## Results of Directional Survey

| | | | | |
|---|---|---|---|---|
| API number: | 30-025-41509 | | | |
| OGRID: | | Operator: | CONOCOPHILLIPS COMPANY | |
| | | Property: | WILDER 29 FEDERAL | # 5H |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| surface | ULSTR: | A | 29 | T | 26S | R | 32E | |
| | | | | 724 | FNL | 877 | FEL | |
| BH Loc | ULSTR: | P | 29 | T | 26S | R | 32E | |
| 13820 | MD | 9226.5 | TVD | 281 | FSL | 331 | FEL | |
| | | | | 4999 | FNL | | | |
| Top Perf/OH | ULSTR: | A | 29 | T | 26S | R | 32E | |
| 9528 | MD | 9270.1 | TVD | 709 | FNL | 348 | FEL | |
| Bot Perf/OH | ULSTR: | P | 29 | T | 26S | R | 32E | |
| 13696 | MD | 9233.1 | TVD | 405 | FSL | 333 | FEL | |
| | | | | 4875 | FNL | | | |

| | MD | N/S | E/W | VD |
|---|---|---|---|---|
| | 9520.00 | 22.40 | 529.60 | 9268.80 |
| TOP PERFS/OH | **9528.00** | 14.53 | 529.08 | 9270.13 |
| | 9552.00 | -9.10 | 527.50 | 9274.10 |
| | 13679.00 | -4133.80 | 544.30 | 9233.90 |
| BOT PERFS/OH | **13696.00** | -4150.78 | 544.50 | 9233.07 |
| | 13773.00 | -4227.70 | 545.40 | 9229.30 |

| | | | | |
|---|---|---|---|---|
| NEXT TO LAST | 13773.00 | -4227.70 | 545.40 | 9229.30 |
| LAST READING | 13820.00 | -4274.60 | 546.10 | 9226.50 |
| TD | **13820.00** | -4274.60 | 546.10 | 9226.50 |

| | | | | |
|---|---|---|---|---|
| Surface Location | 724 | FN | 877 | FE |
| Projected BHL | 4999 | FN | 331 | FE |
| Location of | | | | |
| Top Perfs/OH | 709 | FN | 348 | FE |
| Bottom Perfs/OH | 4875 | FN | 333 | FE |

SUMMARY of Subsurface Locations

| | | | | | | |
|---|---|---|---|---|---|---|
| **Surface Location** | A-29-26S-32E | 724 | FN | 877 | FE | Vert. Depth |
| | | | | | | |
| **Top Perfs/OH** | A-29-26S-32E | 709 | FN | 348 | FE | 9270.13 |
| **Bottom Perfs/OH** | P-29-26S-32E | 4875 | FN | 333 | FE | 9233.07 |
| | | | | | | |
| **Projected TD** | P-29-26S-32E | 4999 | FN | 331 | FE | 9226.50 |

ConocoPhillips

# Conoco Phillips

Lea County, New Mexico
Sec 28, T26S, R32E
Wilder Federal AC 29 #5H

Wellbore #1

Survey: MWD

# DDC Survey Report

04 March, 2014

DDC
The DIRECTIONAL DRILLING COMPANY

The DIRECTIONAL DRILLING COMPANY

# Survey Certification Sheet

| Conoco Phillips | GC-140144 | 3/5/14 |
|---|---|---|
| Company | Job Number | Date |

| Sec28, T26S, R32E | Wilder Federal AC 29 #5H | Lea, NM |
|---|---|---|
| Lease | Well Name | County & State |

API: 30-025-41509

Surveyed from a depth of: 170 feet to 13820 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Andrew Fisher

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Larry Wright
MWD General Manager

*• 11390 FM 830 • Willis, Texas 77318 •*
*• PH 936-856-4332 • FAX 936-856-8678 •*

| | | | |
|---|---|---|---|
| **Company:** | Conoco Phillips | **Local Co-ordinate Reference:** | Well Wilder Federal AC 29 #5H |
| **Project:** | Lea County, New Mexico | **TVD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Site:** | Sec 28, T26S, R32E | **MD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Well:** | Wilder Federal AC 29 #5H | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |

**Project** Lea County, New Mexico

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | New Mexico East 3001 | | |

