

# Cub Creek Energy, LLC

|                     |                        |                 |                          |
|---------------------|------------------------|-----------------|--------------------------|
| <b>Location</b>     | <b>Weld County, CO</b> | <b>Slot</b>     | <b>KNIGHT 12</b>         |
| <b>Field</b>        | <b>WATTENBERG</b>      | <b>Well</b>     | <b>W KNIGHT 12</b>       |
| <b>Installation</b> | <b>Knight Pad</b>      | <b>Wellbore</b> | <b>W KNIGHT 12 (PWB)</b> |

**N**

GRID

## WELL PROFILE DATA

| Point                   | MD       | Inc   | Azi    | TVD     | North      | East     | deg/100ft | V. Sect  |
|-------------------------|----------|-------|--------|---------|------------|----------|-----------|----------|
| Tie on                  | 17.00    | 0.00  | 0.00   | 17.00   | S 0.00     | W 0.00   |           | -0.00    |
| KOP                     | 1517.00  | 0.00  | 321.55 | 1517.00 | S 0.00     | W 0.00   | 0.00      | -0.00    |
| End of Build            | 2346.92  | 16.60 | 321.55 | 2335.36 | N 93.49    | W 74.22  | 2.00      | -86.85   |
| End of Hold             | 6408.02  | 16.60 | 321.55 | 6227.23 | N 1002.08  | W 795.55 | 0.00      | -930.92  |
| Target Knight 12 EP     | 7437.59  | 90.00 | 179.84 | 6917.00 | N 443.35   | W 921.36 | 10.00     | -363.53  |
| T.D. & Target Kni... BH | 18333.79 | 90.00 | 179.84 | 6917.00 | S 10452.80 | W 890.64 | 0.00      | 10490.68 |

