

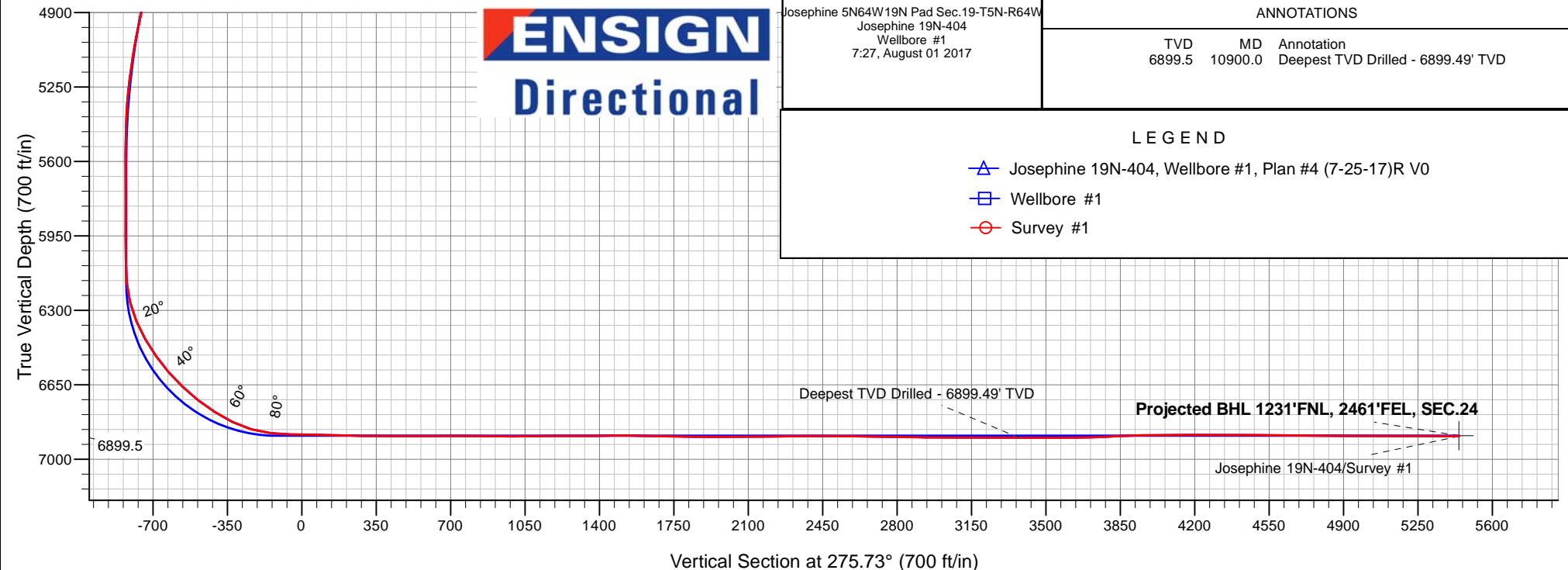
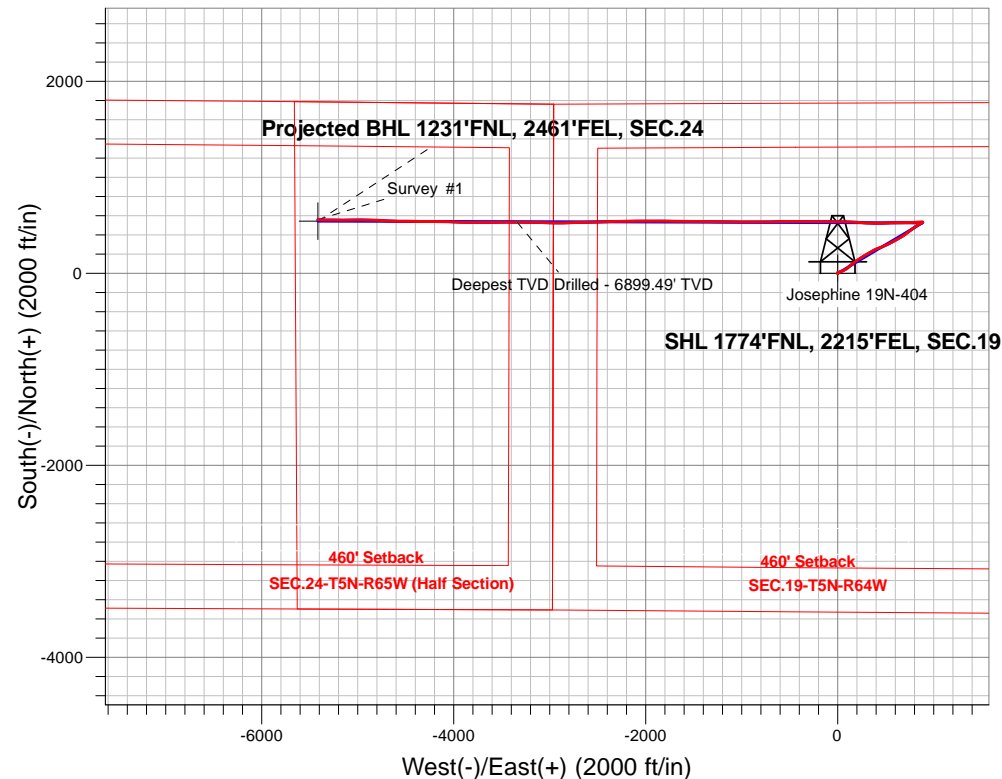
PDC Energy Inc. DJ Basin

