

51-01568



GASTAR EXPLORATION USA, INC.



Oil & Gas

03/30/2015

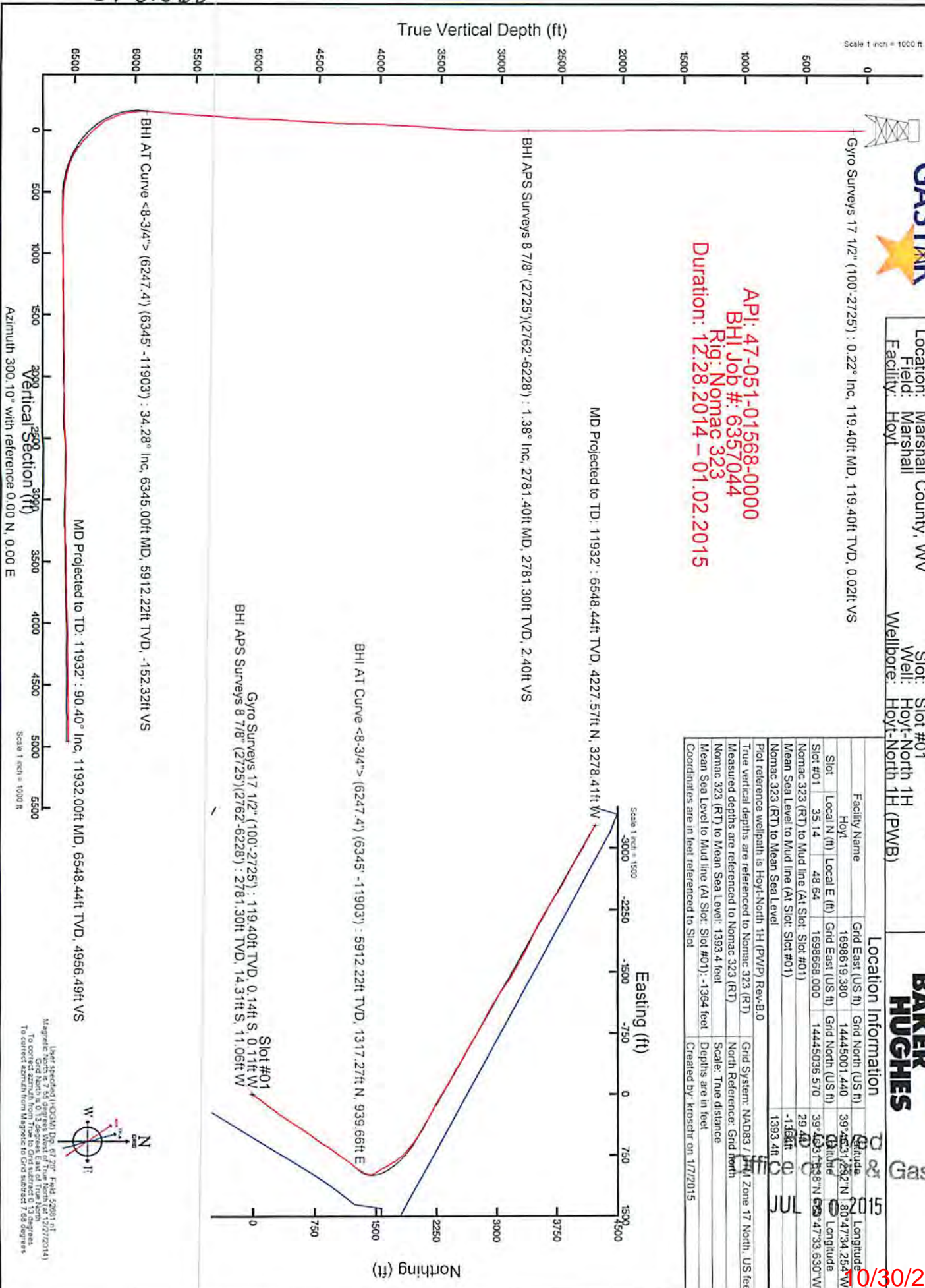
Location: Marshall County, WV
 Field: Marshall
 Facility: Hoyt

Wellbore: Hoyt-North 1H (PWB)
 Slot: Slot #01
 Well: Hoyt-North 1H
 Slot: Slot #01

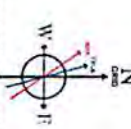
Location Information

| Facility Name | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
|--|--|--------------------|-------------------|--------------------|
| Hoyt | 1699619.380 | 14445001.440 | 39°45'31.252"N | 80°47'34.254"W |
| Slot #01 | Local E (ft) | Local N (US ft) | Grid East (US ft) | Grid North (US ft) |
| | 35.14 | 48.64 | 1699668.000 | 14445036.570 |
| Slot #01 | Nomac 323 (RT) to Mud line (AI Slot: Slot #01) | | | |
| Mean Sea Level to Mud line (AI Slot: Slot #01) | 29.40 | | | |
| Mean Sea Level to Mean Sea Level | -1.36ft | | | |
| Nomac 323 (RT) to Mean Sea Level | 1393.4ft | | | |

API: 47-051-01568-0000
 BHI Job #: 6357044
 Rig: Nomac 323
 Duration: 12.28.2014 - 01.02.2015



Uper Speed 11 (EQM) Dr. 67 2" Field 5208 ft
 Magnetic North 355.00 degrees West of True North (6/12/2014)
 To correct azimuth from True to Grid subtract 0.13 degrees
 To correct azimuth from Magnetic to Grid subtract 7.68 degrees



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|-------------------------|-----------|-----------------------------|
| Operator | GASTAR EXPLORATION INC. | Slot | Slot #1H |
| Area | Marshall County, WV | Well | Hoyt 1H |
| Field | Marshall | Wellbore | Hoyt 1H (AWB) |
| Facility | Hoyt | Wellpath | Hoyt 1H (AWP) Proj: 11.932' |
| | | Sidetrack | (none) |

