

## TOSCO MARKETING COMPANY QUARTERLY REPORT

Former Unocal Site No.: 5472 Address: 3460 1st Avenue South; Seattle, WA  
 Tosco Project Manager: Timothy D. Johnson  
 Consulting Co./Contact Person: GeoEngineers, Inc., Dave Cook  
 Consultant Project No.: 9161-350-54  
 Primary Agency/Regulatory ID No.: Ecology UST Site No. 008459; LUST incident No. 1975  
 Other Parties to Receive Copies: Wally Moon, Ecology

## WORK PERFORMED THIS QUARTER [Third - 1997]:

1. Conduct quarterly ground water monitoring of on- and off-site wells MW-1, MW-6 through MW-12.
2. Complete ground water sampling of MW-6 through MW-12.

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## WORK PROPOSED FOR NEXT QUARTER [Fourth - 1997]:

1. Conduct quarterly ground water monitoring and sampling of on- and off-site wells MW-1 and MW-6 through MW-12.

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|                                                  |                                                                                                  |                           |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------|
| Current Phase of Project:                        | <u>Assessment</u>                                                                                | (Assmnt, Remed., etc.)    |
| Frequency of Sampling:                           | <u>Quarterly for most wells</u>                                                                  | (Quarterly, etc.)         |
| Frequency of Monitoring:                         | <u>No system</u>                                                                                 | (Monthly, etc.)           |
| Are LPH Present On-site:                         | <u>Yes; 0.02 ft. in MW-1</u>                                                                     | (Yes/No)                  |
| Cumulative LPH Recovered to Date:                | <u>0 gallons</u>                                                                                 | (gallons)                 |
| LPH recovered This Quarter:                      | <u>0 gallons</u>                                                                                 | (gallons)                 |
| Bulk Soil Removed to Date:                       | <u>N/A</u>                                                                                       | (cubic yards)             |
| Water Wells or Surface Waters w/in a 1,000'      |                                                                                                  |                           |
| Radius & Their Respective Directions (if known): | <u>Puget Sound, 500 feet west</u>                                                                | (Distance and Direction)  |
| Current Remediation Techniques:                  | <u>None</u>                                                                                      | (SVES, LPH Removal, etc.) |
| Permits for Discharge:                           | <u>None</u>                                                                                      | (NPDES, POTW, etc.)       |
| Approximate Depth to Groundwater                 | <u>5.29 feet to 7.30 feet (on site)</u>                                                          | (Measured Feet)           |
| Groundwater Gradient:                            | <u>West to Northwest</u>                                                                         | (Bearing)                 |
|                                                  | <u>0.0018 ft/ft</u>                                                                              | (Magnitude)               |
| Maximum TPHg/Benzene Concentrations:             | <u>WTPH-G=8.45 mg/l; benzene=4.38 mg/l (on site); diesel=0.556 mg/l; heavy oil=&lt;0.75 mg/l</u> | (µg/l)                    |

## Discussion:

- BET and/or X were detected at concentrations greater than the MTCA Method A cleanup levels in MW-8, MW-9, MW-10 and MW-12.
- Gasoline- and diesel-range hydrocarbons were detected at concentrations exceeding the MTCA Method A cleanup level in MW-8, MW-9 and MW-12.

Summary of Unusual Activity: The summary table (Table 1) of our last quarterly report dated July 15, 1997 did not include 1995 data. The 1995 data has been included in the summary table of this report.

Agency Directive Requirements: Independent remedial action

Attachments: Table 1: Summary of Ground Water Elevation and Chemical Analytical Data  
 Figure 1: Site Plan  
 Figure 2: Summary of Ground Water Analytical Data

Signed by: Kurt SA

Title: Associate

TABLE 1 (Page 1 of 6)  
SUMMARY OF GROUND WATER ELEVATION AND CHEMICAL ANALYTICAL DATA  
FORMER UNOCAL SITE NO. 5472  
SEATTLE, WASHINGTON