Well Name: **Josephine 19N-404**

Surface Location: Josephine 5N64W19N Pad Sec.19-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4626.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1385125.173253129.21 40.387010 -104.591290
 Original Well Elev WELL @ 4649.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
12,978'MD 6892'TVD 557'N & 5415'W of SHL
89.5 degree Incl @ 270.6 degree AZM



Josephine 5N64W19N Pad Sec.19-T5N-R64W
 Josephine 19N-404
 Wellbore #1
 7:27, August 01 2017

ANNOTATIONS

| TVD | MD | Annotation |
|--------|---------|------------------------------------|
| 6899.5 | 10900.0 | Deepest TVD Drilled - 6899.49' TVD |

LEGEND

- △ Josephine 19N-404, Wellbore #1, Plan #4 (7-25-17)R V0
- Wellbore #1
- Survey #1



PDC Energy Inc. DJ Basin

SEC.19-T5N-R64W

Josephine 5N64W19N Pad Sec.19-T5N-R64W

Josephine 19N-404

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 August, 2017

| | | | |
|------------------|--|-------------------------------------|--------------------------------------|
| Company: | PDC Energy Inc. DJ Basin | Local Co-ordinate Reference: | Well Josephine 19N-404 |
| Project: | SEC.19-T5N-R64W | TVD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Site: | Josephine 5N64W19N Pad Sec.19-T5N-R64W | MD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Well: | Josephine 19N-404 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| | | | |
|--------------------|---------------------------|----------------------|-----------------------------|
| Project | SEC.19-T5N-R64W | | |
| 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 |

| | | | | | |
|-----------------------|--|--------------|-------------------|-------------------|-------------|
| Site | Josephine 5N64W19N Pad Sec.19-T5N-R64W | | | | |
| Site Position: | | Northing: | 1,385,202.34 usft | Latitude: | 40.387220 |
| From: | Lat/Long | Easting: | 3,253,192.49 usft | Longitude: | -104.591060 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.59 ° |

