

# SCIENTIFIC DRILLING

## SURVEY REPORT

|                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                           |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>Company:</b> TEXACO E & P INC.<br><b>Field:</b> Upper Wolfcamp<br><b>Site:</b> Lea County, NM<br><b>Well:</b> Skelly #902<br><b>Wellpath:</b> HH - Job #32D1000410 | <b>Date:</b> 11/21/2000<br><b>Co-ordinate(NE) Reference:</b><br><b>Vertical (TVD) Reference:</b><br><b>Section (VS) Reference:</b><br><b>Survey Calculation Method:</b> | <b>Time:</b> 15:04:06<br><b>Site:</b> Lea County, NM, True North<br><b>SITE:</b> 0.0 above Mean Sea Level<br><b>Slot (0.0E,0.0N,133.0Azi)</b><br><b>Minimum Curvature</b> | <b>Page:</b> 1 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|

Survey: 10/11/00-10/24/00      Start Date: 11/21/2000  
 MWD 8418'-10534'

Company: SDI w/ Ryan      Engineer: L. Coutzee  
 Tool: MWD

### Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | N/S<br>ft | E/W<br>ft | VS<br>ft | DLS<br>d/100ft | ChA<br>deg | ChD<br>ft |
|----------|-------------|-------------|-----------|-----------|-----------|----------|----------------|------------|-----------|
| 8418.0   | 0.89        | 228.80      | 8417.3    | -66.4     | -11.6     | 36.8     | 0.00           | 189.89     | 67.4      |
| 8462.0   | 17.80       | 132.70      | 8460.6    | -71.2     | -6.8      | 43.5     | 40.72          | 185.49     | 71.5      |
| 8472.0   | 21.30       | 133.00      | 8470.0    | -73.5     | -4.4      | 46.9     | 35.01          | 183.42     | 73.6      |
| 8505.0   | 33.50       | 134.80      | 8499.2    | -84.0     | 6.5       | 62.0     | 37.05          | 175.58     | 84.3      |
| 8525.0   | 42.70       | 131.30      | 8514.9    | -92.4     | 15.5      | 74.4     | 47.23          | 170.46     | 93.7      |
| 8555.0   | 57.50       | 128.40      | 8534.1    | -107.1    | 33.2      | 97.3     | 49.88          | 162.78     | 112.1     |
| 8585.0   | 72.80       | 131.30      | 8546.7    | -124.5    | 54.0      | 124.4    | 51.74          | 156.55     | 135.7     |
| 8619.0   | 88.20       | 132.70      | 8552.3    | -146.9    | 78.8      | 157.8    | 45.47          | 151.77     | 166.7     |
| 8651.0   | 92.40       | 132.70      | 8552.1    | -168.5    | 102.3     | 189.8    | 13.12          | 148.73     | 197.2     |
| 8682.0   | 95.80       | 132.00      | 8549.9    | -189.4    | 125.2     | 220.7    | 11.20          | 146.53     | 227.0     |
| 8715.0   | 96.80       | 132.00      | 8546.3    | -211.3    | 149.6     | 253.5    | 3.03           | 144.71     | 258.9     |
| 8745.0   | 93.70       | 131.60      | 8543.6    | -231.2    | 171.8     | 283.4    | 10.42          | 143.38     | 288.1     |
| 8778.0   | 90.30       | 131.30      | 8542.4    | -253.1    | 196.5     | 316.3    | 10.34          | 142.16     | 320.4     |
| 8810.0   | 91.20       | 131.30      | 8542.0    | -274.2    | 220.6     | 348.3    | 2.81           | 141.18     | 351.9     |
| 8841.0   | 91.20       | 130.60      | 8541.3    | -294.5    | 244.0     | 379.3    | 2.26           | 140.36     | 382.4     |
| 8873.0   | 89.30       | 130.20      | 8541.2    | -315.2    | 268.4     | 411.3    | 6.07           | 139.59     | 414.0     |
| 8904.0   | 89.50       | 129.90      | 8541.5    | -335.2    | 292.1     | 442.2    | 1.16           | 138.93     | 444.6     |
| 8935.0   | 90.20       | 129.50      | 8541.6    | -355.0    | 315.9     | 473.2    | 2.60           | 138.33     | 475.2     |
| 8997.0   | 90.60       | 127.00      | 8541.2    | -393.4    | 364.6     | 534.9    | 4.08           | 137.17     | 536.4     |