WELLPATH DATA † = interpolated/extrapolated station

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [m] | Grid North [m] | Latitude | Longitude | Closure Dist [ft] | Closure DR [°] | DLS [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|---------------|----------------|----------------|----------------|-------------------|----------------|---------------|
| 0.00 | 0.00 | 217.69 | 0.00 | 0.00 | 0.00 | 0.00 | 4402855.8 | 517754.9 | 39°46'31.638"N | 80°47'33.630"W | 0.00 | 0.00 | 0.00 |
| 29.40 | 0.00 | 217.69 | 29.40 | 0.00 | 0.00 | 0.00 | 4402855.8 | 517754.9 | 39°46'31.638"N | 80°47'33.630"W | 0.00 | 0.00 | 0.00 |
| 119.40 | 0.22 | 217.69 | 119.40 | 0.02 | -0.14 | -0.11 | 4402855.8 | 517754.9 | 39°46'31.637"N | 80°47'33.631"W | 0.17 | 217.69 | 0.24 |
| 219.40 | 0.38 | 214.08 | 219.40 | 0.07 | -0.56 | -0.41 | 4402855.8 | 517754.9 | 39°46'31.632"N | 80°47'33.635"W | 0.70 | 215.97 | 0.16 |
| 319.40 | 0.16 | 215.62 | 319.40 | 0.11 | -0.95 | -0.68 | 4402855.7 | 517754.8 | 39°46'31.628"N | 80°47'33.639"W | 1.17 | 215.39 | 0.22 |
| 419.40 | 0.38 | 213.39 | 419.40 | 0.14 | -1.34 | -0.94 | 4402855.5 | 517754.8 | 39°46'31.625"N | 80°47'33.642"W | 1.64 | 215.01 | 0.22 |
| 519.40 | 0.01 | 220.07 | 519.40 | 0.16 | -1.63 | -1.13 | 4402855.5 | 517754.7 | 39°46'31.622"N | 80°47'33.644"W | 1.98 | 214.76 | 0.37 |
| 619.40 | 0.43 | 221.74 | 619.39 | 0.24 | -1.91 | -1.38 | 4402855.4 | 517754.6 | 39°46'31.619"N | 80°47'33.648"W | 2.36 | 215.89 | 0.42 |
| 719.40 | 0.59 | 217.82 | 719.39 | 0.38 | -2.60 | -1.95 | 4402855.2 | 517754.4 | 39°46'31.612"N | 80°47'33.655"W | 3.25 | 216.87 | 0.16 |
| 819.40 | 0.43 | 207.68 | 819.39 | 0.44 | -3.34 | -2.44 | 4402854.9 | 517754.3 | 39°46'31.605"N | 80°47'33.661"W | 4.13 | 216.16 | 0.18 |
| 919.40 | 0.48 | 204.62 | 919.38 | 0.38 | -4.05 | -2.79 | 4402854.7 | 517754.2 | 39°46'31.598"N | 80°47'33.666"W | 4.92 | 214.54 | 0.06 |
| 1019.40 | 0.40 | 203.05 | 1019.38 | 0.30 | -4.75 | -3.10 | 4402854.5 | 517754.1 | 39°46'31.591"N | 80°47'33.670"W | 5.67 | 213.10 | 0.08 |
| 1119.40 | 0.63 | 196.12 | 1119.38 | 0.12 | -5.60 | -3.39 | 4402854.2 | 517754.0 | 39°46'31.583"N | 80°47'33.673"W | 6.55 | 211.17 | 0.24 |
| 1219.40 | 0.27 | 197.80 | 1219.37 | -0.06 | -6.35 | -3.61 | 4402854.0 | 517753.9 | 39°46'31.575"N | 80°47'33.676"W | 7.31 | 209.62 | 0.36 |
| 1319.40 | 0.85 | 194.37 | 1319.37 | -0.31 | -7.30 | -3.87 | 4402853.7 | 517753.9 | 39°46'31.566"N | 80°47'33.680"W | 8.26 | 207.93 | 0.58 |
| 1419.40 | 0.78 | 195.59 | 1419.36 | -0.68 | -8.67 | -4.24 | 4402853.3 | 517753.8 | 39°46'31.552"N | 80°47'33.684"W | 9.65 | 206.04 | 0.07 |
| 1519.40 | 0.62 | 211.58 | 1519.35 | -0.84 | -9.79 | -4.70 | 4402853.0 | 517753.6 | 39°46'31.541"N | 80°47'33.690"W | 10.86 | 205.66 | 0.25 |
| 1619.40 | 0.73 | 210.50 | 1619.34 | -0.82 | -10.80 | -5.31 | 4402852.7 | 517753.4 | 39°46'31.531"N | 80°47'33.698"W | 12.03 | 206.18 | 0.11 |
| 1719.40 | 0.76 | 217.40 | 1719.33 | -0.73 | -11.87 | -6.04 | 4402852.3 | 517753.2 | 39°46'31.521"N | 80°47'33.707"W | 13.32 | 206.94 | 0.09 |
| 1819.40 | 0.78 | 226.38 | 1819.33 | -0.46 | -12.87 | -6.93 | 4402852.0 | 517752.9 | 39°46'31.511"N | 80°47'33.719"W | 14.62 | 208.30 | 0.12 |
| 1919.40 | 0.34 | 225.71 | 1919.32 | -0.19 | -13.55 | -7.64 | 4402851.8 | 517752.7 | 39°46'31.504"N | 80°47'33.728"W | 15.55 | 209.41 | 0.44 |
| 2019.40 | 0.40 | 219.96 | 2019.32 | -0.05 | -14.02 | -8.07 | 4402851.7 | 517752.6 | 39°46'31.499"N | 80°47'33.734"W | 16.18 | 209.93 | 0.07 |
| 2119.40 | 0.49 | 216.51 | 2119.32 | 0.06 | -14.63 | -8.55 | 4402851.5 | 517752.4 | 39°46'31.493"N | 80°47'33.740"W | 16.95 | 210.30 | 0.09 |
| 2219.40 | 0.48 | 220.70 | 2219.31 | 0.18 | -15.29 | -9.08 | 4402851.3 | 517752.3 | 39°46'31.487"N | 80°47'33.747"W | 17.79 | 210.69 | 0.04 |
| 2319.40 | 0.17 | 232.12 | 2319.31 | 0.32 | -15.70 | -9.47 | 4402851.2 | 517752.2 | 39°46'31.483"N | 80°47'33.752"W | 18.34 | 211.09 | 0.32 |