| Well | Josephine 19N-404 | | | | | |
|----------------------|-------------------|--------|---------------------|-------------------|---------------|-------------|
| Well Position | +N/-S | 0.0 ft | Northing: | 1,385,125.17 usft | Latitude: | 40.387010 |
| | +E/-W | 0.0 ft | Easting: | 3,253,129.21 usft | Longitude: | -104.591290 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | 0.0 ft | Ground Level: | 4,626.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 7/25/2017 | 7.94 | 66.85 | 52,500 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| 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 | 275.73 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 8/1/2017 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 158.0 | 12,978.0 | Survey #1 (Wellbore #1) | MWD | MWD - Standard | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 158.0 | 0.40 | 19.50 | 158.0 | 0.5 | 0.2 | -0.1 | 0.25 | 0.25 | 0.00 | |
| 254.0 | 0.50 | 50.10 | 254.0 | 1.1 | 0.6 | -0.5 | 0.27 | 0.10 | 31.88 | |
| 350.0 | 0.70 | 30.40 | 350.0 | 1.9 | 1.2 | -1.0 | 0.30 | 0.21 | -20.52 | |
| 445.0 | 0.80 | 23.40 | 445.0 | 3.0 | 1.8 | -1.5 | 0.14 | 0.11 | -7.37 | |
| 541.0 | 0.70 | 267.70 | 541.0 | 3.6 | 1.5 | -1.1 | 1.32 | -0.10 | -120.52 | |
| 636.0 | 0.60 | 272.30 | 636.0 | 3.6 | 0.4 | 0.0 | 0.12 | -0.11 | 4.84 | |
| 732.0 | 0.90 | 283.40 | 732.0 | 3.8 | -0.8 | 1.2 | 0.35 | 0.31 | 11.56 | |
| 828.0 | 1.00 | 297.60 | 828.0 | 4.3 | -2.3 | 2.7 | 0.27 | 0.10 | 14.79 | |
| 923.0 | 0.50 | 137.00 | 922.9 | 4.4 | -2.8 | 3.2 | 1.56 | -0.53 | -169.05 | |

