

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14X-414**

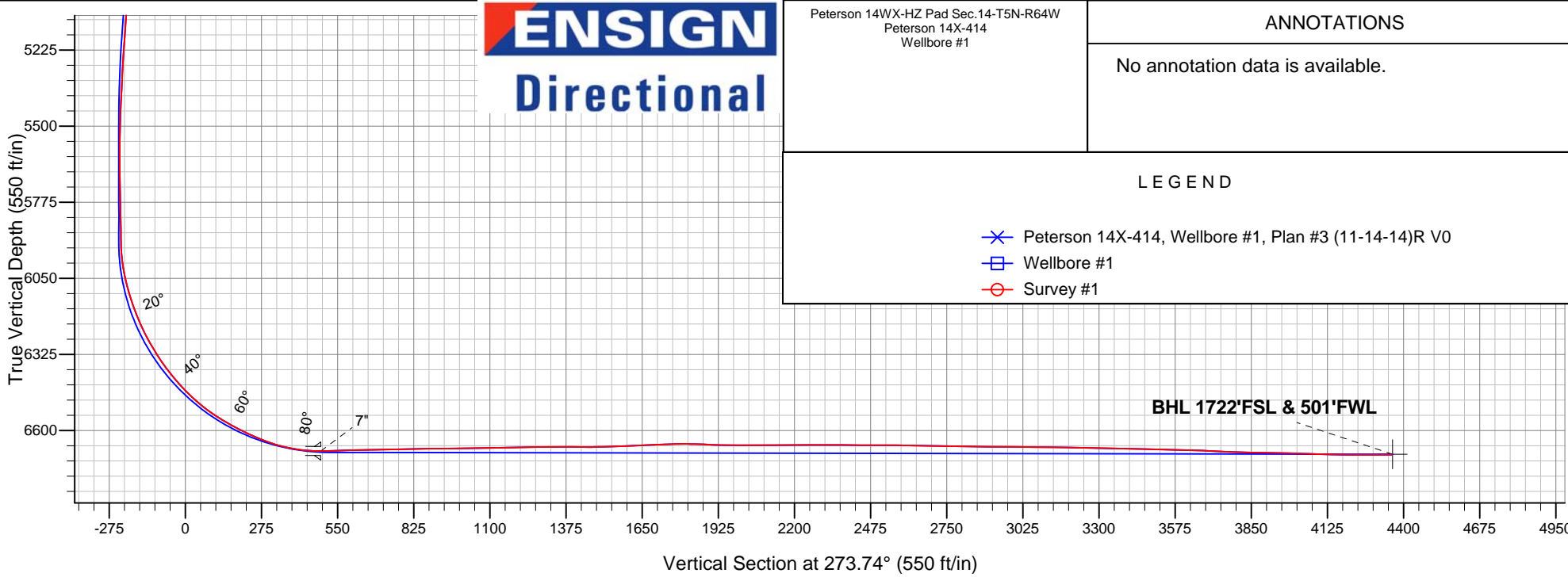
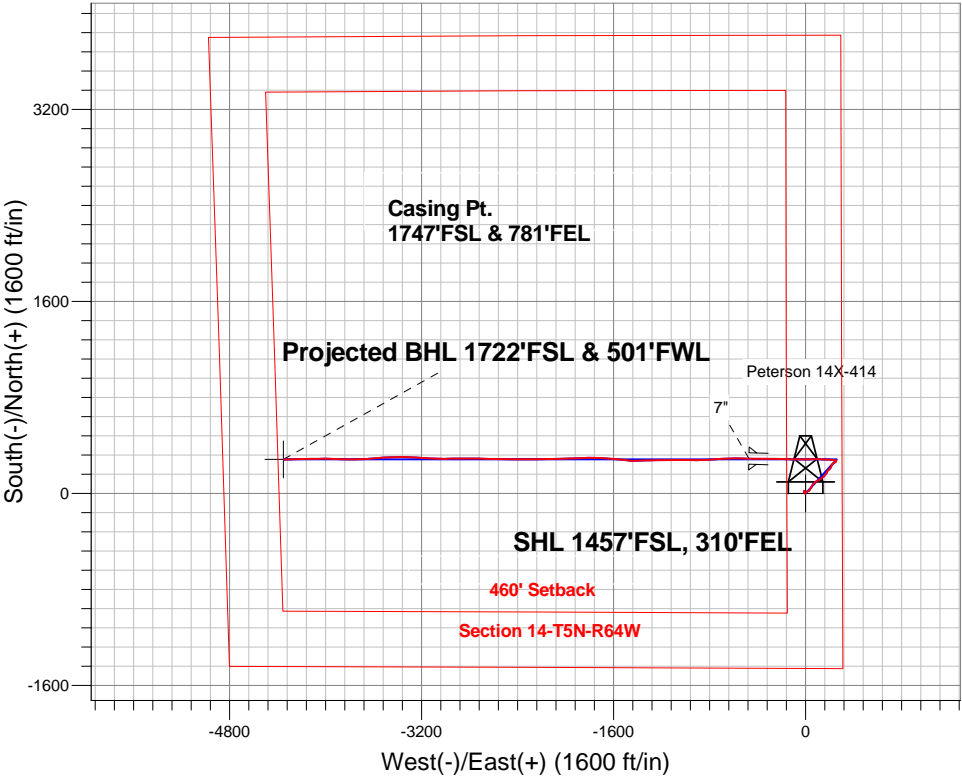
Surface Location: Peterson 14WX-HZ Pad Sec.14-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4571.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1388652.16 | 3275955.73 | 40.396020 | -104.509210 | |
| Ensign Rig - RKB - 15' WELL @ 4586.0ft (Ensign Rig - RKB - 15') | | | | | | |