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|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|------------------|-------------------|----------------|----------------|-------------------------|-----------------------|-----------------|
| 2419.40 | 0.26 | 274.56 | 2419.31 | 0.58 | -15.78 | -9.81 | 4402851.1 | 517752.1 | 39°46'31.482"N | 80°47'33.756"W | 18.58 | 211.88 | 0.18 |
| 2519.40 | 0.31 | 308.06 | 2519.31 | 1.05 | -15.59 | -10.25 | 4402851.2 | 517751.9 | 39°46'31.484"N | 80°47'33.762"W | 18.66 | 213.33 | 0.17 |
| 2619.40 | 0.09 | 310.96 | 2619.31 | 1.39 | -15.37 | -10.52 | 4402851.3 | 517751.8 | 39°46'31.486"N | 80°47'33.765"W | 18.63 | 214.39 | 0.22 |
| 2719.40 | 0.57 | 311.79 | 2719.31 | 1.96 | -14.99 | -10.95 | 4402851.4 | 517751.7 | 39°46'31.490"N | 80°47'33.771"W | 18.57 | 216.16 | 0.48 |
| 2744.40 | 0.52 | 313.87 | 2744.30 | 2.19 | -14.83 | -11.13 | 4402851.4 | 517751.7 | 39°46'31.492"N | 80°47'33.773"W | 18.54 | 216.89 | 0.22 |
| 2781.40 | 1.38 | 24.60 | 2781.30 | 2.40 | -14.31 | -11.06 | 4402851.6 | 517751.7 | 39°46'31.497"N | 80°47'33.772"W | 18.09 | 217.72 | 3.53 |
| 2812.40 | 2.45 | 28.07 | 2812.28 | 2.46 | -13.38 | -10.60 | 4402851.9 | 517751.8 | 39°46'31.506"N | 80°47'33.766"W | 17.07 | 218.37 | 3.47 |
| 2844.40 | 3.92 | 31.59 | 2844.23 | 2.45 | -11.85 | -9.70 | 4402852.3 | 517752.1 | 39°46'31.521"N | 80°47'33.754"W | 15.31 | 219.31 | 4.63 |
| 2875.40 | 4.90 | 32.26 | 2875.14 | 2.37 | -9.83 | -8.44 | 4402853.0 | 517752.5 | 39°46'31.541"N | 80°47'33.738"W | 12.95 | 220.66 | 3.17 |
| 2907.40 | 6.14 | 32.57 | 2906.99 | 2.25 | -7.23 | -6.79 | 4402853.8 | 517753.0 | 39°46'31.567"N | 80°47'33.717"W | 9.92 | 223.21 | 3.88 |
| 2938.40 | 7.24 | 32.07 | 2937.78 | 2.11 | -4.17 | -4.86 | 4402854.7 | 517753.6 | 39°46'31.597"N | 80°47'33.692"W | 6.41 | 229.33 | 3.55 |
| 2970.40 | 8.61 | 31.42 | 2969.47 | 1.99 | -0.42 | -2.54 | 4402855.8 | 517754.3 | 39°46'31.634"N | 80°47'33.662"W | 2.57 | 260.57 | 4.29 |
| 3001.40 | 9.80 | 31.93 | 3000.07 | 1.85 | 3.80 | 0.07 | 4402857.1 | 517755.1 | 39°46'31.675"N | 80°47'33.629"W | 3.80 | 0.98 | 3.85 |
| 3033.40 | 10.63 | 32.94 | 3031.57 | 1.61 | 8.59 | 3.11 | 4402858.6 | 517756.0 | 39°46'31.723"N | 80°47'33.590"W | 9.13 | 19.91 | 2.65 |
| 3064.40 | 11.85 | 32.95 | 3061.97 | 1.32 | 13.66 | 6.40 | 4402860.1 | 517757.0 | 39°46'31.773"N | 80°47'33.547"W | 15.08 | 25.10 | 3.94 |
| 3095.40 | 13.00 | 34.79 | 3092.24 | 0.87 | 19.19 | 10.12 | 4402861.8 | 517758.1 | 39°46'31.827"N | 80°47'33.500"W | 21.69 | 27.80 | 3.92 |
| 3127.40 | 14.10 | 36.14 | 3123.35 | 0.17 | 25.30 | 14.47 | 4402863.7 | 517759.4 | 39°46'31.888"N | 80°47'33.444"W | 29.14 | 29.77 | 3.58 |
| 3159.40 | 15.43 | 36.20 | 3154.30 | -0.70 | 31.88 | 19.28 | 4402865.7 | 517760.9 | 39°46'31.952"N | 80°47'33.382"W | 37.26 | 31.17 | 4.16 |
| 3190.40 | 16.38 | 36.87 | 3184.11 | -1.65 | 38.70 | 24.34 | 4402867.7 | 517762.5 | 39°46'32.020"N | 80°47'33.317"W | 45.72 | 32.17 | 3.12 |
| 3222.40 | 17.31 | 36.72 | 3214.74 | -2.73 | 46.13 | 29.90 | 4402870.0 | 517764.1 | 39°46'32.093"N | 80°47'33.246"W | 54.97 | 32.95 | 2.91 |
| 3254.40 | 18.38 | 36.84 | 3245.20 | -3.87 | 53.98 | 35.77 | 4402872.4 | 517765.9 | 39°46'32.171"N | 80°47'33.170"W | 64.76 | 33.53 | 3.35 |
| 3285.40 | 19.56 | 37.24 | 3274.51 | -5.09 | 62.03 | 41.84 | 4402874.9 | 517767.8 | 39°46'32.250"N | 80°47'33.092"W | 74.82 | 34.00 | 3.83 |
| 3317.40 | 20.70 | 38.23 | 3304.56 | -6.55 | 70.73 | 48.58 | 4402877.5 | 517769.8 | 39°46'32.336"N | 80°47'33.006"W | 85.81 | 34.48 | 3.72 |
| 3349.40 | 21.96 | 39.48 | 3334.36 | -8.33 | 79.79 | 55.88 | 4402880.3 | 517772.1 | 39°46'32.425"N | 80°47'32.912"W | 97.42 | 35.01 | 4.19 |
| 3381.40 | 23.20 | 39.37 | 3363.91 | -10.32 | 89.29 | 63.69 | 4402883.2 | 517774.4 | 39°46'32.519"N | 80°47'32.811"W | 109.67 | 35.50 | 3.88 |
| 3412.40 | 24.49 | 38.45 | 3392.26 | -12.24 | 99.04 | 71.56 | 4402886.1 | 517776.8 | 39°46'32.615"N | 80°47'32.710"W | 122.18 | 35.85 | 4.33 |
| 3444.40 | 25.92 | 37.13 | 3421.22 | -14.06 | 109.81 | 79.90 | 4402889.4 | 517779.4 | 39°46'32.721"N | 80°47'32.603"W | 135.80 | 36.04 | 4.80 |
| 3476.40 | 27.76 | 36.60 | 3449.77 | -15.76 | 121.37 | 88.57 | 4402892.9 | 517782.0 | 39°46'32.835"N | 80°47'32.492"W | 150.25 | 36.12 | 5.80 |
| 3508.40 | 29.04 | 36.82 | 3477.92 | -17.51 | 133.57 | 97.67 | 4402896.6 | 517784.8 | 39°46'32.956"N | 80°47'32.375"W | 165.47 | 36.17 | 4.01 |
| 3539.40 | 29.95 | 37.58 | 3504.90 | -19.40 | 145.73 | 106.89 | 4402900.4 | 517787.6 | 39°46'33.076"N | 80°47'32.256"W | 180.73 | 36.26 | 3.17 |
| 3571.40 | 29.27 | 37.19 | 3532.72 | -21.40 | 158.29 | 116.50 | 4402904.2 | 517790.5 | 39°46'33.200"N | 80°47'32.133"W | 196.54 | 36.35 | 2.21 |

