



Job Number: SVGJ-141077
 Company: PDC
 Lease/Well: Schmidt 44-35
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.44°
 Grid: East To True North
 File name: S:\2014SU~1\PDC\GJ\SCHMIDT\4435.SVY
 Date/Time: 05-Sep-14 / 11:44
 Curve Name: Surface - 8000' M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane .00

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | True Vertical Depth | N-S FT | E-W FT | Vertical Section FT | C L O S U R E | | Dogleg Severity Deg/100 |
|-------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
| | | | | | | | Distance FT | Direction Deg | |
| .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 100.00 | .48 | 297.83 | 100.00 | .20 | -.37 | .20 | .42 | 297.83 | .48 |
| 200.00 | .27 | 318.80 | 200.00 | .57 | -.90 | .57 | 1.06 | 302.39 | .25 |
| 300.00 | .43 | 289.55 | 299.99 | .87 | -1.40 | .87 | 1.65 | 301.81 | .23 |
| 400.00 | .32 | 319.04 | 399.99 | 1.21 | -1.94 | 1.21 | 2.29 | 301.88 | .22 |
| 500.00 | .35 | 280.58 | 499.99 | 1.47 | -2.42 | 1.47 | 2.84 | 301.31 | .22 |
| 600.00 | .09 | 169.69 | 599.99 | 1.45 | -2.71 | 1.45 | 3.08 | 298.20 | .39 |
| 700.00 | .39 | 192.55 | 699.99 | 1.04 | -2.77 | 1.04 | 2.96 | 290.64 | .31 |
| 800.00 | .38 | 163.79 | 799.99 | .39 | -2.75 | .39 | 2.78 | 278.13 | .19 |
| 900.00 | .51 | 180.16 | 899.98 | -.37 | -2.66 | -.37 | 2.69 | 262.08 | .18 |

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | True Vertical Depth | N-S FT | E-W FT | Vertical Section FT | C L O S U R E | | Dogleg Severity Deg/100 |
|-------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
| | | | | | | | Distance FT | Direction Deg | |
| 1000.00 | .44 | 202.94 | 999.98 | -1.17 | -2.81 | -1.17 | 3.05 | 247.43 | .20 |
| 1100.00 | .48 | 189.53 | 1099.98 | -1.94 | -3.03 | -1.94 | 3.60 | 237.44 | .11 |
| 1200.00 | .37 | 226.30 | 1199.98 | -2.57 | -3.33 | -2.57 | 4.21 | 232.35 | .29 |
| 1300.00 | .24 | 230.43 | 1299.97 | -2.93 | -3.73 | -2.93 | 4.74 | 231.86 | .13 |
| 1400.00 | .47 | 232.40 | 1399.97 | -3.31 | -4.21 | -3.31 | 5.36 | 231.84 | .23 |
| 1500.00 | .24 | 239.43 | 1499.97 | -3.67 | -4.72 | -3.67 | 5.98 | 232.15 | .23 |
| 1600.00 | .60 | 256.70 | 1599.97 | -3.90 | -5.41 | -3.90 | 6.67 | 234.24 | .38 |
| 1700.00 | .58 | 259.86 | 1699.96 | -4.11 | -6.42 | -4.11 | 7.62 | 237.40 | .04 |
| 1800.00 | 1.02 | 264.73 | 1799.95 | -4.28 | -7.80 | -4.28 | 8.90 | 241.28 | .44 |
| 1900.00 | 1.28 | 274.23 | 1899.93 | -4.28 | -9.80 | -4.28 | 10.69 | 246.44 | .32 |
| 2000.00 | 1.14 | 275.01 | 1999.91 | -4.11 | -11.91 | -4.11 | 12.60 | 250.97 | .14 |
| 2100.00 | 1.46 | 277.89 | 2099.88 | -3.84 | -14.16 | -3.84 | 14.67 | 254.81 | .33 |
| 2200.00 | 1.44 | 276.63 | 2199.85 | -3.52 | -16.67 | -3.52 | 17.04 | 258.06 | .04 |
| 2300.00 | 1.80 | 282.65 | 2299.81 | -3.04 | -19.45 | -3.04 | 19.69 | 261.13 | .40 |
| 2400.00 | 1.83 | 296.11 | 2399.76 | -1.99 | -22.42 | -1.99 | 22.51 | 264.93 | .43 |
| 2500.00 | 2.17 | 300.07 | 2499.70 | -.34 | -25.49 | -.34 | 25.49 | 269.24 | .37 |
| 2600.00 | 2.37 | 302.06 | 2599.62 | 1.71 | -28.88 | 1.71 | 28.93 | 273.39 | .21 |
| 2700.00 | 2.48 | 307.82 | 2699.53 | 4.13 | -32.34 | 4.13 | 32.60 | 277.28 | .27 |
| 2800.00 | 2.23 | 307.26 | 2799.45 | 6.64 | -35.60 | 6.64 | 36.21 | 280.56 | .25 |
| 2900.00 | 1.15 | 340.88 | 2899.41 | 8.76 | -37.48 | 8.76 | 38.49 | 283.16 | 1.42 |
| 3000.00 | 1.43 | 66.13 | 2999.39 | 10.22 | -36.66 | 10.22 | 38.06 | 285.57 | 1.76 |
| 3100.00 | 1.80 | 64.26 | 3099.35 | 11.40 | -34.11 | 11.40 | 35.96 | 288.49 | .37 |
| 3200.00 | 1.51 | 94.75 | 3199.31 | 11.98 | -31.38 | 11.98 | 33.59 | 290.89 | .91 |
| 3300.00 | 1.12 | 136.67 | 3299.28 | 11.16 | -29.40 | 11.16 | 31.44 | 290.78 | 1.01 |
| 3400.00 | 1.50 | 162.75 | 3399.26 | 9.20 | -28.34 | 9.20 | 29.79 | 287.98 | .70 |
| 3500.00 | 1.50 | 186.19 | 3499.22 | 6.64 | -28.09 | 6.64 | 28.87 | 283.31 | .61 |
| 3600.00 | 1.28 | 190.85 | 3599.20 | 4.25 | -28.44 | 4.25 | 28.76 | 278.49 | .25 |
| 3700.00 | 1.48 | 185.72 | 3699.17 | 1.86 | -28.78 | 1.86 | 28.84 | 273.71 | .23 |
| 3800.00 | 1.29 | 173.86 | 3799.14 | -.54 | -28.79 | -.54 | 28.79 | 268.93 | .34 |