| | | | |
|------------------|--|-------------------------------------|--------------------------------------|
| Company: | PDC Energy Inc. DJ Basin | Local Co-ordinate Reference: | Well Josephine 19N-404 |
| Project: | SEC.19-T5N-R64W | TVD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Site: | Josephine 5N64W19N Pad Sec.19-T5N-R64W | MD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Well: | Josephine 19N-404 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 1,018.0 | 0.40 | 94.80 | 1,017.9 | 4.1 | -2.2 | 2.6 | 0.35 | -0.11 | -44.42 |
| 1,114.0 | 0.50 | 152.40 | 1,113.9 | 3.7 | -1.6 | 2.0 | 0.46 | 0.10 | 60.00 |
| 1,210.0 | 0.50 | 130.10 | 1,209.9 | 3.0 | -1.1 | 1.4 | 0.20 | 0.00 | -23.23 |
| 1,306.0 | 1.30 | 65.10 | 1,305.9 | 3.2 | 0.2 | 0.1 | 1.23 | 0.83 | -67.71 |
| 1,401.0 | 3.10 | 55.80 | 1,400.9 | 5.1 | 3.3 | -2.8 | 1.93 | 1.89 | -9.79 |
| 1,497.0 | 3.30 | 65.90 | 1,496.7 | 7.7 | 8.0 | -7.2 | 0.62 | 0.21 | 10.52 |
| 1,593.0 | 4.00 | 70.50 | 1,592.5 | 10.0 | 13.6 | -12.6 | 0.79 | 0.73 | 4.79 |
| 1,615.0 | 4.40 | 70.20 | 1,614.5 | 10.5 | 15.2 | -14.0 | 1.82 | 1.82 | -1.36 |
| 1,690.0 | 4.50 | 60.50 | 1,689.2 | 12.9 | 20.4 | -19.0 | 1.01 | 0.13 | -12.93 |
| 1,786.0 | 5.60 | 68.80 | 1,784.9 | 16.5 | 28.1 | -26.3 | 1.37 | 1.15 | 8.65 |
| 1,881.0 | 7.50 | 69.80 | 1,879.2 | 20.3 | 38.2 | -36.0 | 2.00 | 2.00 | 1.05 |
| 1,977.0 | 10.20 | 65.90 | 1,974.1 | 25.9 | 51.9 | -49.0 | 2.88 | 2.81 | -4.06 |
| 2,073.0 | 12.50 | 61.40 | 2,068.2 | 34.4 | 68.7 | -65.0 | 2.57 | 2.40 | -4.69 |
| 2,169.0 | 14.90 | 57.70 | 2,161.5 | 45.9 | 88.3 | -83.3 | 2.66 | 2.50 | -3.85 |
| 2,264.0 | 16.90 | 51.40 | 2,252.8 | 61.1 | 109.4 | -102.8 | 2.78 | 2.11 | -6.63 |
| 2,359.0 | 17.60 | 50.50 | 2,343.6 | 78.8 | 131.3 | -122.8 | 0.79 | 0.74 | -0.95 |
| 2,456.0 | 16.50 | 49.40 | 2,436.3 | 97.1 | 153.1 | -142.6 | 1.18 | -1.13 | -1.13 |
| 2,552.0 | 17.90 | 53.50 | 2,528.0 | 114.8 | 175.3 | -162.9 | 1.93 | 1.46 | 4.27 |
| 2,647.0 | 17.40 | 52.60 | 2,618.5 | 132.1 | 198.3 | -184.1 | 0.60 | -0.53 | -0.95 |
| 2,742.0 | 18.90 | 57.20 | 2,708.8 | 149.1 | 222.5 | -206.5 | 2.18 | 1.58 | 4.84 |