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| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [M] | Grid North [M] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DL [°/100ft] |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|------------------|-------------------|----------------|----------------|-------------------------|-----------------------|-----------------|
| 3603.40 | 28.16 | 36.66 | 3560.78 | -23.23 | 170.58 | 125.73 | 4402907.9 | 517793.3 | 39°46'33.321"N | 80°47'32.014"W | 211.91 | 36.39 | 3.56 |
| 3667.40 | 28.36 | 36.52 | 3617.15 | -26.66 | 194.91 | 143.80 | 4402915.3 | 517798.9 | 39°46'33.561"N | 80°47'31.782"W | 242.21 | 36.42 | 0.33 |
| 3730.40 | 29.87 | 36.70 | 3672.19 | -30.13 | 219.51 | 162.08 | 4402922.8 | 517804.4 | 39°46'33.804"N | 80°47'31.547"W | 272.86 | 36.44 | 2.40 |
| 3793.40 | 30.76 | 36.34 | 3726.58 | -33.69 | 245.07 | 181.00 | 4402930.6 | 517810.2 | 39°46'34.056"N | 80°47'31.304"W | 304.66 | 36.45 | 1.44 |
| 3857.40 | 30.67 | 35.46 | 3781.60 | -36.99 | 271.55 | 200.17 | 4402938.7 | 517816.0 | 39°46'34.317"N | 80°47'31.058"W | 337.35 | 36.40 | 0.72 |
| 3920.40 | 30.24 | 35.02 | 3835.91 | -39.85 | 297.63 | 218.59 | 4402946.6 | 517821.6 | 39°46'34.574"N | 80°47'30.821"W | 369.28 | 36.30 | 0.77 |
| 3982.40 | 30.96 | 36.37 | 3889.27 | -42.93 | 323.26 | 237.01 | 4402954.4 | 517827.3 | 39°46'34.827"N | 80°47'30.585"W | 400.83 | 36.25 | 1.61 |
| 4046.40 | 31.09 | 36.23 | 3944.12 | -46.49 | 349.84 | 256.54 | 4402962.5 | 517833.2 | 39°46'35.089"N | 80°47'30.334"W | 433.82 | 36.25 | 0.23 |
| 4109.40 | 29.14 | 33.49 | 3998.61 | -49.14 | 375.76 | 274.62 | 4402970.4 | 517838.7 | 39°46'35.345"N | 80°47'30.101"W | 465.41 | 36.16 | 3.79 |
| 4173.40 | 30.70 | 33.85 | 4054.08 | -51.13 | 402.32 | 292.32 | 4402978.5 | 517844.1 | 39°46'35.607"N | 80°47'29.874"W | 497.31 | 36.00 | 2.45 |
| 4235.40 | 32.14 | 34.16 | 4106.99 | -53.33 | 429.11 | 310.39 | 4402986.7 | 517849.6 | 39°46'35.872"N | 80°47'29.642"W | 529.61 | 35.88 | 2.34 |
| 4298.40 | 30.90 | 31.95 | 4160.70 | -55.04 | 456.71 | 328.36 | 4402995.1 | 517855.1 | 39°46'36.144"N | 80°47'29.411"W | 562.50 | 35.72 | 2.69 |
| 4360.40 | 31.36 | 31.05 | 4213.77 | -55.82 | 484.04 | 345.11 | 4403003.4 | 517860.2 | 39°46'36.414"N | 80°47'29.195"W | 594.47 | 35.49 | 1.06 |
| 4423.40 | 32.01 | 30.88 | 4267.38 | -56.32 | 512.41 | 362.14 | 4403012.1 | 517865.4 | 39°46'36.694"N | 80°47'28.976"W | 627.46 | 35.25 | 1.04 |
| 4487.40 | 31.55 | 31.69 | 4321.78 | -57.02 | 541.22 | 379.64 | 4403020.8 | 517870.7 | 39°46'36.978"N | 80°47'28.751"W | 661.09 | 35.05 | 0.98 |
| 4550.40 | 31.85 | 35.76 | 4375.39 | -59.11 | 568.74 | 398.01 | 4403029.2 | 517876.3 | 39°46'37.249"N | 80°47'28.515"W | 694.17 | 34.99 | 3.43 |
| 4614.40 | 31.52 | 35.13 | 4429.85 | -62.25 | 596.12 | 417.51 | 4403037.6 | 517882.2 | 39°46'37.520"N | 80°47'28.265"W | 727.79 | 35.01 | 0.73 |
| 4676.40 | 30.06 | 34.79 | 4483.11 | -64.94 | 622.13 | 435.69 | 4403045.5 | 517887.8 | 39°46'37.776"N | 80°47'28.031"W | 759.52 | 35.01 | 2.37 |
| 4740.40 | 30.30 | 34.18 | 4538.44 | -67.40 | 648.65 | 453.91 | 4403053.6 | 517893.3 | 39°46'38.038"N | 80°47'27.797"W | 791.69 | 34.98 | 0.61 |
| 4803.40 | 30.20 | 34.67 | 4592.86 | -69.79 | 674.83 | 471.85 | 4403061.6 | 517898.8 | 39°46'38.296"N | 80°47'27.566"W | 823.43 | 34.96 | 0.42 |
| 4864.40 | 30.38 | 35.63 | 4645.53 | -72.50 | 699.98 | 489.56 | 4403069.2 | 517904.2 | 39°46'38.544"N | 80°47'27.339"W | 854.20 | 34.97 | 0.85 |
| 4928.40 | 30.89 | 36.69 | 4700.60 | -75.94 | 726.31 | 508.81 | 4403077.2 | 517910.1 | 39°46'38.804"N | 80°47'27.091"W | 886.80 | 35.01 | 1.16 |
| 4990.40 | 31.07 | 36.85 | 4753.75 | -79.65 | 751.88 | 527.91 | 4403085.0 | 517915.9 | 39°46'39.056"N | 80°47'26.846"W | 918.70 | 35.07 | 0.32 |
| 5053.40 | 31.93 | 36.52 | 4807.47 | -83.42 | 778.27 | 547.58 | 4403093.1 | 517921.9 | 39°46'39.317"N | 80°47'26.593"W | 951.60 | 35.13 | 1.39 |
| 5115.40 | 33.67 | 36.19 | 4859.58 | -87.08 | 805.32 | 567.48 | 4403101.3 | 517927.9 | 39°46'39.584"N | 80°47'26.338"W | 985.18 | 35.17 | 2.82 |
| 5176.40 | 34.39 | 35.25 | 4910.14 | -90.42 | 833.04 | 587.41 | 4403109.8 | 517934.0 | 39°46'39.857"N | 80°47'26.081"W | 1019.32 | 35.19 | 1.46 |
| 5238.40 | 32.47 | 32.09 | 4961.88 | -92.57 | 861.44 | 606.36 | 4403118.4 | 517939.8 | 39°46'40.137"N | 80°47'25.838"W | 1053.45 | 35.14 | 4.18 |
| 5302.40 | 29.92 | 28.44 | 5016.63 | -92.71 | 890.04 | 623.09 | 4403127.1 | 517944.9 | 39°46'40.420"N | 80°47'25.623"W | 1086.47 | 35.00 | 4.96 |
| 5365.40 | 29.21 | 32.13 | 5071.43 | -92.79 | 916.88 | 638.75 | 4403135.3 | 517949.7 | 39°46'40.684"N | 80°47'25.421"W | 1117.44 | 34.86 | 3.10 |
| 5427.40 | 28.38 | 36.13 | 5125.77 | -94.88 | 941.59 | 655.49 | 4403142.8 | 517954.8 | 39°46'40.928"N | 80°47'25.206"W | 1147.28 | 34.84 | 3.38 |
| 5490.40 | 29.98 | 37.66 | 5180.77 | -98.52 | 966.15 | 673.93 | 4403150.3 | 517960.4 | 39°46'41.170"N | 80°47'24.969"W | 1177.98 | 34.90 | 2.80 |