**Site** Sec 28, T26S, R32E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 371,284.70 usft | **Latitude:** | 32° 1' 8.615 N |
| **From:** | Map | **Easting:** | 704,476.40 usft | **Longitude:** | 103° 40' 24.926 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.35 ° |

**Well** Wilder Federal AC 29 #5H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 371,136.20 usft | **Latitude:** | 32° 1' 7.467 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 699,091.50 usft | **Longitude:** | 103° 41' 27.481 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 3,136.0 usft |

**Wellbore** Wellbore #1

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 1/23/2014 | 7.31 | 59.91 | 48,221 |

**Design** Wellbore #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 172.65 |

**Survey Program** **Date** 3/4/2014

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 170.0 | 13,820.0 | MWD (Wellbore #1) | MWD default | MWD - Standard |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| FIRST SURVEY @ 170' MD / 170' TVD | | | | | | | | | |
| 170.0 | 0.30 | 33.10 | 170.0 | 0.4 | 0.2 | -0.3 | 0.18 | 0.18 | 0.00 |
| 322.0 | 0.70 | 49.80 | 322.0 | 1.3 | 1.2 | -1.1 | 0.28 | 0.26 | 10.99 |
| 418.0 | 0.30 | 102.30 | 418.0 | 1.6 | 1.9 | -1.4 | 0.59 | -0.42 | 54.69 |
| 510.0 | 0.70 | 108.50 | 510.0 | 1.4 | 2.6 | -1.1 | 0.44 | 0.43 | 6.74 |
| 602.0 | 0.50 | 144.00 | 602.0 | 0.9 | 3.4 | -0.5 | 0.45 | -0.22 | 38.59 |
| 693.0 | 0.40 | 135.00 | 693.0 | 0.4 | 3.9 | 0.1 | 0.13 | -0.11 | -9.89 |
| 788.0 | 0.40 | 155.60 | 788.0 | -0.2 | 4.2 | 0.7 | 0.15 | 0.00 | 21.68 |
| 885.0 | 2.00 | 249.60 | 885.0 | -1.1 | 2.8 | 1.4 | 2.13 | 1.65 | 96.91 |
| 963.0 | 2.50 | 261.40 | 962.9 | -1.8 | -0.2 | 1.8 | 0.87 | 0.64 | 15.13 |