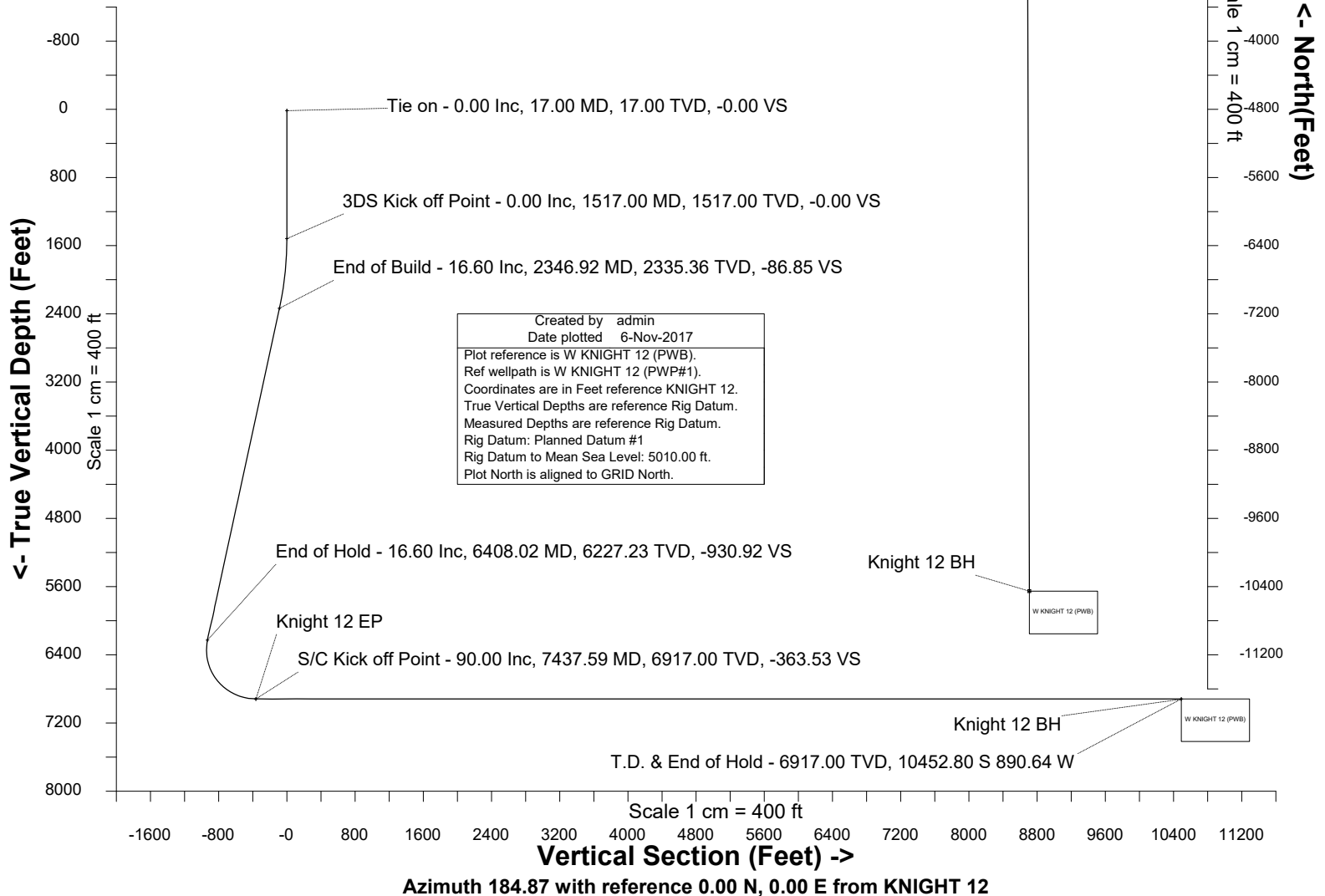
**East (Feet) ->**

-1600 -800 0 800  
Scale 1 cm = 400 ft

Surface 0.00 N 0.00 E

Knight 12 EP

**<- North(Feet)**  
Scale 1 cm = 400 ft





SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 12 (PWB)



### Wellhead Details

| Name      | Latitude    | Longitude     | Northing     | Easting      | North   | East  | Slot Elevation Above Ground |
|-----------|-------------|---------------|--------------|--------------|---------|-------|-----------------------------|
| KNIGHT 12 | 40.19759000 | -105.04196000 | 1315154.9915 | 3127949.1891 | 163.92S | 3.64E | 0.00                        |

### Declination

| Date       | Source                   | Time  |
|------------|--------------------------|-------|
| Nov-6-2017 | EMM-2015 [2000.0-2020.0] | 14:52 |

### Installation Details

| Name       | Installation Position (Latitude) | Installation Position (Longitude) | Northing     | Easting      | Coord System Name                          | North Alignment |
|------------|----------------------------------|-----------------------------------|--------------|--------------|--------------------------------------------|-----------------|
| Knight Pad | 40.19804000                      | -105.04197000                     | 1315318.9022 | 3127945.5490 | CO83-NF on NORTH AMERICAN DATUM 1983 datum | Grid            |

### Summary Wellpath

| MD[ft]   | Inc[deg] | Azi[deg] | TVD[ft] | North[ft] | East[ft] | Dogleg [deg/100ft] | Vertical Section[ft] | Northing   | Easting    |
|----------|----------|----------|---------|-----------|----------|--------------------|----------------------|------------|------------|
| 17.00    | 0.00     | 0.000    | 17.00   | 0.00N     | 0.00E    |                    | 0.00                 | 1315154.99 | 3127949.19 |
| 1517.00  | 0.00     | 321.550  | 1517.00 | 0.00N     | 0.00E    | ==>                | 0.00                 | 1315154.99 | 3127949.19 |
| 2346.92  | 16.60    | 321.550  | 2335.36 | 93.49N    | 74.22W   | 2.00               | -86.85               | 1315248.48 | 3127874.97 |
| 6408.02  | 16.60    | 321.550  | 6227.23 | 1002.08N  | 795.55W  | ==>                | -930.92              | 1316157.02 | 3127153.68 |
| 7437.59  | 90.00    | 179.840  | 6917.00 | 443.35N   | 921.36W  | 10.00              | -363.53              | 1315598.32 | 3127027.87 |
| 18333.79 | 90.00    | 179.840  | 6917.00 | 10452.80S | 890.64W  | ==>                | 10490.68             | 1304702.66 | 3127058.59 |

