

PDC ENERGY

WELD COUNTY, COLORADO

SE SE SEC. 18 T4N R67W 6th P.M.

RIEDER 18T-321

JOB # 2015-043-135

11 June, 2015

Survey: FINAL SURVEYS





Project: WELD COUNTY, COLORADO
Site: SE SE SEC. 18 T4N R67W 6th P.M.
Well: RIEDER 18T-321
Wellbore: JOB # 2015-043-135
Design: FINAL SURVEYS

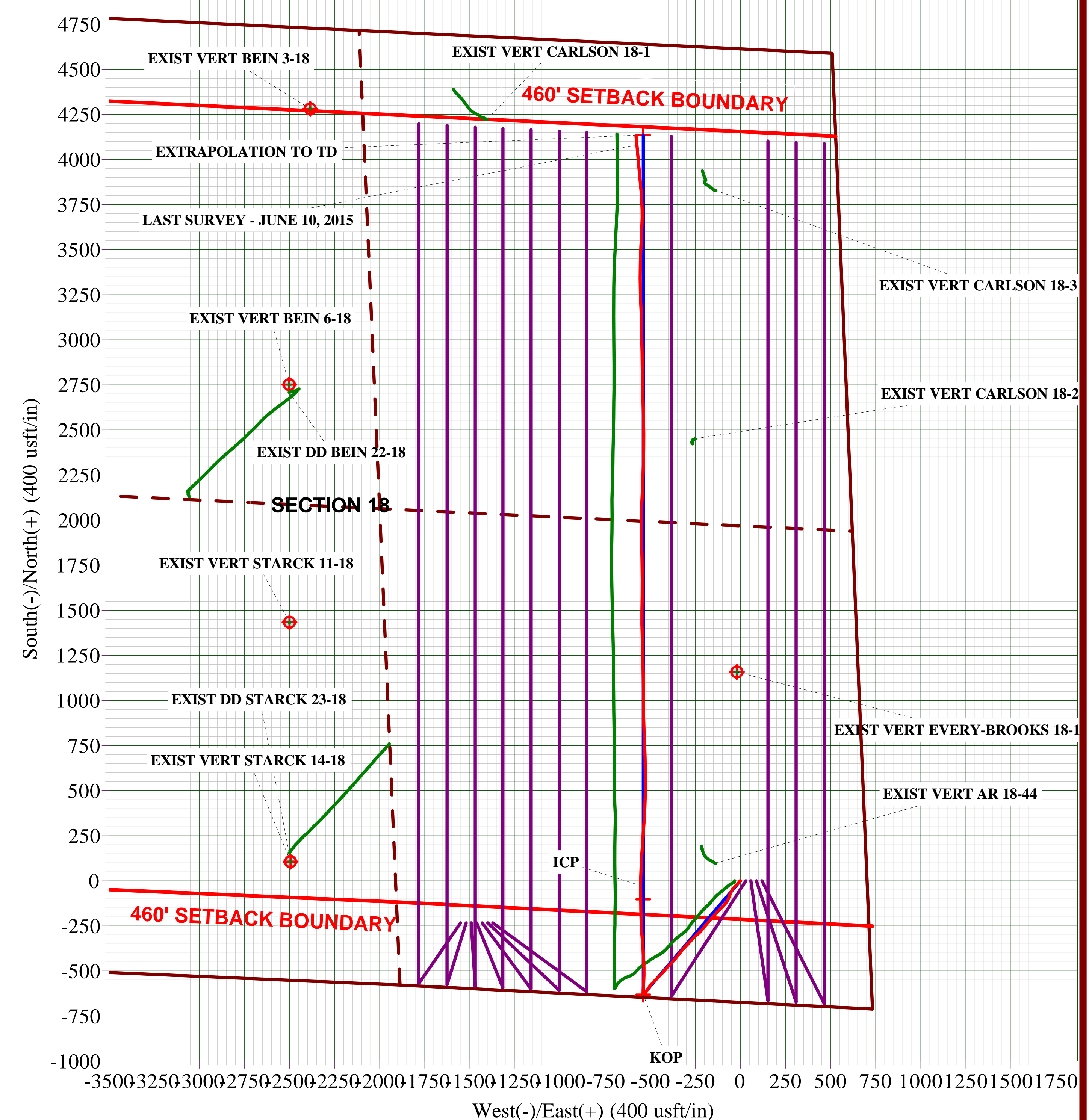