| | | | |
|---|---|---|---|
| **Company:** | Conoco Phillips | **Local Co-ordinate Reference:** | Well Wilder Federal AC 29 #5H |
| **Project:** | Lea County, New Mexico | **TVD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Site:** | Sec 28, T26S, R32E | **MD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Well:** | Wilder Federal AC 29 #5H | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 1,073.0 | 2.30 | 257.90 | 1,072.8 | -2.6 | -4.7 | 2.0 | 0.23 | -0.18 | -3.18 |
| 1,168.0 | 2.50 | 261.30 | 1,167.7 | -3.3 | -8.6 | 2.2 | 0.26 | 0.21 | 3.58 |
| 1,262.0 | 0.80 | 22.70 | 1,261.7 | -3.1 | -10.4 | 1.7 | 3.19 | -1.81 | 129.15 |
| 1,357.0 | 1.60 | 34.10 | 1,356.7 | -1.3 | -9.4 | 0.1 | 0.87 | 0.84 | 12.00 |
| 1,452.0 | 1.60 | 19.20 | 1,451.6 | 1.0 | -8.2 | -2.1 | 0.44 | 0.00 | -15.68 |
| 1,547.0 | 1.40 | 14.80 | 1,546.6 | 3.4 | -7.5 | -4.3 | 0.24 | -0.21 | -4.63 |
| 1,642.0 | 1.40 | 7.10 | 1,641.6 | 5.7 | -7.0 | -6.5 | 0.20 | 0.00 | -8.11 |
| 1,737.0 | 1.20 | 68.10 | 1,736.5 | 7.2 | -6.0 | -7.9 | 1.40 | -0.21 | 64.21 |
| 1,831.0 | 1.10 | 97.30 | 1,830.5 | 7.4 | -4.2 | -7.9 | 0.63 | -0.11 | 31.06 |
| 1,926.0 | 1.00 | 108.10 | 1,925.5 | 7.1 | -2.5 | -7.3 | 0.23 | -0.11 | 11.37 |
| 2,020.0 | 1.00 | 99.40 | 2,019.5 | 6.7 | -0.9 | -6.7 | 0.16 | 0.00 | -9.26 |
| 2,115.0 | 0.60 | 88.30 | 2,114.5 | 6.6 | 0.4 | -6.4 | 0.45 | -0.42 | -11.68 |
| 2,210.0 | 0.10 | 108.70 | 2,209.5 | 6.5 | 1.0 | -6.4 | 0.53 | -0.53 | 21.47 |
| 2,305.0 | 0.50 | 270.70 | 2,304.5 | 6.5 | 0.7 | -6.4 | 0.63 | 0.42 | 170.53 |
| 2,399.0 | 0.60 | 266.40 | 2,398.5 | 6.5 | -0.2 | -6.5 | 0.12 | 0.11 | -4.57 |
| 2,494.0 | 0.70 | 275.30 | 2,493.5 | 6.5 | -1.3 | -6.6 | 0.15 | 0.11 | 9.37 |
| 2,589.0 | 0.70 | 255.50 | 2,588.5 | 6.4 | -2.4 | -6.7 | 0.25 | 0.00 | -20.84 |
| 2,684.0 | 0.60 | 269.00 | 2,683.5 | 6.3 | -3.5 | -6.7 | 0.19 | -0.11 | 14.21 |
| 2,778.0 | 0.60 | 265.30 | 2,777.5 | 6.2 | -4.5 | -6.7 | 0.04 | 0.00 | -3.94 |