### Interpolated Wellpath

| MD[ft]  | Inc[deg] | Azi[deg] | TVD[ft] | North[ft] | East[ft] | Dogleg [deg/100ft] | Vertical Section[ft] | All Station Comments |
|---------|----------|----------|---------|-----------|----------|--------------------|----------------------|----------------------|
| 0.00    | 0.00     | 0.000    | 0.00    | 0.00N     | 0.00E    |                    | 0.00                 | Rig Datum            |
| 17.00   | 0.00     | 0.000    | 17.00   | 0.00N     | 0.00E    | ==>                | 0.00                 | Slot Datum           |
| 100.00  | 0.00     | 0.000    | 100.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 200.00  | 0.00     | 0.000    | 200.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 300.00  | 0.00     | 0.000    | 300.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 400.00  | 0.00     | 0.000    | 400.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 500.00  | 0.00     | 0.000    | 500.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 600.00  | 0.00     | 0.000    | 600.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 700.00  | 0.00     | 0.000    | 700.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 800.00  | 0.00     | 0.000    | 800.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 900.00  | 0.00     | 0.000    | 900.00  | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1000.00 | 0.00     | 0.000    | 1000.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1100.00 | 0.00     | 0.000    | 1100.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1200.00 | 0.00     | 0.000    | 1200.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1300.00 | 0.00     | 0.000    | 1300.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1400.00 | 0.00     | 0.000    | 1400.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1500.00 | 0.00     | 0.000    | 1500.00 | 0.00N     | 0.00E    | ==>                | 0.00                 |                      |
| 1600.00 | 1.66     | 321.550  | 1599.99 | 0.94N     | 0.75W    | 2.00               | -0.87                |                      |
| 1700.00 | 3.66     | 321.550  | 1699.88 | 4.58N     | 3.63W    | 2.00               | -4.25                |                      |
| 1800.00 | 5.66     | 321.550  | 1799.54 | 10.94N    | 8.68W    | 2.00               | -10.16               |                      |
| 1900.00 | 7.66     | 321.550  | 1898.86 | 20.02N    | 15.90W   | 2.00               | -18.60               |                      |
| 2000.00 | 9.66     | 321.550  | 1997.71 | 31.81N    | 25.26W   | 2.00               | -29.55               |                      |
| 2100.00 | 11.66    | 321.550  | 2095.98 | 46.30N    | 36.76W   | 2.00               | -43.01               |                      |
| 2200.00 | 13.66    | 321.550  | 2193.55 | 63.46N    | 50.38W   | 2.00               | -58.96               |                      |
| 2300.00 | 15.66    | 321.550  | 2290.29 | 83.28N    | 66.12W   | 2.00               | -77.37               |                      |
| 2400.00 | 16.60    | 321.550  | 2386.23 | 105.37N   | 83.65W   | ==>                | -97.89               |                      |
| 2500.00 | 16.60    | 321.550  | 2482.06 | 127.74N   | 101.41W  | ==>                | -118.67              |                      |
| 2600.00 | 16.60    | 321.550  | 2577.89 | 150.11N   | 119.18W  | ==>                | -139.45              |                      |
| 2700.00 | 16.60    | 321.550  | 2673.73 | 172.49N   | 136.94W  | ==>                | -160.24              |                      |
| 2800.00 | 16.60    | 321.550  | 2769.56 | 194.86N   | 154.70W  | ==>                | -181.02              |                      |
| 2900.00 | 16.60    | 321.550  | 2865.39 | 217.23N   | 172.46W  | ==>                | -201.81              |                      |
| 3000.00 | 16.60    | 321.550  | 2961.23 | 239.61N   | 190.22W  | ==>                | -222.59              |                      |
| 3100.00 | 16.60    | 321.550  | 3057.06 | 261.98N   | 207.98W  | ==>                | -243.38              |                      |

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5010.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 184.870 degrees  
Bottom hole distance is 10490.68 Feet on azimuth 184.87 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Microsoft  
Date Printed: 1-Dec-2017



SYS DRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 12 (PWB)



