

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 5-T8N-R66W

Christner 8-66-5-3H

Plan A Rev 5 SideTrack

Design: Sperry MWD Survey

Sperry Drilling Services Standard Report

09 December, 2011

Well Coordinates: 1,497,026.32 N, 3,192,649.20 E (40° 41' 44.37" N, 104° 48' 18.90" W)

Ground Level: 5,192.00 ft

Local Coordinate Origin:

Centered on Well Christner 8-66-5-3H

Viewing Datum:

RKB 25' @ 5217.00ft (H&P 308)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

SPERRY-SUN DRILLING SERVICES

CERTIFIED SURVEY WORK SHEET


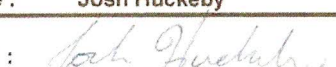
| | |
|----------------------|---------------------|
| OPERATOR: | Anadarko Pet |
| WELL: | Christner 8-66-5-3H |
| FIELD: | DJ Basin |
| RIG: | H & P 308 |
| LEGALS: | Sec 5 T8N R66W |
| COUNTY: | Weld |
| STATE: | Colorado |
| CAL. METHOD: | Min. Curv. |
| MAG. DECL. APPLIED: | 8.82 |
| VERTICAL SEC. DIR. : | 183.530 |

| | |
|---------------------------|---------------|
| SSDS Job Number : | 8257111 |
| Start Date of Job : | 10/22/2011 |
| End Date of Job : | 11/7/2011 |
| Lead Directional Driller: | Mike Robert |
| | Roy Shryack |
| Other SSDS DD's : | |
| SSDS MWD Engineers : | Josh Huckleby |
| | Ryan Elliott |
| | 0 |

Geo Pilot Engineer :

| | Main Hole =====> | | 1st Side Track =====> | | 2nd Side Track =====> | | 3rd Side Track =====> | | 4th Side Track =====> | |
|------------------------|------------------|--------|-----------------------|---------|-----------------------|---------|-----------------------|---------|-----------------------|---------|
| Surface | 961.00 | Tie-on | 6717.00 | Tie On | | Tie On | | Tie On | | Tie On |
| Wireline survey | | SS | | MWD | | | | | | |
| Wireline survey | | SS | | | | | | | | |
| | | | | | | | | | | |
| KOP Depth/Sidetrack MD | 981.00 | KOP | 6801.00 | KOP-ST1 | | KOP-ST2 | | KOP-ST3 | | KOP-ST4 |
| MWD Tie-on | | | | | | | | | | |
| | | | | | | | | | | |
| First MWD Survey Depth | 1047.00 | MWD | 6749.00 | MWD | | MWD | | MWD | | MWD |
| Last MWD Survey Depth | 7419.00 | MWD | 11375.00 | MWD | | MWD | | MWD | | MWD |
| Bit Extrapolation @ TD | 7491.00 | T.D. | 11420.00 | T.D. | | T.D. | | T.D. | | T.D. |

The following Sperry Drilling Services personnel, certify the above survey information to be accurate to the best of our knowledge:

| | | | | | |
|--------------|---|--------------|--------------|--------------|---|
| Print Name : | Mike Robert | Print Name : | Roy Shryack | Print Name : | |
| Sign Name : |  | Sign Name : | | Sign Name : | |
| Print Name : | Josh Huckleby | Print Name : | Ryan Elliott | Print Name : | 0 |
| Sign Name : |  | Sign Name : | | Sign Name : | |

Examples of
Survey Types:

| | |
|-------|--|
| TieOn | Tie On to Surface Casing (Assumed Vertical), Tie On to existing MWD Survey (prior drilled hole) |
| MWD | Sperry-Sun Drilling Services (SSDS) Measurement While Drilling (MWD) Survey's |
| ESS | Sperry-Sun Drilling Services (SSDS) Electronic Survey System (ESS) Survey's |
| Gyro | Gyro Survey's ; Provided by third party vendor, or by Sperry-Sun Drilling Services (SSDS) |
| SS | Single Shot (SS) Survey's ; Provided by Sperry-Sun Drilling Services (SSDS) or third party vendor. |