| 2,838.0 | 18.90 | 60.90 | 2,799.6 | 165.0 | 249.2 | -231.5 | 1.25 | 0.00 | 3.85 |
| 2,934.0 | 17.80 | 60.90 | 2,890.7 | 179.7 | 275.6 | -256.3 | 1.15 | -1.15 | 0.00 |
| 3,029.0 | 17.10 | 59.40 | 2,981.4 | 193.9 | 300.3 | -279.4 | 0.88 | -0.74 | -1.58 |
| 3,125.0 | 15.70 | 55.80 | 3,073.5 | 208.4 | 323.2 | -300.8 | 1.80 | -1.46 | -3.75 |
| 3,221.0 | 15.70 | 60.00 | 3,165.9 | 222.2 | 345.2 | -321.3 | 1.18 | 0.00 | 4.38 |
| 3,317.0 | 16.50 | 60.90 | 3,258.1 | 235.3 | 368.3 | -343.0 | 0.87 | 0.83 | 0.94 |
| 3,412.0 | 16.90 | 64.90 | 3,349.1 | 247.7 | 392.6 | -365.9 | 1.28 | 0.42 | 4.21 |
| 3,508.0 | 17.90 | 68.10 | 3,440.7 | 259.2 | 419.0 | -391.0 | 1.44 | 1.04 | 3.33 |
| 3,604.0 | 16.70 | 67.50 | 3,532.4 | 269.9 | 445.4 | -416.2 | 1.26 | -1.25 | -0.63 |
| 3,699.0 | 16.80 | 67.50 | 3,623.4 | 280.4 | 470.7 | -440.3 | 0.11 | 0.11 | 0.00 |
| 3,795.0 | 18.20 | 67.70 | 3,714.9 | 291.4 | 497.4 | -465.8 | 1.46 | 1.46 | 0.21 |
| 3,891.0 | 18.20 | 67.00 | 3,806.1 | 303.0 | 525.0 | -492.2 | 0.23 | 0.00 | -0.73 |
| 3,987.0 | 18.20 | 61.20 | 3,897.3 | 316.0 | 552.0 | -517.7 | 1.89 | 0.00 | -6.04 |
| 4,083.0 | 16.50 | 58.70 | 3,988.9 | 330.4 | 576.8 | -540.9 | 1.93 | -1.77 | -2.60 |
| 4,179.0 | 17.90 | 60.50 | 4,080.6 | 344.7 | 601.3 | -563.8 | 1.56 | 1.46 | 1.88 |
| 4,275.0 | 16.10 | 59.30 | 4,172.4 | 358.8 | 625.6 | -586.6 | 1.91 | -1.88 | -1.25 |
| 4,371.0 | 17.00 | 61.00 | 4,264.5 | 372.4 | 649.3 | -608.9 | 1.06 | 0.94 | 1.77 |
| 4,466.0 | 16.80 | 57.30 | 4,355.4 | 386.5 | 673.0 | -631.0 | 1.15 | -0.21 | -3.89 |
| 4,561.0 | 18.00 | 55.80 | 4,446.0 | 402.2 | 696.7 | -653.0 | 1.35 | 1.26 | -1.58 |
| 4,657.0 | 16.40 | 53.60 | 4,537.7 | 418.6 | 719.8 | -674.5 | 1.80 | -1.67 | -2.29 |
| 4,752.0 | 17.20 | 51.70 | 4,628.7 | 435.2 | 741.7 | -694.5 | 1.02 | 0.84 | -2.00 |
| 4,847.0 | 18.00 | 55.00 | 4,719.2 | 452.4 | 764.7 | -715.7 | 1.35 | 0.84 | 3.47 |
| 4,943.0 | 15.90 | 54.00 | 4,811.0 | 468.6 | 787.5 | -736.8 | 2.21 | -2.19 | -1.04 |
| 5,039.0 | 15.30 | 54.50 | 4,903.5 | 483.7 | 808.5 | -756.1 | 0.64 | -0.63 | 0.52 |