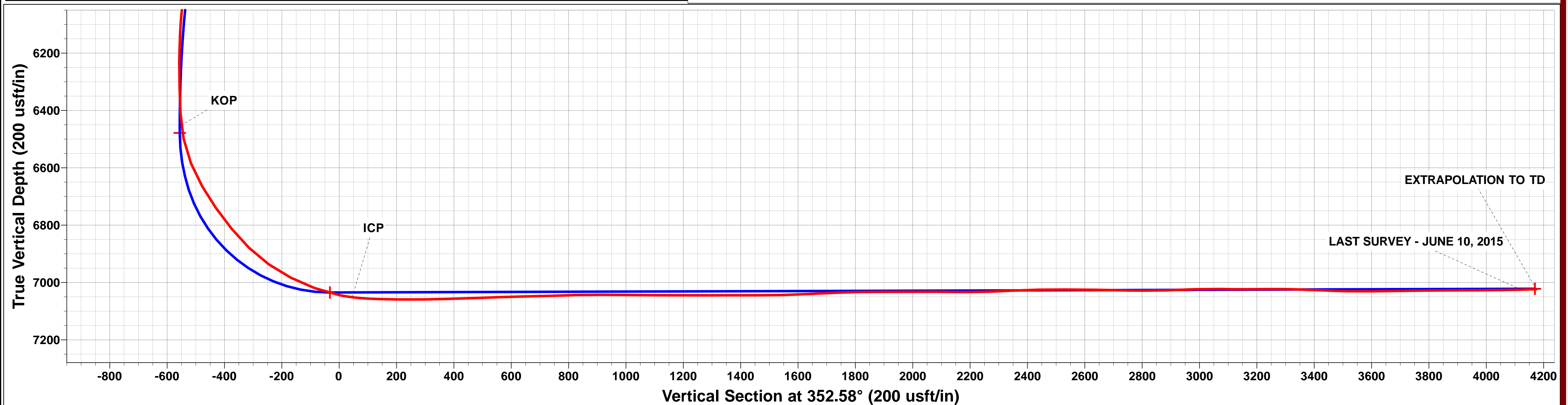
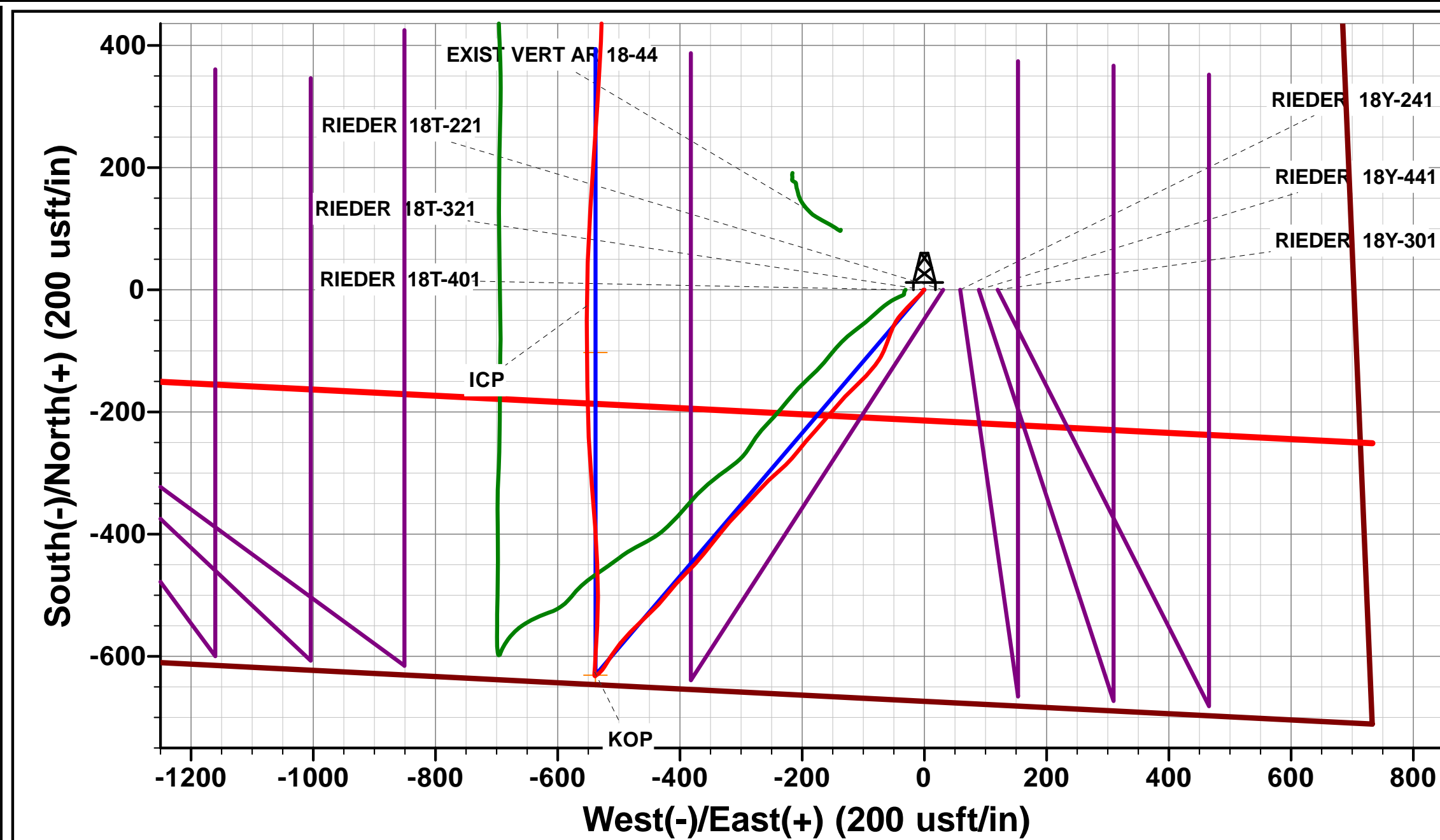
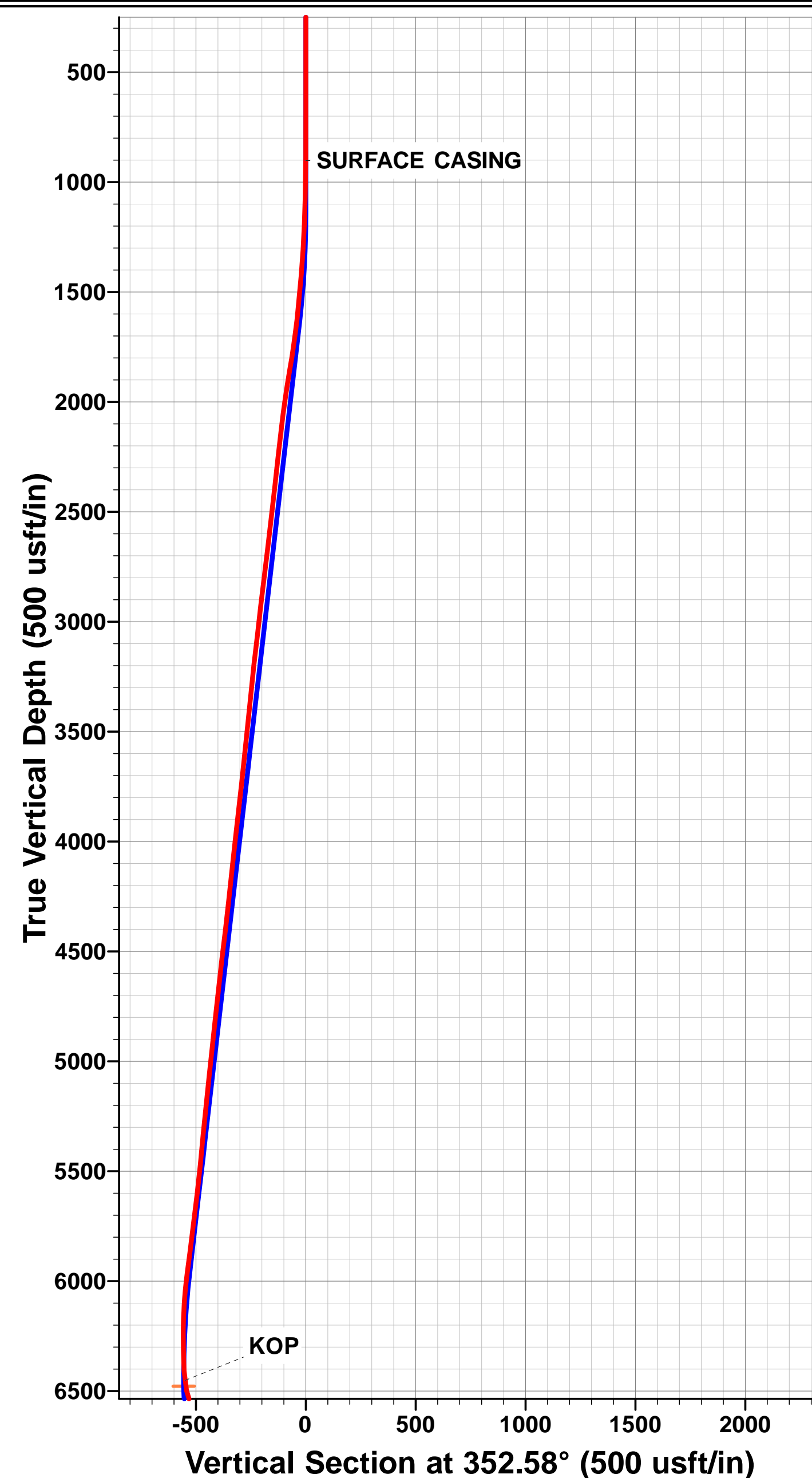
ANNOTATIONS