| Interpolated Wellpath |          |          |         |           |          |                       |                         |                         |
|-----------------------|----------|----------|---------|-----------|----------|-----------------------|-------------------------|-------------------------|
| MD[ft]                | Inc[deg] | Azi[deg] | TVD[ft] | North[ft] | East[ft] | Dogleg<br>[deg/100ft] | Vertical<br>Section[ft] | All Station<br>Comments |
| 3200.00               | 16.60    | 321.550  | 3152.89 | 284.35N   | 225.75W  | ==>                   | -264.16                 |                         |
| 3300.00               | 16.60    | 321.550  | 3248.73 | 306.72N   | 243.51W  | ==>                   | -284.94                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 3400.00               | 16.60    | 321.550  | 3344.56 | 329.10N   | 261.27W  | ==>                   | -305.73                 |                         |
| 3500.00               | 16.60    | 321.550  | 3440.39 | 351.47N   | 279.03W  | ==>                   | -326.51                 |                         |
| 3600.00               | 16.60    | 321.550  | 3536.22 | 373.84N   | 296.79W  | ==>                   | -347.30                 |                         |
| 3700.00               | 16.60    | 321.550  | 3632.06 | 396.22N   | 314.56W  | ==>                   | -368.08                 |                         |
| 3800.00               | 16.60    | 321.550  | 3727.89 | 418.59N   | 332.32W  | ==>                   | -388.86                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 3900.00               | 16.60    | 321.550  | 3823.72 | 440.96N   | 350.08W  | ==>                   | -409.65                 |                         |
| 4000.00               | 16.60    | 321.550  | 3919.56 | 463.33N   | 367.84W  | ==>                   | -430.43                 |                         |
| 4100.00               | 16.60    | 321.550  | 4015.39 | 485.71N   | 385.60W  | ==>                   | -451.22                 |                         |
| 4200.00               | 16.60    | 321.550  | 4111.22 | 508.08N   | 403.36W  | ==>                   | -472.00                 |                         |
| 4300.00               | 16.60    | 321.550  | 4207.06 | 530.45N   | 421.13W  | ==>                   | -492.79                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 4400.00               | 16.60    | 321.550  | 4302.89 | 552.83N   | 438.89W  | ==>                   | -513.57                 |                         |
| 4500.00               | 16.60    | 321.550  | 4398.72 | 575.20N   | 456.65W  | ==>                   | -534.35                 |                         |
| 4600.00               | 16.60    | 321.550  | 4494.56 | 597.57N   | 474.41W  | ==>                   | -555.14                 |                         |
| 4700.00               | 16.60    | 321.550  | 4590.39 | 619.94N   | 492.17W  | ==>                   | -575.92                 |                         |
| 4800.00               | 16.60    | 321.550  | 4686.22 | 642.32N   | 509.94W  | ==>                   | -596.71                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 4900.00               | 16.60    | 321.550  | 4782.05 | 664.69N   | 527.70W  | ==>                   | -617.49                 |                         |
| 5000.00               | 16.60    | 321.550  | 4877.89 | 687.06N   | 545.46W  | ==>                   | -638.27                 |                         |
| 5100.00               | 16.60    | 321.550  | 4973.72 | 709.44N   | 563.22W  | ==>                   | -659.06                 |                         |
| 5200.00               | 16.60    | 321.550  | 5069.55 | 731.81N   | 580.98W  | ==>                   | -679.84                 |                         |
| 5300.00               | 16.60    | 321.550  | 5165.39 | 754.18N   | 598.74W  | ==>                   | -700.63                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 5400.00               | 16.60    | 321.550  | 5261.22 | 776.55N   | 616.51W  | ==>                   | -721.41                 |                         |
| 5500.00               | 16.60    | 321.550  | 5357.05 | 798.93N   | 634.27W  | ==>                   | -742.20                 |                         |
| 5600.00               | 16.60    | 321.550  | 5452.89 | 821.30N   | 652.03W  | ==>                   | -762.98                 |                         |
| 5700.00               | 16.60    | 321.550  | 5548.72 | 843.67N   | 669.79W  | ==>                   | -783.76                 |                         |
| 5800.00               | 16.60    | 321.550  | 5644.55 | 866.05N   | 687.55W  | ==>                   | -804.55                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 5900.00               | 16.60    | 321.550  | 5740.38 | 888.42N   | 705.32W  | ==>                   | -825.33                 |                         |