| | | | |
|------------------|--|-------------------------------------|--------------------------------------|
| Company: | PDC Energy Inc. DJ Basin | Local Co-ordinate Reference: | Well Josephine 19N-404 |
| Project: | SEC.19-T5N-R64W | TVD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Site: | Josephine 5N64W19N Pad Sec.19-T5N-R64W | MD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Well: | Josephine 19N-404 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,135.0 | 14.60 | 56.50 | 4,996.3 | 497.7 | 828.9 | -775.0 | 0.91 | -0.73 | 2.08 |
| 5,231.0 | 11.90 | 54.70 | 5,089.7 | 510.1 | 847.0 | -791.9 | 2.84 | -2.81 | -1.88 |
| 5,326.0 | 9.10 | 61.00 | 5,183.1 | 519.4 | 861.6 | -805.4 | 3.18 | -2.95 | 6.63 |
| 5,422.0 | 6.70 | 68.90 | 5,278.2 | 525.1 | 873.5 | -816.7 | 2.74 | -2.50 | 8.23 |
| 5,517.0 | 3.70 | 67.70 | 5,372.8 | 528.3 | 881.5 | -824.3 | 3.16 | -3.16 | -1.26 |
| 5,613.0 | 1.00 | 49.80 | 5,468.7 | 530.0 | 885.0 | -827.6 | 2.88 | -2.81 | -18.65 |
| 5,708.0 | 0.70 | 26.40 | 5,563.7 | 531.0 | 885.9 | -828.4 | 0.48 | -0.32 | -24.63 |
| 5,804.0 | 0.40 | 50.70 | 5,659.7 | 531.8 | 886.4 | -828.9 | 0.39 | -0.31 | 25.31 |
| 5,900.0 | 0.40 | 51.00 | 5,755.7 | 532.2 | 886.9 | -829.3 | 0.00 | 0.00 | 0.31 |
| 5,995.0 | 0.50 | 281.50 | 5,850.7 | 532.5 | 886.8 | -829.2 | 0.86 | 0.11 | -136.32 |
| 6,091.0 | 0.40 | 326.50 | 5,946.7 | 532.9 | 886.2 | -828.5 | 0.37 | -0.10 | 46.88 |
| 6,215.0 | 0.60 | 303.80 | 6,070.7 | 533.6 | 885.4 | -827.7 | 0.22 | 0.16 | -18.31 |
| 6,311.0 | 4.30 | 277.60 | 6,166.6 | 534.3 | 881.4 | -823.6 | 3.93 | 3.85 | -27.29 |
| 6,406.0 | 13.90 | 265.60 | 6,260.3 | 533.9 | 866.5 | -808.8 | 10.25 | 10.11 | -12.63 |
| 6,502.0 | 23.70 | 264.10 | 6,351.0 | 531.1 | 835.7 | -778.5 | 10.22 | 10.21 | -1.56 |
| 6,598.0 | 30.20 | 268.10 | 6,436.6 | 528.3 | 792.3 | -735.6 | 7.03 | 6.77 | 4.17 |
| 6,693.0 | 35.10 | 271.80 | 6,516.5 | 528.3 | 741.1 | -684.6 | 5.57 | 5.16 | 3.89 |
| 6,789.0 | 41.10 | 270.40 | 6,592.1 | 529.4 | 681.9 | -625.6 | 6.31 | 6.25 | -1.46 |
| 6,884.0 | 46.90 | 266.70 | 6,660.4 | 527.6 | 616.0 | -560.2 | 6.68 | 6.11 | -3.89 |
