

API#: 30-015-4217

RECEIVED
 SHL X:
 SHL Y: APR 03 2014
 Mag Decl: 7.58
NMOCD-ARTESIA
 Sensor

| | | |
|---|------------------------------|--------------------|
| Customer: Lime Rock Resources | Rig: UDI#33 | SHL X: |
| Lease, Well No.: Williams B Federal #12 | Job No.: CD-14018 | SHL Y: APR 03 2014 |
| County or Parrish: Eddy County | Location or Area: New Mexico | Mag Decl: 7.58 |



| | |
|-----------------------|-----|
| Calculated // Targets | TVD |
| KBTVD (@ 0° VS) | N-S |
| Dip Angle (+Dn/-Up) | E-W |

| Tie-In Survey Co.: | | | | Minimum Curvature Calculations | | | | | Rates / 100' M.D. | | | Dist // Target Line | |
|--|---------|-------|--------|--------------------------------|--------|---------|----------|------------|-------------------|---------|--------|---------------------|----------|
| Surveying Company: Childress Directional | | | | Proposed Azimuth: 83.46° | | | | | Build or | R or -L | Course | Above or | Right or |
| Survey No. | M.D. | INCL | AZM. | TVD | N / -S | E / -W | V. SECT. | DLS / 100' | -Drop | -Turn | Length | -Below | -Left |
| Tie-In | 0.00 | 0.00 | 0.00 | 0.00' | 0.00' | 0.00' | 0.00' | 0.00° | | | | | |
| 1. | 470.00 | 0.80 | 56.10 | 469.98' | 1.83' | 2.72' | 2.91' | 0.17° | | | | | |
| 2. | 561.00 | 2.60 | 77.20 | 560.94' | 2.64' | 5.26' | 5.53' | 2.06° | | | | | |
| 3. | 656.00 | 5.50 | 97.10 | 655.70' | 2.56' | 11.88' | 12.10' | 3.35° | | | | | |
| 4. | 752.00 | 8.00 | 95.10 | 751.03' | 1.39' | 23.11' | 23.11' | 2.62° | | | | | |
| 5. | 848.00 | 9.40 | 84.40 | 845.92' | 1.56' | 37.56' | 37.50' | 2.22° | | | | | |
| 6. | 944.00 | 11.00 | 83.00 | 940.40' | 3.45' | 54.46' | 54.50' | 1.69° | | | | | |
| 7. | 1040.00 | 10.60 | 85.60 | 1034.70' | 5.24' | 72.35' | 72.48' | 0.66° | | | | | |
| 8. | 1136.00 | 10.20 | 78.40 | 1129.13' | 7.63' | 89.48' | 89.77' | 1.42° | | | | | |
| 9. | 1232.00 | 9.20 | 77.00 | 1223.76' | 11.06' | 105.29' | 105.86' | 1.07° | | | | | |
| 10. | 1328.00 | 8.00 | 76.00 | 1318.68' | 14.40' | 119.25' | 120.11' | 1.26° | | | | | |
| 11. | 1425.00 | 7.30 | 74.20 | 1414.81' | 17.72' | 131.73' | 132.89' | 0.76° | | | | | |
| 12. | 1521.00 | 6.40 | 75.40 | 1510.13' | 20.73' | 142.77' | 144.20' | 0.95° | | | | | |
| 13. | 1617.00 | 5.90 | 69.80 | 1605.57' | 23.78' | 152.58' | 154.30' | 0.81° | | | | | |
| 14. | 1713.00 | 6.10 | 76.30 | 1701.05' | 26.69' | 162.17' | 164.15' | 0.74° | | | | | |
| 15. | 1809.00 | 5.90 | 80.20 | 1796.52' | 28.74' | 171.99' | 174.14' | 0.47° | | | | | |
| 16. | 1906.00 | 5.60 | 75.10 | 1893.04' | 30.80' | 181.47' | 183.80' | 0.61° | | | | | |
| 17. | 2002.00 | 4.20 | 81.80 | 1988.68' | 32.51' | 189.48' | 191.95' | 1.57° | | | | | |
| 18. | 2106.00 | 2.00 | 81.10 | 2092.53' | 33.33' | 195.04' | 197.57' | 2.12° | | | | | |
| 19. | 2202.00 | 1.10 | 96.50 | 2188.49' | 33.49' | 197.61' | 200.14' | 1.02° | | | | | |
| 20. | 2298.00 | 1.30 | 73.40 | 2284.47' | 33.69' | 199.57' | 202.11' | 0.54° | | | | | |
| 21. | 2395.00 | 1.00 | 66.50 | 2381.45' | 34.35' | 201.40' | 204.00' | 0.34° | | | | | |
| 22. | 2491.00 | 0.10 | 101.10 | 2477.44' | 34.66' | 202.25' | 204.88' | 0.96° | | | | | |
| 23. | 2588.00 | 0.20 | 87.90 | 2574.44' | 34.65' | 202.50' | 205.13' | 0.11° | | | | | |
| 24. | 2684.00 | 0.30 | 340.90 | 2670.44' | 34.90' | 202.59' | 205.25' | 0.42° | | | | | |
| 25. | 2780.00 | 0.10 | 84.60 | 2766.44' | 35.14' | 202.59' | 205.27' | 0.35° | | | | | |
| 26. | 2876.00 | 0.20 | 314.80 | 2862.44' | 35.27' | 202.56' | 205.25' | 0.29° | | | | | |
| 27. | 2972.00 | 0.20 | 314.80 | 2958.44' | 35.51' | 202.32' | 205.04' | 0.00° | | | | | |
| 28. | 3068.00 | 0.30 | 276.30 | 3054.44' | 35.65' | 201.95' | 204.69' | 0.20° | | | | | |
| 29. | 3164.00 | 0.30 | 286.70 | 3150.44' | 35.75' | 201.46' | 204.22' | 0.06° | | | | | |
| 30. | 3260.00 | 0.90 | 232.20 | 3246.44' | 35.36' | 200.62' | 203.34' | 0.80° | | | | | |
| 31. | 3356.00 | 0.90 | 260.00 | 3342.42' | 34.77' | 199.28' | 201.95' | 0.45° | | | | | |
| 32. | 3452.00 | 1.00 | 244.90 | 3438.41' | 34.28' | 197.78' | 200.40' | 0.28° | | | | | |
| 33. | 3548.00 | 0.90 | 224.00 | 3534.40' | 33.38' | 196.50' | 199.02' | 0.37° | | | | | |
| 34. | 3580.00 | 0.90 | 226.10 | 3566.39' | 33.03' | 196.14' | 198.63' | 0.10° | | | | | |
| PTB | 3625.00 | 0.90 | 226.10 | 3611.39' | 32.54' | 195.63' | 198.07' | 0.00° | | | | | |

The above survey data is true and correct, complete and within the limitations of the tool as set forth by Childress Directional Drilling, LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Lime Rock Resources; that I reviewed these MWD Surveys and find they conform to the principles and procedures as set forth by Childress Directional Drilling.

Regards,



Art Poffenroth
MWD Manager
Childress Directional Drilling, LLC