| 6000.00               | 16.60    | 321.550  | 5836.22 | 910.79N   | 723.08W  | ==>                   | -846.12                 |                         |
| 6100.00               | 16.60    | 321.550  | 5932.05 | 933.17N   | 740.84W  | ==>                   | -866.90                 |                         |
| 6200.00               | 16.60    | 321.550  | 6027.88 | 955.54N   | 758.60W  | ==>                   | -887.68                 |                         |
| 6300.00               | 16.60    | 321.550  | 6123.72 | 977.91N   | 776.36W  | ==>                   | -908.47                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 6400.00               | 16.60    | 321.550  | 6219.55 | 1000.28N  | 794.13W  | ==>                   | -929.25                 |                         |
| 6500.00               | 11.11    | 289.730  | 6316.63 | 1015.39N  | 812.10W  | 10.00                 | -942.78                 |                         |
| 6600.00               | 12.17    | 238.780  | 6414.82 | 1013.17N  | 830.22W  | 10.00                 | -939.03                 |                         |
| 6700.00               | 19.24    | 211.780  | 6511.15 | 993.66N   | 847.96W  | 10.00                 | -918.08                 |                         |
| 6800.00               | 28.11    | 200.060  | 6602.69 | 957.42N   | 864.76W  | 10.00                 | -880.55                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 6900.00               | 37.52    | 193.750  | 6686.66 | 905.58N   | 880.12W  | 10.00                 | -827.59                 |                         |
| 7000.00               | 47.15    | 189.700  | 6760.51 | 839.71N   | 893.58W  | 10.00                 | -760.81                 |                         |
| 7100.00               | 56.88    | 186.760  | 6821.99 | 761.80N   | 904.71W  | 10.00                 | -682.24                 |                         |
| 7200.00               | 66.66    | 184.410  | 6869.25 | 674.22N   | 913.19W  | 10.00                 | -594.26                 |                         |
| 7300.00               | 76.47    | 182.380  | 6900.83 | 579.63N   | 918.76W  | 10.00                 | -499.54                 |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 7400.00               | 86.30    | 180.520  | 6915.79 | 480.92N   | 921.24W  | 10.00                 | -400.97                 |                         |
| 7500.00               | 90.00    | 179.840  | 6917.00 | 380.94N   | 921.19W  | ==>                   | -301.36                 |                         |
| 7600.00               | 90.00    | 179.840  | 6917.00 | 280.94N   | 920.90W  | ==>                   | -201.75                 |                         |
| 7700.00               | 90.00    | 179.840  | 6917.00 | 180.95N   | 920.62W  | ==>                   | -102.13                 |                         |
| 7800.00               | 90.00    | 179.840  | 6917.00 | 80.95N    | 920.34W  | ==>                   | -2.52                   |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 7900.00               | 90.00    | 179.840  | 6917.00 | 19.05S    | 920.06W  | ==>                   | 97.10                   |                         |
| 8000.00               | 90.00    | 179.840  | 6917.00 | 119.05S   | 919.78W  | ==>                   | 196.71                  |                         |
| 8100.00               | 90.00    | 179.840  | 6917.00 | 219.05S   | 919.49W  | ==>                   | 296.33                  |                         |
| 8200.00               | 90.00    | 179.840  | 6917.00 | 319.05S   | 919.21W  | ==>                   | 395.94                  |                         |
| 8300.00               | 90.00    | 179.840  | 6917.00 | 419.05S   | 918.93W  | ==>                   | 495.55                  |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 8400.00               | 90.00    | 179.840  | 6917.00 | 519.05S   | 918.65W  | ==>                   | 595.17                  |                         |
| 8500.00               | 90.00    | 179.840  | 6917.00 | 619.05S   | 918.37W  | ==>                   | 694.78                  |                         |
| 8600.00               | 90.00    | 179.840  | 6917.00 | 719.05S   | 918.08W  | ==>                   | 794.40                  |                         |
| 8700.00               | 90.00    | 179.840  | 6917.00 | 819.05S   | 917.80W  | ==>                   | 894.01                  |                         |
| 8800.00               | 90.00    | 179.840  | 6917.00 | 919.05S   | 917.52W  | ==>                   | 993.63                  |                         |
|                       |          |          |         |           |          |                       |                         |                         |
| 8900.00               | 90.00    | 179.840  | 6917.00 | 1019.05S  | 917.24W  | ==>                   | 1093.24                 |                         |
| 9000.00               | 90.00    | 179.840  | 6917.00 | 1119.05S  | 916.96W  | ==>                   | 1192.86                 |                         |