Design Report for Christner 8-66-5-3H - Sperry MWD Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 961.00 | 0.00 | 0.000 | 961.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,047.00 | 0.37 | 38.251 | 1,047.00 | 0.22 | 0.17 | -0.23 | 0.43 |
| First Sperry MWD Survey (Original Hole) at 1047.00 ft | | | | | | | |
| 1,138.00 | 0.56 | 35.151 | 1,138.00 | 0.81 | 0.61 | -0.85 | 0.20 |
| 1,261.00 | 0.50 | 33.968 | 1,260.99 | 1.74 | 1.25 | -1.81 | 0.05 |
| 1,355.00 | 0.41 | 21.918 | 1,354.99 | 2.39 | 1.60 | -2.48 | 0.13 |
| 1,450.00 | 0.42 | 35.931 | 1,449.99 | 2.99 | 1.93 | -3.10 | 0.11 |
| 1,545.00 | 0.22 | 11.797 | 1,544.98 | 3.45 | 2.18 | -3.58 | 0.25 |
| 1,640.00 | 0.52 | 35.229 | 1,639.98 | 3.99 | 2.47 | -4.13 | 0.35 |
| 1,735.00 | 0.32 | 17.665 | 1,734.98 | 4.60 | 2.80 | -4.76 | 0.25 |
| 1,830.00 | 0.71 | 3.895 | 1,829.98 | 5.44 | 2.92 | -5.61 | 0.43 |
| 1,925.00 | 0.37 | 312.174 | 1,924.97 | 6.23 | 2.73 | -6.39 | 0.59 |
| 2,019.00 | 0.39 | 321.130 | 2,018.97 | 6.69 | 2.31 | -6.82 | 0.06 |
| 2,114.00 | 0.50 | 327.190 | 2,113.97 | 7.29 | 1.88 | -7.39 | 0.13 |
| 2,208.00 | 0.59 | 304.062 | 2,207.96 | 7.90 | 1.26 | -7.96 | 0.25 |
| 2,309.00 | 0.61 | 280.233 | 2,308.96 | 8.29 | 0.30 | -8.29 | 0.24 |
| 2,404.00 | 0.74 | 275.829 | 2,403.95 | 8.44 | -0.81 | -8.37 | 0.15 |
| 2,500.00 | 0.91 | 266.449 | 2,499.94 | 8.45 | -2.18 | -8.30 | 0.22 |
| 2,595.00 | 1.55 | 267.211 | 2,594.92 | 8.34 | -4.21 | -8.07 | 0.68 |
| 2,690.00 | 1.08 | 262.622 | 2,689.89 | 8.17 | -6.38 | -7.76 | 0.51 |
| 2,785.00 | 1.40 | 250.530 | 2,784.87 | 7.67 | -8.36 | -7.14 | 0.43 |
| 2,880.00 | 1.93 | 263.353 | 2,879.83 | 7.09 | -11.04 | -6.40 | 0.68 |
| 2,975.00 | 2.18 | 254.769 | 2,974.77 | 6.43 | -14.37 | -5.54 | 0.42 |
| 3,071.00 | 2.17 | 258.838 | 3,070.70 | 5.60 | -17.92 | -4.49 | 0.16 |
| 3,166.00 | 2.78 | 260.222 | 3,165.61 | 4.86 | -21.95 | -3.50 | 0.64 |
| 3,261.00 | 0.77 | 241.379 | 3,260.56 | 4.16 | -24.79 | -2.63 | 2.17 |
| 3,357.00 | 1.49 | 231.469 | 3,356.54 | 3.08 | -26.33 | -1.45 | 0.77 |
| 3,452.00 | 1.82 | 227.035 | 3,451.50 | 1.28 | -28.39 | 0.47 | 0.38 |
| 3,547.00 | 1.85 | 232.213 | 3,546.45 | -0.68 | -30.71 | 2.57 | 0.18 |
| 3,643.00 | 2.21 | 234.185 | 3,642.39 | -2.72 | -33.44 | 4.77 | 0.38 |
| 3,738.00 | 2.31 | 242.626 | 3,737.32 | -4.67 | -36.62 | 6.92 | 0.37 |
| 3,833.00 | 2.26 | 258.942 | 3,832.25 | -5.91 | -40.16 | 8.37 | 0.68 |
| 3,929.00 | 1.99 | 244.898 | 3,928.18 | -6.98 | -43.52 | 9.64 | 0.61 |
| 4,024.00 | 2.17 | 245.421 | 4,023.12 | -8.42 | -46.65 | 11.28 | 0.20 |
| 4,119.00 | 1.78 | 243.484 | 4,118.06 | -9.83 | -49.61 | 12.87 | 0.42 |
| 4,214.00 | 1.78 | 234.985 | 4,213.02 | -11.34 | -52.14 | 14.53 | 0.28 |
| 4,309.00 | 2.16 | 224.625 | 4,307.96 | -13.46 | -54.60 | 16.80 | 0.55 |
| 4,405.00 | 2.28 | 228.849 | 4,403.89 | -16.00 | -57.31 | 19.50 | 0.21 |
| 4,500.00 | 2.43 | 237.938 | 4,498.81 | -18.31 | -60.44 | 22.00 | 0.43 |
| 4,595.00 | 2.66 | 234.999 | 4,593.71 | -20.65 | -63.95 | 24.55 | 0.27 |
| 4,690.00 | 0.62 | 259.125 | 4,688.67 | -22.01 | -66.27 | 26.05 | 2.22 |
| 4,785.00 | 1.04 | 282.216 | 4,783.66 | -21.93 | -67.62 | 26.05 | 0.55 |
| 4,880.00 | 1.30 | 275.775 | 4,878.64 | -21.64 | -69.53 | 25.88 | 0.31 |
| 4,975.00 | 2.13 | 254.633 | 4,973.60 | -22.00 | -72.31 | 26.41 | 1.09 |
| 5,071.00 | 3.26 | 221.525 | 5,069.50 | -24.51 | -75.84 | 29.14 | 1.95 |
| 5,166.00 | 2.01 | 206.876 | 5,164.40 | -28.02 | -78.38 | 32.80 | 1.48 |
| 5,261.00 | 1.50 | 209.002 | 5,259.35 | -30.59 | -79.74 | 35.45 | 0.54 |
| 5,356.00 | 0.28 | 133.099 | 5,354.34 | -31.84 | -80.17 | 36.72 | 1.54 |
| 5,451.00 | 1.01 | 120.791 | 5,449.33 | -32.44 | -79.27 | 37.26 | 0.78 |
| 5,547.00 | 2.11 | 62.831 | 5,545.30 | -32.06 | -76.97 | 36.75 | 1.87 |