| 6,980.0 | 52.60 | 267.40 | 6,722.4 | 523.9 | 542.8 | -487.8 | 5.96 | 5.94 | 0.73 |
| 7,076.0 | 57.10 | 269.00 | 6,777.6 | 521.5 | 464.4 | -410.0 | 4.88 | 4.69 | 1.67 |
| 7,172.0 | 63.90 | 271.40 | 6,824.9 | 521.8 | 380.9 | -326.9 | 7.41 | 7.08 | 2.50 |
| 7,267.0 | 74.00 | 273.70 | 6,859.0 | 525.8 | 292.5 | -238.5 | 10.87 | 10.63 | 2.42 |
| 7,363.0 | 83.10 | 272.70 | 6,878.0 | 531.0 | 198.6 | -144.6 | 9.53 | 9.48 | -1.04 |
| 7,458.0 | 90.00 | 272.10 | 6,883.7 | 535.0 | 103.9 | -50.0 | 7.29 | 7.26 | -0.63 |
| 7,554.0 | 88.70 | 270.60 | 6,884.8 | 537.3 | 8.0 | 45.7 | 2.07 | -1.35 | -1.56 |
| 7,650.0 | 89.10 | 270.70 | 6,886.7 | 538.4 | -88.0 | 141.3 | 0.43 | 0.42 | 0.10 |
| 7,746.0 | 88.20 | 269.70 | 6,888.9 | 538.7 | -184.0 | 236.8 | 1.40 | -0.94 | -1.04 |
| 7,841.0 | 89.60 | 270.20 | 6,890.7 | 538.6 | -278.9 | 331.3 | 1.56 | 1.47 | 0.53 |
| 7,937.0 | 89.80 | 270.00 | 6,891.2 | 538.8 | -374.9 | 426.9 | 0.29 | 0.21 | -0.21 |
| 8,032.0 | 90.10 | 270.20 | 6,891.3 | 538.9 | -469.9 | 521.4 | 0.38 | 0.32 | 0.21 |
| 8,127.0 | 90.40 | 269.70 | 6,890.9 | 538.9 | -564.9 | 615.9 | 0.61 | 0.32 | -0.53 |
| 8,223.0 | 90.20 | 268.80 | 6,890.4 | 537.6 | -660.9 | 711.3 | 0.96 | -0.21 | -0.94 |
| 8,318.0 | 89.00 | 269.30 | 6,891.1 | 536.0 | -755.9 | 805.7 | 1.37 | -1.26 | 0.53 |
| 8,414.0 | 89.30 | 269.70 | 6,892.5 | 535.2 | -851.9 | 901.1 | 0.52 | 0.31 | 0.42 |
| 8,509.0 | 90.50 | 270.60 | 6,892.7 | 535.4 | -946.9 | 995.6 | 1.58 | 1.26 | 0.95 |
| 8,605.0 | 90.80 | 269.70 | 6,891.6 | 535.7 | -1,042.9 | 1,091.2 | 0.99 | 0.31 | -0.94 |
| 8,700.0 | 90.20 | 271.10 | 6,890.7 | 536.4 | -1,137.9 | 1,185.7 | 1.60 | -0.63 | 1.47 |
| 8,796.0 | 90.00 | 270.60 | 6,890.6 | 537.8 | -1,233.9 | 1,281.4 | 0.56 | -0.21 | -0.52 |
| 8,891.0 | 90.30 | 270.00 | 6,890.3 | 538.3 | -1,328.9 | 1,376.0 | 0.71 | 0.32 | -0.63 |
| 8,987.0 | 90.90 | 271.60 | 6,889.3 | 539.6 | -1,424.9 | 1,471.6 | 1.78 | 0.63 | 1.67 |
| 9,083.0 | 88.60 | 269.90 | 6,889.7 | 540.9 | -1,520.8 | 1,567.2 | 2.98 | -2.40 | -1.77 |
| 9,179.0 | 88.70 | 269.70 | 6,892.0 | 540.5 | -1,616.8 | 1,662.7 | 0.23 | 0.10 | -0.21 |