| 2,873.0 | 0.70 | 358.10 | 2,872.5 | 6.8 | -5.0 | -7.3 | 0.99 | 0.11 | 97.68 |
| 2,968.0 | 2.00 | 36.80 | 2,967.4 | 8.7 | -4.0 | -9.1 | 1.60 | 1.37 | 40.74 |
| 3,063.0 | 3.90 | 46.60 | 3,062.3 | 12.2 | -0.7 | -12.2 | 2.06 | 2.00 | 10.32 |
| 3,158.0 | 5.30 | 54.40 | 3,157.0 | 17.0 | 5.2 | -16.2 | 1.61 | 1.47 | 8.21 |
| 3,252.0 | 7.10 | 54.90 | 3,250.4 | 22.9 | 13.5 | -20.9 | 1.92 | 1.91 | 0.53 |
| 3,347.0 | 7.90 | 56.10 | 3,344.6 | 29.9 | 23.7 | -26.6 | 0.86 | 0.84 | 1.26 |
| 3,442.0 | 7.50 | 55.60 | 3,438.8 | 37.0 | 34.3 | -32.3 | 0.43 | -0.42 | -0.53 |
| 3,536.0 | 6.60 | 57.50 | 3,532.1 | 43.4 | 43.9 | -37.4 | 0.99 | -0.96 | 2.02 |
| 3,631.0 | 7.10 | 54.40 | 3,626.4 | 49.7 | 53.3 | -42.5 | 0.65 | 0.53 | -3.26 |
| 3,726.0 | 7.80 | 51.40 | 3,720.6 | 57.2 | 63.1 | -48.6 | 0.84 | 0.74 | -3.16 |
| 3,821.0 | 7.60 | 52.60 | 3,814.7 | 65.0 | 73.1 | -55.1 | 0.27 | -0.21 | 1.26 |
| 3,915.0 | 6.80 | 55.80 | 3,908.0 | 71.9 | 82.6 | -60.8 | 0.95 | -0.85 | 3.40 |
| 4,010.0 | 8.00 | 53.80 | 4,002.2 | 79.0 | 92.6 | -66.5 | 1.29 | 1.26 | -2.11 |
| 4,105.0 | 7.80 | 55.70 | 4,096.3 | 86.5 | 103.3 | -72.6 | 0.35 | -0.21 | 2.00 |
| 4,200.0 | 6.90 | 57.30 | 4,190.5 | 93.2 | 113.4 | -78.0 | 0.97 | -0.95 | 1.68 |
| 4,300.0 | 6.50 | 56.60 | 4,289.8 | 99.6 | 123.2 | -83.0 | 0.41 | -0.40 | -0.70 |
| 4,400.0 | 5.50 | 61.30 | 4,389.3 | 105.0 | 132.1 | -87.2 | 1.11 | -1.00 | 4.70 |
| 4,558.0 | 5.40 | 59.80 | 4,546.6 | 112.4 | 145.2 | -92.9 | 0.11 | -0.06 | -0.95 |
| 4,652.0 | 6.80 | 54.00 | 4,640.0 | 117.9 | 153.5 | -97.3 | 1.63 | 1.49 | -6.17 |
| 4,747.0 | 8.40 | 47.80 | 4,734.2 | 125.9 | 163.2 | -103.9 | 1.89 | 1.68 | -6.53 |
| 4,842.0 | 8.40 | 45.90 | 4,828.2 | 135.3 | 173.3 | -112.1 | 0.29 | 0.00 | -2.00 |
| 4,936.0 | 8.40 | 46.10 | 4,921.2 | 144.9 | 183.2 | -120.3 | 0.03 | 0.00 | 0.21 |
| 5,031.0 | 8.10 | 44.90 | 5,015.2 | 154.4 | 192.9 | -128.5 | 0.36 | -0.32 | -1.26 |
| 5,126.0 | 8.10 | 44.00 | 5,109.2 | 164.0 | 202.3 | -136.8 | 0.13 | 0.00 | -0.95 |