Design Report for Christner 8-66-5-3H - Sperry MWD Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 5,642.00 | 3.09 | 39.901 | 5,640.20 | -29.30 | -73.77 | 33.79 | 1.48 |
| 5,737.00 | 4.10 | 29.127 | 5,735.02 | -24.37 | -70.47 | 28.66 | 1.27 |
| 5,833.00 | 5.75 | 20.929 | 5,830.66 | -16.88 | -67.09 | 20.98 | 1.86 |
| 5,928.00 | 7.78 | 15.383 | 5,924.99 | -6.23 | -63.68 | 10.15 | 2.25 |
| 6,023.00 | 8.35 | 13.334 | 6,019.05 | 6.68 | -60.38 | -2.95 | 0.67 |
| 6,118.00 | 8.73 | 11.978 | 6,113.00 | 20.45 | -57.29 | -16.88 | 0.46 |
| 6,213.00 | 9.93 | 7.500 | 6,206.74 | 35.63 | -54.73 | -32.19 | 1.47 |
| 6,309.00 | 10.91 | 11.249 | 6,301.16 | 52.75 | -51.87 | -49.46 | 1.24 |
| 6,372.00 | 11.36 | 13.498 | 6,362.97 | 64.64 | -49.26 | -61.48 | 1.00 |
| 6,431.00 | 11.30 | 10.601 | 6,420.82 | 75.97 | -46.84 | -72.94 | 0.97 |
| 6,495.00 | 10.95 | 10.768 | 6,483.62 | 88.10 | -44.55 | -85.19 | 0.54 |
| 6,526.00 | 9.31 | 10.770 | 6,514.14 | 93.46 | -43.53 | -90.60 | 5.28 |
| 6,558.00 | 6.27 | 10.068 | 6,545.84 | 97.72 | -42.75 | -94.90 | 9.53 |
| 6,590.00 | 3.01 | 16.586 | 6,577.73 | 100.24 | -42.20 | -97.45 | 10.30 |
| 6,622.00 | 2.34 | 19.331 | 6,609.69 | 101.66 | -41.75 | -98.90 | 2.13 |
| 6,653.00 | 0.99 | 35.508 | 6,640.68 | 102.48 | -41.38 | -99.73 | 4.55 |
| 6,685.00 | 2.26 | 165.576 | 6,672.67 | 102.09 | -41.06 | -99.37 | 9.37 |
| 6,717.00 | 5.70 | 183.526 | 6,704.59 | 99.90 | -41.00 | -97.18 | 11.28 |
| 6,749.00 | 0.81 | 179.926 | 6,736.53 | 98.08 | -41.10 | -95.37 | 15.27 |
| First Sperry MWD Survey (ST1) at 6749.00 ft | | | | | | | |
| 6,781.00 | 1.01 | 184.616 | 6,768.53 | 97.58 | -41.12 | -94.86 | 0.66 |
| 6,812.00 | 2.41 | 193.262 | 6,799.51 | 96.67 | -41.29 | -93.94 | 4.60 |
| 6,844.00 | 4.32 | 199.887 | 6,831.45 | 94.88 | -41.86 | -92.12 | 6.09 |
| 6,876.00 | 5.50 | 196.956 | 6,863.34 | 92.28 | -42.72 | -89.47 | 3.77 |
| 6,908.00 | 6.64 | 184.701 | 6,895.16 | 88.97 | -43.32 | -86.13 | 5.38 |