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| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [M] | Grid North [M] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS ["/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|---------------|----------------|----------------|----------------|-------------------|-----------------|---------------|
| 5554.40 | 30.84 | 37.51 | 5235.97 | -102.74 | 991.82 | 693.69 | 4403158.1 | 517966.4 | 39°46'41.424"N | 80°47'24.715"W | 1210.34 | 334.97 | 1.35 |
| 5617.40 | 31.70 | 37.52 | 5289.81 | -106.96 | 1017.76 | 713.61 | 4403166.0 | 517972.5 | 39°46'41.680"N | 80°47'24.460"W | 1243.01 | 35.04 | 1.37 |
| 5680.40 | 31.84 | 36.68 | 5343.37 | -111.00 | 1044.21 | 733.62 | 4403174.1 | 517978.6 | 39°46'41.941"N | 80°47'24.203"W | 1276.16 | 35.09 | 0.74 |
| 5743.40 | 33.85 | 35.88 | 5396.30 | -114.68 | 1071.76 | 753.83 | 4403182.5 | 517984.7 | 39°46'42.212"N | 80°47'23.943"W | 1310.32 | 35.12 | 3.26 |
| 5807.40 | 34.54 | 35.83 | 5449.24 | -118.28 | 1100.91 | 774.90 | 4403191.4 | 517991.1 | 39°46'42.500"N | 80°47'23.672"W | 1346.28 | 35.14 | 1.08 |
| 5870.40 | 33.24 | 34.59 | 5501.53 | -121.42 | 1129.61 | 795.15 | 4403200.1 | 517997.3 | 39°46'42.783"N | 80°47'23.412"W | 1381.41 | 35.14 | 2.34 |
| 5932.40 | 32.62 | 37.46 | 5553.57 | -124.89 | 1156.86 | 814.97 | 4403208.4 | 518003.3 | 39°46'43.052"N | 80°47'23.157"W | 1415.10 | 35.16 | 2.71 |
| 5995.40 | 30.36 | 38.18 | 5607.29 | -129.30 | 1182.86 | 835.14 | 4403216.3 | 518009.5 | 39°46'43.308"N | 80°47'22.898"W | 1447.97 | 35.22 | 3.64 |
| 6058.40 | 28.20 | 35.64 | 5662.24 | -132.98 | 1207.48 | 853.66 | 4403223.8 | 518015.1 | 39°46'43.551"N | 80°47'22.660"W | 1478.76 | 35.26 | 3.95 |
| 6120.40 | 25.81 | 39.97 | 5717.48 | -136.71 | 1229.73 | 870.87 | 4403230.6 | 518020.4 | 39°46'43.771"N | 80°47'22.439"W | 1506.87 | 35.31 | 4.99 |
| 6184.40 | 27.68 | 41.04 | 5774.64 | -141.92 | 1251.62 | 889.58 | 4403237.3 | 518026.1 | 39°46'43.987"N | 80°47'22.199"W | 1535.55 | 35.40 | 3.02 |
| 6247.40 | 30.36 | 39.67 | 5829.72 | -147.34 | 1274.92 | 909.35 | 4403244.4 | 518032.1 | 39°46'44.217"N | 80°47'21.945"W | 1566.00 | 35.50 | 4.38 |
| 6345.00 | 34.28 | 31.93 | 5912.22 | -152.32 | 1317.27 | 939.66 | 4403257.3 | 518041.3 | 39°46'44.634"N | 80°47'21.555"W | 1618.07 | 35.50 | 5.83 |
| 6445.00 | 34.08 | 22.39 | 5995.01 | -149.46 | 1367.11 | 965.24 | 4403272.5 | 518049.1 | 39°46'45.126"N | 80°47'21.226"W | 1673.53 | 35.22 | 5.36 |
| 6540.00 | 30.16 | 11.68 | 6075.52 | -138.34 | 1415.15 | 980.23 | 4403287.1 | 518053.7 | 39°46'45.601"N | 80°47'21.033"W | 1721.48 | 34.71 | 7.26 |
| 6635.00 | 27.68 | 346.07 | 6158.98 | -115.37 | 1460.12 | 979.75 | 4403300.8 | 518053.6 | 39°46'46.045"N | 80°47'21.037"W | 1758.37 | 33.86 | 13.20 |
| 6729.00 | 32.48 | 326.25 | 6240.50 | -77.42 | 1502.42 | 960.41 | 4403313.7 | 518047.7 | 39°46'46.464"N | 80°47'21.284"W | 1783.16 | 32.59 | 11.67 |
| 6824.00 | 42.24 | 328.94 | 6315.93 | -26.43 | 1551.11 | 929.69 | 4403328.5 | 518038.3 | 39°46'46.946"N | 80°47'21.676"W | 1808.38 | 30.94 | 10.41 |
| 6917.00 | 51.52 | 331.95 | 6379.43 | 32.01 | 1610.14 | 896.37 | 4403346.5 | 518028.1 | 39°46'47.530"N | 80°47'22.101"W | 1842.84 | 29.11 | 10.25 |
| 7011.00 | 53.29 | 330.28 | 6436.78 | 95.84 | 1675.35 | 860.38 | 4403366.4 | 518017.2 | 39°46'48.175"N | 80°47'22.560"W | 1883.36 | 27.18 | 2.35 |
| 7106.00 | 59.15 | 325.90 | 6489.60 | 165.56 | 1742.26 | 818.59 | 4403386.8 | 518004.5 | 39°46'48.837"N | 80°47'23.093"W | 1924.99 | 25.17 | 7.26 |
| 7201.00 | 68.88 | 320.99 | 6531.19 | 243.90 | 1810.66 | 767.69 | 4403407.6 | 517988.9 | 39°46'49.514"N | 80°47'23.743"W | 1966.68 | 22.98 | 11.24 |
| 7296.00 | 74.74 | 311.08 | 6560.90 | 330.55 | 1875.41 | 705.06 | 4403427.4 | 517969.9 | 39°46'50.156"N | 80°47'24.543"W | 2003.56 | 20.60 | 11.67 |
| 7390.00 | 80.19 | 309.99 | 6581.29 | 420.76 | 1935.01 | 635.35 | 4403445.5 | 517948.6 | 39°46'50.746"N | 80°47'25.434"W | 2036.65 | 18.18 | 5.91 |
| 7483.00 | 84.33 | 307.17 | 6593.82 | 511.88 | 1992.45 | 563.32 | 4403463.0 | 517926.7 | 39°46'51.316"N | 80°47'26.355"W | 2070.55 | 15.79 | 5.37 |
| 7578.00 | 89.48 | 303.35 | 6598.95 | 606.30 | 2047.18 | 485.90 | 4403479.7 | 517903.1 | 39°46'51.858"N | 80°47'27.345"W | 2104.05 | 13.35 | 6.75 |
| 7673.00 | 89.05 | 299.52 | 6600.17 | 701.25 | 2096.71 | 404.87 | 4403494.8 | 517878.4 | 39°46'52.350"N | 80°47'28.382"W | 2135.44 | 10.93 | 4.06 |
| 7767.00 | 89.66 | 297.16 | 6601.23 | 795.20 | 2141.33 | 322.14 | 4403508.4 | 517853.2 | 39°46'52.793"N | 80°47'29.440"W | 2165.42 | 8.56 | 2.59 |
| 7861.00 | 90.06 | 299.31 | 6601.45 | 889.14 | 2185.79 | 239.33 | 4403521.9 | 517828.0 | 39°46'53.234"N | 80°47'30.499"W | 2198.86 | 6.25 | 2.33 |
| 7956.00 | 91.17 | 298.54 | 6600.44 | 984.11 | 2231.74 | 156.19 | 4403535.9 | 517802.6 | 39°46'53.690"N | 80°47'31.563"W | 2237.20 | 4.00 | 1.42 |
| 8050.00 | 91.08 | 300.67 | 6598.59 | 1078.08 | 2278.16 | 74.48 | 4403550.1 | 517777.7 | 39°46'54.151"N | 80°47'32.608"W | 2279.38 | 1.87 | 2.27 |