| | | | |
|---|---|---|---|
| **Company:** | Conoco Phillips | **Local Co-ordinate Reference:** | Well Wilder Federal AC 29 #5H |
| **Project:** | Lea County, New Mexico | **TVD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Site:** | Sec 28, T26S, R32E | **MD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Well:** | Wilder Federal AC 29 #5H | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,220.0 | 7.90 | 44.50 | 5,202.3 | 173.4 | 211.4 | -144.9 | 0.23 | -0.21 | 0.53 |
| 5,315.0 | 7.60 | 42.20 | 5,296.4 | 182.7 | 220.2 | -153.0 | 0.45 | -0.32 | -2.42 |
| 5,410.0 | 8.40 | 49.10 | 5,390.5 | 191.9 | 229.7 | -160.9 | 1.31 | 0.84 | 7.26 |
| 5,504.0 | 8.60 | 49.60 | 5,483.5 | 200.9 | 240.2 | -168.5 | 0.23 | 0.21 | 0.53 |
| 5,599.0 | 8.60 | 50.30 | 5,577.4 | 210.1 | 251.1 | -176.2 | 0.11 | 0.00 | 0.74 |
| 5,694.0 | 8.70 | 50.30 | 5,671.3 | 219.2 | 262.1 | -183.9 | 0.11 | 0.11 | 0.00 |
| 5,789.0 | 8.80 | 50.30 | 5,765.2 | 228.4 | 273.2 | -191.6 | 0.11 | 0.11 | 0.00 |
| 5,883.0 | 8.50 | 49.60 | 5,858.2 | 237.5 | 284.1 | -199.2 | 0.34 | -0.32 | -0.74 |
| 5,978.0 | 8.60 | 49.10 | 5,952.1 | 246.7 | 294.8 | -207.0 | 0.13 | 0.11 | -0.53 |
| 6,073.0 | 8.60 | 48.70 | 6,046.0 | 256.1 | 305.5 | -214.9 | 0.06 | 0.00 | -0.42 |
| 6,167.0 | 8.80 | 48.50 | 6,139.0 | 265.5 | 316.1 | -222.8 | 0.22 | 0.21 | -0.21 |
| 6,262.0 | 8.90 | 48.20 | 6,232.8 | 275.2 | 327.1 | -231.1 | 0.12 | 0.11 | -0.32 |
| 6,357.0 | 8.80 | 48.00 | 6,326.7 | 284.9 | 337.9 | -239.4 | 0.11 | -0.11 | -0.21 |
| 6,452.0 | 8.40 | 48.70 | 6,420.6 | 294.4 | 348.6 | -247.4 | 0.44 | -0.42 | 0.74 |
| 6,546.0 | 8.20 | 49.30 | 6,513.6 | 303.3 | 358.8 | -254.9 | 0.23 | -0.21 | 0.64 |
| 6,641.0 | 7.70 | 50.10 | 6,607.7 | 311.8 | 368.8 | -262.0 | 0.54 | -0.53 | 0.84 |
| 6,736.0 | 8.10 | 47.70 | 6,701.8 | 320.4 | 378.6 | -269.3 | 0.55 | 0.42 | -2.53 |
| 6,831.0 | 7.40 | 45.90 | 6,796.0 | 329.1 | 388.0 | -276.8 | 0.78 | -0.74 | -1.89 |
| 6,925.0 | 7.20 | 45.40 | 6,889.2 | 337.5 | 396.5 | -284.0 | 0.22 | -0.21 | -0.53 |
| 7,020.0 | 8.40 | 48.70 | 6,983.3 | 346.2 | 406.0 | -291.5 | 1.35 | 1.26 | 3.47 |
| 7,115.0 | 8.40 | 49.40 | 7,077.3 | 355.3 | 416.5 | -299.1 | 0.11 | 0.00 | 0.74 |
| 7,210.0 | 8.00 | 49.80 | 7,171.3 | 364.1 | 426.8 | -306.5 | 0.43 | -0.42 | 0.42 |
| 7,304.0 | 7.40 | 51.20 | 7,264.5 | 372.1 | 436.5 | -313.2 | 0.67 | -0.64 | 1.49 |
| 7,399.0 | 7.40 | 51.70 | 7,358.7 | 379.8 | 446.1 | -319.6 | 0.07 | 0.00 | 0.53 |
| 7,494.0 | 6.70 | 50.10 | 7,453.0 | 387.1 | 455.1 | -325.7 | 0.77 | -0.74 | -1.68 |
| 7,588.0 | 7.40 | 47.00 | 7,546.3 | 394.7 | 463.8 | -332.2 | 0.85 | 0.74 | -3.30 |
| 7,683.0 | 6.90 | 46.80 | 7,640.5 | 402.8 | 472.4 | -339.1 | 0.53 | -0.53 | -0.21 |
| 7,778.0 | 7.20 | 48.50 | 7,734.8 | 410.7 | 481.0 | -345.8 | 0.38 | 0.32 | 1.79 |
| 7,872.0 | 6.90 | 50.50 | 7,828.1 | 418.2 | 489.8 | -352.1 | 0.41 | -0.32 | 2.13 |
| 7,967.0 | 6.20 | 50.50 | 7,922.5 | 425.1 | 498.1 | -357.8 | 0.74 | -0.74 | 0.00 |
| 8,062.0 | 4.80 | 51.50 | 8,017.0 | 430.8 | 505.2 | -362.6 | 1.48 | -1.47 | 1.05 |
| 8,156.0 | 3.50 | 56.60 | 8,110.8 | 434.8 | 510.7 | -365.9 | 1.44 | -1.38 | 5.43 |
| 8,251.0 | 1.90 | 63.00 | 8,205.7 | 437.1 | 514.5 | -367.7 | 1.71 | -1.68 | 6.74 |
| 8,346.0 | 1.90 | 57.70 | 8,300.6 | 438.7 | 517.2 | -368.9 | 0.18 | 0.00 | -5.58 |
| 8,440.0 | 1.80 | 56.80 | 8,394.6 | 440.3 | 519.8 | -370.2 | 0.11 | -0.11 | -0.96 |
| 8,535.0 | 1.20 | 43.80 | 8,489.5 | 441.9 | 521.7 | -371.5 | 0.72 | -0.63 | -13.68 |
| 8,630.0 | 1.10 | 31.00 | 8,584.5 | 443.4 | 522.9 | -372.8 | 0.29 | -0.11 | -13.47 |
| 8,725.0 | 1.10 | 6.40 | 8,679.5 | 445.1 | 523.5 | -374.4 | 0.49 | 0.00 | -25.89 |
| 8,744.0 | 1.10 | 352.50 | 8,698.5 | 445.4 | 523.5 | -374.8 | 1.40 | 0.00 | -73.16 |
| 8,826.0 | 2.90 | 186.20 | 8,780.5 | 444.1 | 523.1 | -373.6 | 4.85 | 2.20 | -202.80 |
| 8,857.0 | 6.90 | 175.80 | 8,811.4 | 441.5 | 523.2 | -370.9 | 13.17 | 12.90 | -33.55 |
| 8,889.0 | 10.50 | 169.50 | 8,843.0 | 436.7 | 523.8 | -366.1 | 11.62 | 11.25 | -19.69 |
| 8,921.0 | 13.80 | 168.40 | 8,874.3 | 430.1 | 525.1 | -359.4 | 10.34 | 10.31 | -3.44 |