| TVD | MD | Inc | Azi | +N/-S | +E/-W | VSec | Dep | Annotation |
|--------|---------|-------|--------|--------|--------|--------|--------|-----------------------------|
| 902.0 | 902.0 | 0.35 | 187.46 | -1.0 | -2.4 | -0.7 | 3.7 | SURFACE CASING |
| 6452.0 | 6521.0 | 6.82 | 3.64 | -625.1 | -539.8 | -550.2 | 851.9 | KOP |
| 7051.4 | 7426.0 | 82.94 | 0.24 | -26.2 | -552.6 | 45.3 | 1449.7 | ICP |
| 7025.1 | 11538.0 | 91.70 | 354.50 | 4081.5 | -573.3 | 4121.3 | 5560.3 | LAST SURVEY - JUNE 10, 2015 |
| 7023.5 | 11591.0 | 91.70 | 354.50 | 4134.2 | -578.4 | 4174.3 | 5613.3 | EXTRAPOLATION TO TD |

AS DRILLED LOCAL COORDINATES:
SHL: 675ft FSL & 712ft FEL Sec 18
ICP: 648.8ft FSL & 1264.6ft FEL Sec 18
BHL: 500.7ft FNL & 1115.2ft FEL Sec 18

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|-------------------------------|--------|--------|--------|-----------|-------------|
| 7" ICP *NEW* - RIEDER 18T-321 | 7035.0 | -102.6 | -538.2 | 40.307568 | -104.927610 |
| BHL - RIEDER 18T-321 | 7022.0 | 4134.9 | -538.2 | 40.319200 | -104.927610 |
| KOP - RIEDER 18T-321 | 6478.4 | -630.7 | -538.2 | 40.306119 | -104.927610 |



Survey Report



| | | | |
|------------------|---------------------------------|-------------------------------------|---------------------------|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well RIEDER 18T-321 |
| Project: | WELD COUNTY, COLORADO | TVD Reference: | KB @ 4818.0usft (ENS 135) |
| Site: | SE SE SEC. 18 T4N R67W 6th P.M. | MD Reference: | KB @ 4818.0usft (ENS 135) |
| Well: | RIEDER 18T-321 | North Reference: | True |
| Wellbore: | JOB # 2015-043-135 | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL SURVEYS | Database: | EDM 5000.1 Single User Db |

| | | | |
|--------------------|---------------------------|----------------------|-----------------------------|
| Project | WELD COUNTY, COLORADO | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | Using geodetic scale factor |

| | | | | | |
|-----------------------|---------------------------------|--------------|-------------------|-------------------|-------------|
| Site | SE SE SEC. 18 T4N R67W 6th P.M. | | | | |
| Site Position: | | Northing: | 1,355,509.25 usft | Latitude: | 40.307850 |
| From: | Lat/Long | Easting: | 3,160,139.69 usft | Longitude: | -104.925790 |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 1.10000 ft | Grid Convergence: | 0.37 ° |

| | | | | | | |
|----------------------|----------------|----------|---------------------|-------------------|---------------|--------------|
| Well | RIEDER 18T-321 | | | | | |
| Well Position | +N/-S | 0.0 usft | Northing: | 1,355,509.43 usft | Latitude: | 40.307850 |
| | +E/-W | 0.0 usft | Easting: | 3,160,170.37 usft | Longitude: | -104.925680 |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | usft | Ground Level: | 4,805.0 usft |

| | | | | | |
|------------------|--------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | JOB # 2015-043-135 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 28/04/2015 | 8.51 | 66.81 | 52,571 |

| Design | FINAL SURVEYS | | | |
|-------------------|----------------------------|-----------------|-----------------|-------------------|
| 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 | 352.58 |

| | | | | | |
|-----------------------|------------------|------------------------------------|------------------|--------------------|--|
| Survey Program | Date | 11/06/2015 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 264.0 | 11,591.0 | FINAL SURVEYS (JOB # 2015-043-135) | MWD | MWD - Standard | |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|----------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|
| Survey | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea 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 | -4,818.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 264.0 | 0.30 | 299.30 | 264.0 | -4,554.0 | 0.3 | -0.6 | 0.4 | 0.11 | 0.11 | 0.00 |
| 265.0 | 0.30 | 299.30 | 265.0 | -4,553.0 | 0.3 | -0.6 | 0.4 | 0.00 | 0.00 | 0.00 |
| 546.0 | 0.20 | 207.10 | 546.0 | -4,272.0 | 0.3 | -1.5 | 0.5 | 0.13 | -0.04 | -32.81 |
| 827.0 | 0.30 | 226.50 | 827.0 | -3,991.0 | -0.7 | -2.2 | -0.4 | 0.05 | 0.04 | 6.90 |
| SURFACE CASING | | | | | | | | | | |
| 902.0 | 0.35 | 187.46 | 902.0 | -3,916.0 | -1.0 | -2.4 | -0.7 | 0.30 | 0.07 | -52.06 |
| 1,014.0 | 0.60 | 159.40 | 1,014.0 | -3,804.0 | -1.9 | -2.2 | -1.6 | 0.30 | 0.22 | -25.05 |
| 1,294.0 | 6.20 | 226.70 | 1,293.4 | -3,524.6 | -13.7 | -12.7 | -11.9 | 2.14 | 2.00 | 24.04 |
| 1,575.0 | 8.50 | 221.30 | 1,572.1 | -3,245.9 | -39.7 | -37.5 | -34.5 | 0.85 | 0.82 | -1.92 |
| 1,856.0 | 10.70 | 197.00 | 1,849.3 | -2,968.7 | -80.3 | -58.8 | -72.0 | 1.62 | 0.78 | -8.65 |
| 2,137.0 | 9.40 | 217.90 | 2,126.0 | -2,692.0 | -123.3 | -80.6 | -111.9 | 1.37 | -0.46 | 7.44 |
| 2,409.0 | 10.50 | 227.40 | 2,394.0 | -2,424.0 | -157.6 | -112.5 | -141.8 | 0.73 | 0.40 | 3.49 |