| Monitoring Well <sup>1</sup>               | Date                   | Depth to Ground Water <sup>2</sup> | Ground Water Elevation <sup>3</sup> | BETX <sup>4</sup><br>(µg/l) |       |       |       | Gasoline-range<br>Hydrocarbons <sup>5</sup><br>(mg/l) | Diesel-range<br>Hydrocarbons <sup>6</sup><br>(mg/l) | Heavy Oil-range<br>Hydrocarbons <sup>6</sup><br>(mg/l) | Dissolved Lead<br>(µg/l) |
|--------------------------------------------|------------------------|------------------------------------|-------------------------------------|-----------------------------|-------|-------|-------|-------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------|
|                                            |                        |                                    |                                     | B                           | E     | T     | X     |                                                       |                                                     |                                                        |                          |
| MW-1                                       | 02/25/91               | 5.43                               | 92.59                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 10/19/92               | 7.20                               | 92.60                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 08/26/93               | 7.36                               | 92.27                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 10/13/94 <sup>7</sup>  | 8.23                               | 91.55                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 04/25/95               | 5.62                               | 93.90                               | 890                         | 340   | <4.0  | 290   | 30                                                    | 15                                                  | 9.6                                                    | --                       |
|                                            | 07/12/95               | --                                 | --                                  | 1,000                       | 360   | <8.0  | 210   | 13                                                    | 4.9                                                 | <8.0                                                   | <2.0                     |
|                                            | 10/12/95               | 6.15                               | 93.41                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 01/22/96 <sup>8</sup>  | 5.10                               | 94.35                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 04/10/96 <sup>8</sup>  | 5.86                               | 93.76                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 07/29/96 <sup>8</sup>  | 5.83                               | 93.69                               | 753                         | 169   | 5.50  | 22.5  | 6.7                                                   | 6.21                                                | 2.95                                                   | --                       |
|                                            | 10/25/96 <sup>8</sup>  | 6.32                               | 93.37                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 03/05/97               | 4.96                               | 94.56                               | 114                         | 18.7  | <2.50 | <5.00 | 4.24                                                  | 3.86                                                | 2.10                                                   | --                       |
|                                            | 03/05/97 <sup>10</sup> | 4.96                               | 94.56                               | 40.7                        | 58.9  | <2.50 | 15.3  | 8.15                                                  | 0.534                                               | <0.75                                                  | --                       |
|                                            | 06/19/97               | 5.66                               | 93.87                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 09/16/97               | 6.56                               | 92.96                               | --                          | --    | --    | --    | --                                                    | --                                                  | --                                                     | --                       |
| MW-6                                       | 02/25/91               | 5.69                               | 92.50                               | <1.0                        | <1.0  | <1.0  | <1.0  | --                                                    | --                                                  | --                                                     | --                       |
|                                            | 10/19/92               | 7.64                               | 92.03                               | 19                          | <1.0  | <1.0  | <1.0  | <1.0                                                  | <0.25                                               | --                                                     | 8                        |
|                                            | 08/26/93               | 6.33                               | 93.34                               | <0.50                       | <0.50 | <0.50 | <0.50 | <0.1                                                  | <0.25                                               | <0.75                                                  | <3                       |
|                                            | 10/13/94               | 7.90                               | 91.77                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | 0.45                                                | <0.75                                                  | 40                       |
|                                            | 04/25/95               | 5.63                               | 94.04                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | 0.33                                                | 1.3                                                    | <2.0                     |
|                                            | 07/12/95               | --                                 | --                                  | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | 0.55                                                | 1.2                                                    | <2.0                     |
|                                            | 10/12/95               | 6.50                               | 93.17                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | 0.53                                                | 0.97                                                   | --                       |
|                                            | 01/22/96               | 5.08                               | 94.59                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | 0.61                                                | <0.75                                                  | --                       |
|                                            | 04/10/96               | 5.73                               | 93.94                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | <0.25                                               | <0.75                                                  | --                       |
|                                            | 07/29/96               | 5.55                               | 94.12                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.005                                                | <0.25                                               | <0.75                                                  | --                       |
|                                            | 10/25/96               | 6.25                               | 93.42                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                                 | <0.25                                               | <0.75                                                  | --                       |
|                                            | 03/05/97               | 5.09                               | 94.58                               | <0.5                        | <0.5  | <0.5  | <1.0  | <0.05                                                 | <0.25                                               | <0.75                                                  | --                       |
|                                            | 03/05/97 <sup>10</sup> | 5.52                               | 94.15                               | <0.5                        | <0.5  | <0.5  | <1.0  | <0.05                                                 | <0.25                                               | <0.75                                                  | --                       |
| MTCA Method A Cleanup Levels <sup>12</sup> |                        |                                    |                                     | 5                           | 40    | 30    | 20    | 1.0 <sup>13</sup>                                     |                                                     |                                                        | 5.0                      |