FINAL SURVEY

Projected Bottom Hole Location
10970'MD 6687'TVD 282'N & 4349'W of SHL
90.7 degree Incl @ 267.4 degree AZM



Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-414
Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- Peterson 14X-414, Wellbore #1, Plan #3 (11-14-14)R V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Peterson 14X-414

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 December, 2014

| | | | |
|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Peterson 14X-414 |
| Project: | SEC.14-T5N-R64W | TVD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Site: | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | MD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Well: | Peterson 14X-414 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| | | | |
|--------------------|----------------------------------|----------------------|-----------------------------|
| Project | SEC.14-T5N-R64W, Weld County, CO | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | Using Well Reference Point |
| Map Zone: | Colorado Northern Zone | | Using geodetic scale factor |

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|-----------------------|----------|--------------------------------------|-----------------|-------------------|-------------|
| Site | | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | | | |
| Site Position: | | Northing: | 1,388,684.96 ft | Latitude: | 40.396110 |
| From: | Lat/Long | Easting: | 3,275,955.37 ft | Longitude: | -104.509210 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | " | Grid Convergence: | 0.64 ° |

| | | | | | | |
|----------------------|------------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Peterson 14X-414 | | | | | |
| Well Position | +N-S | 0.0 ft | Northing: | 1,388,652.16 ft | Latitude: | 40.396020 |
| | +E-W | 0.0 ft | Easting: | 3,275,955.73 ft | Longitude: | -104.509210 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 4,571.0 ft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 11/14/2014 | 8.27 | 66.97 | 52,798 |

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|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| Design | Wellbore #1 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 273.74 | |

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|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 12/1/2014 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 176.0 | 10,970.0 | Survey #1 (Wellbore #1) | MWD | MWD - Standard | |

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|------------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 1.0 | 0.00 | 221.70 | 1.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| SHL 1457'FSL, 310'FEL | | | | | | | | | | |
| 176.0 | 0.20 | 221.70 | 176.0 | -0.2 | -0.2 | 0.2 | 0.11 | 0.11 | 0.00 | |
| 297.0 | 0.20 | 295.80 | 297.0 | -0.3 | -0.5 | 0.5 | 0.20 | 0.00 | 61.24 | |
| 420.0 | 0.10 | 224.30 | 420.0 | -0.3 | -0.8 | 0.8 | 0.16 | -0.08 | -58.13 | |
| 542.0 | 0.10 | 278.30 | 542.0 | -0.3 | -1.0 | 1.0 | 0.07 | 0.00 | 44.26 | |
| 664.0 | 1.10 | 288.30 | 664.0 | 0.0 | -2.2 | 2.2 | 0.82 | 0.82 | 8.20 | |
| 786.0 | 1.10 | 278.10 | 786.0 | 0.6 | -4.5 | 4.5 | 0.16 | 0.00 | -8.36 | |
| 885.0 | 1.10 | 305.70 | 885.0 | 1.3 | -6.2 | 6.3 | 0.53 | 0.00 | 27.88 | |
| 955.0 | 1.80 | 305.20 | 954.9 | 2.3 | -7.6 | 7.8 | 1.00 | 1.00 | -0.71 | |
| 1,080.0 | 3.30 | 332.80 | 1,079.8 | 6.6 | -10.9 | 11.3 | 1.52 | 1.20 | 22.08 | |