| | | | |
|---|---|---|---|
| **Company:** | Conoco Phillips | **Local Co-ordinate Reference:** | Well Wilder Federal AC 29 #5H |
| **Project:** | Lea County, New Mexico | **TVD Reference:** | WELL @ 3161.0usft (H&P.#486) |
| **Site:** | Sec 28, T26S, R32E | **MD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Well:** | Wilder Federal AC 29 #5H | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,952.0 | 17.20 | 166.70 | 8,904.1 | 422.0 | 526.9 | -351.1 | 11.06 | 10.97 | -5.48 |
| 8,984.0 | 20.50 | 166.00 | 8,934.4 | 412.0 | 529.4 | -340.9 | 10.34 | 10.31 | -2.19 |
| 9,015.0 | 23.80 | 167.40 | 8,963.1 | 400.6 | 532.1 | -329.2 | 10.78 | 10.65 | 4.52 |
| 9,047.0 | 27.60 | 171.80 | 8,992.0 | 387.0 | 534.5 | -315.4 | 13.28 | 11.88 | 13.75 |
| 9,079.0 | 31.00 | 176.20 | 9,019.9 | 371.4 | 536.1 | -299.8 | 12.57 | 10.63 | 13.75 |
| 9,110.0 | 34.10 | 179.70 | 9,046.0 | 354.7 | 536.7 | -283.2 | 11.70 | 10.00 | 11.29 |
| 9,142.0 | 37.50 | 181.40 | 9,071.9 | 336.0 | 536.5 | -264.6 | 11.07 | 10.63 | 5.31 |
| 9,173.0 | 40.70 | 182.30 | 9,096.0 | 316.5 | 535.9 | -245.3 | 10.48 | 10.32 | 2.90 |
| 9,205.0 | 43.80 | 183.00 | 9,119.7 | 295.0 | 534.9 | -224.1 | 9.80 | 9.69 | 2.19 |
| 9,236.0 | 47.80 | 182.90 | 9,141.3 | 272.8 | 533.7 | -202.3 | 12.91 | 12.90 | -0.32 |
| 9,268.0 | 51.50 | 182.00 | 9,162.0 | 248.4 | 532.7 | -178.3 | 11.76 | 11.56 | -2.81 |
| 9,299.0 | 54.80 | 180.70 | 9,180.6 | 223.6 | 532.1 | -153.7 | 11.16 | 10.65 | -4.19 |
| 9,331.0 | 58.50 | 179.30 | 9,198.2 | 196.9 | 532.1 | -127.2 | 12.13 | 11.56 | -4.38 |
| 9,362.0 | 62.30 | 179.50 | 9,213.5 | 170.0 | 532.4 | -100.5 | 12.27 | 12.26 | 0.65 |
| 9,394.0 | 66.50 | 180.00 | 9,227.3 | 141.1 | 532.5 | -71.8 | 13.20 | 13.13 | 1.56 |
| 9,425.0 | 67.80 | 180.70 | 9,239.3 | 112.6 | 532.4 | -43.5 | 4.68 | 4.19 | 2.26 |
| 9,457.0 | 69.60 | 181.30 | 9,251.0 | 82.7 | 531.8 | -14.0 | 5.89 | 5.63 | 1.88 |
| 9,489.0 | 73.30 | 182.00 | 9,261.2 | 52.4 | 531.0 | 15.9 | 11.75 | 11.56 | 2.19 |
| 9,520.0 | 78.10 | 183.40 | 9,268.8 | 22.4 | 529.6 | 45.5 | 16.09 | 15.48 | 4.52 |
| 9,552.0 | 82.80 | 183.90 | 9,274.1 | -9.1 | 527.5 | 76.5 | 14.77 | 14.69 | 1.56 |