| 6,939.00 | 8.53 | 174.937 | 6,925.89 | 84.89 | -43.26 | -82.06 | 7.35 |
| 6,971.00 | 10.27 | 171.592 | 6,957.45 | 79.70 | -42.63 | -76.92 | 5.71 |
| 7,003.00 | 12.17 | 171.904 | 6,988.84 | 73.54 | -41.74 | -70.83 | 5.92 |
| 7,035.00 | 14.36 | 172.735 | 7,019.99 | 66.27 | -40.76 | -63.63 | 6.87 |
| 7,066.00 | 17.34 | 174.415 | 7,049.81 | 57.86 | -39.83 | -55.29 | 9.73 |
| 7,098.00 | 20.22 | 176.145 | 7,080.10 | 47.59 | -38.99 | -45.10 | 9.18 |
| 7,130.00 | 22.46 | 177.427 | 7,109.90 | 35.96 | -38.35 | -33.53 | 7.16 |
| 7,160.00 | 25.26 | 179.475 | 7,137.34 | 23.84 | -38.03 | -21.45 | 9.71 |
| 7,192.00 | 28.01 | 179.643 | 7,165.94 | 9.49 | -37.92 | -7.14 | 8.60 |
| 7,224.00 | 31.47 | 181.433 | 7,193.72 | -6.37 | -38.08 | 8.71 | 11.18 |
| 7,256.00 | 33.14 | 182.619 | 7,220.77 | -23.46 | -38.69 | 25.80 | 5.56 |
| 7,288.00 | 32.30 | 181.155 | 7,247.69 | -40.75 | -39.26 | 43.09 | 3.59 |
| 7,319.00 | 31.80 | 180.586 | 7,273.97 | -57.20 | -39.51 | 59.52 | 1.90 |
| 7,351.00 | 33.53 | 181.753 | 7,300.90 | -74.46 | -39.87 | 76.78 | 5.76 |
| 7,383.00 | 37.45 | 183.568 | 7,326.95 | -93.02 | -40.75 | 95.35 | 12.69 |
| 7,414.00 | 41.47 | 185.034 | 7,350.88 | -112.66 | -42.23 | 115.05 | 13.30 |
| 7,446.00 | 45.93 | 184.907 | 7,374.01 | -134.68 | -44.15 | 137.14 | 13.94 |
| 7,478.00 | 50.10 | 184.554 | 7,395.41 | -158.38 | -46.11 | 160.92 | 13.07 |
| 7,509.00 | 54.75 | 184.019 | 7,414.31 | -182.88 | -47.94 | 185.48 | 15.06 |
| 7,541.00 | 59.76 | 184.710 | 7,431.61 | -209.70 | -49.99 | 212.39 | 15.74 |
| 7,573.00 | 64.60 | 183.927 | 7,446.54 | -237.92 | -52.12 | 240.67 | 15.27 |
| 7,604.00 | 69.62 | 184.186 | 7,458.60 | -266.39 | -54.14 | 269.22 | 16.23 |
| 7,636.00 | 75.03 | 184.463 | 7,468.31 | -296.78 | -56.44 | 299.70 | 16.91 |
| 7,668.00 | 80.53 | 184.848 | 7,475.08 | -327.94 | -58.98 | 330.95 | 17.24 |
| 7,699.00 | 83.57 | 183.774 | 7,479.37 | -358.55 | -61.28 | 361.65 | 10.40 |
| 7,731.00 | 86.03 | 182.947 | 7,482.27 | -390.37 | -63.15 | 393.52 | 8.09 |