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | True Vertical Depth | N-S FT | E-W FT | Vertical Section FT | C L O S U R E | | Dogleg Severity Deg/100 |
|-------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
| | | | | | | | Distance FT | Direction Deg | |
| 3900.00 | 1.46 | 202.38 | 3899.11 | -2.84 | -29.15 | -2.84 | 29.29 | 264.44 | .70 |
| 4000.00 | 1.51 | 230.72 | 3999.08 | -4.85 | -30.66 | -4.85 | 31.04 | 261.01 | .73 |
| 4100.00 | 1.91 | 243.75 | 4099.03 | -6.42 | -33.17 | -6.42 | 33.79 | 259.05 | .56 |
| 4200.00 | 1.87 | 260.85 | 4198.98 | -7.42 | -36.28 | -7.42 | 37.03 | 258.45 | .56 |
| 4300.00 | 2.52 | 279.65 | 4298.91 | -7.31 | -40.06 | -7.31 | 40.72 | 259.66 | .96 |
| 4400.00 | 2.68 | 275.93 | 4398.80 | -6.70 | -44.55 | -6.70 | 45.05 | 261.45 | .23 |
| 4500.00 | 2.88 | 271.01 | 4498.69 | -6.41 | -49.39 | -6.41 | 49.80 | 262.60 | .31 |
| 4600.00 | 3.50 | 271.32 | 4598.53 | -6.30 | -54.95 | -6.30 | 55.31 | 263.46 | .62 |
| 4700.00 | 3.76 | 281.87 | 4698.33 | -5.55 | -61.21 | -5.55 | 61.46 | 264.82 | .72 |
| 4800.00 | 4.05 | 287.98 | 4798.10 | -3.79 | -67.78 | -3.79 | 67.88 | 266.80 | .51 |
| 4900.00 | 3.97 | 286.19 | 4897.85 | -1.73 | -74.46 | -1.73 | 74.48 | 268.67 | .15 |
| 5000.00 | 4.04 | 289.28 | 4997.61 | .40 | -81.11 | .40 | 81.11 | 270.28 | .23 |
| 5100.00 | 3.67 | 281.60 | 5097.38 | 2.20 | -87.57 | 2.20 | 87.60 | 271.44 | .63 |
| 5200.00 | 2.96 | 281.44 | 5197.22 | 3.36 | -93.24 | 3.36 | 93.30 | 272.06 | .71 |
| 5300.00 | 2.92 | 279.34 | 5297.09 | 4.28 | -98.28 | 4.28 | 98.37 | 272.50 | .11 |
| 5400.00 | 2.23 | 287.62 | 5396.98 | 5.29 | -102.65 | 5.29 | 102.79 | 272.95 | .78 |
| 5500.00 | 2.56 | 283.26 | 5496.90 | 6.39 | -106.68 | 6.39 | 106.87 | 273.43 | .38 |
| 5600.00 | 2.50 | 273.86 | 5596.80 | 7.05 | -111.03 | 7.05 | 111.25 | 273.63 | .42 |
| 5700.00 | 2.58 | 274.57 | 5696.70 | 7.37 | -115.45 | 7.37 | 115.68 | 273.65 | .09 |
| 5800.00 | 2.33 | 279.99 | 5796.61 | 7.90 | -119.69 | 7.90 | 119.95 | 273.78 | .34 |
| 5900.00 | 2.50 | 275.64 | 5896.52 | 8.47 | -123.86 | 8.47 | 124.15 | 273.91 | .25 |
| 6000.00 | 1.39 | 279.30 | 5996.46 | 8.88 | -127.23 | 8.88 | 127.54 | 273.99 | 1.12 |
| 6100.00 | .67 | 317.57 | 6096.45 | 9.51 | -128.82 | 9.51 | 129.17 | 274.22 | .96 |
| 6200.00 | .47 | 349.02 | 6196.44 | 10.34 | -129.30 | 10.34 | 129.71 | 274.57 | .36 |
| 6300.00 | .54 | 25.77 | 6296.44 | 11.17 | -129.17 | 11.17 | 129.65 | 274.94 | .33 |
| 6400.00 | .50 | 345.38 | 6396.43 | 12.02 | -129.07 | 12.02 | 129.63 | 275.32 | .36 |
| 6500.00 | .71 | 328.16 | 6496.43 | 12.97 | -129.51 | 12.97 | 130.16 | 275.72 | .28 |
| 6600.00 | .85 | 327.86 | 6596.42 | 14.12 | -130.23 | 14.12 | 131.00 | 276.19 | .14 |
| 6700.00 | .55 | 347.73 | 6696.41 | 15.22 | -130.73 | 15.22 | 131.61 | 276.64 | .38 |