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| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Peterson 14X-414 |
| Project: | SEC.14-T5N-R64W | TVD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Site: | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | MD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Well: | Peterson 14X-414 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 1,204.0 | 3.10 | 339.80 | 1,203.6 | 12.9 | -13.7 | 14.5 | 0.35 | -0.16 | 5.65 |
| 1,299.0 | 2.20 | 19.20 | 1,298.5 | 17.1 | -14.0 | 15.0 | 2.08 | -0.95 | 41.47 |
| 1,326.0 | 2.00 | 19.70 | 1,325.5 | 18.0 | -13.6 | 14.8 | 0.74 | -0.74 | 1.85 |
| 1,390.0 | 1.10 | 90.90 | 1,389.5 | 19.1 | -12.6 | 13.8 | 3.04 | -1.41 | 111.25 |
| 1,448.0 | 1.30 | 124.00 | 1,447.5 | 18.7 | -11.5 | 12.7 | 1.22 | 0.34 | 57.07 |
| 1,512.0 | 2.00 | 115.30 | 1,511.4 | 17.8 | -9.9 | 11.1 | 1.16 | 1.09 | -13.59 |
| 1,572.0 | 2.60 | 110.90 | 1,571.4 | 16.9 | -7.7 | 8.8 | 1.04 | 1.00 | -7.33 |
| 1,694.0 | 2.50 | 114.10 | 1,693.3 | 14.8 | -2.7 | 3.6 | 0.14 | -0.08 | 2.62 |
| 1,815.0 | 4.70 | 86.00 | 1,814.0 | 14.1 | 4.7 | -3.7 | 2.28 | 1.82 | -23.22 |
| 1,936.0 | 5.20 | 72.60 | 1,934.6 | 16.0 | 14.8 | -13.8 | 1.04 | 0.41 | -11.07 |
| 2,058.0 | 6.30 | 56.30 | 2,056.0 | 21.4 | 25.7 | -24.2 | 1.61 | 0.90 | -13.36 |
| 2,178.0 | 6.10 | 34.80 | 2,175.3 | 30.3 | 34.8 | -32.8 | 1.93 | -0.17 | -17.92 |
| 2,299.0 | 5.00 | 25.50 | 2,295.7 | 40.3 | 40.7 | -38.0 | 1.17 | -0.91 | -7.69 |
| 2,419.0 | 6.30 | 27.60 | 2,415.1 | 50.9 | 46.1 | -42.6 | 1.10 | 1.08 | 1.75 |
| 2,544.0 | 6.60 | 37.00 | 2,539.4 | 62.7 | 53.6 | -49.3 | 0.88 | 0.24 | 7.52 |
| 2,670.0 | 6.00 | 31.80 | 2,664.6 | 74.1 | 61.4 | -56.4 | 0.66 | -0.48 | -4.13 |
| 2,797.0 | 5.70 | 46.80 | 2,790.9 | 84.0 | 69.5 | -63.8 | 1.22 | -0.24 | 11.81 |
| 2,923.0 | 4.60 | 42.70 | 2,916.4 | 92.0 | 77.5 | -71.3 | 0.92 | -0.87 | -3.25 |
| 3,049.0 | 2.70 | 64.70 | 3,042.2 | 97.0 | 83.6 | -77.1 | 1.85 | -1.51 | 17.46 |
| 3,175.0 | 6.80 | 57.50 | 3,167.7 | 102.3 | 92.6 | -85.7 | 3.28 | 3.25 | -5.71 |
| 3,301.0 | 6.20 | 61.70 | 3,292.9 | 109.5 | 104.8 | -97.5 | 0.61 | -0.48 | 3.33 |
| 3,427.0 | 8.10 | 62.40 | 3,417.9 | 116.9 | 118.7 | -110.8 | 1.51 | 1.51 | 0.56 |
| 3,553.0 | 10.00 | 55.00 | 3,542.3 | 127.3 | 135.5 | -126.9 | 1.77 | 1.51 | -5.87 |
| 3,679.0 | 9.40 | 42.00 | 3,666.6 | 141.2 | 151.4 | -141.8 | 1.80 | -0.48 | -10.32 |
| 3,806.0 | 8.60 | 38.50 | 3,792.0 | 156.3 | 164.2 | -153.7 | 0.76 | -0.63 | -2.76 |