| 9029.0   | 90.90       | 127.40      | 8540.7    | -412.7    | 390.1     | 566.8    | 1.56           | 136.61     | 567.9     |
| 9061.0   | 88.90       | 129.90      | 8540.8    | -432.7    | 415.1     | 598.7    | 10.00          | 136.19     | 599.6     |
| 9093.0   | 89.30       | 129.50      | 8541.3    | -453.1    | 439.7     | 630.6    | 1.77           | 135.86     | 631.4     |
| 9125.0   | 89.90       | 130.20      | 8541.5    | -473.6    | 464.3     | 662.6    | 2.88           | 135.57     | 663.2     |
| 9156.0   | 88.70       | 132.00      | 8541.9    | -494.0    | 487.6     | 693.5    | 6.98           | 135.37     | 694.1     |
| 9188.0   | 90.00       | 132.00      | 8542.3    | -515.4    | 511.4     | 725.5    | 4.06           | 135.22     | 726.1     |
| 9219.0   | 91.00       | 131.30      | 8542.0    | -536.0    | 534.6     | 756.5    | 3.94           | 135.08     | 757.0     |
| 9251.0   | 91.50       | 130.90      | 8541.3    | -557.0    | 558.7     | 788.5    | 2.00           | 134.92     | 788.9     |
| 9282.0   | 92.10       | 130.90      | 8540.3    | -577.3    | 582.1     | 819.5    | 1.94           | 134.76     | 819.9     |
| 9314.0   | 88.60       | 128.80      | 8540.1    | -597.8    | 606.7     | 851.4    | 12.75          | 134.58     | 851.7     |
| 9345.0   | 86.20       | 129.10      | 8541.5    | -617.3    | 630.8     | 882.3    | 7.80           | 134.38     | 882.6     |
| 9377.0   | 88.30       | 132.00      | 8543.1    | -638.1    | 655.0     | 914.2    | 11.18          | 134.25     | 914.4     |
| 9409.0   | 89.30       | 131.60      | 8543.7    | -659.4    | 678.9     | 946.2    | 3.37           | 134.17     | 946.4     |
| 9440.0   | 90.00       | 131.30      | 8543.9    | -679.9    | 702.1     | 977.2    | 2.46           | 134.08     | 977.4     |
| 9471.0   | 90.30       | 130.90      | 8543.9    | -700.3    | 725.5     | 1008.2   | 1.61           | 133.99     | 1008.3    |
| 9503.0   | 90.80       | 130.90      | 8543.5    | -721.2    | 749.7     | 1040.2   | 1.56           | 133.89     | 1040.3    |
| 9535.0   | 91.10       | 130.60      | 8543.0    | -742.1    | 773.9     | 1072.1   | 1.33           | 133.80     | 1072.2    |
| 9566.0   | 90.40       | 129.90      | 8542.6    | -762.2    | 797.6     | 1103.1   | 3.19           | 133.70     | 1103.2    |
| 9598.0   | 88.00       | 129.90      | 8543.1    | -782.7    | 822.1     | 1135.0   | 7.50           | 133.59     | 1135.1    |
| 9629.0   | 87.70       | 129.10      | 8544.2    | -802.4    | 846.0     | 1166.0   | 2.75           | 133.48     | 1166.0    |
| 9660.0   | 88.60       | 129.90      | 8545.2    | -822.1    | 869.9     | 1196.9   | 3.88           | 133.38     | 1196.9    |
| 9692.0   | 90.00       | 132.70      | 8545.6    | -843.2    | 894.0     | 1228.9   | 9.78           | 133.33     | 1228.9    |
| 9723.0   | 91.80       | 131.60      | 8545.1    | -864.0    | 916.9     | 1259.9   | 6.80           | 133.30     | 1259.9    |
| 9755.0   | 92.20       | 131.60      | 8544.0    | -885.2    | 940.8     | 1291.8   | 1.25           | 133.26     | 1291.8    |
| 9787.0   | 93.70       | 131.30      | 8542.4    | -906.4    | 964.8     | 1323.8   | 4.78           | 133.21     | 1323.8    |
| 9818.0   | 94.30       | 130.60      | 8540.2    | -926.7    | 988.2     | 1354.7   | 2.97           | 133.16     | 1354.7    |
| 9850.0   | 93.80       | 130.90      | 8537.9    | -947.5    | 1012.3    | 1386.6   | 1.82           | 133.11     | 1386.6    |
| 9881.0   | 91.70       | 132.00      | 8536.5    | -968.0    | 1035.5    | 1417.5   | 7.65           | 133.07     | 1417.5    |
| 9913.0   | 92.30       | 131.30      | 8535.3    | -989.3    | 1059.4    | 1449.5   | 2.88           | 133.04     | 1449.5    |