September 14, 2000 G-R #180064

251

TO:

Mr. David B. De Witt

Tosco Marketing Company

2000 Crow Canyon Place, Suite 400

San Ramon, California 94583

CC:

Mr. David Vossler

Gettler-Ryan Inc.

Petaluma, California

FROM:

Deanna L. Harding

Project Coordinator

Gettler-Ryan Inc.

6747 Sierra Court, Suite J Dublin, California 94568 RE:

Tosco (Unocal) SS #3538

411 West MacArthur Blvd.

Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

| COPIES | DATED | DESCRIPTION |
|--------|--------------------|---|
| 1 | September 12, 2000 | Groundwater Monitoring and Sampling Report Semi-Annual - Events of July 10, and August 25, 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 *September 25, 2000*, this report will be distributed to the following:

Enclosure

cc:

Ms. Susan Hugo

Alameda County Health Care Services

1131 Harbor Bay Parkway Alameda, California 94502 TROTECTION OF SECOND

trans/3538.dbd



September 12, 2000 G-R Job #180064

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 #3538

411 West MacArthur Boulevard

Oakland, California

Dear Mr. De Witt:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On July 10, 2000, field personnel monitored and sampled six wells (MW-1 through MW-6) at the above referenced site. In addition, on August 25, 2000, field personnel monitored and sampled one well (MW-3).

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. 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, 2, and 3. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

No. 6676

Sincerely,

Deanna L. Harding

Project Coordinator

Barbara Sieminski

Project Geologist, R.G. No. 6676

Figure 1:

Potentiometric Map

Figure 2:

Concentration Map

Table 1:

Groundwater Monitoring Data and Analytical Results

Table 2:

Groundwater Analytical Results

Table 3:

Groundwater Analytical Results - Oxygenate Compounds

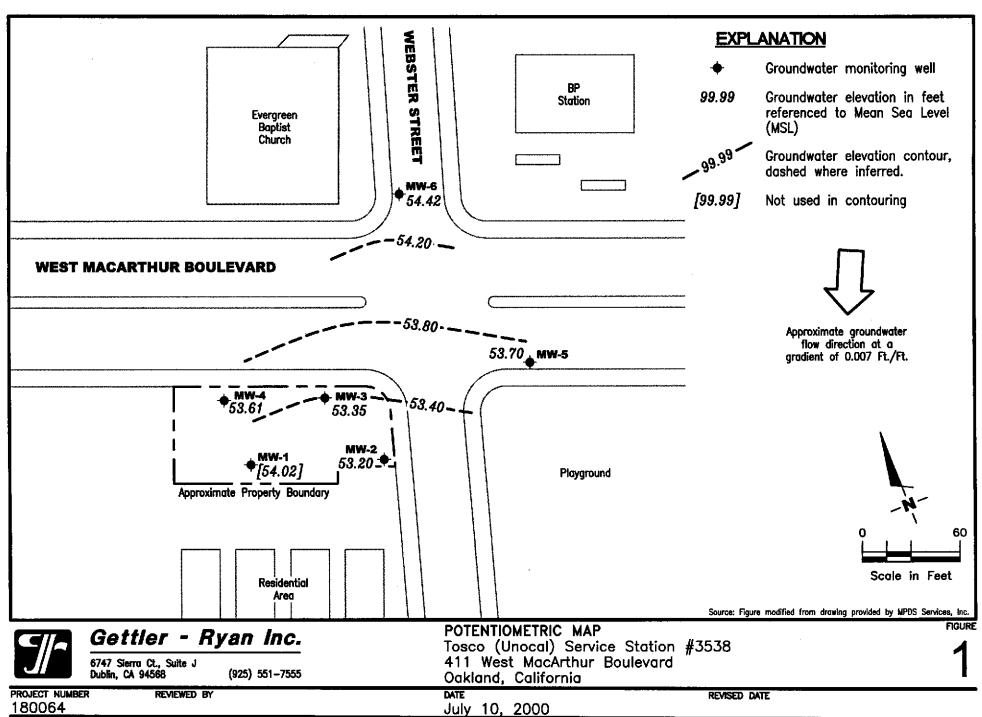
Attachments:

Standard Operating Procedure - Groundwater Sampling

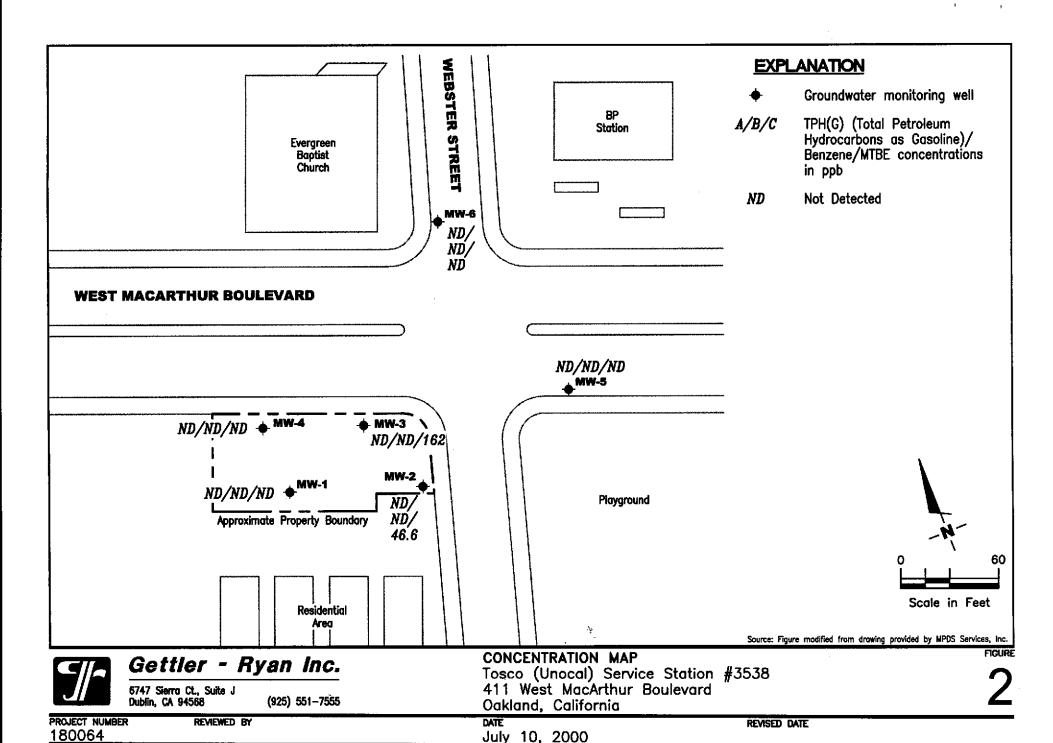
Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports

3538.qml



FILE NAME: P:\ENVIRO\TOSCO\3538\Q00-3538.DWG | Loyout Tab: pot3



FILE NAME: P:\Enviro\Yosco\3538\q00-3538.dwg | Layout Tab: con3

Table 1
Groundwater Monitoring Data and Analytical Results

| WELL ID/ | DATE | DTW | S.I. | GWE | TPH(G) | В | T | E | X | MTBE |
|----------|-----------------------|-------|------------|-------------|-----------|---------|-------|-------|----------|---------------|
| TOC* | | (fl.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ррв) | (ppb) | (ppb) | (ppb) |
| MW-1 | 09/15/89 | | 5.0-29.0 | ⊕ In | ND | ND | 0.61 | ND | ND | |
| | 01/23/90 | | | | ND | 1.5 | 2.3 | ND | 4.3 | |
| | 04/19/90 | | | | ND | ND | ND | ND | ND | -+ |
| | 07/17/90 | | | | ND | ND | ND | ND | ND | |
| | 10/16/90 | | | | ND | ND | ND | ND | ND | |
| | 01/15/91 | | | | ND | ND | ND | ND | ND | |
| | 04/12/91 | | | | ND | ND | ND | ND | ND | |
| | 07/15/91 | | | | ND | ND | ND | ND | ND | |
| | 07/14/92 | | | | ND | ND | ND | ND | ND | |
| 72.43 | 04/13/93 | 17.70 | | 54.73 | SAMPLED A | NNUALLY | | •• | | |
| | 07/14/93 | 18.49 | | 53.94 | ND | 2.2 | 2.1 | 1.1 | 6.2 | |
| 72.10 | 10/14/93 | 18.32 | | 53.78 | | | | | | |
| | 01/12/94 | 18.18 | | 53.92 | | ` | | | | |
| | 04/11/94 | 17.80 | | 54.30 | | | | | | |
| | 07/07/94 | 18.28 | | 53.82 | ND | ND | ND | ND | ND | |
| | 10/05/94 | 18.55 | | 53.55 | | | | | | |
| | 01/09/95 | 17.90 | | 54.20 | | | | | | |
| | 04/17/95 | 17.22 | | 54.88 | | | | | | |
| | 07/19/95 | 18.03 | | 54.07 | ND | ND | ND | ND | ND | |
| | 10/26/95 | 18.67 | | 53.43 | | | | | | |
| | 01/16/95 | 17.20 | | 54.90 | | | | | | |
| | 04/15/96 | 17.40 | | 54.70 | | | | | - | |
| | 07/11/96 | 18.03 | | 54.07 | ND | ND | ND | ND | ND | ND |
| | 01/17/97 | 16.54 | | 55.56 | | | | | | |
| | 07/21/97 | 18.16 | | 53.94 | ND | ND | ND | ND | ND | ND |
| | 01/14/98 | 16.05 | | 56.05 | | | | | | |
| | 07/06/98 ⁵ | 16.46 | | 55.64 | ND | ND | ND | ND | ND | ND |
| | 01/13/99 | 17.37 | | 54.73 | | | | | | · |
| 72.12 | 08/31/99 | 17.00 | | 55.12 | ND | ND | ND | ND | ND | ND |
| | 01/21/00 | 17.04 | | 55.08 | | | | | | |
| | 07/10/00 ⁵ | 18.10 | | 54.02 | ND | ND | ND | ND | ND | ND |