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5010.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 184.870 degrees  
Bottom hole distance is 10490.68 Feet on azimuth 184.87 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Microsoft  
Date Printed: 1-Dec-2017



SYSDRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 12 (PWB)



| Interpolated Wellpath |          |          |         |           |          |                       |                         |                         |
|-----------------------|----------|----------|---------|-----------|----------|-----------------------|-------------------------|-------------------------|
| MD[ft]                | Inc[deg] | Azi[deg] | TVD[ft] | North[ft] | East[ft] | Dogleg<br>[deg/100ft] | Vertical<br>Section[ft] | All Station<br>Comments |
| 9100.00               | 90.00    | 179.840  | 6917.00 | 1219.05S  | 916.67W  | ==>                   | 1292.47                 |                         |
| 9200.00               | 90.00    | 179.840  | 6917.00 | 1319.05S  | 916.39W  | ==>                   | 1392.09                 |                         |
| 9300.00               | 90.00    | 179.840  | 6917.00 | 1419.05S  | 916.11W  | ==>                   | 1491.70                 |                         |
| 9400.00               | 90.00    | 179.840  | 6917.00 | 1519.05S  | 915.83W  | ==>                   | 1591.32                 |                         |
| 9500.00               | 90.00    | 179.840  | 6917.00 | 1619.05S  | 915.55W  | ==>                   | 1690.93                 |                         |
| 9600.00               | 90.00    | 179.840  | 6917.00 | 1719.05S  | 915.26W  | ==>                   | 1790.54                 |                         |
| 9700.00               | 90.00    | 179.840  | 6917.00 | 1819.05S  | 914.98W  | ==>                   | 1890.16                 |                         |
| 9800.00               | 90.00    | 179.840  | 6917.00 | 1919.05S  | 914.70W  | ==>                   | 1989.77                 |                         |
| 9900.00               | 90.00    | 179.840  | 6917.00 | 2019.05S  | 914.42W  | ==>                   | 2089.39                 |                         |
| 10000.00              | 90.00    | 179.840  | 6917.00 | 2119.05S  | 914.14W  | ==>                   | 2189.00                 |                         |
| 10100.00              | 90.00    | 179.840  | 6917.00 | 2219.05S  | 913.85W  | ==>                   | 2288.62                 |                         |
| 10200.00              | 90.00    | 179.840  | 6917.00 | 2319.04S  | 913.57W  | ==>                   | 2388.23                 |                         |
| 10300.00              | 90.00    | 179.840  | 6917.00 | 2419.04S  | 913.29W  | ==>                   | 2487.85                 |                         |
| 10400.00              | 90.00    | 179.840  | 6917.00 | 2519.04S  | 913.01W  | ==>                   | 2587.46                 |                         |
| 10500.00              | 90.00    | 179.840  | 6917.00 | 2619.04S  | 912.73W  | ==>                   | 2687.08                 |                         |
| 10600.00              | 90.00    | 179.840  | 6917.00 | 2719.04S  | 912.44W  | ==>                   | 2786.69                 |                         |
| 10700.00              | 90.00    | 179.840  | 6917.00 | 2819.04S  | 912.16W  | ==>                   | 2886.31                 |                         |
| 10800.00              | 90.00    | 179.840  | 6917.00 | 2919.04S  | 911.88W  | ==>                   | 2985.92                 |                         |
| 10900.00              | 90.00    | 179.840  | 6917.00 | 3019.04S  | 911.60W  | ==>                   | 3085.53                 |                         |
| 11000.00              | 90.00    | 179.840  | 6917.00 | 3119.04S  | 911.32W  | ==>                   | 3185.15                 |                         |
| 11100.00              | 90.00    | 179.840  | 6917.00 | 3219.04S  | 911.03W  | ==>                   | 3284.76                 |                         |
| 11200.00              | 90.00    | 179.840  | 6917.00 | 3319.04S  | 910.75W  | ==>                   | 3384.38                 |                         |
| 11300.00              | 90.00    | 179.840  | 6917.00 | 3419.04S  | 910.47W  | ==>                   | 3483.99                 |                         |
| 11400.00              | 90.00    | 179.840  | 6917.00 | 3519.04S  | 910.19W  | ==>                   | 3583.61                 |                         |
| 11500.00              | 90.00    | 179.840  | 6917.00 | 3619.04S  | 909.91W  | ==>                   | 3683.22                 |                         |
| 11600.00              | 90.00    | 179.840  | 6917.00 | 3719.04S  | 909.62W  | ==>                   | 3782.84                 |                         |
| 11700.00              | 90.00    | 179.840  | 6917.00 | 3819.04S  | 909.34W  | ==>                   | 3882.45                 |                         |