| 9,583.0 | 87.30 | 184.40 | 9,276.8 | -39.8 | 525.3 | 106.7 | 14.60 | 14.52 | 1.61 |
| 9,615.0 | 88.00 | 184.40 | 9,278.1 | -71.7 | 522.9 | 138.0 | 2.19 | 2.19 | 0.00 |
| 9,647.0 | 88.20 | 184.40 | 9,279.2 | -103.6 | 520.4 | 169.3 | 0.63 | 0.63 | 0.00 |
| 9,678.0 | 90.00 | 184.10 | 9,279.6 | -134.5 | 518.1 | 199.7 | 5.89 | 5.81 | -0.97 |
| 9,773.0 | 91.20 | 182.10 | 9,278.7 | -229.4 | 513.0 | 293.1 | 2.46 | 1.26 | -2.11 |
| 9,868.0 | 92.40 | 179.30 | 9,275.7 | -324.3 | 511.8 | 387.1 | 3.21 | 1.26 | -2.95 |
| 9,962.0 | 93.20 | 178.30 | 9,271.1 | -418.2 | 513.8 | 480.5 | 1.36 | 0.85 | -1.06 |
| 10,057.0 | 92.20 | 178.50 | 9,266.6 | -513.0 | 516.4 | 574.9 | 1.07 | -1.05 | 0.21 |
| 10,152.0 | 91.10 | 179.70 | 9,263.9 | -608.0 | 517.9 | 669.2 | 1.71 | -1.16 | 1.26 |
| 10,246.0 | 89.20 | 180.20 | 9,263.6 | -702.0 | 518.0 | 762.5 | 2.09 | -2.02 | 0.53 |
| 10,341.0 | 89.70 | 179.90 | 9,264.5 | -797.0 | 517.9 | 856.7 | 0.61 | 0.53 | -0.32 |
| 10,436.0 | 89.70 | 178.80 | 9,265.0 | -892.0 | 519.0 | 951.0 | 1.16 | 0.00 | -1.16 |
| 10,530.0 | 89.60 | 178.10 | 9,265.6 | -985.9 | 521.5 | 1,044.5 | 0.75 | -0.11 | -0.74 |
| 10,625.0 | 91.50 | 179.20 | 9,264.7 | -1,080.9 | 523.8 | 1,139.0 | 2.31 | 2.00 | 1.16 |
| 10,720.0 | 92.30 | 179.20 | 9,261.5 | -1,175.8 | 525.1 | 1,233.3 | 0.84 | 0.84 | 0.00 |
| 10,814.0 | 90.10 | 179.30 | 9,259.6 | -1,269.8 | 526.3 | 1,326.7 | 2.34 | -2.34 | 0.11 |
| 10,909.0 | 90.30 | 178.80 | 9,259.2 | -1,364.8 | 527.9 | 1,421.1 | 0.57 | 0.21 | -0.53 |
| 11,004.0 | 90.80 | 178.30 | 9,258.3 | -1,459.7 | 530.3 | 1,515.6 | 0.74 | 0.53 | -0.53 |
| 11,099.0 | 91.90 | 178.30 | 9,256.1 | -1,554.7 | 533.1 | 1,610.1 | 1.16 | 1.16 | 0.00 |
| 11,193.0 | 89.30 | 179.30 | 9,255.1 | -1,648.6 | 535.1 | 1,703.5 | 2.96 | -2.77 | 1.06 |
| 11,288.0 | 89.10 | 178.80 | 9,256.4 | -1,743.6 | 536.7 | 1,797.9 | 0.57 | -0.21 | -0.53 |
| 11,383.0 | 90.90 | 180.20 | 9,256.4 | -1,838.6 | 537.5 | 1,892.3 | 2.40 | 1.89 | 1.47 |
| 11,477.0 | 91.10 | 180.20 | 9,254.8 | -1,932.6 | 537.2 | 1,985.4 | 0.21 | 0.21 | 0.00 |
| 11,572.0 | 92.20 | 180.20 | 9,252.1 | -2,027.5 | 536.8 | 2,079.6 | 1.16 | 1.16 | 0.00 |