| Measured Depth FT | Incl Angle Deg | Drift Direction Deg | True Vertical Depth | N-S FT | E-W FT | Vertical Section FT | C L O S U R E | | Dogleg Severity Deg/100 |
|-----------------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
| | | | | | | | Distance FT | Direction Deg | |
| 6800.00 | 1.12 | 321.83 | 6796.40 | 16.45 | -131.44 | 16.45 | 132.46 | 277.14 | .67 |
| 6900.00 | 1.64 | 296.21 | 6896.37 | 17.85 | -133.32 | 17.85 | 134.51 | 277.63 | .79 |
| 7000.00 | 2.07 | 293.56 | 6996.32 | 19.21 | -136.26 | 19.21 | 137.61 | 278.02 | .44 |
| 7100.00 | 2.86 | 289.15 | 7096.23 | 20.75 | -140.27 | 20.75 | 141.80 | 278.41 | .81 |
| 7200.00 | 3.07 | 303.14 | 7196.09 | 23.03 | -144.87 | 23.03 | 146.69 | 279.03 | .75 |
| 7300.00 | 4.46 | 330.61 | 7295.88 | 27.88 | -149.02 | 27.88 | 151.61 | 280.60 | 2.24 |
| 7400.00 | 9.47 | 345.84 | 7395.12 | 39.26 | -152.95 | 39.26 | 157.91 | 284.39 | 5.30 |
| 7500.00 | 8.81 | 348.32 | 7493.85 | 54.73 | -156.51 | 54.73 | 165.80 | 289.27 | .77 |
| 7600.00 | 7.56 | 335.46 | 7592.84 | 68.22 | -160.79 | 68.22 | 174.67 | 292.99 | 2.21 |
| 7700.00 | 7.92 | 331.88 | 7691.93 | 80.28 | -166.77 | 80.28 | 185.09 | 295.70 | .60 |
| 7800.00 | 6.99 | 333.66 | 7791.08 | 91.81 | -172.72 | 91.81 | 195.60 | 297.99 | .96 |
| 7900.00 | 4.25 | 345.92 | 7890.60 | 100.86 | -176.32 | 100.86 | 203.13 | 299.77 | 2.98 |
| Last Survey Depth Recorded | | | | | | | | | |
| 8000.00 | 2.75 | 354.36 | 7990.41 | 106.84 | -177.46 | 106.84 | 207.14 | 301.05 | 1.58 |