| 3,932.0 | 6.20 | 33.10 | 3,916.9 | 169.4 | 173.8 | -162.4 | 1.98 | -1.90 | -4.29 |
| 4,059.0 | 4.60 | 13.20 | 4,043.4 | 180.1 | 178.7 | -166.6 | 1.92 | -1.26 | -15.67 |
| 4,185.0 | 5.30 | 48.20 | 4,168.9 | 188.9 | 184.2 | -171.5 | 2.42 | 0.56 | 27.78 |
| 4,311.0 | 3.60 | 48.40 | 4,294.6 | 195.4 | 191.5 | -178.3 | 1.35 | -1.35 | 0.16 |
| 4,438.0 | 4.50 | 51.50 | 4,421.2 | 201.2 | 198.4 | -184.8 | 0.73 | 0.71 | 2.44 |
| 4,565.0 | 6.90 | 30.60 | 4,547.6 | 210.8 | 206.2 | -192.0 | 2.47 | 1.89 | -16.46 |
| 4,691.0 | 5.50 | 22.90 | 4,672.9 | 222.9 | 212.4 | -197.4 | 1.29 | -1.11 | -6.11 |
| 4,818.0 | 4.70 | 16.20 | 4,799.4 | 233.5 | 216.2 | -200.5 | 0.78 | -0.63 | -5.28 |
| 4,945.0 | 4.70 | 47.80 | 4,926.0 | 242.0 | 221.5 | -205.2 | 2.01 | 0.00 | 24.88 |
| 5,071.0 | 3.20 | 45.90 | 5,051.7 | 247.9 | 227.8 | -211.2 | 1.19 | -1.19 | -1.51 |
| 5,135.0 | 4.90 | 60.00 | 5,115.5 | 250.5 | 231.5 | -214.7 | 3.06 | 2.66 | 22.03 |
| 5,198.0 | 5.40 | 62.80 | 5,178.2 | 253.2 | 236.5 | -219.4 | 0.89 | 0.79 | 4.44 |
| 5,261.0 | 4.50 | 58.20 | 5,241.0 | 255.9 | 241.2 | -224.0 | 1.56 | -1.43 | -7.30 |
| 5,324.0 | 3.80 | 55.40 | 5,303.8 | 258.4 | 245.0 | -227.6 | 1.16 | -1.11 | -4.44 |
| 5,387.0 | 3.10 | 50.50 | 5,366.7 | 260.6 | 248.1 | -230.5 | 1.20 | -1.11 | -7.78 |
| 5,451.0 | 3.80 | 39.70 | 5,430.6 | 263.4 | 250.7 | -233.0 | 1.49 | 1.09 | -16.88 |
| 5,514.0 | 4.10 | 33.00 | 5,493.5 | 266.9 | 253.3 | -235.3 | 0.87 | 0.48 | -10.63 |
| 5,577.0 | 3.30 | 25.90 | 5,556.3 | 270.4 | 255.3 | -237.1 | 1.46 | -1.27 | -11.27 |
| 5,641.0 | 1.50 | 341.90 | 5,620.3 | 272.8 | 255.9 | -237.5 | 3.83 | -2.81 | -68.75 |
| 5,704.0 | 1.50 | 302.60 | 5,683.3 | 274.1 | 254.9 | -236.5 | 1.60 | 0.00 | -62.38 |
| 5,767.0 | 1.10 | 279.00 | 5,746.2 | 274.6 | 253.6 | -235.2 | 1.05 | -0.63 | -37.46 |
| 5,830.0 | 0.90 | 250.50 | 5,809.2 | 274.5 | 252.6 | -234.1 | 0.84 | -0.32 | -45.24 |
| 5,893.0 | 0.90 | 232.90 | 5,872.2 | 274.1 | 251.7 | -233.3 | 0.44 | 0.00 | -27.94 |
| 5,925.0 | 0.60 | 224.00 | 5,904.2 | 273.8 | 251.4 | -233.0 | 1.00 | -0.94 | -27.81 |
| 5,956.0 | 1.80 | 263.20 | 5,935.2 | 273.6 | 250.8 | -232.4 | 4.48 | 3.87 | 126.45 |
| 5,988.0 | 5.30 | 280.00 | 5,967.2 | 273.8 | 248.8 | -230.4 | 11.29 | 10.94 | 52.50 |
| 6,019.0 | 8.40 | 283.00 | 5,997.9 | 274.6 | 245.2 | -226.8 | 10.06 | 10.00 | 9.68 |
| 6,051.0 | 11.40 | 287.60 | 6,029.5 | 276.1 | 239.9 | -221.4 | 9.69 | 9.38 | 14.38 |
| 6,083.0 | 13.50 | 285.00 | 6,060.7 | 278.0 | 233.3 | -214.7 | 6.79 | 6.56 | -8.13 |