| | | | |
|---|---|---|---|
| **Company:** | Conoco Phillips | **Local Co-ordinate Reference:** | Well Wilder Federal AC 29 #5H |
| **Project:** | Lea County, New Mexico | **TVD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Site:** | Sec 28, T26S, R32E | **MD Reference:** | WELL @ 3161.0usft (H&P #486) |
| **Well:** | Wilder Federal AC 29 #5H | **North Reference:** | Grid |
| **Wellbore:** | Wellbore #1 | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Wellbore #1 | **Database:** | EDM 5000.1 Single User Db |

**Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 11,667.0 | 91.30 | 181.30 | 9,249.2 | -2,122.5 | 535.6 | 2,173.6 | 1.50 | -0.95 | 1.16 |
| 11,788.0 | 90.40 | 181.40 | 9,247.4 | -2,243.4 | 532.7 | 2,293.2 | 0.75 | -0.74 | 0.08 |
| 11,882.0 | 90.90 | 181.40 | 9,246.3 | -2,337.4 | 530.4 | 2,386.1 | 0.53 | 0.53 | 0.00 |
| 11,976.0 | 89.50 | 180.60 | 9,246.0 | -2,431.4 | 528.8 | 2,479.1 | 1.72 | -1.49 | -0.85 |
| 12,071.0 | 90.40 | 180.70 | 9,246.1 | -2,526.4 | 527.7 | 2,573.1 | 0.95 | 0.95 | 0.11 |
| 12,166.0 | 91.10 | 180.70 | 9,244.8 | -2,621.4 | 526.6 | 2,667.2 | 0.74 | 0.74 | 0.00 |
| 12,261.0 | 91.50 | 180.60 | 9,242.7 | -2,716.3 | 525.5 | 2,761.2 | 0.43 | 0.42 | -0.11 |
| 12,355.0 | 90.20 | 178.10 | 9,241.3 | -2,810.3 | 526.6 | 2,854.6 | 3.00 | -1.38 | -2.66 |
| 12,450.0 | 91.20 | 177.60 | 9,240.1 | -2,905.2 | 530.1 | 2,949.2 | 1.18 | 1.05 | -0.53 |
| 12,545.0 | 91.20 | 178.80 | 9,238.1 | -3,000.2 | 533.1 | 3,043.7 | 1.26 | 0.00 | 1.26 |
| 12,639.0 | 91.40 | 178.60 | 9,236.0 | -3,094.1 | 535.2 | 3,137.2 | 0.30 | 0.21 | -0.21 |
| 12,734.0 | 89.80 | 179.20 | 9,235.0 | -3,189.1 | 537.1 | 3,231.6 | 1.80 | -1.68 | 0.63 |
| 12,828.0 | 90.60 | 179.30 | 9,234.7 | -3,283.1 | 538.3 | 3,325.0 | 0.86 | 0.85 | 0.11 |
| 12,922.0 | 92.60 | 179.70 | 9,232.0 | -3,377.0 | 539.1 | 3,418.3 | 2.17 | 2.13 | 0.43 |
| 13,017.0 | 89.50 | 179.50 | 9,230.3 | -3,472.0 | 539.8 | 3,512.5 | 3.27 | -3.26 | -0.21 |
| 13,111.0 | 90.60 | 179.00 | 9,230.2 | -3,566.0 | 541.0 | 3,605.9 | 1.29 | 1.17 | -0.53 |
| 13,205.0 | 90.20 | 179.20 | 9,229.5 | -3,660.0 | 542.5 | 3,699.3 | 0.48 | -0.43 | 0.21 |
| 13,300.0 | 87.70 | 180.90 | 9,231.3 | -3,755.0 | 542.4 | 3,793.5 | 3.18 | -2.63 | 1.79 |
| 13,395.0 | 88.40 | 179.50 | 9,234.5 | -3,849.9 | 542.1 | 3,887.6 | 1.65 | 0.74 | -1.47 |
| 13,490.0 | 89.20 | 179.30 | 9,236.5 | -3,944.9 | 543.1 | 3,981.9 | 0.87 | 0.84 | -0.21 |
| 13,584.0 | 90.80 | 179.90 | 9,236.5 | -4,038.9 | 543.7 | 4,075.2 | 1.82 | 1.70 | 0.64 |
| 13,679.0 | 92.30 | 179.40 | 9,233.9 | -4,133.8 | 544.3 | 4,169.5 | 1.66 | 1.58 | -0.53 |
| 13,773.0 | 93.40 | 179.20 | 9,229.3 | -4,227.7 | 545.4 | 4,262.7 | 1.19 | 1.17 | -0.21 |
| TD @ 13820' MD / 9227' TVD | | | | | | | | | |
| 13,820.0 | 93.40 | 179.20 | 9,226.5 | -4,274.6 | 546.1 | 4,309.3 | 0.00 | 0.00 | 0.00 |

**Survey Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 170.0 | 170.0 | 0.4 | 0.2 | FIRST SURVEY @ 170' MD / 170' TVD |
| 13,820.0 | 9,226.5 | -4,274.6 | 546.1 | TD @ 13820' MD / 9227' TVD |

Checked By: _____ Approved By: _____ Date: _____