Design Report for Christner 8-66-5-3H - Sperry MWD Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 7,771.40 | 88.99 | 182.609 | 7,484.03 | -430.68 | -65.11 | 433.87 | 7.38 |
| 7" Int. Casing Shoe at 7771.40 ft | | | | | | | |
| 7,802.00 | 91.24 | 182.353 | 7,483.96 | -461.24 | -66.43 | 464.46 | 7.38 |
| 7,898.00 | 93.33 | 181.839 | 7,480.14 | -557.10 | -69.94 | 560.35 | 2.25 |
| 7,992.00 | 96.31 | 181.289 | 7,472.23 | -650.72 | -72.50 | 653.95 | 3.22 |
| 8,087.00 | 96.00 | 181.331 | 7,462.04 | -745.15 | -74.66 | 748.33 | 0.33 |
| 8,183.00 | 95.94 | 181.887 | 7,452.06 | -840.59 | -77.34 | 843.76 | 0.58 |
| 8,278.00 | 90.25 | 182.248 | 7,446.93 | -935.35 | -80.76 | 938.55 | 6.01 |
| 8,373.00 | 89.63 | 182.805 | 7,447.03 | -1,030.26 | -84.95 | 1,033.53 | 0.88 |
| 8,468.00 | 88.33 | 182.913 | 7,448.72 | -1,125.12 | -89.68 | 1,128.51 | 1.37 |
| 8,563.00 | 88.58 | 183.047 | 7,451.28 | -1,219.96 | -94.62 | 1,223.47 | 0.30 |
| 8,659.00 | 87.16 | 182.058 | 7,454.85 | -1,315.79 | -98.89 | 1,319.39 | 1.80 |
| 8,754.00 | 88.02 | 181.921 | 7,458.84 | -1,410.65 | -102.19 | 1,414.27 | 0.92 |
| 8,849.00 | 87.41 | 181.555 | 7,462.63 | -1,505.53 | -105.07 | 1,509.14 | 0.76 |
| 8,944.00 | 87.28 | 181.437 | 7,467.03 | -1,600.40 | -107.55 | 1,603.98 | 0.18 |
| 9,040.00 | 89.26 | 182.460 | 7,469.93 | -1,696.29 | -110.81 | 1,699.89 | 2.32 |
| 9,135.00 | 91.36 | 182.899 | 7,469.42 | -1,791.18 | -115.25 | 1,794.88 | 2.26 |
| 9,231.00 | 90.00 | 183.235 | 7,468.28 | -1,887.03 | -120.38 | 1,890.86 | 1.46 |
| 9,326.00 | 88.58 | 183.284 | 7,469.46 | -1,981.87 | -125.79 | 1,985.85 | 1.50 |
| 9,422.00 | 87.10 | 183.165 | 7,473.08 | -2,077.65 | -131.18 | 2,081.78 | 1.55 |
| 9,517.00 | 88.21 | 183.677 | 7,476.98 | -2,172.40 | -136.85 | 2,176.70 | 1.29 |
| 9,613.00 | 89.69 | 184.256 | 7,478.74 | -2,268.15 | -143.49 | 2,272.68 | 1.66 |
| 9,708.00 | 88.70 | 185.008 | 7,480.07 | -2,362.82 | -151.16 | 2,367.65 | 1.31 |
| 9,803.00 | 94.33 | 185.596 | 7,477.55 | -2,457.35 | -159.93 | 2,462.53 | 5.95 |
| 9,898.00 | 95.19 | 186.263 | 7,469.67 | -2,551.51 | -169.71 | 2,557.12 | 1.15 |
| 9,993.00 | 96.37 | 184.910 | 7,460.10 | -2,645.58 | -178.91 | 2,651.57 | 1.88 |
| 10,088.00 | 95.57 | 184.862 | 7,450.23 | -2,739.72 | -186.96 | 2,746.03 | 0.84 |
| 10,183.00 | 93.65 | 185.163 | 7,442.59 | -2,834.04 | -195.23 | 2,840.69 | 2.05 |
| 10,278.00 | 94.08 | 185.346 | 7,436.19 | -2,928.43 | -203.91 | 2,935.43 | 0.50 |
| 10,374.00 | 93.15 | 185.110 | 7,430.14 | -3,023.84 | -212.64 | 3,031.19 | 1.00 |
| 10,469.00 | 91.85 | 183.271 | 7,425.99 | -3,118.49 | -219.58 | 3,126.09 | 2.37 |
| 10,564.00 | 89.75 | 182.512 | 7,424.66 | -3,213.35 | -224.37 | 3,221.07 | 2.35 |
| 10,660.00 | 90.49 | 183.475 | 7,424.45 | -3,309.22 | -229.38 | 3,317.06 | 1.27 |
| 10,755.00 | 87.53 | 182.296 | 7,426.09 | -3,404.07 | -234.16 | 3,412.03 | 3.36 |
| 10,851.00 | 86.17 | 182.204 | 7,431.37 | -3,499.85 | -237.92 | 3,507.86 | 1.42 |
| 10,946.00 | 85.12 | 182.646 | 7,438.59 | -3,594.49 | -241.93 | 3,602.57 | 1.20 |
| 11,041.00 | 89.20 | 181.983 | 7,443.30 | -3,689.27 | -245.76 | 3,697.41 | 4.35 |
| 11,136.00 | 88.39 | 181.115 | 7,445.30 | -3,784.22 | -248.33 | 3,792.33 | 1.25 |
| 11,231.00 | 90.56 | 182.133 | 7,446.17 | -3,879.17 | -251.02 | 3,887.26 | 2.52 |
| 11,327.00 | 90.99 | 182.229 | 7,444.88 | -3,975.09 | -254.68 | 3,983.23 | 0.46 |
| 11,375.00 | 91.67 | 182.325 | 7,443.77 | -4,023.04 | -256.58 | 4,031.20 | 1.42 |
| Final Sperry MWD Survey (ST1) at 11375.00 ft | | | | | | | |
| 11,420.00 | 91.67 | 182.320 | 7,442.46 | -4,067.98 | -258.40 | 4,076.17 | 0.01 |
| Straight Line Projection to TD (ST1) at 11420.00 ft | | | | | | | |