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| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [M] | Grid North [M] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|------------------|-------------------|----------------|----------------|-------------------------|-----------------------|------------------|
| 8145.00 | 90.74 | 300.85 | 6597.08 | 1173.07 | 2326.74 | -7.14 | 4403564.9 | 517752.9 | 39°46'54.632"N | 80°47'33.652"W | 2326.76 | 3359.82 | 0.40 |
| 8240.00 | 90.65 | 303.43 | 6595.93 | 1267.99 | 2377.28 | -87.57 | 4403580.3 | 517728.4 | 39°46'55.134"N | 80°47'34.681"W | 2378.89 | 3357.89 | 2.72 |
| 8335.00 | 90.86 | 297.77 | 6594.68 | 1362.94 | 2425.61 | -169.30 | 4403595.0 | 517703.5 | 39°46'55.613"N | 80°47'35.726"W | 2431.51 | 356.01 | 5.96 |
| 8429.00 | 90.62 | 298.06 | 6593.46 | 1456.86 | 2469.61 | -252.36 | 4403608.4 | 517678.2 | 39°46'56.050"N | 80°47'36.789"W | 2482.47 | 354.17 | 0.40 |
| 8524.00 | 90.49 | 302.27 | 6592.54 | 1551.84 | 2517.34 | -334.47 | 4403622.9 | 517653.1 | 39°46'56.524"N | 80°47'37.839"W | 2539.46 | 352.43 | 4.43 |
| 8619.00 | 90.83 | 300.74 | 6591.45 | 1646.80 | 2566.98 | -415.46 | 4403638.1 | 517628.5 | 39°46'57.016"N | 80°47'38.875"W | 2600.38 | 350.81 | 1.65 |
| 8712.00 | 90.59 | 299.62 | 6590.29 | 1739.79 | 2613.73 | -495.84 | 4403652.3 | 517604.0 | 39°46'57.480"N | 80°47'39.904"W | 2660.34 | 349.26 | 1.23 |
| 8807.00 | 90.68 | 299.88 | 6589.24 | 1834.78 | 2660.86 | -578.32 | 4403666.7 | 517578.8 | 39°46'57.947"N | 80°47'40.959"W | 2722.98 | 347.74 | 0.29 |
| 8902.00 | 90.37 | 302.08 | 6588.37 | 1929.76 | 2709.76 | -659.76 | 4403681.6 | 517554.0 | 39°46'58.433"N | 80°47'42.000"W | 2788.92 | 346.32 | 2.34 |
| 8997.00 | 90.52 | 299.15 | 6587.63 | 2024.75 | 2758.13 | -741.50 | 4403696.3 | 517529.1 | 39°46'58.912"N | 80°47'43.046"W | 2856.07 | 344.95 | 3.09 |
| 9092.00 | 90.74 | 297.66 | 6586.59 | 2119.70 | 2803.32 | -825.06 | 4403710.1 | 517503.7 | 39°46'59.361"N | 80°47'44.115"W | 2922.21 | 343.60 | 1.59 |
| 9186.00 | 90.86 | 299.97 | 6585.28 | 2213.66 | 2848.62 | -907.41 | 4403723.9 | 517478.6 | 39°46'59.810"N | 80°47'45.168"W | 2989.65 | 342.33 | 2.46 |
| 9281.00 | 90.68 | 297.68 | 6584.00 | 2308.62 | 2894.41 | -990.62 | 4403737.8 | 517453.2 | 39°47'00.265"N | 80°47'46.233"W | 3059.24 | 341.11 | 2.42 |
| 9376.00 | 91.23 | 301.24 | 6582.41 | 2403.58 | 2941.12 | -1073.31 | 4403752.1 | 517428.0 | 39°47'00.728"N | 80°47'47.291"W | 3130.85 | 339.95 | 3.79 |
| 9471.00 | 90.65 | 302.72 | 6580.86 | 2498.52 | 2991.43 | -1153.88 | 4403767.4 | 517403.5 | 39°47'01.227"N | 80°47'48.321"W | 3206.26 | 338.91 | 1.67 |