Survey Report



| | | | |
|------------------|---------------------------------|-------------------------------------|---------------------------|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well RIEDER 18T-321 |
| Project: | WELD COUNTY, COLORADO | TVD Reference: | KB @ 4818.0usft (ENS 135) |
| Site: | SE SE SEC. 18 T4N R67W 6th P.M. | MD Reference: | KB @ 4818.0usft (ENS 135) |
| Well: | RIEDER 18T-321 | North Reference: | True |
| Wellbore: | JOB # 2015-043-135 | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL SURVEYS | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|---------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 2,680.0 | 10.30 | 218.80 | 2,660.5 | -2,157.5 | -193.2 | -145.8 | -172.8 | 0.58 | -0.07 | -3.17 |
| 2,952.0 | 10.30 | 223.20 | 2,928.1 | -1,889.9 | -229.9 | -177.7 | -205.1 | 0.29 | 0.00 | 1.62 |
| 3,223.0 | 9.20 | 217.50 | 3,195.2 | -1,622.8 | -264.8 | -207.5 | -235.8 | 0.54 | -0.41 | -2.10 |
| 3,494.0 | 9.60 | 229.90 | 3,462.6 | -1,355.4 | -296.5 | -238.0 | -263.3 | 0.76 | 0.15 | 4.58 |
| 3,765.0 | 10.10 | 221.70 | 3,729.6 | -1,088.4 | -328.8 | -271.0 | -291.1 | 0.55 | 0.18 | -3.03 |
| 4,036.0 | 9.90 | 224.40 | 3,996.5 | -821.5 | -363.2 | -303.2 | -321.0 | 0.19 | -0.07 | 1.00 |
| 4,307.0 | 8.90 | 218.10 | 4,263.9 | -554.1 | -396.3 | -332.4 | -350.1 | 0.53 | -0.37 | -2.32 |
| 4,578.0 | 10.10 | 219.00 | 4,531.2 | -286.8 | -431.3 | -360.3 | -381.2 | 0.45 | 0.44 | 0.33 |
| 4,849.0 | 9.50 | 225.80 | 4,798.2 | -19.8 | -465.4 | -391.3 | -411.0 | 0.48 | -0.22 | 2.51 |
| 5,121.0 | 9.40 | 218.10 | 5,066.5 | 248.5 | -498.5 | -421.1 | -440.0 | 0.47 | -0.04 | -2.83 |
| 5,392.0 | 8.70 | 227.40 | 5,334.2 | 516.2 | -529.8 | -449.8 | -467.3 | 0.60 | -0.26 | 3.43 |
| 5,664.0 | 10.20 | 224.30 | 5,602.5 | 784.5 | -561.0 | -481.8 | -494.1 | 0.58 | 0.55 | -1.14 |
| 5,935.0 | 10.20 | 213.20 | 5,869.2 | 1,051.2 | -598.2 | -511.7 | -527.2 | 0.72 | 0.00 | -4.10 |
| 6,025.0 | 9.20 | 210.50 | 5,957.9 | 1,139.9 | -611.1 | -519.7 | -538.9 | 1.22 | -1.11 | -3.00 |
| 6,116.0 | 7.60 | 218.70 | 6,048.0 | 1,230.0 | -622.0 | -527.1 | -548.8 | 2.19 | -1.76 | 9.01 |
| 6,206.0 | 5.40 | 235.40 | 6,137.4 | 1,319.4 | -629.1 | -534.4 | -554.9 | 3.20 | -2.44 | 18.56 |
| 6,297.0 | 1.60 | 223.10 | 6,228.2 | 1,410.2 | -632.5 | -538.8 | -557.6 | 4.23 | -4.18 | -13.52 |
| 6,387.0 | 2.10 | 357.50 | 6,318.2 | 1,500.2 | -631.7 | -539.7 | -556.8 | 3.80 | 0.56 | 149.33 |
| 6,477.0 | 2.00 | 355.50 | 6,408.1 | 1,590.1 | -628.5 | -539.9 | -553.6 | 0.14 | -0.11 | -2.22 |
| KOP | | | | | | | | | | |
| 6,521.0 | 6.82 | 3.64 | 6,452.0 | 1,634.0 | -625.1 | -539.8 | -550.2 | 11.03 | 10.96 | 18.51 |
| 6,568.0 | 12.00 | 5.10 | 6,498.3 | 1,680.3 | -617.5 | -539.2 | -542.7 | 11.03 | 11.02 | 3.10 |
| 6,658.0 | 21.90 | 2.00 | 6,584.3 | 1,766.3 | -591.3 | -537.7 | -517.0 | 11.04 | 11.00 | -3.44 |