Design Report for Christner 8-66-5-3H - Sperry MWD Survey**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------|---------------------|-------------------|------------|---|
| | | +N/-S (ft) | +E/-W (ft) | |
| 1,047.00 | 1,047.00 | 0.22 | 0.17 | First Sperry MWD Survey (Original Hole) at 1047.00 ft |
| 6,749.00 | 6,736.53 | 98.08 | -41.10 | First Sperry MWD Survey (ST1) at 6749.00 ft |
| 7,771.40 | 7,484.03 | -430.68 | -65.11 | 7" Int. Casing Shoe at 7771.40 ft |
| 11,375.00 | 7,443.77 | -4,023.04 | -256.58 | Final Sperry MWD Survey (ST1) at 11375.00 ft |
| 11,420.00 | 7,442.46 | -4,067.98 | -258.40 | Straight Line Projection to TD (ST1) at 11420.00 ft |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin +N/-S (ft) | Origin +E/-W (ft) | Start TVD (ft) |
|------------|---|-------------|-------------|-------------------|-------------------|----------------|
| Target | Christner 8-66-5-3H_Plan A-5_BHL Tgt | 183.533 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (ft) | To (ft) | Survey/Plan | Survey Tool |
|-----------|-----------|------------------------------------|-------------|
| 1,047.00 | 7,471.00 | Sperry MWD Surveys (Original Hole) | MWD |
| 6,749.00 | 11,420.00 | Sperry MWD Surveys (Sidetrack) | MWD |