Notes appear on page 6 of 6

TABLE 1 (Page 2 of 6)

| Monitoring Well <sup>1</sup>               | Date                   | Depth to Ground Water <sup>2</sup> | Ground Water Elevation <sup>3</sup> | BETX <sup>4</sup><br>(µg/l) |       |       |       | Gasoline-range Hydrocarbons <sup>5</sup><br>(mg/l) | Diesel-range Hydrocarbons <sup>6</sup><br>(mg/l) | Heavy Oil-range Hydrocarbons <sup>6</sup><br>(mg/l) | Dissolved Lead<br>(µg/l) |
|--------------------------------------------|------------------------|------------------------------------|-------------------------------------|-----------------------------|-------|-------|-------|----------------------------------------------------|--------------------------------------------------|-----------------------------------------------------|--------------------------|
|                                            |                        |                                    |                                     | B                           | E     | T     | X     |                                                    |                                                  |                                                     |                          |
| MW-6<br>(Cont'd.)                          | 06/19/97 <sup>10</sup> | 5.52                               | 94.15                               | <0.5                        | <0.5  | <0.5  | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 09/16/97 <sup>10</sup> | 6.35                               | 93.32                               | <0.5                        | <0.5  | <0.5  | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
| MW-7                                       | 02/25/91               | 4.33                               | 92.68                               | 11                          | <1.0  | <1.0  | <1.0  | --                                                 | --                                               | --                                                  | --                       |
|                                            | 10/19/92               | 5.98                               | 92.52                               | 6                           | <1.0  | <1.0  | <1.0  | <1.0                                               | 0.62                                             | --                                                  | <5                       |
|                                            | 08/26/93               | 6.16                               | 92.34                               | 12                          | <0.50 | <0.50 | <0.50 | <0.1                                               | <0.25                                            | <0.75                                               | <3                       |
|                                            | 10/13/94               | 6.56                               | 91.94                               | 3.3                         | <0.50 | <0.50 | <1.0  | <0.05                                              | 0.54                                             | <0.75                                               | 110                      |
|                                            | 04/25/95               | 4.45                               | 93.05                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | <2.0                     |
|                                            | 07/12/95               | --                                 | --                                  | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | 2.0                                              | 2.1                                                 | <2.0                     |
|                                            | 10/12/95               | 4.90                               | 93.60                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | 0.95                                                | --                       |
|                                            | 01/22/96               | 3.89                               | 94.61                               | 1.5                         | <0.50 | <0.50 | <1.0  | <0.05                                              | 0.52                                             | <0.75                                               | --                       |
|                                            | 04/10/96               | 4.63                               | 93.87                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 07/29/96               | 4.55                               | 93.95                               | <0.50                       | <0.05 | <0.05 | <0.10 | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 10/25/96               | 4.98                               | 93.52                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 03/05/97               | 3.94                               | 94.56                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 03/05/97 <sup>10</sup> | 3.94                               | 94.56                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 06/19/97 <sup>10</sup> | 4.57                               | 93.93                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
|                                            | 09/16/97 <sup>10</sup> | 5.29                               | 93.21                               | <0.50                       | <0.50 | <0.50 | <1.0  | <0.05                                              | <0.25                                            | <0.75                                               | --                       |
| MW-8                                       | 02/25/91               | 5.44                               | 92.06                               | 7                           | 29    | 16    | 32    | --                                                 | --                                               | --                                                  | --                       |
|                                            | 10/19/92               | 7.17                               | 91.79                               | 7,200                       | 510   | 32    | 1,500 | 4.9                                                | 0.33                                             | --                                                  | <5                       |
|                                            | 08/26/93               | 6.91                               | 92.05                               | 16,000                      | 800   | 410   | 670   | 7.5                                                | 0.66                                             | --                                                  | <3                       |
|                                            | 10/13/94               | 7.40                               | 91.56                               | 19,000                      | <40   | <40   | 63    | 2.2                                                | 0.74                                             | 1.2                                                 | 4.6                      |
|                                            | 04/25/95               | 5.41                               | 93.55                               | 10,000                      | 340   | 200   | 1,000 | 6.7                                                | 1.5                                              | 1.2                                                 | <2.0                     |
|                                            | 07/12/95               | --                                 | --                                  | 8,700                       | 130   | <8.0  | 690   | 4.8                                                | 1.5                                              | 1.0                                                 | <2.0                     |
|                                            | 10/12/95               | 6.48                               | 92.48                               | 11,000                      | 18    | 16    | 59    | 3.5                                                | 1.5                                              | 1.1                                                 | --                       |
|                                            | 01/22/96               | 5.10                               | 94.35                               | 8,500                       | <20   | <20   | 23    | 2.5                                                | 2.5                                              | 1.0                                                 | --                       |
|                                            | 04/10/96               | 5.63                               | 93.33                               | 3,400                       | <20   | <20   | 21    | 2.3                                                | 2.0                                              | 0.75                                                | --                       |
| MTCA Method A Cleanup Levels <sup>12</sup> |                        |                                    |                                     | 5                           | 40    | 30    | 20    | 1.0 <sup>13</sup>                                  |                                                  |                                                     | 5.0                      |

Notes appear on page 6 of 6























