Table 1
Groundwater Monitoring Data and Analytical Results

| WELL ID/ | DATE | DTW | S.I. | GWE | TPH(G) | В | T | E | X | MTBE |
|----------|-----------------------|-------|------------|-------|------------------|-------|-------|-------|------------|-------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) |
| MW-2 | 09/15/89 | | 3.5-28.5 | | 290 | ND | 12 | ND | ND . | |
| | 01/23/90 | | 3.3-26.3 | | 400 | 73 | 36 | 10 | 40 | |
| | 04/19/90 | | | | 3,900 | 550 | 5.1 | 91 | 390 | |
| | 07/17/90 | | | | 490 | 76 | 0.59 | 11 | 46 | |
| | 10/16/90 | | | | 1,400 | 430 | 2.0 | 48 | 240 | |
| | 01/15/91 | | | | 680 | 170 | 0.7 | 19 | 81 | |
| | 04/12/91 | | | *** | 2,200 | 160 | 4.3 | 23 | 62 | |
| | 07/15/91 | | | | 2,200 | 770 | 12 | 72 | 370 | |
| | 10/15/91 | | | | 140 | 44 | 0.56 | 1.5 | 12 | |
| | -01/15/92 | | | | 220 | 37 | 0.52 | 1.1 | 7 | |
| | 04/14/92 | | | •• | 150 | 6.2 | ND | ND | 1.4 | |
| | 07/14/92 | | | | 130 | 3.7 | ND | ND | ND | |
| | 10/12/92 | | | | 370 | 3.4 | 0.56 | ND | 1 1 | |
| | 01/08/93 | | | | 510 ¹ | ND | ND | ND | ND | |
| 71.63 | 04/13/93 | 17.86 | | 53.77 | 410^{2} | 42 | 7.7 | 6.4 | 28 | 200 |
| | 07/14/93 | 18.38 | | 53.25 | 110¹ | 6.5 | ND | ND | 1.1 | 250 |
| 1.38 | 10/14/93 | 18.20 | | 53.18 | 230 ¹ | 5.3 | ND | ND | 2.1 | |
| | 01/12/94 | 18.08 | | 53.30 | 300 | 7.8 | 3.8 | 1.8 | 10 | |
| | 04/09/94 | 17.97 | | 53.41 | 120 | 10 | 0.88 | 1.1 | 4.9 | |
| | 04/11/94 | 17.88 | | 53.50 | | | | nt m | | |
| | 07/07/94 | 17.81 | | 53.57 | 110 ¹ | 4.4 | ND | ND | ND | |
| | 10/05/94 | 18.33 | | 53.05 | 720 ¹ | 20 | ND | ND | 3.1 | |
| | 01/09/95 | 17.40 | | 53.98 | ND | ND | ND | ND | ND | |
| | 04/17/95 | 17.50 | | 53.88 | 93 | 5.6 | 0.62 | 1.7 | 5.5 | |
| | 07/19/95 | 18.01 | | 53.37 | 77 | 32 | 0.58 | 1.7 | 4.1 | |
| | 10/26/95 | 18.21 | | 53.17 | 54 ² | 13 | ND | ND | 0.72 | 220 |
| | 01/16/96 ³ | 16.58 | | 54.80 | 120 | 23 | ND | ND | 0.99 | |
| | 04/15/96 | 17.61 | | 53.77 | 340 | 21 | ND | 2.2 | 3.7 | 45 |
| | 07/11/96 | 17.98 | | 53.40 | 540 | 34 | ND | 4.3 | 12 | 150 |
| | 01/17/97 | 17.08 | | 54.30 | 320 | 63 | 2.4 | 9.4 | 26 | 260 |
| | 07/21/97 | 18.06 | | 53.32 | 160 | 13 | ND | 1.3 | 1.6 | 180 |
| | 01/14/98 | 16.52 | | 54.86 | 66 | 6.3 | ND | ND | 0.98 | 100 |

Table 1
Groundwater Monitoring Data and Analytical Results

| WELL ID/ | DATE | DTW | S.I, | GWE | TPH(G) | В | T | E | X | MTBE |
|----------|-----------------------|-------------|------------|-------|------------------|-------|-------|-------|-------|-------------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ррв) | (ppb) | (ppb) | (ppb) |
| MW-2 | 07/06/98 | 16.87 | 3.5-28.5 | 54.51 | ND | 2.3 | ND | ND | ND | 11 |
| (cont) | 01/13/99 | 17.88 | | 53.50 | 53 | 24 | ND | 0.52 | 0.98 | 120 |
| 71.34 | 08/31/99 | 18.45 | | 52.89 | 8610 | 14 | ND | 0.63 | ND | 21 |
| | 01/21/00 | 17.73 | | 53.61 | ND | 1.94 | ND | ND | ND | 10.1 |
| | 07/10/00 | 18.14 | | 53.20 | ND | ND | ND | ND | ND | 46.6 |
| MW-3 | 09/15/89 | | 5.0-29.0 | | 32 | ND | ND | ND | ND | |
| | 01/23/90 | · | | | 450 | 110 | 1.2 | 4.4 | 11 | |
| | 04/19/90 | | | | 3,100 | 600 | 27 | 54 | 220 | |
| | 07/17/90 | | | | 4,000 | 270 | 48 | 130 | 250 | |
| | 10/16/90 | | | | 740 | 210 | 1.4 | 2.5 | 82 | |
| | 01/15/91 | | | | 3,200 | 460 | 1.5 | 120 | 270 | |
| | 04/12/91 | | | | 880 | 170 | 1.1 | 34 | 110 | |
| | 07/15/91 | | 2 | | 9,200 | 1,300 | 230 | 490 | 1,900 | |
| | 10/15/91 | | | | 3,100 | 390 | 34 | 150 | 390 | |
| | 01/15/92 | | | | 3,000 | 590 | 14 | 310 | 750 | |
| | 04/14/92 | | | | 14,000 | 660 | 48 | 560 | 2,000 | |
| | 07/14/92 | | | | 21,000 | 890 | 200 | 1,200 | 4,300 | |
| | 10/12/92 | | | | 3,200 | 160 | 10 | 230 | 540 | |
| | 01/08/93 | | | | $1,100^2$ | 48 | 0.99 | 0.9 | 93 | |
| 72.06 | 04/13/93 | 17.96 | | 54.10 | $12,000^2$ | 290 | 38 | 760 | 2,300 | 1,400 |
| | 07/14/93 | 18.54 | | 53.52 | 6,300 | 190 | ND | 430 | 1,000 | 860 |
| 71.86 | 10/14/93 | 18.45 | | 53.41 | 2,500 | 52 | ND | 110 | 250 | |
| | 01/12/94 | 18.34 | | 53.52 | 3,800 | 78 | ND | 180 | 390 | |
| | 04/09/94 | 18.19 | | 53.67 | 1,800 | 22 | ND | 140 | 280 | |
| | 04/11/94 | 18.12 | | 53.74 | | | | | | |
| | 07/07/94 | 18.21 | | 53.65 | 110 ¹ | 4.5 | ND | ND | ND | |
| | 10/05/94 | 18.58 | | 53.28 | ND | ND | ND | ND | ND | |
| | 01/09/95 | 17.69 | | 54.17 | ND | 0.68 | ND | ND | ND | |
| | 04/17/95 | 17.68 | | 54.18 | 3,700 | 80 | 10 | 270 | 510 | |
| | 07/19/95 | 18.20 | | 53.66 | 15,000 | 330 | 27 | 990 | 2,400 | |
| | 10/26/95 | 18.32 | | 53.54 | 14,000 | 420 | 180 | 750 | 1,600 | 4,800 |
| | 01/16/96 ³ | 17.95 | | 53.91 | 920 | 38 | ND | 30 | 57 | |

Table 1
Groundwater Monitoring Data and Analytical Results

| WELL ID/ | DATE | DTW | S.I. | GWE | TPH(G) | В | T | E | X | MTBE |
|----------|-----------------------|-------|------------|-------|--------------------|----------|-----------------|-------|----------|-------------------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) |
| MW-3 | 04/15/96 | 17.78 | 5.0-29.0 | 54.08 | 9,700 | 240 | ND | 570 | 860 | 3,200 |
| (cont) | 07/11/96 | 18.19 | | 53.67 | 13,000 | 69 | 5.5 | 430 | 900 | 740 |
| | 01/17/97 | 17.23 | | 54.63 | 4,400 | 25 | ND | 270 | 580 | 1,600 |
| | 07/21/97 | 18.29 | | 53.57 | 9,000 | 36 | ND | 450 | 800 | 950 |
| | 01/14/98 | 16.71 | | 55.15 | 7,100 | 40 | ND^4 | 380 | 360 | 930 |
| | 07/06/98 | 17.03 | | 54.83 | 6,800 ⁶ | 39 | ND^4 | 320 | 360 | 370 |
| | 01/13/99 ⁷ | 18.00 | | 53.86 | 1,800 | 9.4 | ND^4 | 58 | 36 | 180 |
| 71.40 | 08/31/99 | 8 | | | | | | | | |
| | 01/21/00 | 17.58 | | 53.82 | ND | ND | ND | . ND | ND | 21.4 |
| | 07/10/00 | 18.05 | | 53.35 | ND | ND | ND | ND | ND | 162 |
| | 08/25/00 | 17.82 | | 53.58 | ion like | | | | * | 180 ¹¹ |
| | | | | | | | | | | |
| MW-4 | 09/15/89 | | 5.0-29.0 | | ND | ND | ND | ND | ND | |
| | 01/23/90 | | | | ND | ND | 0.4 | ND | ND | |
| | 04/19/90 | | | | ND | ND | 0.48 | ND | ND | |
| | 07/17/90 | | | | ND | ND | ND | ND | ND | |
| | 10/16/90 | | | | ND | ND | ND | ND | ND | |
| | 01/15/91 | | | | ND | ND | ND | | ND | |
| | 04/12/91 | | | | ND | ND | ND | ND | ND | |
| | 07/15/91 | | | | ND | ND | ND | ND | ND | |
| | 07/14/92 | | | | ND | 1.3 | 2.5 | ND | 1.0 | |
| 71.98 | 04/13/93 | 17.67 | | 54.31 | SAMPLED A | ANNUALLY | | | | |
| | 07/14/93 | 18.31 | | 53.67 | ND | ND | ND | ND | ND | |
| 71.64 | 10/14/93 | 18.08 | | 53.56 | | | | | | |
| | 01/12/94 | 17.97 | | 53.67 | | | | | | |
| | 04/11/94 | 17.70 | | 53.94 | | | | | | |
| | 07/07/94 | 17.80 | | 53.84 | ND | ND | ND | ND | ND | |
| | 10/05/94 | 18.28 | | 53.36 | | | | | | |
| | 01/09/95 | 17.38 | | 54.26 | | | | | | |
| | 04/17/95 | 17.21 | | 54.43 | | | | | | |
| | 07/19/95 | 17.82 | | 53.82 | ND | ND | ND | ND | ND | |
| | 10/26/95 | 18.17 | | 53.47 | | | | | | |
| | 01/16/96 | 16.45 | | 55.19 | | | | | | |

Table 1
Groundwater Monitoring Data and Analytical Results

| WELL ID/ | DATE | DTW | S.I. | GWE | TPH(G) | В | Т | E | X | MTBE |
|----------|----------|-------|------------|-------------|-----------|-------|-------|---------------|-------|-------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) |
| MW-4 | 04/15/96 | 17.35 | 5.0-29.0 | 54.29 | | | | - | | |
| (cont) | 07/11/96 | 17.81 | 5.0-25.0 | 53.83 | ND | ND | ND | ND | ND | ND |
| (COIR) | 01/17/97 | 16.73 | | 54.91 | | | | | | |
| | 07/21/97 | 17.91 | | 53.73 | ND | ND | ND | ND | ND | ND |
| | 01/14/98 | 16.18 | | 55.46 | | | | | | |
| | 07/06/98 | 16.49 | | 55.15 | ND | ND | ND | ND | ND | ND |
| | 01/13/99 | 17.29 | | 54.35 | | | | | | |
| 71.54 | 08/31/99 | _9 | | | | | | | | |
| 71.54 | 01/21/00 | 17.51 | | 54.03 | | ~+ | | | | |
| | 07/10/00 | 17.93 | | 53.61 | ND | ND | ND | ND | ND | ND |
| | | | | | • | | | | | |
| MW-5 | 11/30/92 | | 13.0-30.0 | . | ND | ND | ND | ND | ND | |
| | 01/08/93 | | | | ND | ND | ND | ND | ND | |
| 71.51 | 04/13/93 | 17.49 | | 54.02 | ND | ND | ND | ND | ND | |
| | 07/14/93 | 18.02 | | 53.49 | ND | ND | 0.57 | ND | ND | |
| 71.23 | 10/14/93 | 17.82 | | 53.41 | ND | ND | ND | ND | ND | |
| | 01/12/94 | 17.74 | | 53.49 | ND | ND | 0.84 | ND | 1.6 | |
| | 04/11/94 | 17.56 | | 53.67 | SAMPLED A | | | | | |
| | 07/07/94 | 17.50 | | 53.73 | ND | ND | ND | ND | ND | |
| | 10/05/94 | 17.98 | | 53.25 | | | +- | | | |
| | 01/09/95 | 17.13 | | 54.10 | | | | | | |
| | 04/17/95 | 17.05 | | 54.18 | | | | | | |
| | 07/19/95 | 17.59 | | 53.64 | ND | ND | ND | ND | ND | |
| | 10/26/95 | 18.10 | | 53.13 | | | | | | |
| | 01/16/96 | 17.11 | | 54.12 | | | | | | |
| | 04/15/96 | 17.22 | | 54.01 | | | | | | |
| | 07/11/96 | 17.59 | | 53.64 | ND | ND | ND | ND | ND | ND |
| | 01/17/97 | 16.75 | | 54.48 | | | | | | |
| | 07/21/97 | 17.59 | | 53.64 | ND | ND | ND | ND | ND | ND |
| | 01/14/98 | 16.16 | | 55.07 | | · | | | | |
| | 07/06/98 | 16.52 | | 54.71 | ND | ND | ND | ND | ND | ND |
| | 01/13/99 | 17.62 | | 53.61 | | | | | | |
| 71.16 | 08/31/99 | 17.76 | | 53.40 | ND | ND | ND | ND | ND | ND |