Targets

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Christner 8-66-5-3H_ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,497,026.32 | 3,192,649.20 | 40.695658 | -104.805250 |
| - actual wellpath misses target center by 961.00ft at 961.00ft MD (961.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Christner 8-66-5-3H_ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,497,026.32 | 3,192,649.20 | 40.695658 | -104.805250 |
| - actual wellpath misses target center by 961.00ft at 961.00ft MD (961.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Polygon | | | | | | | | | |
| Point 1 | | | | 3,124.38 | -4,122.99 | 1,492,927.99 | 3,195,805.75 | | |
| Point 2 | | | | 3,143.68 | -2,103.56 | 1,494,947.49 | 3,195,809.23 | | |
| Point 3 | | | | 3,161.02 | -352.57 | 1,496,698.54 | 3,195,812.85 | | |
| Point 4 | | | | 1,142.90 | -351.39 | 1,496,683.90 | 3,193,794.81 | | |
| Point 5 | | | | -875.09 | -350.21 | 1,496,669.27 | 3,191,776.89 | | |
| Point 6 | | | | -948.51 | -4,070.27 | 1,492,948.80 | 3,191,732.62 | | |
| Point 7 | | | | 1,080.57 | -4,097.88 | 1,492,937.09 | 3,193,761.83 | | |
| Point 8 | | | | 3,124.38 | -4,122.99 | 1,492,927.99 | 3,195,805.75 | | |
| Christner 8-66-5-3H_ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,497,026.32 | 3,192,649.20 | 40.695658 | -104.805250 |
| - actual wellpath misses target center by 961.00ft at 961.00ft MD (961.00 TVD, 0.00 N, 0.00 E) | | | | | | | | | |
| - Polygon | | | | | | | | | |
| Point 1 | | | | 3,724.39 | -4,722.99 | 1,492,332.72 | 3,196,410.43 | | |
| Point 2 | | | | 3,743.68 | -2,103.56 | 1,494,952.19 | 3,196,409.20 | | |
| Point 3 | | | | 3,761.02 | 247.43 | 1,497,303.21 | 3,196,408.12 | | |
| Point 4 | | | | 1,142.89 | 248.61 | 1,497,283.88 | 3,193,790.10 | | |
| Point 5 | | | | -1,475.09 | 249.78 | 1,497,264.54 | 3,191,172.22 | | |
| Point 6 | | | | -1,548.51 | -4,670.28 | 1,492,344.12 | 3,191,137.35 | | |
| Point 7 | | | | 1,080.57 | -4,697.88 | 1,492,337.12 | 3,193,766.53 | | |
| Point 8 | | | | 3,724.39 | -4,722.99 | 1,492,332.72 | 3,196,410.43 | | |
| Christner 8-66-5-3H_ | 0.00 | 0.00 | 7,471.90 | -4,083.40 | -252.11 | 1,492,941.13 | 3,192,429.10 | 40.684450 | -104.806159 |
| - actual wellpath misses target center by 33.83ft at 11420.00ft MD (7442.46 TVD, -4067.98 N, -258.40 E) | | | | | | | | | |
| - Point | | | | | | | | | |

North Reference Sheet for Sec. 5-T8N-R66W - Christner 8-66-5-3H - Plan A Rev 5 SideTrack

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB 25' @ 5217.00ft (H&P 308). Northing and Easting are relative to Christner 8-66-5-3H

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99998695

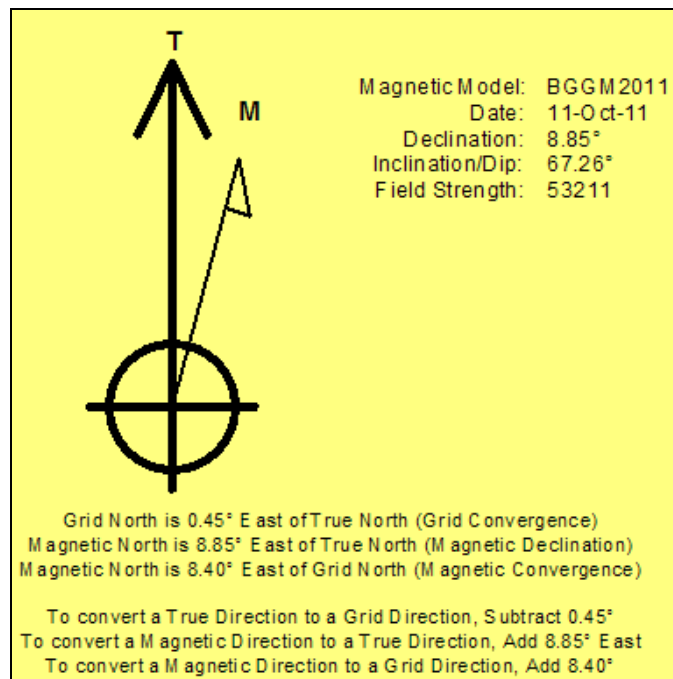
Grid Coordinates of Well: 1,497,026.32 ft N, 3,192,649.20 ft E