| 11800.00              | 90.00    | 179.840  | 6917.00 | 3919.04S  | 909.06W  | ==>                   | 3982.07                 |                         |
| 11900.00              | 90.00    | 179.840  | 6917.00 | 4019.04S  | 908.78W  | ==>                   | 4081.68                 |                         |
| 12000.00              | 90.00    | 179.840  | 6917.00 | 4119.04S  | 908.50W  | ==>                   | 4181.30                 |                         |
| 12100.00              | 90.00    | 179.840  | 6917.00 | 4219.04S  | 908.21W  | ==>                   | 4280.91                 |                         |
| 12200.00              | 90.00    | 179.840  | 6917.00 | 4319.04S  | 907.93W  | ==>                   | 4380.52                 |                         |
| 12300.00              | 90.00    | 179.840  | 6917.00 | 4419.04S  | 907.65W  | ==>                   | 4480.14                 |                         |
| 12400.00              | 90.00    | 179.840  | 6917.00 | 4519.04S  | 907.37W  | ==>                   | 4579.75                 |                         |
| 12500.00              | 90.00    | 179.840  | 6917.00 | 4619.04S  | 907.09W  | ==>                   | 4679.37                 |                         |
| 12600.00              | 90.00    | 179.840  | 6917.00 | 4719.04S  | 906.80W  | ==>                   | 4778.98                 |                         |
| 12700.00              | 90.00    | 179.840  | 6917.00 | 4819.03S  | 906.52W  | ==>                   | 4878.60                 |                         |
| 12800.00              | 90.00    | 179.840  | 6917.00 | 4919.03S  | 906.24W  | ==>                   | 4978.21                 |                         |
| 12900.00              | 90.00    | 179.840  | 6917.00 | 5019.03S  | 905.96W  | ==>                   | 5077.83                 |                         |
| 13000.00              | 90.00    | 179.840  | 6917.00 | 5119.03S  | 905.68W  | ==>                   | 5177.44                 |                         |
| 13100.00              | 90.00    | 179.840  | 6917.00 | 5219.03S  | 905.39W  | ==>                   | 5277.06                 |                         |
| 13200.00              | 90.00    | 179.840  | 6917.00 | 5319.03S  | 905.11W  | ==>                   | 5376.67                 |                         |
| 13300.00              | 90.00    | 179.840  | 6917.00 | 5419.03S  | 904.83W  | ==>                   | 5476.29                 |                         |
| 13400.00              | 90.00    | 179.840  | 6917.00 | 5519.03S  | 904.55W  | ==>                   | 5575.90                 |                         |
| 13500.00              | 90.00    | 179.840  | 6917.00 | 5619.03S  | 904.27W  | ==>                   | 5675.52                 |                         |
| 13600.00              | 90.00    | 179.840  | 6917.00 | 5719.03S  | 903.98W  | ==>                   | 5775.13                 |                         |
| 13700.00              | 90.00    | 179.840  | 6917.00 | 5819.03S  | 903.70W  | ==>                   | 5874.74                 |                         |
| 13800.00              | 90.00    | 179.840  | 6917.00 | 5919.03S  | 903.42W  | ==>                   | 5974.36                 |                         |
| 13900.00              | 90.00    | 179.840  | 6917.00 | 6019.03S  | 903.14W  | ==>                   | 6073.97                 |                         |
| 14000.00              | 90.00    | 179.840  | 6917.00 | 6119.03S  | 902.86W  | ==>                   | 6173.59                 |                         |
| 14100.00              | 90.00    | 179.840  | 6917.00 | 6219.03S  | 902.57W  | ==>                   | 6273.20                 |                         |
| 14200.00              | 90.00    | 179.840  | 6917.00 | 6319.03S  | 902.29W  | ==>                   | 6372.82                 |                         |
| 14300.00              | 90.00    | 179.840  | 6917.00 | 6419.03S  | 902.01W  | ==>                   | 6472.43                 |                         |
| 14400.00              | 90.00    | 179.840  | 6917.00 | 6519.03S  | 901.73W  | ==>                   | 6572.05                 |                         |
| 14500.00              | 90.00    | 179.840  | 6917.00 | 6619.03S  | 901.45W  | ==>                   | 6671.66                 |                         |
| 14600.00              | 90.00    | 179.840  | 6917.00 | 6719.03S  | 901.16W  | ==>                   | 6771.28                 |                         |
| 14700.00              | 90.00    | 179.840  | 6917.00 | 6819.03S  | 900.88W  | ==>                   | 6870.89                 |                         |
| 14800.00              | 90.00    | 179.840  | 6917.00 | 6919.03S  | 900.60W  | ==>                   | 6970.51                 |                         |
| 14900.00              | 90.00    | 179.840  | 6917.00 | 7019.03S  | 900.32W  | ==>                   | 7070.12                 |                         |