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|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Peterson 14X-414 |
| Project: | SEC.14-T5N-R64W | TVD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Site: | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | MD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Well: | Peterson 14X-414 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 6,114.0 | 15.50 | 278.50 | 6,090.7 | 279.5 | 225.7 | -207.0 | 8.31 | 6.45 | -20.97 |
| 6,146.0 | 17.90 | 274.20 | 6,121.4 | 280.5 | 216.6 | -197.8 | 8.43 | 7.50 | -13.44 |
| 6,177.0 | 19.90 | 273.40 | 6,150.7 | 281.2 | 206.6 | -187.8 | 6.51 | 6.45 | -2.58 |
| 6,209.0 | 21.50 | 271.80 | 6,180.6 | 281.7 | 195.3 | -176.5 | 5.30 | 5.00 | -5.00 |
| 6,241.0 | 23.00 | 270.90 | 6,210.2 | 282.0 | 183.1 | -164.3 | 4.81 | 4.69 | -2.81 |
| 6,272.0 | 25.40 | 271.80 | 6,238.5 | 282.3 | 170.4 | -151.6 | 7.83 | 7.74 | 2.90 |
| 6,304.0 | 28.10 | 272.50 | 6,267.1 | 282.8 | 156.0 | -137.3 | 8.49 | 8.44 | 2.19 |
| 6,335.0 | 31.00 | 273.70 | 6,294.0 | 283.7 | 140.8 | -122.0 | 9.55 | 9.35 | 3.87 |
| 6,367.0 | 32.20 | 272.10 | 6,321.3 | 284.5 | 124.0 | -105.2 | 4.57 | 3.75 | -5.00 |
| 6,399.0 | 34.10 | 271.10 | 6,348.1 | 285.0 | 106.5 | -87.7 | 6.18 | 5.94 | -3.13 |
| 6,430.0 | 36.30 | 270.60 | 6,373.4 | 285.3 | 88.7 | -69.9 | 7.16 | 7.10 | -1.61 |
| 6,462.0 | 39.10 | 268.80 | 6,398.7 | 285.1 | 69.1 | -50.4 | 9.40 | 8.75 | -5.63 |
| 6,493.0 | 41.20 | 268.30 | 6,422.4 | 284.6 | 49.1 | -30.5 | 6.85 | 6.77 | -1.61 |
| 6,525.0 | 43.50 | 269.10 | 6,446.1 | 284.2 | 27.6 | -9.0 | 7.38 | 7.19 | 2.50 |
| 6,556.0 | 45.20 | 270.20 | 6,468.3 | 284.0 | 5.9 | 12.6 | 6.02 | 5.48 | 3.55 |
| 6,588.0 | 48.40 | 270.20 | 6,490.2 | 284.1 | -17.4 | 35.9 | 10.00 | 10.00 | 0.00 |
| 6,619.0 | 51.00 | 269.70 | 6,510.2 | 284.1 | -41.0 | 59.5 | 8.48 | 8.39 | -1.61 |
| 6,651.0 | 53.90 | 270.40 | 6,529.7 | 284.1 | -66.4 | 84.8 | 9.23 | 9.06 | 2.19 |
| 6,682.0 | 56.70 | 270.40 | 6,547.3 | 284.3 | -91.9 | 110.3 | 9.03 | 9.03 | 0.00 |
| 6,714.0 | 59.20 | 270.60 | 6,564.3 | 284.5 | -119.0 | 137.3 | 7.83 | 7.81 | 0.63 |
| 6,745.0 | 61.30 | 272.00 | 6,579.7 | 285.1 | -145.9 | 164.2 | 7.83 | 6.77 | 4.52 |
| 6,777.0 | 63.00 | 273.00 | 6,594.7 | 286.4 | -174.2 | 192.5 | 5.99 | 5.31 | 3.13 |
| 6,809.0 | 64.30 | 272.30 | 6,608.9 | 287.7 | -202.8 | 221.2 | 4.51 | 4.06 | -2.19 |
| 6,840.0 | 65.90 | 271.40 | 6,621.9 | 288.6 | -230.9 | 249.3 | 5.79 | 5.16 | -2.90 |