| 6,748.0 | 30.90 | 3.90 | 6,664.8 | 1,846.8 | -551.4 | -535.6 | -477.7 | 10.04 | 10.00 | 2.11 |
| 6,838.0 | 34.50 | 359.80 | 6,740.6 | 1,922.6 | -502.8 | -534.1 | -429.7 | 4.69 | 4.00 | -4.56 |
| 6,929.0 | 40.10 | 357.60 | 6,812.9 | 1,994.9 | -447.7 | -535.4 | -374.9 | 6.32 | 6.15 | -2.42 |
| 7,019.0 | 45.00 | 356.10 | 6,879.2 | 2,061.2 | -387.0 | -538.8 | -314.2 | 5.56 | 5.44 | -1.67 |
| 7,109.0 | 55.00 | 354.90 | 6,937.0 | 2,119.0 | -318.4 | -544.2 | -245.4 | 11.16 | 11.11 | -1.33 |
| 7,199.0 | 62.60 | 357.60 | 6,983.6 | 2,165.6 | -241.6 | -549.2 | -168.7 | 8.82 | 8.44 | 3.00 |
| 7,290.0 | 70.60 | 359.30 | 7,019.7 | 2,201.7 | -158.2 | -551.4 | -85.7 | 8.96 | 8.79 | 1.87 |
| 7,380.0 | 77.90 | 359.50 | 7,044.1 | 2,226.1 | -71.6 | -552.3 | 0.3 | 8.11 | 8.11 | 0.22 |
| 7,403.0 | 81.30 | 359.50 | 7,048.3 | 2,230.3 | -49.0 | -552.5 | 22.7 | 14.78 | 14.78 | 0.00 |
| ICP | | | | | | | | | | |
| 7,426.0 | 82.94 | 0.24 | 7,051.4 | 2,233.4 | -26.2 | -552.6 | 45.3 | 7.80 | 7.12 | 3.22 |
| 7,497.0 | 88.00 | 2.50 | 7,057.0 | 2,239.0 | 44.5 | -550.9 | 115.2 | 7.80 | 7.13 | 3.18 |
| 7,587.0 | 89.10 | 3.20 | 7,059.3 | 2,241.3 | 134.4 | -546.4 | 203.8 | 1.45 | 1.22 | 0.78 |
| 7,678.0 | 91.00 | 4.20 | 7,059.2 | 2,241.2 | 225.2 | -540.5 | 293.0 | 2.36 | 2.09 | 1.10 |
| 7,766.4 | 91.40 | 3.50 | 7,057.4 | 2,239.4 | 313.4 | -534.6 | 379.7 | 0.91 | 0.45 | -0.79 |
| 7,859.0 | 92.10 | 3.00 | 7,054.5 | 2,236.5 | 405.8 | -529.4 | 470.7 | 0.93 | 0.76 | -0.54 |
| 7,949.0 | 92.00 | 0.30 | 7,051.3 | 2,233.3 | 495.7 | -526.8 | 559.5 | 3.00 | -0.11 | -3.00 |
| 8,039.0 | 91.20 | 359.60 | 7,048.8 | 2,230.8 | 585.6 | -526.8 | 648.7 | 1.18 | -0.89 | -0.78 |
| 8,129.0 | 91.60 | 358.80 | 7,046.6 | 2,228.6 | 675.6 | -528.1 | 738.1 | 0.99 | 0.44 | -0.89 |
| 8,220.0 | 91.90 | 358.00 | 7,043.8 | 2,225.8 | 766.5 | -530.6 | 828.6 | 0.94 | 0.33 | -0.88 |
| 8,310.0 | 89.10 | 357.00 | 7,043.1 | 2,225.1 | 856.4 | -534.6 | 918.2 | 3.30 | -3.11 | -1.11 |
| 8,400.0 | 89.70 | 0.00 | 7,044.0 | 2,226.0 | 946.4 | -536.9 | 1,007.7 | 3.40 | 0.67 | 3.33 |
| 8,491.0 | 89.70 | 359.90 | 7,044.5 | 2,226.5 | 1,037.4 | -537.0 | 1,098.0 | 0.11 | 0.00 | -0.11 |
| 8,581.0 | 89.90 | 358.80 | 7,044.8 | 2,226.8 | 1,127.3 | -538.0 | 1,187.4 | 1.24 | 0.22 | -1.22 |
| 8,671.0 | 90.00 | 358.20 | 7,044.9 | 2,226.9 | 1,217.3 | -540.4 | 1,276.9 | 0.68 | 0.11 | -0.67 |
| 8,761.0 | 90.20 | 359.10 | 7,044.7 | 2,226.7 | 1,307.3 | -542.5 | 1,366.4 | 1.02 | 0.22 | 1.00 |
| 8,851.0 | 89.70 | 358.10 | 7,044.8 | 2,226.8 | 1,397.3 | -544.7 | 1,455.9 | 1.24 | -0.56 | -1.11 |
| 8,942.0 | 91.30 | 1.00 | 7,044.0 | 2,226.0 | 1,488.2 | -545.4 | 1,546.2 | 3.64 | 1.76 | 3.19 |
| 9,032.0 | 93.10 | 0.70 | 7,040.5 | 2,222.5 | 1,578.2 | -544.1 | 1,635.2 | 2.03 | 2.00 | -0.33 |
| 9,123.0 | 92.40 | 359.60 | 7,036.2 | 2,218.2 | 1,669.1 | -543.8 | 1,725.3 | 1.43 | -0.77 | -1.21 |