Table 1 **Groundwater Monitoring Data and Analytical Results**

| WELL ID/ | DATE | DTW | S.I. | GWE | TPH(G) | В | T | E | X | MTBE |
|----------------|----------|-------|------------|-------|-----------|-------------|----------|----------------|----------|----------------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (թրե) | (ppb) | (ppb) | (ppb) |
| | | | | | | | | | | |
| MW-5 | 01/21/00 | 16.83 | 13.0-30.0 | 54.33 | | | | | | |
| (cont) | 07/10/00 | 17.46 | | 53.70 | ND | ND | ND | ND | ND | ND |
| MW-6 | 11/30/92 | | 13.0-30.0 | | ND | ND | ND | ND | ND | |
| 111 11 -0 | 01/08/93 | | 2000 2000 | | ND | ND | ND | ND | ND | |
| 71. 7 9 | 04/13/93 | 11.94 | | 59.85 | ND | ND | ND | ND | ND | |
| 71.75 | 07/14/93 | 17.20 | | 54.59 | ND | 0.99 | 2.4 | ND | 1.9 | |
| 71.44 | 10/14/93 | 17.21 | | 54.23 | ND | ND | 0.64 | ND | ND | |
| 71.77 | 01/12/94 | 17.44 | | 54.00 | ND | ND | 1.2 | ND | 2.9 | |
| | 04/11/94 | 13.66 | | 57.78 | SAMPLED A | | | | | |
| | 07/07/94 | 14.05 | | 57.39 | ND | ND | ND | ND | ND | |
| | 10/05/94 | 14.16 | | 57.28 | | | | | | |
| | 01/09/95 | 13.73 | | 57.71 | | | | - - | | |
| | 04/17/95 | 11.30 | | 60.14 | | | | | | |
| | 07/19/95 | 12.32 | | 59.12 | ND | ND | ND | ND | ND | |
| | 10/26/95 | 17.88 | | 53.56 | | | <u></u> | | | |
| | 01/16/96 | 16.38 | | 55.06 | | | | | | |
| | 04/15/96 | 14.00 | | 57.44 | | | | | | |
| | 07/11/96 | 13.58 | | 57.86 | ND | ND | ND | ND . | ND | ND |
| | 01/17/97 | 15.42 | | 56.02 | | | | | | |
| | 07/21/97 | 13.78 | | 57.66 | ND | ND | ND | ND | ND | ND |
| | 01/14/98 | 13.65 | | 57.79 | | | | | | |
| | 07/06/98 | 13.90 | | 57.54 | ND | ND | ND | ND | ND | ND |
| | 01/13/99 | 14.93 | | 56.51 | | | | | | |
| 71.37 | 08/31/99 | 15.81 | | 55.56 | ND | ND | ND | ND | ND | ND |
| | 01/21/00 | 16.13 | | 55.24 | | | | | | |
| | 07/10/00 | 16.95 | | 54.42 | ND | ND | ND | ND | ND | ND |
| Trip Blank | | | | | | | | | | |
| TB-LB | 01/14/98 | | | | ND | ND | ND | ND | ND | ND |
| ID-LD | 07/06/98 | | | | ND ND | ND ND | ND ND | ND ND | ND | ND ND |
| | 07/06/98 | | | | ND ND | ND ND | ND ND | ND ND | ND ND | ND ND |
| 3538.xls/#1 | 80064 | | | | 6 | | | | | As of 08/25/00 |

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538

411 West MacArthur Boulevard

Oakland, California

| WELL ID/ | DATE | DTW | SJ. | GWE | TPH(G) | В | T | E | X | MTBE |
|----------|----------|-------|------------|-------|--------|-------|-------|-------|-------|-------|
| TOC* | | (ft.) | (ft. bgs.) | (msl) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) | (ppb) |
| TB-LB | 08/31/99 | | | | ND | ND | 1.5 | ND | 2.3 | 39 |
| (cont) | 01/21/00 | | | | ND | ND | ND | ND | ND | ND |
| (00111) | 07/10/00 | | | | ND | ND | ND | ND | ND | ND |

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3538 411 West MacArthur Boulevard Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl tertiary butyl ether

DTW = Depth to Water

B = Benzene

ppb = Parts per billion

(ft.) = Feet

T = Toluene

ND = Not detected

S.I. = Screen Interval

E = Ethylbenzene

-- = Not Measured/Not Analyzed

(ft. bgs.) = Feet Below Ground Surface

X = Xylenes

GWE = Groundwater Elevation

msl = Mean sea level

- * TOC elevations are relative to mean sea level (msl), per the City of Oakland Benchmark #9NW10. (Elevation = 75.50 feet msl). Prior to October 14, 1994, the DTW measurements were taken from the top of well covers. On September 15, 1999, TOC elevations were resurveyed City of Oakland Benchmark being a square brass pin in the concrete gutter at the southwest corner of Webster & MacArthur. The stationing data is with reference to the back of sidewalk on MacArthur in front of the site. Benchmark (Elevation = 71.055 feet, msl)
- Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and a non-gasoline mixture.
- ³ Laboratory report indicates the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb.
- Detection limit raised. Refer to analytical reports.
- ⁵ All EPA Method 8010 constituents were ND.
- 6 Laboratory report indicates gasoline and unidentified hydrocarbons <C7.</p>
- 7 TOC measurement may have been altered due to damaged casing.
- ⁸ Well was obstructed by a solid at 0.5 feet.
- Well was obstructed by a solid (concrete or soil) at 10.4 feet.
- Laboratory report indicates gasoline C6-C12.
- MTBE by EPA Method 8260

Table 2
Groundwater Analytical Results

Tosco (Unocal) Service Station #3538

411 West MacArthur Boulevard Oakland, California

| WELL ID | DATE | TPH(D) | TOG | Tetrachloroethene ¹ |
|---------|-----------------------|--------|-----------|--------------------------------|
| | | (ррь) | (ppb) | (ppb) |
| MW-1 | 09/15/89 | ND | ND | 2.7 |
| | 01/23/90 | ND | 1.5 | 2.1 |
| | 04/19/90 | ND | ND | 2.2 |
| | 07/17/90 | ND | ND | 1.7 |
| | 10/16/90 | ND | ND | 2.0 |
| | 01/15/91 | ND | ND | 2.1 |
| | 04/12/91 | ND | ND | 2.0 |
| | 07/15/91 | ND | ND | 1.8 |
| | 07/14/92 | | | 1.4 |
| | 07/14/93 | | , | 0.95 |
| | 07/07/94 | | | 0.83 |
| | 07/19/95 | | | 0.52 |
| | 07/11/96 ² | | | 0.73 |
| | 07/21/97 ³ | | | 0.70 |
| | 08/31/99 | | | ND |

EXPLANATIONS:

Groundwater analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TOG = Total Oil and Grease

ppb = Parts per billion

ND = Not Detected

-- = Not Analyzed

All other EPA Method 8010 constituents were ND.

² Chloroform was detected at a concentration of 0.96 ppb.

Chloroform was detected at a concentration of 1.0 ppb.

Table 3

Groundwater Analytical Results - Oxygenate Compounds

Tosco (Unocal) Service Station #3538 411 West MacArthur Boulevard

Oakland, California

| WELL ID | DATE | TBA (ppb) | MTBE (ppb) | DIPE (ppb) | ETBE (ppb) | TAME (ppb) | 1,2-DCA (ppb) | EDB (ppb) |
|---------|----------|-----------------|---------------|-----------------|---------------|---------------|------------------|-----------------|
| MW-3 | 08/25/00 | ND ¹ | 180 | ND ¹ | ND^1 | ND¹ | ND^1 | ND ¹ |

EXPLANATIONS:

ANALYTICAL METHOD:

TBA = Tertiary butyl alcohol

EPA Method 8260 for Oxygenate Compounds

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

ppb = Parts per billion

ND = Not Detected

¹ Detection limit raised. Refer to analytical reports.

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 an 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.

| Client/ Facility #35 | 38 | | Job | ·#: | 80064 | | |
|--|--|--------------------------|--|----------------------|--|---------------------------------------|----------------------|
| Address: 411 | W. MacActh | we Blu | <u>ا.</u> Dat | e: _ | 7-10- | 00 | |
| City: Oak | land | | Sar | npler: | Joe | | |
| Well ID | mw-1 | Well | Condition: | (| 0,K | | |
| Well Diameter | 2 in. | - | rocarbon kness: | e in. | Amount Ba | | (oel.) |
| Total Depth | 23.35 tr | . [| | · 0.17 | 3" = 0.38 | 3 4 | = 0.66 |
| Depth to Water | 18.10 + | Fac | tor (VF) | 6" = | 1.50 | 12" = 5.80 | |
| | _ 5 .25_x | vf <u>0.17</u> | = <u>0.89</u> ×3 (ca | se volume) | = Estimated Pu | ırge Volume: _ | } ' _{lgal.} |
| Purge Equipment: | Disposable Bailer Bailer Stack Sustina Grundfos Other: | <u> </u> | Sampling Equipme | nt: C | Disposable Ba lailer Pressure Baile Grab Sample | | ', |
| Starting Time: Sampling Time: Purging Flow Rat Did well de-wate | | P. w | Weather Condit Water Color: _ Sediment Desc If yes; Time: | ription: _ | Mone | ·- | |
| Time \ | /olume pH (gal.) | Cond µml | hictivity ⁵⁰ Ter | nperature | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
| 11:47 | 7.57 2 7.67 3 7.62 | - <u>9</u> - 9 - 9 | <u> ک</u> ک | 65.8 66.0 65.4 | | | |
| SAMPLE ID | (#) - CONTAINER | LABOF REFRIG. | RATORY INFORI | | BORATORY | ANAL | .YSES |
| Mw-I | 3 VeA | Y | HCL | | equoia | TPHG, BTE | |
| | 2vot | € / | ٠/ | | <i>*</i> • | 8010 | |
| COMMENTS: _ | <u> </u> | | | | | · · · · · · · · · · · · · · · · · · · | |