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 5010.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 184.870 degrees  
Bottom hole distance is 10490.68 Feet on azimuth 184.87 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Microsoft  
Date Printed: 1-Dec-2017



SYS DRILL  
Well Design Combined Report  
Wellbore: W KNIGHT 12 (PWB)



| Interpolated Wellpath |          |          |         |           |          |                       |                         |                         |
|-----------------------|----------|----------|---------|-----------|----------|-----------------------|-------------------------|-------------------------|
| MD[ft]                | Inc[deg] | Azi[deg] | TVD[ft] | North[ft] | East[ft] | Dogleg<br>[deg/100ft] | Vertical<br>Section[ft] | All Station<br>Comments |
| 15000.00              | 90.00    | 179.840  | 6917.00 | 7119.03S  | 900.04W  | ==>                   | 7169.73                 |                         |
| 15100.00              | 90.00    | 179.840  | 6917.00 | 7219.03S  | 899.75W  | ==>                   | 7269.35                 |                         |
| 15200.00              | 90.00    | 179.840  | 6917.00 | 7319.02S  | 899.47W  | ==>                   | 7368.96                 |                         |
| 15300.00              | 90.00    | 179.840  | 6917.00 | 7419.02S  | 899.19W  | ==>                   | 7468.58                 |                         |
| 15400.00              | 90.00    | 179.840  | 6917.00 | 7519.02S  | 898.91W  | ==>                   | 7568.19                 |                         |
| 15500.00              | 90.00    | 179.840  | 6917.00 | 7619.02S  | 898.63W  | ==>                   | 7667.81                 |                         |
| 15600.00              | 90.00    | 179.840  | 6917.00 | 7719.02S  | 898.34W  | ==>                   | 7767.42                 |                         |
| 15700.00              | 90.00    | 179.840  | 6917.00 | 7819.02S  | 898.06W  | ==>                   | 7867.04                 |                         |
| 15800.00              | 90.00    | 179.840  | 6917.00 | 7919.02S  | 897.78W  | ==>                   | 7966.65                 |                         |
| 15900.00              | 90.00    | 179.840  | 6917.00 | 8019.02S  | 897.50W  | ==>                   | 8066.27                 |                         |
| 16000.00              | 90.00    | 179.840  | 6917.00 | 8119.02S  | 897.22W  | ==>                   | 8165.88                 |                         |
| 16100.00              | 90.00    | 179.840  | 6917.00 | 8219.02S  | 896.93W  | ==>                   | 8265.50                 |                         |
| 16200.00              | 90.00    | 179.840  | 6917.00 | 8319.02S  | 896.65W  | ==>                   | 8365.11                 |                         |
| 16300.00              | 90.00    | 179.840  | 6917.00 | 8419.02S  | 896.37W  | ==>                   | 8464.72                 |                         |
| 16400.00              | 90.00    | 179.840  | 6917.00 | 8519.02S  | 896.09W  | ==>                   | 8564.34                 |                         |
| 16500.00              | 90.00    | 179.840  | 6917.00 | 8619.02S  | 895.81W  | ==>                   | 8663.95                 |                         |
| 16600.00              | 90.00    | 179.840  | 6917.00 | 8719.02S  | 895.52W  | ==>                   | 8763.57                 |                         |
| 16700.00              | 90.00    | 179.840  | 6917.00 | 8819.02S  | 895.24W  | ==>                   | 8863.18                 |                         |
| 16800.00              | 90.00    | 179.840  | 6917.00 | 8919.02S  | 894.96W  | ==>                   | 8962.80                 |                         |
| 16900.00              | 90.00    | 179.840  | 6917.00 | 9019.02S  | 894.68W  | ==>                   | 9062.41                 |                         |
| 17000.00              | 90.00    | 179.840  | 6917.00 | 9119.02S  | 894.40W  | ==>                   | 9162.03                 |                         |
| 17100.00              | 90.00    | 179.840  | 6917.00 | 9219.02S  | 894.11W  | ==>                   | 9261.64                 |                         |
| 17200.00              | 90.00    | 179.840  | 6917.00 | 9319.02S  | 893.83W  | ==>                   | 9361.26                 |                         |
| 17300.00              | 90.00    | 179.840  | 6917.00 | 9419.02S  | 893.55W  | ==>                   | 9460.87                 |                         |
| 17400.00              | 90.00    | 179.840  | 6917.00 | 9519.02S  | 893.27W  | ==>                   | 9560.49                 |                         |
| 17500.00              | 90.00    | 179.840  | 6917.00 | 9619.02S  | 892.99W  | ==>                   | 9660.10                 |                         |
| 17600.00              | 90.00    | 179.840  | 6917.00 | 9719.02S  | 892.70W  | ==>                   | 9759.72                 |                         |
| 17700.00              | 90.00    | 179.840  | 6917.00 | 9819.01S  | 892.42W  | ==>                   | 9859.33                 |                         |
| 17800.00              | 90.00    | 179.840  | 6917.00 | 9919.01S  | 892.14W  | ==>                   | 9958.94                 |                         |
| 17900.00              | 90.00    | 179.840  | 6917.00 | 10019.01S | 891.86W  | ==>                   | 10058.56                |                         |
| 18000.00              | 90.00    | 179.840  | 6917.00 | 10119.01S | 891.58W  | ==>                   | 10158.17                |                         |
| 18100.00              | 90.00    | 179.840  | 6917.00 | 10219.01S | 891.29W  | ==>                   | 10257.79                |                         |
| 18200.00              | 90.00    | 179.840  | 6917.00 | 10319.01S | 891.01W  | ==>                   | 10357.40                |                         |
| 18300.00              | 90.00    | 179.840  | 6917.00 | 10419.01S | 890.73W  | ==>                   | 10457.02                |                         |
| 18333.79              | 90.00    | 179.840  | 6917.00 | 10452.80S | 890.64W  | ==>                   | 10490.68                |                         |

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Vertical Section is from 0.00N 0.00E on azimuth 184.870 degrees  
Bottom hole distance is 10490.68 Feet on azimuth 184.87 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Microsoft  
Date Printed: 1-Dec-2017



| Targets      |           |          |         |             |               |            |            |
|--------------|-----------|----------|---------|-------------|---------------|------------|------------|
| Name         | North[ft] | East[ft] | TVD[ft] | Latitude    | Longitude     | Northing   | Easting    |
| Knight 12 EP | 443.35N   | 921.36W  | 6917.00 | 40.19882000 | -105.04525000 | 1315598.32 | 3127027.87 |
| Knight 12 BH | 10452.80S | 890.64W  | 6917.00 | 40.16891000 | -105.04534000 | 1304702.66 | 3127058.59 |

| Notes |
|-------|
|       |