



Job Number: MI-07008  
 Company: ConocoPhillips  
 Lease/Well: Warren Unit #318  
 Location: Lea County  
 Rig Name:   
 RKB:   
 G.L. or M.S.L.:

State/Country: New Mexico  
 Declination:   
 Grid:   
 File name: C:\DOCUME~1\RICKMA~1\MYDOCU~1\PROPOS~1\COI  
 Date/Time: 12-Mar-07 / 10:57  
 Curve Name: MWD Surveys

### The Directional Drilling Company

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane .00  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth | Vertical<br>Section<br>FT | N-S<br>FT | E-W<br>FT | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|---------------------------|---------------------------|-----------|-----------|-------------------------------|
| <b>No Tie-in Survey</b> |                      |                           |                           |                           |           |           |                               |
| 5138.00                 | .50                  | 49.80                     | 5138.00                   | .00                       | .00       | .00       | .00                           |
| 5162.00                 | .90                  | 314.20                    | 5162.00                   | .20                       | .20       | -.06      | 4.46                          |
| 5193.00                 | 1.80                 | 295.00                    | 5192.99                   | .57                       | .57       | -.67      | 3.21                          |
| 5666.00                 | 2.00                 | 299.90                    | 5665.73                   | 7.83                      | 7.83      | -14.56    | .05                           |
| <b>Last MWD Survey</b>  |                      |                           |                           |                           |           |           |                               |
| 5697.00                 | 1.65                 | 298.00                    | 5696.71                   | 8.31                      | 8.31      | -15.42    | 1.15                          |

**WARREN UNIT 318**  
**Directional Survey Data**

| Wellbore  | Date             | MD       | Course Interval (ft) | Inclination (degrees) | sine of inclination angle | Course Departure (ft) |                     |
|-----------|------------------|----------|----------------------|-----------------------|---------------------------|-----------------------|---------------------|
| Original  | 12/22/2006 21:15 | 80       |                      | 0.00                  |                           |                       |                     |
| Original  | 12/23/2006 0:30  | 240      | 160                  | 1.00                  | 0.017452406               | 2.79                  | Single Shot (Totco) |
| Original  | 12/23/2006 8:00  | 682      | 442                  | 1.00                  | 0.017452406               | 7.71                  | Single Shot (Totco) |
| Original  | 12/23/2006 13:30 | 871      | 189                  | 1.00                  | 0.017452406               | 3.30                  | Single Shot (Totco) |
| Original  | 12/24/2006 3:15  | 1,345.00 | 474                  | 1.25                  | 0.021814885               | 10.34                 | Single Shot (Totco) |
| Original  | 12/24/2006 9:30  | 1,445.00 | 100                  | 1.50                  | 0.026176948               | 2.62                  | Single Shot (Totco) |
| Original  | 12/27/2006 10:00 | 1,641.00 | 196                  | 1.25                  | 0.021814885               | 4.28                  | Single Shot (Totco) |
| Original  | 12/27/2006 13:15 | 1,833.00 | 192                  | 1.00                  | 0.017452406               | 3.35                  | Single Shot (Totco) |
| Original  | 12/27/2006 16:30 | 2,054.00 | 221                  | 1.00                  | 0.017452406               | 3.86                  | Single Shot (Totco) |
| Original  | 12/27/2006 20:30 | 2,339.00 | 285                  | 1.00                  | 0.017452406               | 4.97                  | Single Shot (Totco) |
| Original  | 12/27/2006 20:30 | 2,590.00 | 251                  | 2.25                  | 0.039259816               | 9.85                  | Single Shot (Totco) |
| Original  | 12/28/2006 8:15  | 2,715.00 | 125                  | 1.75                  | 0.030538513               | 3.82                  | Single Shot (Totco) |
| Original  | 12/28/2006 13:00 | 2,810.00 | 95                   | 1.75                  | 0.030538513               | 2.90                  | Single Shot (Totco) |
| Original  | 12/28/2006 18:30 | 2,938.00 | 128                  | 1.50                  | 0.026176948               | 3.35                  | Single Shot (Totco) |
| Original  | 12/29/2006 0:15  | 3,065.00 | 127                  | 1.25                  | 0.021814885               | 2.77                  | Single Shot (Totco) |
| Original  | 12/29/2006 6:00  | 3,191.00 | 126                  | 1.25                  | 0.021814885               | 2.75                  | Single Shot (Totco) |
| Original  | 12/29/2006 12:00 | 3,349.00 | 158                  | 1.00                  | 0.017452406               | 2.76                  | Single Shot (Totco) |
| Original  | 12/29/2006 20:00 | 3,571.00 | 222                  | 1.00                  | 0.017452406               | 3.87                  | Single Shot (Totco) |
| Original  | 12/30/2006 8:00  | 3,822.00 | 251                  | 1.00                  | 0.017452406               | 4.38                  | Single Shot (Totco) |
| Original  | 12/30/2006 18:00 | 4,087.00 | 265                  | 1.00                  | 0.017452406               | 4.62                  | Single Shot (Totco) |
| Original  | 12/30/2006 23:15 | 4,298.00 | 211                  | 0.50                  | 0.008726535               | 1.84                  | Single Shot (Totco) |
| Original  | 12/31/2006 6:15  | 4,552.00 | 254                  | 0.25                  | 0.004363309               | 1.11                  | Single Shot (Totco) |
| Original  | 12/31/2006 17:45 | 4,805.00 | 253                  | 0.75                  | 0.013089596               | 3.31                  | Single Shot (Totco) |
| Original  | 1/12/2007 9:15   | 5,138.00 | 333                  | 0.50                  | 0.008726535               | 2.91                  | MWD                 |
| Sidetrack | 1/12/2007 12:45  | 5,162.00 | 24                   | 0.90                  | 0.015707317               | 0.38                  | MWD                 |
| Sidetrack | 1/12/2007 14:45  | 5,193.00 | 31                   | 1.80                  | 0.031410759               | 0.97                  | MWD                 |
| Sidetrack | 1/13/2007 10:00  | 5,666.00 | 473                  | 2.00                  | 0.034899497               | 16.51                 | MWD                 |
| Sidetrack | 1/13/2007 12:45  | 5,697.00 | 31                   | 1.65                  | 0.028793952               | 0.89                  | MWD                 |
| Sidetrack | 1/17/2007 17:30  | 6,527.00 | 830                  | 2.00                  | 0.034899497               | 28.97                 | Single Shot (Totco) |
| Sidetrack | 1/21/2007 9:15   | 7,116.00 | 589                  | Estimated 2.00        | 0.034899497               | 20.56                 | Single Shot (Totco) |

Total maximum horizontal displacement from surface location (feet): 161.74