Survey Report



| | | | |
|------------------|---------------------------------|-------------------------------------|---------------------------|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well RIEDER 18T-321 |
| Project: | WELD COUNTY, COLORADO | TVD Reference: | KB @ 4818.0usft (ENS 135) |
| Site: | SE SE SEC. 18 T4N R67W 6th P.M. | MD Reference: | KB @ 4818.0usft (ENS 135) |
| Well: | RIEDER 18T-321 | North Reference: | True |
| Wellbore: | JOB # 2015-043-135 | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL SURVEYS | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|-----------------------------|-----------------|-------------|-----------------------|---------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | Subsea Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 9,213.0 | 91.20 | 359.40 | 7,033.3 | 2,215.3 | 1,759.0 | -544.6 | 1,814.6 | 1.35 | -1.33 | -0.22 |
| 9,304.0 | 89.30 | 357.70 | 7,032.9 | 2,214.9 | 1,850.0 | -546.9 | 1,905.1 | 2.80 | -2.09 | -1.87 |
| 9,394.0 | 91.10 | 0.20 | 7,032.6 | 2,214.6 | 1,939.9 | -548.6 | 1,994.5 | 3.42 | 2.00 | 2.78 |
| 9,485.0 | 89.00 | 0.80 | 7,032.6 | 2,214.6 | 2,030.9 | -547.8 | 2,084.6 | 2.40 | -2.31 | 0.66 |
| 9,575.0 | 89.60 | 2.40 | 7,033.7 | 2,215.7 | 2,120.9 | -545.3 | 2,173.5 | 1.90 | 0.67 | 1.78 |
| 9,666.0 | 92.20 | 2.90 | 7,032.2 | 2,214.2 | 2,211.8 | -541.1 | 2,263.1 | 2.91 | 2.86 | 0.55 |
| 9,757.0 | 92.80 | 1.60 | 7,028.3 | 2,210.3 | 2,302.6 | -537.5 | 2,352.7 | 1.57 | 0.66 | -1.43 |
| 9,847.0 | 90.90 | 0.80 | 7,025.3 | 2,207.3 | 2,392.5 | -535.6 | 2,441.7 | 2.29 | -2.11 | -0.89 |
| 9,937.0 | 89.60 | 359.50 | 7,025.0 | 2,207.0 | 2,482.5 | -535.4 | 2,530.9 | 2.04 | -1.44 | -1.44 |
| 10,028.0 | 89.60 | 358.60 | 7,025.6 | 2,207.6 | 2,573.5 | -536.9 | 2,621.3 | 0.99 | 0.00 | -0.99 |
| 10,118.0 | 88.50 | 357.50 | 7,027.1 | 2,209.1 | 2,663.5 | -539.9 | 2,710.9 | 1.73 | -1.22 | -1.22 |
| 10,209.0 | 89.60 | 359.10 | 7,028.6 | 2,210.6 | 2,754.4 | -542.6 | 2,801.4 | 2.13 | 1.21 | 1.76 |
| 10,299.0 | 91.90 | 359.60 | 7,027.4 | 2,209.4 | 2,844.4 | -543.7 | 2,890.8 | 2.62 | 2.56 | 0.56 |
| 10,389.0 | 92.60 | 359.10 | 7,023.9 | 2,205.9 | 2,934.3 | -544.7 | 2,980.1 | 0.96 | 0.78 | -0.56 |
| 10,480.0 | 88.60 | 358.30 | 7,022.9 | 2,204.9 | 3,025.2 | -546.7 | 3,070.5 | 4.48 | -4.40 | -0.88 |
| 10,571.0 | 90.40 | 358.80 | 7,023.7 | 2,205.7 | 3,116.2 | -549.0 | 3,161.0 | 2.05 | 1.98 | 0.55 |
| 10,661.0 | 90.40 | 357.40 | 7,023.1 | 2,205.1 | 3,206.2 | -552.0 | 3,250.6 | 1.56 | 0.00 | -1.56 |
| 10,751.0 | 88.10 | 358.80 | 7,024.3 | 2,206.3 | 3,296.1 | -555.0 | 3,340.2 | 2.99 | -2.56 | 1.56 |
| 10,842.0 | 87.50 | 1.00 | 7,027.8 | 2,209.8 | 3,387.0 | -555.2 | 3,430.3 | 2.50 | -0.66 | 2.42 |
| 10,932.0 | 88.80 | 2.30 | 7,030.7 | 2,212.7 | 3,476.9 | -552.6 | 3,519.2 | 2.04 | 1.44 | 1.44 |
| 11,023.0 | 91.00 | 3.20 | 7,030.8 | 2,212.8 | 3,567.8 | -548.2 | 3,608.7 | 2.61 | 2.42 | 0.99 |
| 11,113.0 | 90.80 | 1.30 | 7,029.4 | 2,211.4 | 3,657.7 | -544.7 | 3,697.4 | 2.12 | -0.22 | -2.11 |
| 11,203.0 | 90.50 | 358.00 | 7,028.4 | 2,210.4 | 3,747.7 | -545.2 | 3,786.7 | 3.68 | -0.33 | -3.67 |
| 11,293.0 | 90.30 | 354.30 | 7,027.8 | 2,209.8 | 3,837.5 | -551.3 | 3,876.5 | 4.12 | -0.22 | -4.11 |
| 11,384.0 | 90.10 | 354.90 | 7,027.4 | 2,209.4 | 3,928.1 | -559.8 | 3,967.5 | 0.70 | -0.22 | 0.66 |
| 11,475.0 | 91.00 | 355.20 | 7,026.6 | 2,208.6 | 4,018.7 | -567.7 | 4,058.4 | 1.04 | 0.99 | 0.33 |
| LAST SURVEY - JUNE 10, 2015 | | | | | | | | | | |
| 11,538.0 | 91.70 | 354.50 | 7,025.1 | 2,207.1 | 4,081.5 | -573.3 | 4,121.3 | 1.57 | 1.11 | -1.11 |
| EXTRAPOLATION TO TD | | | | | | | | | | |
| 11,591.0 | 91.70 | 354.50 | 7,023.5 | 2,205.5 | 4,134.2 | -578.4 | 4,174.3 | 0.00 | 0.00 | 0.00 |