| 6,872.0 | 68.10 | 270.00 | 6,634.4 | 289.0 | -260.4 | 278.7 | 7.97 | 6.88 | -4.38 |
| 6,903.0 | 71.40 | 269.30 | 6,645.1 | 288.8 | -289.5 | 307.7 | 10.85 | 10.65 | -2.26 |
| 6,935.0 | 74.90 | 269.00 | 6,654.4 | 288.3 | -320.1 | 338.2 | 10.97 | 10.94 | -0.94 |
| 6,966.0 | 77.90 | 270.00 | 6,661.7 | 288.1 | -350.2 | 368.3 | 10.17 | 9.68 | 3.23 |
| 6,998.0 | 80.80 | 270.60 | 6,667.6 | 288.2 | -381.7 | 399.7 | 9.25 | 9.06 | 1.88 |
| 7,030.0 | 84.10 | 270.70 | 6,671.8 | 288.6 | -413.4 | 431.3 | 10.32 | 10.31 | 0.31 |
| 7,050.0 | 86.70 | 270.90 | 6,673.4 | 288.9 | -433.3 | 451.2 | 13.04 | 13.00 | 1.00 |
| 7,088.0 | 89.93 | 271.28 | 6,674.5 | 289.6 | -471.3 | 489.2 | 8.56 | 8.50 | 1.00 |
| 7" | | | | | | | | | |
| 7,090.0 | 90.10 | 271.30 | 6,674.5 | 289.6 | -473.3 | 491.2 | 8.56 | 8.50 | 1.00 |
| 7,116.0 | 91.80 | 271.80 | 6,674.1 | 290.3 | -499.3 | 517.1 | 6.82 | 6.54 | 1.92 |
| 7,148.0 | 92.40 | 271.40 | 6,672.9 | 291.2 | -531.2 | 549.1 | 2.25 | 1.88 | -1.25 |
| 7,211.0 | 91.40 | 269.30 | 6,670.9 | 291.6 | -594.2 | 611.9 | 3.69 | -1.59 | -3.33 |
| 7,275.0 | 91.10 | 267.40 | 6,669.5 | 289.8 | -658.1 | 675.6 | 3.00 | -0.47 | -2.97 |
| 7,338.0 | 90.50 | 266.30 | 6,668.6 | 286.3 | -721.0 | 738.2 | 1.99 | -0.95 | -1.75 |
| 7,401.0 | 91.20 | 266.70 | 6,667.6 | 282.5 | -783.9 | 800.7 | 1.28 | 1.11 | 0.63 |
| 7,464.0 | 91.50 | 267.40 | 6,666.2 | 279.2 | -846.8 | 863.2 | 1.21 | 0.48 | 1.11 |
| 7,528.0 | 90.00 | 270.70 | 6,665.3 | 278.2 | -910.8 | 927.0 | 5.66 | -2.34 | 5.16 |
| 7,591.0 | 90.40 | 270.40 | 6,665.1 | 278.8 | -973.8 | 989.9 | 0.79 | 0.63 | -0.48 |
| 7,654.0 | 90.90 | 270.20 | 6,664.4 | 279.1 | -1,036.8 | 1,052.8 | 0.85 | 0.79 | -0.32 |
| 7,717.0 | 91.70 | 270.00 | 6,663.0 | 279.2 | -1,099.8 | 1,115.6 | 1.31 | 1.27 | -0.32 |
| 7,780.0 | 91.40 | 269.00 | 6,661.3 | 278.7 | -1,162.7 | 1,178.4 | 1.66 | -0.48 | -1.59 |
| 7,844.0 | 90.70 | 269.10 | 6,660.1 | 277.6 | -1,226.7 | 1,242.2 | 1.10 | -1.09 | 0.16 |
| 7,907.0 | 90.00 | 268.90 | 6,659.7 | 276.5 | -1,289.7 | 1,305.0 | 1.16 | -1.11 | -0.32 |
| 7,971.0 | 89.90 | 268.10 | 6,659.8 | 274.8 | -1,353.7 | 1,368.7 | 1.26 | -0.16 | -1.25 |
| 8,034.0 | 89.70 | 268.30 | 6,660.0 | 272.8 | -1,416.6 | 1,431.4 | 0.45 | -0.32 | 0.32 |
| 8,097.0 | 91.20 | 274.30 | 6,659.5 | 274.3 | -1,479.6 | 1,494.3 | 9.82 | 2.38 | 9.52 |
| 8,160.0 | 92.50 | 276.90 | 6,657.4 | 280.4 | -1,542.3 | 1,557.3 | 4.61 | 2.06 | 4.13 |
| 8,223.0 | 92.70 | 276.90 | 6,654.6 | 288.0 | -1,604.7 | 1,620.1 | 0.32 | 0.32 | 0.00 |

