



**PRODIRECTIONAL**

P.O. Box 750 | Conroe, TX 77305 | Phone: 936-441-7266  
[www.prodirectional.com](http://www.prodirectional.com)



SEMU No. 250  
Lea County, NM

October 24, 2014

Job No. LNM 5114514

30-025-42021

## ***Survey Completion Report***

NOV 23 2015



Professional Directional Ltd.

P.O. Box 750 | Conroe, TX 77305 | (936) 441-7266

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October 24, 2014



**ConocoPhillips**

SEMU No. 250

Lea County, NM

Job No. LNM 5114514

*Survey Certification Form:*

This is to certify surveys from **1,590' MD** to a depth of **4,276 MD** are true and correct MWD Surveys.  
These surveys were taken from **10/22/2014** through **10/23/2014**.

Sincerely,

John Jordan | Well Planning

**PRODIRECTIONAL**



## **Conoco Phillips**

Lea County, NM  
SEMU No. 250  
OH

Survey: ProDirectional

## **Wellpath Report**

24 October, 2014





Professional Directional  
Wellpath Report



|           |                  |                              |                                         |
|-----------|------------------|------------------------------|-----------------------------------------|
| Company:  | Conoco Phillips  | Local Co-ordinate Reference: | Well No. 250                            |
| Project:  | Lea County, N.M. | TVD Reference:               | WELL @ 3554.00usft (Original Well Elev) |
| Site:     | SEMU             | MD Reference:                | WELL @ 3554.00usft (Original Well Elev) |
| Well:     | No. 250          | North Reference:             | Grid                                    |
| Wellbore: | OH               | Survey Calculation Method:   | Minimum Curvature                       |
| Design:   | OH               | Database:                    | Well_Planner1                           |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project     | Lea County, N.M.                     |               |                |
| 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                  | SEMU      |                   |                   |
| Site Position:        |           | Northing:         | 569,250.22 usft   |
| From:                 | Map       | Easting:          | 850,159.22 usft   |
| Position Uncertainty: | 0.00 usft | Slot Radius:      | 13-3/16 "         |
|                       |           | Latitude:         | 32° 33' 35.417 N  |
|                       |           | Longitude:        | 103° 11' 48.625 W |
|                       |           | Grid Convergence: | 0.61 "            |

|                      |         |           |                     |                 |               |                   |
|----------------------|---------|-----------|---------------------|-----------------|---------------|-------------------|
| Well                 | No. 250 |           |                     |                 |               |                   |
| Well Position        | +N/-S   | 0.00 usft | Northing:           | 570,041.90 usft | Latitude:     | 32° 33' 43.034 N  |
|                      | +E/-W   | 0.00 usft | Easting:            | 852,200.70 usft | Longitude:    | 103° 11' 24.676 W |
| Position Uncertainty |         | 0.00 usft | Wellhead Elevation: | usft            | Ground Level: | 3,541.00 usft     |

|           |              |             |                    |                  |                        |
|-----------|--------------|-------------|--------------------|------------------|------------------------|
| Wellbore  | OH           |             |                    |                  |                        |
| Magnetics | Model Name   | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | User Defined | 8/5/2014    | 7.20               | 60.48            | 48,568                 |

|                   |                            |                 |                 |                  |      |
|-------------------|----------------------------|-----------------|-----------------|------------------|------|
| Design            | OH                         |                 |                 |                  |      |
| Audit Notes:      |                            |                 |                 |                  |      |
| Version:          | 1.0                        | Phase:          | ACTUAL          | Tie On Depth:    | 0.00 |
| Vertical Section: | Depth From (TVD)<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Direction<br>(°) |      |
|                   | 0.00                       | 0.00            | 0.00            | 278.09           |      |





Professional Directional  
Wellpath Report



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| Site:     | SEMU             | MD Reference:                | WELL @ 3554.00usft (Original Well Elev) |
| Well:     | No. 250          | North Reference:             | Grid                                    |
| Wellbore: | OH               | Survey Calculation Method:   | Minimum Curvature                       |
| Design:   | OH               | Database:                    | Well_Planner1                           |

| Survey Program |              | Date              | 10/24/2014 |                |  |
|----------------|--------------|-------------------|------------|----------------|--|
| From<br>(usft) | To<br>(usft) | Survey (Wellbore) | Tool Name  | Description    |  |
| 250.00         | 1,395.00     | Survey #1 (OH)    | UNKNOWN    | Unknown survey |  |
| 1,590.00       | 4,276.00     | Survey #2 (OH)    | MWD        | MWD - Standard |  |