Geographical Coordinates of Well: 40° 41' 44.37" N, 104° 48' 18.90" W

Grid Convergence at Surface is: 0.45°

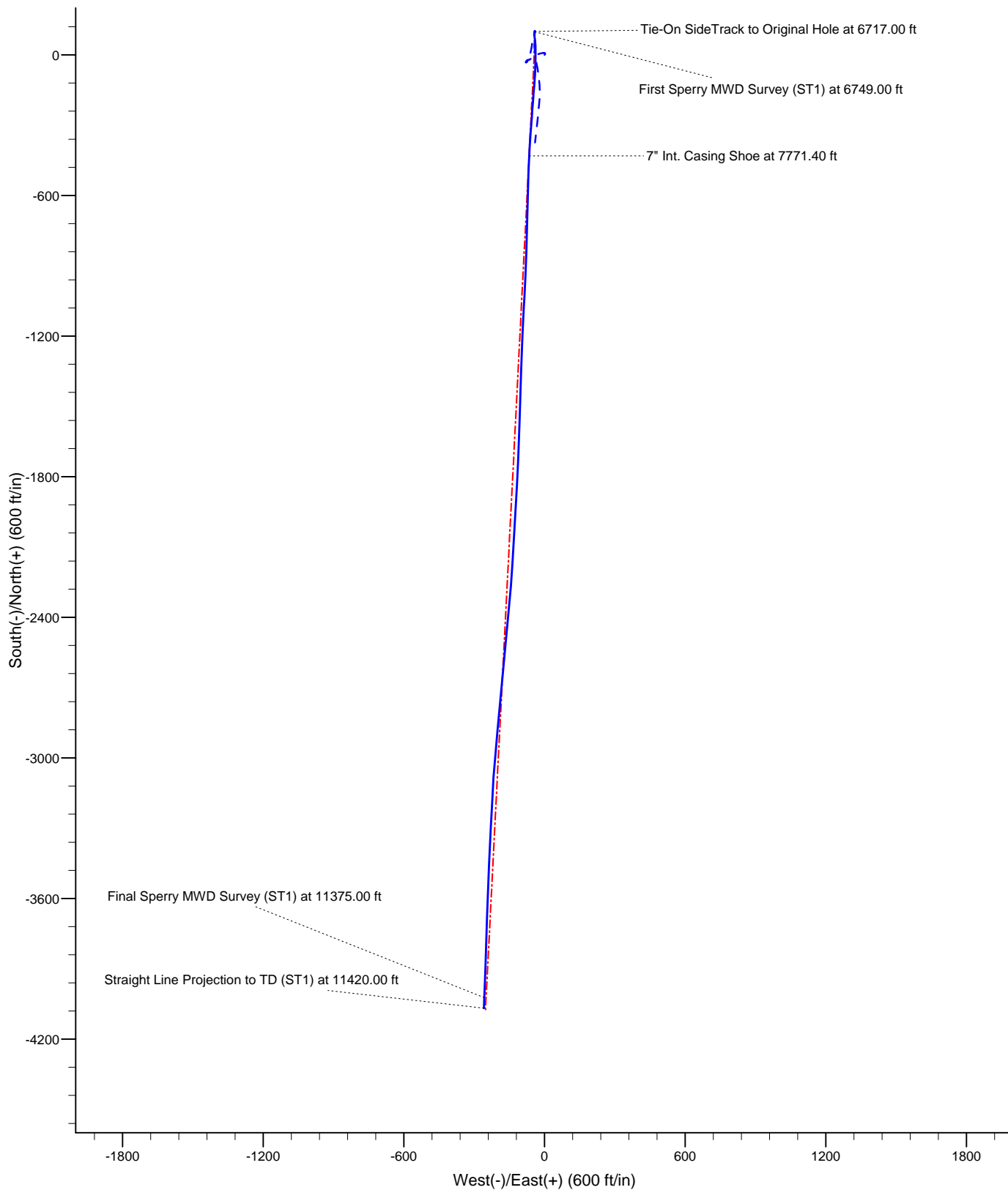
Based upon Minimum Curvature type calculations, at a Measured Depth of 11,420.00ft
the Bottom Hole Displacement is 4,076.18ft in the Direction of 183.63° (True).

Magnetic Convergence at surface is: -8.40° (11 October 2011, , BGGM2011)



LEGEND

- Christner 8-66-5-3H, Plan A Rev 5 SideTrack, Plan A Rev 5 ST Proposal V0
- - - Christner 8-66-5-3H, Plan A Rev 5 SideTrack, Sperry MWD Surveys (Original Hole)
- Sperry MWD Surveys (Sidetrack)



Project: Weld County, CO (NAD 83)
Site: Sec. 5-T8N-R66W
Well: Christner 8-66-5-3H

Anadarko Petroleum Corp.