| Client/ Facility #35 | 38 | | Jo | b#: | 80060 | <u> </u> | |
|--|--|------------------|---|------------------------|---|-------------|------------------|
| Address: 41 | L. W. MacActl | auc Bl | d. Da | ite: | 7-10- | 00 | |
| City:Oak | Land | | Sa | ımpler: _ | Joe | | |
| Well ID | mw-2 | Well | Condition: | | 0.K | | |
| Well Diameter | 2 in | | rocarbon | W in | Amount B | | |
| Total Depth | 24.30 + | | kness: | = 0.17 | (product/we 3" = 0.38 | | = 0.66 |
| Depth to Water | 18.14 . | Fac | xor (VF) | 6* = | 1.50 | 12" = 5.90 | |
| Purge Equipment: | Disposable Bailer Bailer Stack Succion Grundfos Other: | = | = 1.05 x 3 (c Samplir Equipm | ent: O P | Estimated Policy Sposable Baller ressure Bailer frab Sample | iller) | 3. Signal 1 |
| Starting Time: Sampling Time: Purging Flow Rat Did well de-wate | 12 75 1:157 e: | <u> </u> | Weather Cond Water Color: Sediment Des If yes; Time: | clea | Noue | | |
| | folume pH (gal.) i 7.17 7.27 7.37 | μπί | 108/cm ¥ | # 65.8 65.1 65.5 | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
| SAMPLE ID | (#) - CONTAINER | LABOR REFRIG. | ATORY INFOR | | ORATORY | ANAL | vetc |
| Mw - 7 | 3 YeA | Y Y | HCL. | | 400ia | TPHG, BTE | |
| | | | | | | | |
| COMMENTS: _ | | | | | | 1 | |

| Client/ Facility #_35 | 538 | | Jo | b#: _ | 180066 | <u> </u> | |
|--|--|-------------|---|-------------------|---|-------------|------------------|
| Address: 41 | 1 W. MacAct | hur Bl | <u>vd.</u> D | ate: _ | 7-10- | 00 | |
| City: | | | | ampler: _ | Joe | | |
| Weil ID | _mw-3 | We | Il Condition: | | 0,K | | |
| Well Diameter | 2 _{in.} | _ | drocarbon | ES . | Amount B | lailed | |
| Total Depth | 27.20 # | | ckness: | = 0.17 | (product/wa 3" = 0.3 | | = 0.66 |
| Depth to Water | _18.05 to | | ACTOR (VF) | | 1.50 | 12" = 5.90 | = 0.60 |
| Purge Equipment: | Disposable Bailer Bailer Stack Suction Grundfos Other: | * | Sampli Equipm | ng ent: [F | = Estimated Possible Basiler Pressure Baile Grab Sample | ailer) | (0.01.) |
| Sampling Time: Purging Flow Rate Did well de-water | | <u>A.</u> m | Water Color: Sediment Des If yes; Time: | cription: . | None | | |
| | Volume pH (gal.) 1.5 7.37 3 7.41 | μπ / | ductivity 50 To thos/cm * 3.92 9.14 4.21 | 73.2 72.4 | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
| SAMPLE ID | (#) - CONTAINER | LABO | RATORY INFOR | | IORATORY | ANAL | /eFe |
| MW-3 | 3 YeA | Y | HCL | | guoia | TPHG, BTEX | |
| | | | | | | | · |
| COMMENTS: _ | | | | | | | |

| Client/ Facility #35 | 38 | | Jo | ob#: | 80064 | | |
|---|--|------------|--|----------------------|---|----------------|---------------------|
| Address: 41 | W. MacActh | we Bl | d. D | ate: _ | 7-10- | 00 | |
| City: Oak | land | · | S | ampler: _ | Joe | | |
| Well ID | _mw-4_ | Wei | Condition: | | 0,K | · | |
| Well Diameter | 2 in. | = | rocarbon :kness: | # is | Amount Ba | | |
| Total Depth | 24.80 + | <u> </u> | | = 0.17 | 3" = 0.38 | 4 | = 0.66 |
| Depth to Water | 17.93 4. | Fac | zor (VF) | 6" ≖ | 1.50 | 12" = 5.80 | |
| Purge Equipment: | Disposable Bailer Bailer Stack Grundfos Other: | • | Sampli Sampli Equipm | ing nent: (1 F | = Estimated Publisposable Balailer Pressure Baile Grab Sample | iller | 3.5 (c=1) |
| Starting Time: Sampling Time: Purging Flow Rat Did well de-wate | | ₽ ~ | Weather Con Water Color: Sediment De If yes; Time | scription: . | None | | |
| Time | Volume pH (gal.) | Con | ductivity 50 7 | emperature F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
| 12:28 | 1 7.95 2 7.72 3.5 7.61 | | 2.68 2.72 2.70 | 65.1 65.2 65.0 | | | |
| | | | RATORY INFO | | | 45141 | vete |
| SAMPLE ID WW -4 | #) - CONTAINER | REFRIG. | PRESERV. TY | | BORATORY EQUOIQ | TPHG BTE | |
| 70100 727 | | 1 | | | | | |
| | | | | | | | |
| COMMENTS: _ | <u>. </u> | <u> </u> | | | | | |
| COMMENTS: _ | | | | | | | |
| | _ | • | | | | | |

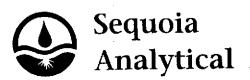
| Client/ Facility #_ 35 | 38 | | Job#: | 80064 | | |
|---------------------------|-----------------------------|---|-----------------------|------------------------|--------------------------------|---------------------|
| | W. MacActhu | CBhd. | Date: | 7-10- | 00 | |
| City: Oak | | | Sampler: | Joe | | |
| | | | • | | | - |
| Weil ID | <u>mw-5</u> | Well Condition | : <u>-</u> | 9,K | | |
| Well Diameter | 2 in_ | Hydrocarbon Thickness: | Ø: | Amount Ba | | (pal.) |
| Total Depth | 30.10 # | Volume | 2" = 0.17 | 3" = 0.38 | | = 0.66 |
| Depth to Water | 17.46 n. | Factor (VF) | <i>6</i> = } | 1.50 | 12" = 5.90 | |
| | 12.64 x v | <u>0.17 -2.15</u> ; | (3 (case volume) = | = Estimated Pu | irge Volume: | 6. Signi |
| Purge Equipment: | Disposable Bailer Bailer | | npling sipment: Di | sposable Ba | iler <table-cell></table-cell> | , |
| , , | Stack | • | | ailer ressure Baile | | |
| | Grundfos | | -G | rab Sample | | |
| | Other: | - | Other: _ | | <u>-</u> | |
| Starting Time: | 11:00 | . Weather (| Conditions: _ | clear | | |
| Sampling Time: | | | lor: <u> </u> | | | |
| | : | | Description: _ | | | |
| Did well de-water | ? | lf yes; T | īme: | Volum | e: | loal.) |
| | olume pH (gal.) | Conductivity Sumhos/cm | 7- | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
| 11:12 | 2 7.70 | 10.37 | 71.9 | | | |
| <u> </u> | 4 7.55 1.55 | 10.47 | 74.0 | | | · —— |
| | 1.25 | | | | | |
| | | | | | | |
| | | | | | | |
| | | LABORATORY IN | | | | |
| SAMPLE ID | 3 YeA | Y HCL | | oratory 400 ia | TPNG BTE | |
| - Mw - > | Sten | 1 1102 | | 1001a | IING, DIE | 1,11180 |
| | | | | | | |
| | | | | | ! | |
| COMMENTS: | | · ———————————————————————————————————— | | | | |
| | - | | | | | |
| | - *** *** | | · <u></u> | | | |

| Client/ Facility #_ 35 | 38 | | Job# | : 180066 | 1 | · |
|---|--|----------------|------------------------|---|---------------|------------------|
| Address: 411 | W. MacActh | uc Blud | Date | 7-10- | 00 | |
| City: _Oak | land | | Sam | pler: <u>Joe</u> | | |
| Well ID | mw-6 | Well (| Condition: | o.K | | |
| Well Diameter | 2_in | - | ocarbon | Amount E | | (gal.) |
| Total Depth | 30.00 E | Volu | | 0.17 3" = 0.3 | 8 4*= | 0.66 |
| Depth to Water | 16.95 4. | Fact | or (VF) | 6" = 1.50 | 1.2" = 5.90 | |
| | 13.05 × | vf <u>0.17</u> | _ <u>722</u> x 3 (case | volume) = Estimated F | Purge Volume: |) (gst.) |
| Purge Equipment: | Disposable Bailer Bailer Stack Suction Grundfos Other: | · | Sampling Equipment | t: Disposable B Bailer Pressure Bail Grab Sample Other: | er | |
| Starting Time: Sampling Time: Purging Flow Rat Did well de-wate | | A.w | Sediment Descri | ons: <u>Clear</u> clear ption: <u>ikeste</u> Volum | | N ^ (gal.) |
| Time 10:30 | Volume pH (gal.) 2.5 7.40 5 7.45 | | 91 52 | perature D.O. (mg/L) 72.5 73.0 73.7 | ORP (mV) | Alkalinity (ppm) |
| SAMPLE ID | (#) - CONTAINER | LABOR | ATORY INFORM | IATION LABORATORY | ANALY | SES |
| mw-6 | 3 YeA | Y | HCL | Sequoia | TPHG, BTEX | , MTBE |
| V-1, 1/2 | | | | | | |
| | | | | | | |
| | | | <u> </u> | | | |
| COMMENTS: . | | <u></u> | | | | |
| | | | | <u> </u> | | |
| | | • | | | | |