| Survey                                 | MD (usft) | Inc (") | Azi (azimuth) (") | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (")/100usft | Northing (usft) | Easting (usft) | TFace (") |
|----------------------------------------|-----------|---------|-------------------|------------|------------|------------|---------------|------------------|-----------------|----------------|-----------|
|                                        | 0.00      | 0.00    | 0.00              | 0.00       | 0.00       | 0.00       | 0.00          | 0.00             | 570,041.90      | 852,200.70     | 0.00      |
|                                        | 250.00    | 0.20    | 270.00            | 250.00     | 0.00       | -0.44      | 0.43          | 0.08             | 570,041.90      | 852,200.26     | 270.00    |
|                                        | 500.00    | 0.00    | 238.00            | 500.00     | 0.00       | -0.87      | 0.86          | 0.08             | 570,041.90      | 852,199.83     | -180.00   |
|                                        | 750.00    | 0.10    | 98.00             | 750.00     | -0.03      | -0.66      | 0.65          | 0.04             | 570,041.87      | 852,200.04     | 98.00     |
|                                        | 1,000.00  | 0.10    | 56.00             | 1,000.00   | 0.06       | -0.26      | 0.27          | 0.03             | 570,041.96      | 852,200.44     | -111.00   |
|                                        | 1,250.00  | 0.10    | 253.00            | 1,250.00   | 0.12       | -0.29      | 0.30          | 0.08             | 570,042.02      | 852,200.41     | -171.50   |
|                                        | 1,395.00  | 0.10    | 186.00            | 1,395.00   | -0.04      | -0.42      | 0.41          | 0.08             | 570,041.86      | 852,200.28     | -123.50   |
| Last Totco Survey: 1,395' MD           |           |         |                   |            |            |            |               |                  |                 |                |           |
|                                        | 1,590.00  | 3.10    | 280.50            | 1,589.90   | 0.75       | -5.63      | 5.67          | 1.59             | 570,042.65      | 852,195.07     | 96.34     |
| ProDirectional First Survey: 1,590' MD |           |         |                   |            |            |            |               |                  |                 |                |           |
|                                        | 1,768.00  | 5.50    | 276.60            | 1,767.39   | 2.61       | -18.83     | 19.01         | 1.36             | 570,044.51      | 852,181.87     | -8.89     |
|                                        | 1,947.00  | 7.10    | 274.70            | 1,945.30   | 4.50       | -38.38     | 38.63         | 0.90             | 570,046.40      | 852,162.32     | -8.37     |
|                                        | 2,125.00  | 8.40    | 278.50            | 2,121.67   | 7.32       | -62.20     | 62.62         | 0.78             | 570,049.22      | 852,138.50     | 23.40     |
|                                        | 2,304.00  | 10.20   | 276.80            | 2,298.31   | 11.13      | -90.88     | 91.54         | 1.02             | 570,053.03      | 852,109.82     | -9.52     |
|                                        | 2,482.00  | 11.80   | 276.50            | 2,473.04   | 15.06      | -124.61    | 125.49        | 0.90             | 570,056.96      | 852,076.09     | -2.20     |
|                                        | 2,661.00  | 11.80   | 277.10            | 2,648.26   | 19.39      | -160.96    | 162.08        | 0.07             | 570,061.29      | 852,039.74     | 90.29     |
|                                        | 2,840.00  | 12.70   | 275.40            | 2,823.18   | 23.51      | -198.71    | 200.04        | 0.54             | 570,065.41      | 852,001.99     | -22.67    |
|                                        | 3,019.00  | 12.00   | 277.40            | 2,998.04   | 27.75      | -236.75    | 238.30        | 0.46             | 570,069.65      | 851,963.95     | 149.55    |
|                                        | 3,197.00  | 11.40   | 276.80            | 3,172.34   | 32.22      | -272.57    | 274.39        | 0.34             | 570,074.12      | 851,928.13     | -168.83   |
|                                        | 3,376.00  | 11.80   | 274.10            | 3,347.68   | 35.62      | -308.39    | 310.34        | 0.38             | 570,077.52      | 851,892.31     | -54.95    |
|                                        | 3,555.00  | 12.00   | 275.50            | 3,522.84   | 38.72      | -345.17    | 347.18        | 0.20             | 570,080.62      | 851,855.53     | 55.97     |
|                                        | 3,734.00  | 12.90   | 278.30            | 3,697.63   | 43.38      | -383.46    | 385.75        | 0.61             | 570,085.28      | 851,817.24     | 35.22     |



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| MD<br>(usft)                          | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) | TFace<br>(°) |
|---------------------------------------|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|--------------|
| 3,913.00                              | 12.40      | 276.90               | 3,872.28      | 48.58         | -422.32       | 424.95           | 0.33                | 570,090.48         | 851,778.38        | -149.17      |
| 4,091.00                              | 12.40      | 278.30               | 4,046.13      | 53.63         | -460.20       | 463.17           | 0.17                | 570,095.53         | 851,740.50        | 90.68        |
| 4,216.00                              | 12.30      | 277.50               | 4,168.24      | 57.31         | -486.68       | 489.90           | 0.16                | 570,099.21         | 851,714.02        | -120.69      |
| Last Survey: 4,216' MD, 4,168.24' TVD |            |                      |               |               |               |                  |                     |                    |                   |              |
| 4,276.00                              | 12.30      | 277.50               | 4,226.86      | 58.98         | -499.35       | 502.68           | 0.00                | 570,100.88         | 851,701.35        | 0.00         |
| PTB: 4,276' MD                        |            |                      |               |               |               |                  |                     |                    |                   |              |

| Design Annotations          |                             |                   |                 |                                        |
|-----------------------------|-----------------------------|-------------------|-----------------|----------------------------------------|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                                |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                        |
| 1,395.00                    | 1,395.00                    | -0.04             | -0.42           | Last Totco Survey: 1,395' MD -         |
| 1,590.00                    | 1,589.90                    | 0.75              | -5.63           | ProDirectional First Survey: 1,590' MD |
| 4,216.00                    | 4,168.24                    | 57.31             | -486.68         | Last Survey: 4,216' MD, 4,168.24' TVD  |
| 4,276.00                    | 4,226.86                    | 58.98             | -499.35         | PTB: 4,276' MD                         |