| 9566.00 | 90.37 | 302.71 | 6580.01 | 2593.41 | 3042.77 | -1233.81 | 4403783.0 | 517379.1 | 39°47'01.737"N | 80°47'49.344"W | 3283.40 | 337.93 | 0.29 |
| 9661.00 | 90.28 | 306.90 | 6579.47 | 2688.07 | 3096.98 | -1311.79 | 4403799.5 | 517355.4 | 39°47'02.274"N | 80°47'50.341"W | 3363.35 | 337.04 | 4.41 |
| 9755.00 | 90.34 | 305.44 | 6578.96 | 2781.54 | 3152.46 | -1387.67 | 4403816.4 | 517332.2 | 39°47'02.824"N | 80°47'51.312"W | 3444.36 | 336.24 | 1.55 |
| 9850.00 | 90.89 | 299.51 | 6577.94 | 2876.41 | 3203.44 | -1467.78 | 4403832.0 | 517307.8 | 39°47'03.330"N | 80°47'52.336"W | 3523.69 | 335.38 | 6.27 |
| 9945.00 | 90.62 | 298.44 | 6576.69 | 2971.38 | 3249.46 | -1550.88 | 4403846.0 | 517282.5 | 39°47'03.786"N | 80°47'53.399"W | 3600.58 | 334.49 | 1.16 |
| 10040.00 | 90.65 | 301.30 | 6575.64 | 3066.37 | 3296.76 | -1633.25 | 4403860.4 | 517257.4 | 39°47'04.256"N | 80°47'54.453"W | 3679.15 | 333.65 | 3.01 |
| 10135.00 | 90.49 | 298.10 | 6574.69 | 3161.35 | 3343.82 | -1715.75 | 4403874.7 | 517232.3 | 39°47'04.722"N | 80°47'55.508"W | 3758.32 | 332.84 | 3.37 |
| 10230.00 | 90.06 | 296.94 | 6574.24 | 3256.25 | 3387.71 | -1800.00 | 4403888.1 | 517206.6 | 39°47'05.158"N | 80°47'56.586"W | 3836.22 | 332.02 | 1.30 |
| 10325.00 | 90.86 | 296.03 | 6573.47 | 3351.05 | 3430.08 | -1885.02 | 4403901.0 | 517180.7 | 39°47'05.579"N | 80°47'57.674"W | 3913.92 | 331.21 | 1.28 |
| 10419.00 | 90.34 | 293.64 | 6572.49 | 3444.64 | 3469.55 | -1970.32 | 4403913.1 | 517154.7 | 39°47'05.971"N | 80°47'58.766"W | 3989.98 | 330.41 | 2.60 |
| 10515.00 | 90.37 | 297.99 | 6571.89 | 3540.35 | 3511.35 | -2056.72 | 4403925.8 | 517128.4 | 39°47'06.386"N | 80°47'59.871"W | 4069.36 | 329.64 | 4.53 |
| 10610.00 | 90.80 | 299.97 | 6570.92 | 3635.32 | 3557.37 | -2139.81 | 4403939.8 | 517103.1 | 39°47'06.842"N | 80°48'00.934"W | 4151.35 | 328.97 | 2.13 |
| 10705.00 | 91.08 | 301.82 | 6569.36 | 3730.30 | 3606.14 | -2221.32 | 4403954.7 | 517078.3 | 39°47'07.326"N | 80°48'01.977"W | 4235.39 | 328.37 | 1.97 |
| 10800.00 | 91.11 | 303.14 | 6567.55 | 3825.20 | 3657.15 | -2301.44 | 4403970.2 | 517053.8 | 39°47'07.832"N | 80°48'03.002"W | 4321.04 | 327.82 | 1.39 |
| 10895.00 | 91.35 | 302.60 | 6565.51 | 3920.06 | 3708.69 | -2381.22 | 4403985.9 | 517029.5 | 39°47'08.343"N | 80°48'04.022"W | 4407.34 | 327.30 | 0.62 |
| 10990.00 | 90.71 | 303.10 | 6563.80 | 4014.94 | 3760.22 | -2461.01 | 4404001.6 | 517005.2 | 39°47'08.854"N | 80°48'05.043"W | 4493.98 | 326.80 | 0.85 |