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|---------------|---|---|--|---|--|--------------|----------------------|--|--------------------------------------|--|--------------------------|---------------------------------|--------------------------------|------------------------------|--------------------------------|---------------------------------------|---|--------------|--|--------------|--------------|------------------------|
| | | | <u> </u> | | | . IIN | OCAL SS | 1252R | 72 | 00 | 70 | x 7 | | | Contact | (Nome) | | MR. I | DAVII | DEW | IT T | |
| | | L | | Facil | lly Numb | 411 | W. MACAI | THUR | BLVD | OAK | LAND | CA | _ | | | (Phone) | (9 | $(25)^{2}$ | 277-2 | 384 | | |
| | 16 | 7 | Cone | | roject Nu | | | 064. | 85 | | | <u>'</u> | ı | Laboratori | / Name | Seg | uoia | Anal | lytical | | | |
| | TOS | | Cone | stant N | me_Ge | ttler | -Ryan Ind | (G | -R_In | <u>زی</u> | | | _] ı | | | | | | | | | |
| | | • | , | ddress | 5747 S | ierra | Court | Suite | _L_D | ubl1r | 1,_CA | 9456 | В в | Samples (| Collecte | by (No | m•) | <u> </u> | EA3(EMIAN) | | | |
| - | Touco Burkeling 2000 Cree Caryon San Parren, Cali | is bil' gar' 400 In bil' gar' 400 I Combani | P | rolect C | antaat (N | ame) _ D | eanna L. | llard | ing | | | | _ • | Collection | Dote _ | | 10-0 | 25 | | | | |
| | • | | | • | (P | hone) 1 | <u>5-551-75</u> | <u>55 (</u> Fa | (Humber | 925 | <u>-551-</u> | 7888 | | Signolure | | <u> </u> | 20/ | <u>حدم</u> | | | | |
| | | | | 7. |] | | | | | | | | | Analyse | e To B | Perfor | međ | | | | r | DO NOT BILL |
| | Somple Number | Lab Sample Number | Number of Containers | Metric S = Sol A = Air W = Water C = Charce | Type G = Grab C = Composite D = Discrete | II-n• | Sample Preservation | lead (Yos or No) | TPH Gas+ BTEX WANTBE BO15] (BG20) | TPH Dissel (8015) | Oil and Graces (5520) | Puryeable Halocarbors (2010) | Purjectile Aromatics (8020) | Purpenble Organics (8240) | Extractoble Organica (8270) | Metals CA.C.Pb.Zn.Ni (COP or M) | | | | | | TB-LB ANALYSIS Remarke |
| . — | | | JOA | V | 0- | - | भर | Y | 1 | | | | | | | | | | | <u> </u> | ļ | |
| <u>TI</u> | | ļ | SVOL | - / | | 12105 | . , | | 1 | | | 7 | | | | · | | | , | | | |
| ノ <u>w</u> | | | 34.4 | | | 11:65 | , | | 1 | | | | | | | | | | | · | | |
| | 1W-2 | | | | | 1:47 | | 1 | 1 | | - | | | | | | | | | | | |
| | 1W-3 | | 4 | | / | | | + | 17 | ├── | | | | | | 1 | | | | | | |
| / <u>w</u> | w-4 | | 1, | | | /2:39 | | ` | | ├ | - | | | | | | | | <u> </u> | | 1 | |
| ノ w | 1W-5 | | 1 | <u></u> | / | 11:25 | | \ <u>'</u> | | ļ | | | <u> </u> | | - | | . | | | + | ┧── | <u> </u> |
| t/ N | 1W-6 | | 1/2 | | | 10:45 | / | 1_ | | <u> </u> | - | ļ | | | ļ | | | | <u> </u> | ┧ | \vdash | |
| | | | | | | <u> </u> | | <u> </u> | | <u> </u> | _ | . | | _ | | - | | | | ╂ | | <u> </u> |
| | | | | | | 1 | | _ | | | . | . | · | _ | <u> </u> | | ļ | | | | - | |
| | | | | | | | | | 1 | <u> </u> | | <u> </u> | <u> </u> | _ | | . | <u> </u> | | | | <u> </u> | |
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| / | | _ | - | | | | | - | | | - | - | 1 | _ | 1 | 1 | | | | | | |
| | | | <u> </u> | <u> </u> | | —- | n-t-Mara 21 | | l | By (Slor | ntura) (| _ <u></u> | ┸╌┐ | Organiza | | Dat | e/Time | 15:30 | <u> </u> | Turn A | round T | lme (Circle Choles) |
| | gulahad B | (Signature) | | | gonizetion | Ŀ | Date/Time 3: | است | <i>'\</i> | | P | | | | | | 10/0 | | | | 2 | 4 Hre. |
| | p. s. | O Lo | | | gonizatio | | 7-10-02 Date/Time | Date/Time Received By (Signature) Organization Date/Time | | | 8 Hrm. | | | | | | | | | | | |
| | A40 B | y (Signoture) | | " | An: 454AA | · | | | • | | | | } | | | | - | | | | | Doys Doys |
| | \ | (Signature) | <u> </u> | O ₁ | gonizatio | h | Date/Time | | Realeved | For Lab | orelory | By (Sign | ngture) | 1 | | Do | le/Time | | | | | optrooted |
| | | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | Ī | | | |] | • | | | | | | | | | | | | | |

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July 25, 2000

Deanna Harding Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568

RE: Tosco(4)/L007067

Dear Deanna Harding:

Enclosed are the results of analyses for sample(s) received by the laboratory on July 10, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson Project Manager

CA ELAP Certificate Number 1-2360





Project:

Tosco(4)

Project Number: Unocal SS#3538 Project Manager: Deanna Harding

Received: 7/10/00

Sampled: 7/10/00

Reported: 7/25/00

ANALYTICAL REPORT FOR L007067

| Sample Description Laboratory Sample Number Sample Matrix | Date Sampled |
|---|--------------|
| TB-LB L007067-01 Water | 7/10/00 |
| MW-1 L007067-02 Water | 7/10/00 |
| MW-2 L007067-03 Water | 7/10/00 |
| MW-3 L007067-04 Water | 7/10/00 |
| MW-4 L007067-05 Water | 7/10/00 |
| √W-5 L007067-06 Water | 7/10/00 |
| 1W-6 L007067-07 Water | 7/10/00 |





Project: Tosco(4)

Project Number: Unocal SS#3538 Deanna Harding Project Manager:

Sampled: 7/10/00 Received:

7/10/00

7/25/00 Reported:

Sample Description: **Laboratory Sample Number:**

TB-LB L007067-01

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|------------------------------------|-----------------|------------------|------------------|--------------------------------------|--------------------|--------|-------|--------|
| | | Seque | ola Analytica | l - San Carlos | | | | |
| Total Purgeable Hydrocarbons (C6-C | 12), BTEX ar | d MTBE by | DHS LUFT | | | | | |
| Purgeable Hydrocarbons as Gasoline | 0070068 | 7/18/00 | 7/18/00 | | 50.0 | ND | ug/l | |
| Benzene | н | 11 | ` 17 | | 0.500 | ND | Ħ | |
| Toluene | Ħ | 79 | n | | 0.500 | ND | n | • |
| | ** | n | Ħ | | 0.500 | ND | n | |
| Ethylbenzene | | ** | # | | 0.500 | ND | R | |
| Xylenes (total) | | | н | | 5.00 | ND | Ħ | |
| Methyl tert-butyl ether | H | | | 70 A 130 | 3.00 | 102 | % | |
| Surrogate: a,a,a-Trifluorotoluene | Ħ | Pi . | ø | 70.0-130 | | 102 | 70 | |





Project: Tosco(4)

Project Number: Unocal SS#3538 Project Manager: Deanna Harding

Sampled: 7/10/00 Received: 7/10/00

Reported: 7/25/00

Sample Description: Laboratory Sample Number: MW-1 L007067-02

| | Batch | Date | Date | Specific Method/ | Reporting Limit | Result | Units | Notes |
|------------------------------------|--------------------|-----------|--------------|------------------|--------------------|------------------|---|-------|
| nalyte | Number | Prepared | Analyzed | Surrogate Limits | Limit | Vesuit | <u> </u> | |
| <u> </u> | | _ | | San Carles | | | | |
| | | Seque | ia Analytica | - San Carlos | | | | |
| otal Purgeable Hydrocarbons (C6-C1 | <u>2), BTEX an</u> | d MTBE by | DHS LUFT | | 50.0 | ND | ug/l | |
| urgeable Hydrocarbons as Gasoline | 0070058 | 7/14/00 | //13/00 | | 0.500 | ND | 44 ——————————————————————————————————— | |
| enzene | ** | 11 | H | | 0.500 | ND | ŧi | |
| oluene | | 11 | # | | 0.500 | ND | п | |
| thylbenzene | н | M | | | | ND | 41 | |
| ylenes (total) | п | H | Ħ | | 0.500 | ND | n | |
| fethyl tert-butyl ether | n | | " | | 5.00 | 91.4 | % | |
| urrogate: a,a,a-Trifluorotoluene | " | <i>n</i> | ** | 70.0-130 | | y1. 4 | 70 | |
| | | | | | | | | |
| olatile Organic Compounds by EPA | Method 8010 | <u>)B</u> | | | 1 00 | NIT's | ug/l | |
| reon 113 | 0070049 | 7/12/00 | 7/13/00 | | 1.00 | ND ND | # n\Z\1 | |
| romodichloromethane | b | Ħ | . # | | 0.500 | | Ħ | |
| comoform | W | Ħ | #1 | | 0.500 | ND | | |
| comomethane | m | 11 | ** | | 1.00 | ND | 11 | |
| Eurbon tetrachloride | м | e | m | | 0.500 | ND | 17 | |
| Chlorobenzene | n | π | н | | 0.500 | ND | н | |
| Chloroethane | и | и | M | | 1.00 | ND | 19 | |
| -Chloroethylvinyl ether | 19 | Ħ | Ħ | | 1.00 | ND | In | |
| Chloroform | н | n | н | | 0.500 | ND | " H | |
| Chloromethane | ** | # | n | | 1.00 | ND | | |
| Dibromochloromethane | n | # | #1 | | 0.500 | ND | " | |
| | 41 | | H | | 0.500 | ND | " | |
| 1,3-Dichlorobenzene | 19 | ** | π | | 0.500 | ND | 4 | |
| 1,4-Dichlorobenzene | ** | | и | | 0.500 | ND | 17 | |
| 1,2-Dichlorobenzene | ** | Ħ | H | | 0.500 | ND | н | |
| 1,1-Dichloroethane | * | | | | 0.500 | ND | ** | |
| 1,2-Dichloroethane | 11 | п | # | | 0.500 | ND | 77 | |
| 1,1-Dichloroethene | | п | Ħ | | 0.500 | ND | et . | |
| cis-1,2-Dichloroethene | | н | п | | 0.500 | ND | ** | |
| trans-1,2-Dichloroethene | ., | ** | # | | 0.500 | ND | 11 | |
| 1,2-Dichloropropane | | | | | 0.500 | ND | Ħ | |
| cis-1,3-Dichloropropene | 17 | " | * | | 0.500 | ND | * | |
| trans-1,3-Dichloropropene | | | H | | 5.00 | ND | H . | |
| Methylene chloride | | | | | 0.500 | ND | M | |
| 1,1,2,2-Tetrachloroethane | | | | | 0.500 | ND | Ħ | |
| Tetrachloroethene | ** | " | | | 0.500 | ND | n | |
| 1,1,1-Trichloroethane | Ħ | H | 71 | | 0.500 | ND | | |
| 1,1,2-Trichloroethane | N | # | | | 0.500 | ND | ** | |
| Trichloroethene | Ħ | H | # | | 0.500 | ND | 1) | |
| Trichlorofluoromethane | H | #1 | | | 0.500 | ND | m | |
| Vinyl chloride | 11 | ** | | 70.0-130 | 0.300 | 81.8 | % | |

Sequoia Analytical - San Carlos

*Refer to end of report for text of notes and definitions.



Project: Tosco(4)

Project Number: Unocal SS#3538

Sampled: 7/10/00 Received: 7/10/00

Project Manager: Deanna Harding

Reported: 7/25/00

Sample Description:

Laboratory Sample Number:

MW-2 L007067-03

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|-------------------------------------|---------------------|------------------|------------------|--------------------------------------|--------------------|--------|-------|--------|
| | * | Seque | oia Analytica | l - San Carlos | | | | |
| Total Purgeable Hydrocarbons (C6-C1 | 2), BTE <u>X an</u> | d MTBE by | DHS LUFT | | | | м | |
| Purgeable Hydrocarbons as Gasoline | 0070068 | 7/18/00 | 7/18/00 | | 50.0 | ND | ug/l | |
| Benzene | н | # | п | | 0.500 | ND | ** | |
| | Ħ | H | Ħ | | 0.500 | ND | н | |
| Toluene | | ** | H | | 0.500 | ND | Ħ | |
| Ethylbenzene | ** | ** | н | | 0.500 | ND | н | |
| Xylenes (total) | 11 | | | | 5.00 | 46.6 | 17 | |
| Methyl tert-butyl ether | ** | | 11 | | | 109 | % | |
| Surrogate: a,a,a-Trifluorotoluene | * | n | " | 70.0-130 | | 109 | 70 | |

Sequoia Analytical - San Carlos



1551 Industrial Road San Carlos, CA 94070-4111 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

Jettler-Ryan/Geostrategies(1) 5747 Sierra Court, Suite J

Project: Tosco(4)

Sampled: 7/10/00

Project Number: Unocal SS#3538

Received: 7/10/00

Dublin, CA 94568

Project Manager: Deanna Harding

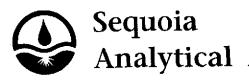
Reported: 7/25/00

Sample Description:

Laboratory Sample Number:

MW-3 L007067-04

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | | Result | Units | Notes* |
|---|----------------------------------|---------------------------------|-------------------|--------------------------------------|--|----------------------------|----------------|--------|
| | | Seque | ia Analytica | l - San Carlos | | | | |
| Total Purgeable Hydrocarbons (C6-C1 Purgeable Hydrocarbons as Gasoline Benzene Toluene Ethylbenzene | 2), BTEX an 0070068 " " | nd MTBE by 7/18/00 " " | 7/19/00 " " | | 50.0 0.500 0.500 0.500 0.500 | ND ND ND ND ND | ug/l " " | |
| Xylenes (total) Methyl tert-butyl ether Surrogate: a,a,a-Trifluorotoluene | | n n | # | 70.0-130 | 5.00 | 162 123 | % | |



Project: Tosco(4)

Project Number: Unocal SS#3538

Sampled: 7/10/00 Received: 7/10/00

Project Manager: Deanna Harding

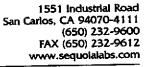
Reported: 7/25/00

Sample Description:

Laboratory Sample Number:

MW-4 L007067-05

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|---|-----------------|------------------|------------------|--------------------------------------|--------------------|--------|-------|--------|
| | | Seque | oia Analytica | l - San Carlos | | | | |
| Total Purgeable Hydrocarbons (C6-C1 | 2), BTEX ar | id MTBE by | DHS LUFT | | | | | |
| Purgeable Hydrocarbons as Gasoline | 0070068 | 7/18/00 | 7/18/00 | | 50.0 | ND | ug/l | |
| Benzene | H | н | 11 | | 0.500 | ND | ** | |
| Toluene | ** | #1 | Ħ | | 0.500 | ND | н | |
| Ethylbenzene | п | 11 | ıı | | 0.500 | ND | Ħ | |
| - | | n | Ħ | | 0.500 | ND | ** | |
| Xylenes (total) | 11 | #1 | 17 | | 5.00 | ND | n | |
| Methyl tert-butyl ether Surrogate: a,a,a-Trifluorotoluene | п | п | 77 | 70.0-130 | | 117 | % | , |





Project Number: Unocal SS#3538
Project Manager: Deanna Harding

Sampled: 7/10/00 Received: 7/10/00

Received: 7/10/00 Reported: 7/25/00

Sample Description: Laboratory Sample Number: MW-5 L007067-06

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | | Result | Units | Notes* |
|---|-----------------------------|--------------------------------------|------------------|--------------------------------------|--|----------------------------|-------|--------|
| | | | | <u>l - San Carlos</u> | | - | | |
| Total Purgeable Hydrocarbons (C6-C1 Purgeable Hydrocarbons as Gasoline Benzene Toluene Ethylbenzene Xylenes (total) | 2), BTEX an 0070068 " | dd MTBE by 7/18/00 " " " | 7/19/00 | | 50.0 0.500 0.500 0.500 0.500 5.00 | ND ND ND ND ND | ug/l | |
| Methyl tert-butyl ether Surrogate: a,a,a-Trifluorotoluene | # | н | W . | 70.0-130 | • | 108 | % | |



Project: Project Number:

Project Manager:

Tosco(4) Unocal SS#3538 Deanna Harding Sampled: 7/10/00

Received: 7/10/00 Reported: 7/25/00

Sample Description:

Laboratory Sample Number:

Sequoia Analytical - San Carlos

MW-6 L007067-07

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|---|-----------------|------------------|------------------|--------------------------------------|--------------------|--------|-------|--------|
| | | Seque | ia Analytica | l - San Carlos | | | | |
| Total Purgeable Hydrocarbons (C6-C1 | 2), BTEX an | d MTBE by | DHS LUFT | | | | | |
| Purgeable Hydrocarbons as Gasoline | 0070068 | 7/18/00 | 7/19/00 | | 50.0 | ND | ug/l | |
| Benzene | #1 | n | 10 | | 0.500 | ND | # | |
| Toluene | H | 11 | | | 0.500 | ND | . ** | |
| Ethylbenzene | 17 | н | я | | 0.500 | ND | | |
| • | | w | n | | 0.500 | ND | н | • |
| Xylenes (total) Methyl tert-butyl ether | 11 | n | n | <u>.</u> | 5.00 | ND_ | H | |
| Surrogate: a,a,a-Trifluorotoluene | | н | н | 70.0-130 | | 106 | % | |

*Refer to end of report for text of notes and definitions.





Gettler-Ryan/Geostrategies(1) Project: Tosco(4) Sampled: 7/10/00 6747 Sierra Court, Suite J Project Number: Unocal SS#3538 Received: 7/10/00 Dublin, CA 94568 Project Manager: Deanna Harding Reported: 7/25/00

Total Porgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LDF (Quality Control 2008). Sequoia Analytical - San Carlos

| | Date | Spike | Sample | QC | | Reporting Limit | Recov. | RPD | RPD | | |
|------------------------------------|-------------------|--------------|--------------------|----------|------------------------------------|-----------------------|---------|----------|----------|--|--|
| Analyte | Analyzed | Level | Result | Result | Units | Recov. Limits | % | Limit | % Notes* | | |
| Allalyte | 7 Lilary 2000 | | | | | | | | | | |
| Batch: 0070058 | Date Prepa | red: 7/14/0 | 10 | | Extraction Method: EPA 5030B [P/T] | | | | | | |
| Blank | 0070058-B | | _ | | | | | | | | |
| Purgeable Hydrocarbons as Gasoline | 7/14/00 | | | ND | ug/l | 50.0 | | | | | |
| Benzene | | | | ND | Ħ | 0.500 | | | | | |
| Toluene | # | | | ND | Ħ | 0.500 | | | | | |
| Ethylbenzene | # | | | ND | H | 0.500 | | | | | |
| Xylenes (total) | ** | | | ND | | 0.500 | | | | | |
| Methyl tert-butyl ether | D | | • | ND | Ħ | 5.00 | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | r r | 10.0 | <u></u> | 11.3 | Ħ | 70.0-130 | 113 | | | | |
| • | | | | | | | | | | | |
| <u>LCS</u> | <u>0070058-B</u> | | | A 4A | | 70 0 100 | 84.9 | | | | |
| Benzene | 7/14/00 | 10.0 | | 8.49 | ug/l | 70.0-130 | | | | | |
| Toluene | Ħ | 10.0 | | 8.02 | ** | 70.0-130 | 80.2 | | | | |
| Ethylbenzene | # | 10.0 | | 7.67 | | 70.0-130 | 76.7 | | | | |
| Xylenes (total) | 11 | 30.0 | | 23.2 | ** <u> </u> | 70.0-130 | 77.3 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | n | 10.0 | | 11.5 | " | 70.0-130 | 115 | | | | |
| LCS | 007 <u>0058-B</u> | S2 | | | | | | | | | |
| Purgeable Hydrocarbons as Gasoline | 7/14/00 | <u>250</u> | | 216 | ug/l | 70.0-130 | 86.4 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | # | 10.0 | | 10.8 | n | 70.0-130 | 108 | | | | |
| | | -c. T | AAWAE1 1A | | | | | | | | |
| Matrix Spike | <u>0070058-N</u> | | 007051-10 | 0.54 | /1 | 60.0-140 | 95.4 | | | | |
| Benzene | 7/14/00 | 10.0 | ND | 9.54 | ug/l | 60.0-140 | 91.6 | | | | |
| Toluene | | 10.0 | ND | 9.16 | . D | 60.0-140 | 90.2 | | | | |
| Ethylbenzene | | 10.0 | ND | 9.02 | | 60.0-140 | 89.3 | | | | |
| Xylenes (total) | et | 30.0 | ND_ | 26.8 | - n | 70.0-130 | 107 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | " | 10.0 | | 10.7 | •• | 70.0-130 | 107 | | | | |
| Matrix Spike Dup | 0 <u>070058-N</u> | MSD1 I | .0070 <u>51-10</u> | | | | | | | | |
| Benzene | 7/14/00 | 10.0 | ' ND | 10.0 | ug/l | 60.0-140 | 100 | 25.0 | 4.71 | | |
| Toluene | Ħ | 10.0 | ND | 9.66 | Ħ | 60.0-140 | 96.6 | 25.0 | 5.31 | | |
| Ethylbenzene | Ħ | 10.0 | ND | 9.52 | # | 60.0-140 | 95.2 | 25.0 | 5.39 | | |
| Xylenes (total) | . 11 | 30.0 | ND | 28.6 | n | 60.0-140 | 95.3 | 25.0 | 6.50 | | |
| Surrogate: a,a,a-Trifluorotoluene | 7 | 10.0 | | 10.6 | W | 70.0-130 | 106 | | | | |
| | | 1. 6/10 | /nn | | E | action Method; EP | A 5030B | (P/T) | | | |
| Batch: 0070068 | | ared: 7/18 | <u>'00</u> | | CALL | ACTION INTERIORS EST. | | <u> </u> | | | |
| Blank | 0070068-1 | <u>SLIKI</u> | | ND | мел | 50.0 | | | | | |
| Purgeable Hydrocarbons as Gasoline | 7/18/00 | | | | ug/l " | 0.500 | | | | | |
| Benzene | e1 | | | ND | | 0.500 | | | | | |
| Toluene | # | | | ND | ** | | | | | | |
| Ethylbenzene | ** | | | ND ND | 77 Pa | 0.500 0.500 | | | | | |
| Xylenes (total) | ja . | | | TATE OF | • | | | | | | |

Sequoia Analytical - San Carlos

*Refer to end of report for text of notes and definitions.



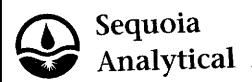
Gettler-Ryan/Geostrategies(1) Project: Tosco(4) Sampled: 7/10/00
6747 Sierra Court, Suite J Project Number: Unocal SS#3538 Received: 7/10/00
Dublin, CA 94568 Project Manager: Deanna Harding Reported: 7/25/00

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS IUFI/Quality Centrel.

| | Date | Spike | Sample | QC | | Reporting Limit | | RPD | RPD | |
|------------------------------------|------------|----------------|------------------|--------|-------|-----------------|------|-------|-------|-------------|
| Analyte | Analyzed | Level | Result | Result | Units | Recov. Limits | % | Limit | % | Notes* |
| | | | | | | | | | | |
| Blank (continued) | 0070068-BI | <u>LK1</u> | | | | | | | | |
| Methyl tert-butyl ether | 7/18/00 | | | ND | ug/l_ | 5.00 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | <i>"</i> | 10.0 | | 11.5 | n | 70.0-130 | 115 | | | |
| LCS | 0070068-B | <u>\$1</u> | | | | | | | | |
| Benzene | 7/18/00 | 10.0 | | 8.11 | ug/l | 70.0-130 | 81.1 | | | |
| Toluene | π | 10.0 | | 7.47 | n | 70.0-130 | 74.7 | | | |
| Ethylbenzene | H | 10.0 | | 7.40 | N | 70.0-130 | | | | |
| Xylenes (total) | н | 30.0 | | 22.6 | | 70.0-130 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | н | 10.0 | | 10.5 | n | 70.0-130 | 105 | | | |
| LCS | 0070068-B | | | | _ | 20.0.100 | 102 | | | |
| Purgeable Hydrocarbons as Gasoline | 7/18/00 | 250 | | 257 | ug/l | 70.0-130 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | H | 10.0 | | 11.3 | н | 70.0-130 | 113 | | | |
| Matrix Spike | 0070068-M | <u>1S1 L</u> | <u>007067-05</u> | | | | 100 | | | |
| Benzene | 7/18/00 | 10.0 | ND | 10.6 | ug/l | 60.0-140 | | | | |
| Toluene | 4 | 10.0 | ND | 9.75 | н | 60.0-140 | | | | |
| Ethylbenzene | н | 10.0 | ND | 9.83 | 11 | 60.0-140 | | | | |
| Xylenes (total) | · _ m | 30.0 | ND | 30.0 | н | 60.0-140 | | | | |
| Surrogate: a,a,a-Trifluorotoluene | н | 10.0 | | 10.8 | # | 70.0-130 | 108 | | | |
| Matrix Spike Dup | 0070068-N | <u> ISD1 L</u> | <u>007067-05</u> | | _ | | 105 | 25.0 | 0.020 | |
| Benzene | 7/18/00 | 10.0 | ND | 10.7 | ug/l | 60.0-140 | | 25.0 | 0.939 | • |
| Toluene | H | 10.0 | ND | 10.0 | # | 60.0-140 | | 25.0 | 2.53 | |
| Ethylbenzene | 41 | 10.0 | ND | 10.1 | Ħ | 60.0-140 | | 25.0 | 2.71 | |
| Xylenes (total) | 17 | 30.0 | ND | 30.9 | | 60.0-140 | | 25.0 | 2.96 | |
| Surrogate: a,a,a-Trifluorotoluene | н | 10.0 | | 10.9 | H | 70.0-130 | 109 | • | | |