Survey Report



| | | | |
|------------------|---------------------------------|-------------------------------------|---------------------------|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well RIEDER 18T-321 |
| Project: | WELD COUNTY, COLORADO | TVD Reference: | KB @ 4818.0usft (ENS 135) |
| Site: | SE SE SEC. 18 T4N R67W 6th P.M. | MD Reference: | KB @ 4818.0usft (ENS 135) |
| Well: | RIEDER 18T-321 | North Reference: | True |
| Wellbore: | JOB # 2015-043-135 | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL SURVEYS | Database: | EDM 5000.1 Single User Db |

| Targets | | | | | | | | | |
|--|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|-----------|-------------|
| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
| BHL - RIEDER 18T-321 - survey misses target center by 40.1usft at 11587.9usft MD (7023.6 TVD, 4131.1 N, -578.1 E) - Point | 0.00 | 0.00 | 7,022.0 | 4,134.9 | -538.2 | 1,359,640.58 | 3,159,605.44 | 40.319200 | -104.927610 |
| EXIST VERT EVERY-BF - survey misses target center by 539.3usft at 8598.7usft MD (7044.8 TVD, 1145.0 N, -538.4 E) - Circle (radius 30.0) | 0.00 | 0.00 | 7,191.0 | 1,158.5 | -19.5 | 1,356,667.73 | 3,160,143.35 | 40.311030 | -104.925750 |
| KOP - RIEDER 18T-321 - survey misses target center by 9.4usft at 6546.2usft MD (6476.9 TVD, -621.5 N, -539.5 E) - Point | 0.00 | 0.00 | 6,478.4 | -630.7 | -538.2 | 1,354,875.29 | 3,159,636.29 | 40.306119 | -104.927610 |
| EXIST VERT STARCK 1 - survey misses target center by 2091.1usft at 8896.6usft MD (7044.7 TVD, 1442.9 N, -545.6 E) - Circle (radius 30.0) | 0.00 | 0.00 | 7,790.0 | 1,434.0 | -2,499.4 | 1,356,927.19 | 3,157,661.88 | 40.311786 | -104.934642 |
| EXIST VERT BEIN 6-18 - survey misses target center by 2088.3usft at 10219.1usft MD (7028.6 TVD, 2764.4 N, -542.8 E) - Circle (radius 30.0) | 0.00 | 0.00 | 7,755.0 | 2,751.7 | -2,500.6 | 1,358,244.80 | 3,157,652.08 | 40.315403 | -104.934647 |
| 7" ICP *NEW* - RIEDER - survey misses target center by 13.9usft at 7347.6usft MD (7036.6 TVD, -103.2 N, -552.0 E) - Point | 0.00 | 0.00 | 7,035.0 | -102.6 | -538.2 | 1,355,403.36 | 3,159,632.87 | 40.307568 | -104.927610 |
| EXIST VERT BEIN 3-18 - survey misses target center by 1827.5usft at 11591.0usft MD (7023.5 TVD, 4134.2 N, -578.4 E) - Circle (radius 30.0) | 0.00 | 0.00 | 7,263.0 | 4,280.7 | -2,384.2 | 1,359,774.44 | 3,157,758.61 | 40.319600 | -104.934230 |
| EXIST VERT STARCK 1 - survey misses target center by 2080.1usft at 7497.0usft MD (7057.0 TVD, 44.5 N, -550.9 E) - Circle (radius 30.0) | 0.00 | 0.00 | 7,797.0 | 106.5 | -2,493.9 | 1,355,599.78 | 3,157,675.92 | 40.308142 | -104.934622 |

| Survey Annotations | | | | |
|--------------------------|--------------------------|-------------------|-----------------|-----------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 902.0 | 902.0 | -1.0 | -2.4 | SURFACE CASING |
| 6,521.0 | 6,452.0 | -625.1 | -539.8 | KOP |
| 7,426.0 | 7,051.4 | -26.2 | -552.6 | ICP |
| 11,538.0 | 7,025.1 | 4,081.5 | -573.3 | LAST SURVEY - JUNE 10, 2015 |
| 11,591.0 | 7,023.5 | 4,134.2 | -578.4 | EXTRAPOLATION TO TD |

| | | |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|