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WELL PATH DATA † = interpolated/extrapolated station

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [M] | Grid North [M] | Latitude | Longitude | Closure Dist [ft] | Closure Dist [ft] | DL [1/100ft] |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|------------------|-------------------|----------------|----------------|-------------------------|-------------------------|-----------------|
| 11084.00 | 91.05 | 300.18 | 6562.36 | 4108.88 | 3809.52 | -2541.02 | 4404016.6 | 516980.8 | 39°47'09.343"N | 80°48'06.067"W | 4579.21 | 326.30 | 3.13 |
| 11179.00 | 91.17 | 297.71 | 6560.52 | 4203.84 | 3855.48 | -2624.13 | 4404030.6 | 516955.5 | 39°47'09.799"N | 80°48'07.130"W | 4663.78 | 325.76 | 2.60 |
| 11274.00 | 90.95 | 299.39 | 6558.76 | 4298.78 | 3900.88 | -2707.56 | 4404044.5 | 516930.1 | 39°47'10.249"N | 80°48'08.197"W | 4748.44 | 325.24 | 1.78 |
| 11369.00 | 90.95 | 300.85 | 6557.18 | 4393.77 | 3948.54 | -2789.72 | 4404059.0 | 516905.1 | 39°47'10.722"N | 80°48'09.248"W | 4834.62 | 324.76 | 1.54 |
| 11464.00 | 91.02 | 300.45 | 6555.55 | 4488.75 | 3996.96 | -2871.44 | 4404073.7 | 516880.2 | 39°47'11.203"N | 80°48'10.294"W | 4921.47 | 324.31 | 0.43 |
| 11558.00 | 91.20 | 301.61 | 6553.73 | 4582.72 | 4045.41 | -2951.97 | 4404088.5 | 516855.6 | 39°47'11.683"N | 80°48'11.324"W | 5007.94 | 323.88 | 1.25 |
| 11653.00 | 91.20 | 297.66 | 6551.74 | 4677.67 | 4092.36 | -3034.51 | 4404102.8 | 516830.5 | 39°47'12.149"N | 80°48'12.380"W | 5094.67 | 323.44 | 4.16 |
| 11747.00 | 90.80 | 297.31 | 6550.10 | 4771.56 | 4135.74 | -3117.89 | 4404116.0 | 516805.1 | 39°47'12.579"N | 80°48'13.447"W | 5179.34 | 322.99 | 0.57 |
| 11842.00 | 90.43 | 299.79 | 6549.08 | 4866.51 | 4181.14 | -3201.32 | 4404129.9 | 516779.7 | 39°47'13.030"N | 80°48'14.514"W | 5265.96 | 322.56 | 2.64 |
| 11903.00 | 90.40 | 301.71 | 6548.64 | 4927.50 | 4212.32 | -3253.74 | 4404139.4 | 516763.7 | 39°47'13.339"N | 80°48'15.185"W | 5322.64 | 322.32 | 3.15 |
| 11932.00 | 90.40 | 301.71 | 6548.44 | 4956.49 | 4227.57 | -3278.41 | 4404144.0 | 516756.2 | 39°47'13.490"N | 80°48'15.501"W | 5349.79 | 322.21 | 0.00 |

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