Project: Tosco(4) Project Number: Unocal SS#3538

Project Manager: Deanna Harding

Sampled: 7/10/00 Received: 7/10/00 Reported: 7/25/00

Volatile Organic Compounds by EPA Method 8010B/Quality Controls Sequois Analytical - San Carlos

| | Date | Spike | Sample | QC | | Reporting Limit Re | cov. RPD % Limit | RPD % Notes* | | | |
|---|----------------|------------|-------------|--------|------------|------------------------------------|---------------------|--------------|--|--|--|
| nalyte | Analyzed | Level | Result | Result | Units | Recov. Limits | 70 Little | /0 110103 | | | |
| naryw | | | | | Thursday | ation Mathod: EPA S | 030B [P/T] | | | | |
| satch: 0070049 | Date Prepar | ed: 7/12/0 | <u>)0</u> | | Extra | Extraction Method: EPA 5030B [P/T] | | | | | |
| Blank | 0070049-BL | <u>K1</u> | | NTD. | | 1.00 | | | | | |
| reon 113 | 7/12/00 | | | ND | ug/l " | 0.500 | | | | | |
| Promodichloromethane | | | | ND | m | 0.500 | | | | | |
| Fromoform | ** | | | ND | # | 1.00 | | | | | |
| Bromomethane | • | | | ND | | 0.500 | | | | | |
| Carbon tetrachloride | Ħ | | | ND | # | 0.500 | | | | | |
| Chlorobenzene | • | | | ND | " # | 1.00 | | | | | |
| Chloroethane | Ħ | | | ND | | 1.00 | | | | | |
| 2-Chloroethylvinyl ether | r | | | ND | | 0.500 | | | | | |
| Chloroform | π | | | ND | | 1.00 | | | | | |
| Chloromethane | n | | | ND | | | | | | | |
| Dibromochloromethane | τŧ | | | ND | π | 0.500 | | | | | |
| 1,3-Dichlorobenzene | Ħ | | | ND | | 0.500 | | | | | |
| 1,4-Dichlorobenzene | ** | | | ND | ** | 0.500 | | | | | |
| 1,2-Dichlorobenzene | 11 | | | ND | Ħ | 0.500 | • | | | | |
| 1,1-Dichloroethane | ч | | | ND | | 0.500 | | | | | |
| 1,2-Dichloroethane | н | | | ND | " | 9.500 | | | | | |
| | ** | | | ND | | 0.500 | | | | | |
| 1,1-Dichloroethene | * | | | ND | 17 | 0.500 | | | | | |
| cis-1,2-Dichloroethene | | | | ND | N | 0.500 | | | | | |
| trans-1,2-Dichloroethene | н | | | ND | # | 0.500 | | | | | |
| 1,2-Dichloropropane | ** | | | ND | 19 | 0.500 | | | | | |
| cis-1,3-Dichloropropene | | | | ND | 41 | 0.500 | | | | | |
| trans-1,3-Dichloropropene | # | | | ND | 17 | 5.00 | | | | | |
| Methylene chloride | | | | ND | ** | 0.500 | | • | | | |
| 1,1,2,2-Tetrachloroethane | π | | | ND | # , | 0.500 | | | | | |
| Tetrachloroethene | н | | | ND | п | 0.500 | | | | | |
| 1,1,1-Trichloroethane | n n | | | ND | ** | 0.500 | | | | | |
| 1,1,2-Trichloroethane | | | | ND | н | 0.500 | | | | | |
| Trichloroethene | | | | ND | 17 | 0.500 | | | | | |
| Trichlorofluoromethane | | | | ND | 111 | 0.500 | | | | | |
| Vinyl chloride | <u> </u> | | | 8.66 | H | 70.0-130 | 86.6 | | | | |
| Surrogate: 1-Chloro-2-fluorobenzene | " | 10.0 | l | 0.00 | | | | | | | |
| LCS | 0070049- | BS1 | | | | | 91.6 | | | | |
| LCS Chlorobenzene | 7/12/00 | 10.0 |) | 9.16 | ug/l | 70.0-130 | 92.2 | | | | |
| Chlorobenzene 1,1-Dichloroethene | # | 10.0 | | 9.22 | PI | 65.0-135 | | | | | |
| | n | 10. | | 8.94 | н | 70.0-130 | 89.4 | | | | |
| Trichloroethene Surrogate: 1-Chloro-2-fluorobenzene | , | 10.0 | | 9.12 | - | 70.0-130 | 91.2 | | | | |
| Surrogate: 1-Chioro-2-Jinorovenzene | | | | | | | | | | | |
| Matrix Spike | <u>0070049</u> | MS1 | 1.007042-01 | | ug/ | n 60.0-140 | 99.6 | | | | |
| Chlorobenzene | 7/12/00 | 10. | 0 ND | 9.50 | -B | • | | _ | | | |

Sequoia Analytical - San Carlos

*Refer to end of report for text of notes and definitions.

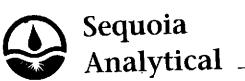




Gettler-Ryan/Geostrategies(1) Project: Tosco(4) Sampled: 7/10/00 6747 Sierra Court, Suite J Project Number: Unocal SS#3538 Received: 7/10/00 Dublin, CA 94568 Project Manager: Deanna Harding Reported: 7/25/00

Volatile Organic Compounds by EPA Method 8010B/Quality Control Sequoia Analytical - San Carlon

| | Date | Spike | Sample | QC | | Reporting Limit | | RPD | RPD |
|-------------------------------------|-----------|-------------|-----------|--------|----------|----------------------|----------|-------|----------|
| Analyte | Analyzed | Level | Result | Result | Units | Recov. Limits | <u>%</u> | Limit | % Notes* |
| Matrix Spike (continued) | 0070049-M | <u>S1 L</u> | 007042-01 | | | | | | |
| 1,1-Dichloroethene | 7/12/00 | 10.0 | ND | 8.31 | ug/l | 60.0-140 | 83.1 | | |
| Trichloroethene | Ħ | 10.0 | ND | 9.39 | n | 60.0-140 | 93.9 | | |
| Surrogate: 1-Chloro-2-fluorobenzene | н | 10.0 | - | 9.53 | # | 70.0-130 | 95.3 | | |
| Matrix Spike Dup | 0070049-M | SD1 L | 007042-01 | | | | | | |
| Chlorobenzene | 7/12/00 | 10.0 | ND | 9.82 | ug/l | 6 0.0-140 | 98.2 | 25.0 | 1.42 |
| 1,1-Dichloroethene | et | 10.0 | ND | 8.43 | н | 60.0-140 | 84.3 | 25.0 | 1.43 |
| Trichloroethene | Ħ | 10.0 | ND | 8.86 | # | 60.0-140 | 88.6 | 25.0 | 5.81 |
| Surrogate: 1-Chloro-2-fluorobenzene | n | 10.0 | | 9.32 | er . | 70.0-130 | 93.2 | | |



1551 Industrial Road San Carlos, CA 94070-4111 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568

Project: Tosco(4)

Project Number: Unocal SS#3538 Project Manager: Deanna Harding

Sampled: 7/10/00 Received: 7/10/00

Reported: 7/25/00

Notes and Definitions

Note Analyte DETECTED DET Analyte NOT DETECTED at or above the reporting limit ND Not Reported NR Sample results reported on a dry weight basis dry Recovery Recov. Relative Percent Difference **RPD**

| ity: | West MacArth Kland | | Sampler: _ | 180064 8/25/80 Vartes | | |
|--------------------|-----------------------------|--|------------------------|-----------------------------|---------------------------------------|------------------------|
| Well ID | _HW-3_ | Well Condit | tion: <u>Ok</u> | <u>′</u> | | |
| /ell Diameter | Z in. | Hydrocarbo Thickness: | <i>- 1</i> | Amount Bail | | (Gallons) |
| otal Depth | 27-20 ft. | Volume | 2" = 0.17 | 3" = 0.38 | | = 0.66 |
| epth to Water | 17.82 tt. | Factor (VF) | 6" = | 1.50 | | |
| | <u>9.38</u> x | VF 0.17 = 1.5 | q x 3 (case volume) | = Estimated Purg | e Volume: 💆 | €, ⊘ _(gal.) |
| Purge quipment: | Disposable Bailer Bailer | | | Disposable Bail | P | |
| darbureur. | Stack Suction | , | | Bailer Pressure Bailer | | |
| | Grundfos | : | | Grab Sample Other: | • | |
| | Other: | | | | · · · · · · · · · · · · · · · · · · · | |
| Starting Time: | 9:05 | | er Conditions: | _ clear | | |
| Sampling Time: | 9:20 | | Color: | | Odor: <u>حب</u> ے | _ |
| Purging Flow Ra | te:/ | | ent Description: Time: | | | (gal.) |
| Did well de-wate | er? | | | _ • | | Alkalinity |
| Time | Volume pH | Conductivity µmhos/cm | Temperature | D.O. (mg/L) | ORP (mV) | (ppm) |
| 9:07 9:09 | 7.5 <u>4.62</u> 7 7.52 | 470 | - <u>67.5</u> 68./ | | | |
| 9;10 | 5 7.49 | | | <u> </u> | | · |
| | | | | | | |
| | | | | | | - |
| | | LABORATOR | / INFORMATION | | | |
| SAMPLE ID | (#) - CONTAINER | REFRIG. PRES | ERV. TYPE / LA | BORATORY | ANAL | |
| | 3 Y VOA | YH | CI SEQU | | 5)0 X431 | LOCATE |
| MW-3 | I | | | | 188 | (60) |
| Μω-3 | | 1 | | | | |