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| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Peterson 14X-414 |
| Project: | SEC.14-T5N-R64W | TVD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Site: | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | MD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Well: | Peterson 14X-414 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 8,286.0 | 91.80 | 273.00 | 6,652.1 | 293.4 | -1,667.4 | 1,683.0 | 6.35 | -1.43 | -6.19 |
| 8,349.0 | 92.30 | 271.40 | 6,649.9 | 295.8 | -1,730.4 | 1,746.0 | 2.66 | 0.79 | -2.54 |
| 8,412.0 | 89.80 | 269.80 | 6,648.7 | 296.5 | -1,793.3 | 1,808.9 | 4.71 | -3.97 | -2.54 |
| 8,476.0 | 87.10 | 267.00 | 6,650.4 | 294.7 | -1,857.3 | 1,872.5 | 6.08 | -4.22 | -4.38 |
| 8,539.0 | 88.40 | 267.70 | 6,652.9 | 291.8 | -1,920.2 | 1,935.1 | 2.34 | 2.06 | 1.11 |
| 8,602.0 | 90.00 | 269.10 | 6,653.8 | 290.0 | -1,983.1 | 1,997.8 | 3.37 | 2.54 | 2.22 |
| 8,665.0 | 90.90 | 269.50 | 6,653.3 | 289.3 | -2,046.1 | 2,060.6 | 1.56 | 1.43 | 0.63 |
| 8,729.0 | 90.10 | 268.60 | 6,652.7 | 288.2 | -2,110.1 | 2,124.4 | 1.88 | -1.25 | -1.41 |
| 8,792.0 | 90.60 | 268.40 | 6,652.3 | 286.6 | -2,173.1 | 2,187.1 | 0.85 | 0.79 | -0.32 |
| 8,855.0 | 89.80 | 268.80 | 6,652.1 | 285.0 | -2,236.1 | 2,249.9 | 1.42 | -1.27 | 0.63 |
| 8,918.0 | 89.30 | 268.90 | 6,652.6 | 283.7 | -2,299.0 | 2,312.7 | 0.81 | -0.79 | 0.16 |
| 8,982.0 | 89.90 | 270.30 | 6,653.1 | 283.3 | -2,363.0 | 2,376.5 | 2.38 | 0.94 | 2.19 |
| 9,045.0 | 89.60 | 270.30 | 6,653.3 | 283.6 | -2,426.0 | 2,439.4 | 0.48 | -0.48 | 0.00 |
| 9,108.0 | 90.30 | 272.50 | 6,653.4 | 285.2 | -2,489.0 | 2,502.3 | 3.66 | 1.11 | 3.49 |
| 9,170.0 | 89.70 | 271.80 | 6,653.4 | 287.5 | -2,551.0 | 2,564.3 | 1.49 | -0.97 | -1.13 |
| 9,233.0 | 88.60 | 270.70 | 6,654.3 | 288.9 | -2,613.9 | 2,627.2 | 2.47 | -1.75 | -1.75 |
| 9,296.0 | 88.50 | 270.00 | 6,655.9 | 289.3 | -2,676.9 | 2,690.1 | 1.12 | -0.16 | -1.11 |
| 9,359.0 | 89.90 | 270.70 | 6,656.8 | 289.6 | -2,739.9 | 2,753.0 | 2.48 | 2.22 | 1.11 |
| 9,422.0 | 88.60 | 270.00 | 6,657.6 | 290.0 | -2,802.9 | 2,815.9 | 2.34 | -2.06 | -1.11 |
| 9,485.0 | 89.30 | 270.20 | 6,658.8 | 290.1 | -2,865.9 | 2,878.7 | 1.16 | 1.11 | 0.32 |
| 9,549.0 | 90.20 | 270.50 | 6,659.1 | 290.5 | -2,929.9 | 2,942.6 | 1.48 | 1.41 | 0.47 |
| 9,612.0 | 89.30 | 267.70 | 6,659.3 | 289.5 | -2,992.9 | 3,005.4 | 4.67 | -1.43 | -4.44 |
| 9,674.0 | 89.50 | 270.70 | 6,660.0 | 288.7 | -3,054.9 | 3,067.2 | 4.85 | 0.32 | 4.84 |
| 9,738.0 | 89.30 | 273.90 | 6,660.7 | 291.2 | -3,118.8 | 3,131.2 | 5.01 | -0.31 | 5.00 |