| | | | | | | | | | | | | | | | , | | | | 1 4441 | <u>. </u> | • • | | |
|------------------------|---|----------------------|---------------------------------------|---------------------|--|---------------|--------------------|-----------------------|--|--|----------------------|--------------------------|--|-------------------------------|-------------------------------|-----------------------------|--|--|--------------|--|----------------|--|-------------------------------|
| | | | | Fooill | y Humb | r IIN | IOCAL. W. M | SS # | 3538 | | | | | _ | . (| Contact | (Hame) | | | DAVID | | ITT | |
| J | | | | | | | | | THUR | BLVD | . OAK | LAND | , CA | - | | | (Phone | | | <u>277-2</u> | | | |
| | | Co | neulten | t Pro | Joat Hun | nber | | | 064.8 | | | | | | abarator | | | | Ana. | <u>Lyt1c</u> | <u>al</u> | | |
| TO | sco | Col | | | | | -Ryar | | | | | | | - L | aborator | y Relace | e Numl | b+r | 46 | Lu Tas (T. | | | |
| Taxan Å. | Walay Company | | | | Contact (Name) Deanna L. Harding Collection Date 8/25/00 Collection Date 8/25/ | | | | | | | | | /42 | o fie | <u> </u> | | | | | | | |
| San Louis San Louis | o Carpen PL, Suc. 401 uni, Galleryin S4865 | | Projec | t Cos | ntaot (N | ame) <u>D</u> | eanna | L. | Hardi | ng | | | | - ° | olleation | Dote_ | 3/6 | | 7.5 | | | | |
| • | | | | | (P | hone).13 | <u>5-551</u> | <u>-755</u> | 5_(Fox | Number | 7425 | -551- | 7888 | s | ignoture | UNC | <u>u, </u> | - | | | | | |
| - · · · · - | | | | 8 | | | | | | <u>: </u> | 1 | | <u> </u> | - | Analyse | e Ta B | Perfor | | | | | | DO NOT BILL TB-LB ANALYSIS |
| Sample Number | Lab Sample Number | Number of Containers | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | W - Water C - Charo | Type 6 = Grab C = Composite D = Discrete | Pas | | - Sample Preservation | load (Yee or No) | TPH Ga+ STEX WANTE | 1PH Dissel (8015) | Oil and Graces (5520) | Purpeable Halocarbors (8010) | Purgeable Aramotica (8020) | Purpeoble Organics (82.40) | Extractable Organica (8270) | Hetals CACYPE,Zr.Ni (ICVP or AA) | (5)047'88263 1,2004480E | | | | | L008185 |
| TD-LB | | | | | | -42 | | • | | ļ <u>.</u> | | | | | <u> </u> | | <u></u> | X | | · . | | | |
| HW- | 3 0 | 3 | 16 | | 6 | 920 AM | H⊂ | | 7 | | | | | | - | | | | | | <u>-:</u> | | |
| | | | - - | \dashv | | | ╂ | <u> </u> | | | <u> </u> | | | | - | <u> </u> | <u> </u> | | - | | | | |
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| | | | | أحسين | | <u> </u> | <u> </u> | | ــــــــــــــــــــــــــــــــــــــ | مل | | 4 | 7 | <u> </u> | 1 | <u> </u> | <u></u> | <u> </u> | | ٠. | | <u> </u> | (2) 1 2) 1 3 |
| elingulahe | d By (Signal | lure) | | - | nization R Inc | . | Date/11n 8/2>10 | n• 5.34 | Re- | polyed | (Sign | W. (| 7Av- | | Organizal | llon | | ie/Time s s ス | 03.5 | | ium M | | ne (Circle Choloe) Hre. |
| lulingulaha | d By (Slynd | ture) | | | neVosine | | Dale/IIn | | Re | celved E | y (Sign | oture) | | | Organiza | lion | Dat | •/lim• | | | | 46 | Hre. |
| quish | ed By (Signa | ture) | | Orgo | enizelion | | Dat•/Tir | no | Ro | aleved f | for Labo | oralory (| By (Sign | ature) | | | Dol | •/Tlm• | | | | 10 | Days ntracted |





August 31, 2000

Deanna Harding Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin, CA 94568

RE: Tosco(4)/L008185

Dear Deanna Harding:

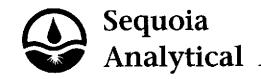
Enclosed are the results of analyses for sample(s) received by the laboratory on August 25, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Richard G. Yee V Organics Dept. Manager

CA ELAP Certificate Number I-2360





Project: Tosco(4)

Sampled: 8/25/00

Project Number: Unocal SS# 3538/411 W. MacArthur Blvd., Oalikandived: 8/25/00

Project Manager: Deanna Harding

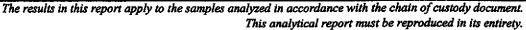
Reported: 8/31/00

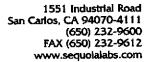
ANALYTICAL REPORT FOR L008185

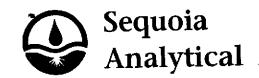
| Sample Description | Laboratory Sample Number | Sample Matrix | Date Sampled |
|--------------------|--------------------------|---------------|--------------|
| MW-3 | L008185-01 | Water | 8/25/00 |



Sequoia Analytical - San Carlos







Gettler-Ryan/Geostrategies(1)

Tosco(4) Project:

Sampled: 8/25/00

6747 Sierra Court, Suite J Dublin, CA 94568

Project Manager: Deanna Harding

Project Number: Unocal SS# 3538/411 W. MacArthur Blvd., OalRandived: 8/25/00

Reported: 8/31/00

Sample Description:

Laboratory Sample Number:

MW-3 L008185-01

| Analyte | Batch Number | Date Prepared | Date Analyzed | Specific Method/ Surrogate Limits | Reporting Limit | Result | Units | Notes* |
|--|-----------------|------------------|------------------|--------------------------------------|--------------------|--------|-------|--------|
| | | Sequ | oia Analytica | l - San Carlos | | | | |
| Volatile Organic Oxygenated Compo | unds by EPA | Method 826 | <u>0B</u> | | | | | |
| 1,2-Dibromoethane | 0080132 | 8/29/00 | 8/29/00 | | 4.00 | ND | ug/l | |
| 1,2-Dichloroethane | н | u | et | | 4.00 | ND | н | |
| • | | ** | # | | 4.00 | ND | er . | |
| Di-isopropyl ether | | 11 | ** | | 4.00 | ND | 11 | |
| Ethyl tert-butyl ether | | | 11 | | 4.00 | 180 | ** | |
| Methyl tert-butyl ether | 11 | " | | | | | . ,, | |
| Tert-amyl methyl ether | H | n | IP . | | 4.00 | ND | н | |
| Tert-butyl alcohol | и | н | н | | 200 | ND | | |
| Surrogate: 1,2-Dichloroethane-d4 | <i>H</i> | п | и | 76.0-114 | | 102 | % | |
| Surrogate: 1,2-Dichioroeinane-a4 Surrogate: Toluene-d8 | n | Ħ | * | 88.0-110 | | 102 | n | |





Sampled: 8/25/00 Project: Tosco(4) Gettler-Ryan/Geostrategies(1) Project Number: Unocal SS# 3538/411 W. MacArthur Blvd., OalRandived: 8/25/00 6747 Sierra Court, Suite J Reported: 8/31/00 Deanna Harding Dublin, CA 94568 Project Manager:

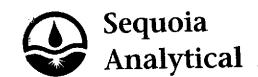
Volatile Organic Oxygenated Compounds by EPA Method 8260B/Quality Control Sequoia Analytical - San Carles

| | Date | Spike | Sample | QC | *** | Reporting Limit | | RPD | RPD |
|----------------------------------|------------|----------------|------------|--------------|--------------|----------------------|---------------|----------|-----------------|
| Analyte | Analyzed | Level | Result | Result | Units | Recov. Limits | <u>%</u> | Limit | % Notes* |
| | | | | | ••• | | | | |
| Batch: 0080132 | Date Prepa | red: 8/29/0 | <u>0</u> | | <u>Extra</u> | ction Method: EPA | <u> 5030B</u> | [P/T] | |
| Blank | 0080132-BI | <u>LK1</u> | | | | | | | |
| 1,2-Dibromoethane | 8/29/00 | | | ND | ug/l | 2.00 | | | |
| 1,2-Dichloroethane | W | | | ND | 17 | 2.00 | | | |
| Di-isopropyl ether | tr . | | | ND | ** | 2.90 | | | |
| Ethyl tert-butyl ether | n | | | ND | ** | 2.00 | | | |
| Methyl tert-butyl ether | Ħ | | | ND | II | 2.00 | | | |
| Tert-amyl methyl ether | H | | | ND | m | 2.00 | | | |
| Tert-butyl alcohol | | | | ND | | 100 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | n | 50.0 | | 49.9 | H | 76.0-114 | 99.8 | | |
| Surrogate: Toluene-d8 | H | 50.0 | | <i>50.1</i> | " . | 88.0-110 | 100 | | |
| Blank | 0080132-B | LK2 | | | | | | | |
| 1,2-Dibromoethane | 8/30/00 | | | ND | ug/l | 2.00 | | | - |
| 1,2-Dichloroethane | n | | | ND | 4 | 2.00 | | | |
| Di-isopropyl ether | n | | | ND | H | 2.00 | | | |
| Ethyl tert-butyl ether | H | | | ND | 77 | 2.06 | | | |
| Methyl tert-butyl ether | π | | | ND | Ħ | 2.00 | | | |
| Tert-amyl methyl ether | n | | | ND | H | 2.00 | | | |
| Tert-butyl alcohol | # | | | ND | 77 | 100_ | | | |
| Surrogate: 1,2-Dichloroethane-d4 | н | 50.0 | | 51.6 | n | 76.0-114 | 103 | - | |
| Surrogate: Toluene-d8 | # | 50.0 | | 49.5 | . # | 88.0-110 | 99.0 | | |
| LCS | 0080132-B | <u>S1</u> | | | | | | | |
| Methyl tert-butyl ether | 8/29/00 | 50.0 | | 52.1 | ug/l | 70.0-130 | 104 | | |
| Surrogate: 1,2-Dichloroethane-d4 | H | 50.0 | | 50.4 | 7 | 76.0-114 | 101 | | |
| Surrogate: Toluene-d8 | Ħ | 50.0 | | 50.2 | * | 88.0-110 | 100 | | |
| LCS | 0080132-B | S2 | | | | | | | |
| Methyl tert-butyl ether | 8/30/00 | 50.0 | | 52.6 | ug/l | 70.0-130 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | n n | 50.0 | | 52.0 | n | 76.0-114 | 104 | | |
| Surrogate: Toluene-d8 | n | 50.0 | | 50.7 | ,, | 88.0-110 | 101 | | |
| Matrix Spike | 0080132-M | <u>1S1</u> L | 008198-01 | | | | | | |
| Methyl tert-butyl ether | 8/29/00 | 50.0 | ND | 46.7 | ug/l | 60.0-140 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | н | 50.0 | | 50.5 | н | 76.0-114 | 101 | | |
| Surrogate: Toluene-d8 | H | 50.0 | | 51.3 | n | 88.0-110 | 103 | | |
| Matrix Spike Dup | 0080132-N | <u> 1SD1 L</u> | .008198-01 | | | | | | |
| Methyl tert-butyl ether | 8/29/00 | 50.0 | ND | 53.3 | ug/l | 60.0-140 | | 25.0 | 13.6 |
| Surrogate: 1,2-Dichloroethane-d4 | * | 50.0 | | 51.3 | я | 76.0-114 | 103 | | |
| Surrogate: Toluene-d8 | Ħ | 50.0 | | <i>50</i> .8 | H | 88.0-110 | 102 | | |
| | | | | | | Defer to and of veno | - Con ton | of water | and definitions |

Sequoia Analytical - San Carlos

*Refer to end of report for text of notes and definitions.





Tosco(4) Project:

Sampled: 8/25/00

Project Number: Unocal SS# 3538/411 W. MacArthur Blvd., OalRandived: 8/25/00

Project Manager: Deanna Harding

Reported: 8/31/00

Notes and Definitions

DET Analyte DETECTED ND

Note

Analyte NOT DETECTED at or above the reporting limit

Not Reported NR

Sample results reported on a dry weight basis dry

Recovery Recov.

Relative Percent Difference RPD