| 9,801.0 | 89.00 | 273.90 | 6,661.6 | 295.5 | -3,181.6 | 3,194.1 | 0.48 | -0.48 | 0.00 |
| 9,864.0 | 89.20 | 273.00 | 6,662.6 | 299.3 | -3,244.5 | 3,257.1 | 1.46 | 0.32 | -1.43 |
| 9,927.0 | 88.20 | 271.10 | 6,664.0 | 301.6 | -3,307.5 | 3,320.1 | 3.41 | -1.59 | -3.02 |
| 9,990.0 | 88.60 | 270.30 | 6,665.8 | 302.3 | -3,370.4 | 3,383.0 | 1.42 | 0.63 | -1.27 |
| 10,054.0 | 89.20 | 268.60 | 6,667.0 | 301.7 | -3,434.4 | 3,446.8 | 2.82 | 0.94 | -2.66 |
| 10,117.0 | 88.40 | 266.70 | 6,668.3 | 299.1 | -3,497.3 | 3,509.4 | 3.27 | -1.27 | -3.02 |
| 10,180.0 | 88.50 | 265.80 | 6,670.0 | 295.0 | -3,560.2 | 3,571.8 | 1.44 | 0.16 | -1.43 |
| 10,243.0 | 88.70 | 265.30 | 6,671.6 | 290.1 | -3,623.0 | 3,634.2 | 0.85 | 0.32 | -0.79 |
| 10,306.0 | 87.00 | 267.40 | 6,673.9 | 286.1 | -3,685.8 | 3,696.6 | 4.29 | -2.70 | 3.33 |
| 10,369.0 | 88.00 | 269.50 | 6,676.7 | 284.4 | -3,748.7 | 3,759.3 | 3.69 | 1.59 | 3.33 |
| 10,432.0 | 87.80 | 270.30 | 6,679.0 | 284.3 | -3,811.7 | 3,822.1 | 1.31 | -0.32 | 1.27 |
| 10,496.0 | 89.20 | 272.30 | 6,680.7 | 285.8 | -3,875.6 | 3,886.0 | 3.81 | 2.19 | 3.13 |
| 10,559.0 | 89.30 | 272.10 | 6,681.5 | 288.2 | -3,938.6 | 3,949.0 | 0.35 | 0.16 | -0.32 |
| 10,621.0 | 88.10 | 270.20 | 6,682.9 | 289.4 | -4,000.5 | 4,010.9 | 3.62 | -1.94 | -3.06 |
| 10,685.0 | 88.00 | 269.60 | 6,685.1 | 289.3 | -4,064.5 | 4,074.7 | 0.95 | -0.16 | -0.94 |
| 10,748.0 | 88.60 | 269.10 | 6,686.9 | 288.6 | -4,127.5 | 4,137.5 | 1.24 | 0.95 | -0.79 |
| 10,812.0 | 89.50 | 268.80 | 6,688.0 | 287.4 | -4,191.4 | 4,201.3 | 1.48 | 1.41 | -0.47 |
| 10,874.0 | 89.90 | 268.10 | 6,688.3 | 285.8 | -4,253.4 | 4,263.0 | 1.30 | 0.65 | -1.13 |
| 10,915.0 | 90.70 | 267.40 | 6,688.1 | 284.1 | -4,294.4 | 4,303.8 | 2.59 | 1.95 | -1.71 |
| 10,970.0 | 90.70 | 267.40 | 6,687.4 | 281.6 | -4,349.3 | 4,358.4 | 0.00 | 0.00 | 0.00 |
| BHL 1725'FSL & 500'FWL | | | | | | | | | |

| Casing Points | | | | | |
|---------------------|---------------------|------|---------------------|-------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") | |
| 7,088.0 | 6,674.5 | 7" | 7 | 7-1/2 | |

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| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Peterson 14X-414 |
| Project: | SEC.14-T5N-R64W | TVD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Site: | Peterson 14WX-HZ Pad Sec.14-T5N-R64W | MD Reference: | WELL @ 4586.0ft (Ensign Rig - RKB - 15') |
| Well: | Peterson 14X-414 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

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