| | | | |
|------------------|--|-------------------------------------|--------------------------------------|
| Company: | PDC Energy Inc. DJ Basin | Local Co-ordinate Reference: | Well Josephine 19N-404 |
| Project: | SEC.19-T5N-R64W | TVD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Site: | Josephine 5N64W19N Pad Sec.19-T5N-R64W | MD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Well: | Josephine 19N-404 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 9,274.0 | 89.40 | 271.30 | 6,893.6 | 541.4 | -1,711.8 | 1,757.3 | 1.84 | 0.74 | 1.68 |
| 9,369.0 | 89.30 | 270.70 | 6,894.7 | 543.0 | -1,806.8 | 1,852.0 | 0.64 | -0.11 | -0.63 |
| 9,465.0 | 90.40 | 269.90 | 6,894.9 | 543.5 | -1,902.8 | 1,947.5 | 1.42 | 1.15 | -0.83 |
| 9,561.0 | 90.10 | 270.00 | 6,894.5 | 543.4 | -1,998.8 | 2,043.0 | 0.33 | -0.31 | 0.10 |
| 9,657.0 | 90.20 | 269.90 | 6,894.2 | 543.4 | -2,094.8 | 2,138.5 | 0.15 | 0.10 | -0.10 |
| 9,753.0 | 90.80 | 269.30 | 6,893.4 | 542.7 | -2,190.8 | 2,234.0 | 0.88 | 0.63 | -0.63 |
| 9,848.0 | 90.70 | 269.00 | 6,892.2 | 541.3 | -2,285.7 | 2,328.4 | 0.33 | -0.11 | -0.32 |
| 9,944.0 | 90.30 | 267.70 | 6,891.3 | 538.5 | -2,381.7 | 2,423.6 | 1.42 | -0.42 | -1.35 |
| 10,040.0 | 89.40 | 268.60 | 6,891.6 | 535.4 | -2,477.6 | 2,518.7 | 1.33 | -0.94 | 0.94 |
| 10,136.0 | 89.30 | 268.80 | 6,892.7 | 533.2 | -2,573.6 | 2,614.0 | 0.23 | -0.10 | 0.21 |
| 10,231.0 | 89.30 | 268.10 | 6,893.8 | 530.7 | -2,668.6 | 2,708.2 | 0.74 | 0.00 | -0.74 |
| 10,327.0 | 89.10 | 267.90 | 6,895.2 | 527.3 | -2,764.5 | 2,803.3 | 0.29 | -0.21 | -0.21 |
| 10,422.0 | 88.90 | 269.00 | 6,896.8 | 524.7 | -2,859.4 | 2,897.5 | 1.18 | -0.21 | 1.16 |
| 10,518.0 | 90.00 | 271.10 | 6,897.7 | 524.8 | -2,955.4 | 2,993.1 | 2.47 | 1.15 | 2.19 |
| 10,613.0 | 89.70 | 271.40 | 6,898.0 | 526.9 | -3,050.4 | 3,087.8 | 0.45 | -0.32 | 0.32 |
| 10,708.0 | 90.00 | 271.40 | 6,898.2 | 529.2 | -3,145.4 | 3,182.5 | 0.32 | 0.32 | 0.00 |
| 10,804.0 | 89.20 | 270.90 | 6,898.9 | 531.2 | -3,241.4 | 3,278.2 | 0.98 | -0.83 | -0.52 |
| 10,900.0 | 90.10 | 270.70 | 6,899.5 | 532.5 | -3,337.3 | 3,373.8 | 0.96 | 0.94 | -0.21 |
| Deepest TVD Drilled - 6899.49' TVD | | | | | | | | | |
| 10,995.0 | 90.40 | 270.20 | 6,899.1 | 533.2 | -3,432.3 | 3,468.4 | 0.61 | 0.32 | -0.53 |
| 11,091.0 | 89.50 | 268.40 | 6,899.2 | 532.1 | -3,528.3 | 3,563.8 | 2.10 | -0.94 | -1.88 |
| 11,186.0 | 90.70 | 268.80 | 6,899.0 | 529.7 | -3,623.3 | 3,658.1 | 1.33 | 1.26 | 0.42 |
| 11,281.0 | 93.10 | 270.00 | 6,895.8 | 528.8 | -3,718.2 | 3,752.4 | 2.82 | 2.53 | 1.26 |
| 11,377.0 | 92.90 | 271.30 | 6,890.8 | 529.8 | -3,814.1 | 3,847.9 | 1.37 | -0.21 | 1.35 |
| 11,473.0 | 91.00 | 271.60 | 6,887.6 | 532.3 | -3,910.0 | 3,943.6 | 2.00 | -1.98 | 0.31 |
| 11,568.0 | 89.90 | 271.60 | 6,886.8 | 534.9 | -4,005.0 | 4,038.4 | 1.16 | -1.16 | 0.00 |
| 11,663.0 | 90.70 | 271.80 | 6,886.3 | 537.7 | -4,099.9 | 4,133.1 | 0.87 | 0.84 | 0.21 |
| 11,758.0 | 89.60 | 270.90 | 6,886.1 | 540.0 | -4,194.9 | 4,227.8 | 1.50 | -1.16 | -0.95 |
| 11,854.0 | 90.30 | 269.20 | 6,886.1 | 540.1 | -4,290.9 | 4,323.4 | 1.92 | 0.73 | -1.77 |
| 11,949.0 | 89.30 | 270.60 | 6,886.5 | 539.9 | -4,385.9 | 4,417.9 | 1.81 | -1.05 | 1.47 |
| 12,045.0 | 89.60 | 270.60 | 6,887.4 | 540.9 | -4,481.9 | 4,513.5 | 0.31 | 0.31 | 0.00 |
| 12,141.0 | 89.70 | 271.40 | 6,888.0 | 542.6 | -4,577.8 | 4,609.1 | 0.84 | 0.10 | 0.83 |
| 12,237.0 | 89.30 | 272.30 | 6,888.8 | 545.7 | -4,673.8 | 4,704.9 | 1.03 | -0.42 | 0.94 |
| 12,333.0 | 89.90 | 273.40 | 6,889.5 | 550.4 | -4,769.7 | 4,800.8 | 1.31 | 0.63 | 1.15 |
| 12,428.0 | 89.90 | 272.00 | 6,889.7 | 554.9 | -4,864.6 | 4,895.7 | 1.47 | 0.00 | -1.47 |
| 12,524.0 | 89.30 | 269.50 | 6,890.3 | 556.2 | -4,960.5 | 4,991.3 | 2.68 | -0.63 | -2.60 |
| 12,620.0 | 89.70 | 268.80 | 6,891.2 | 554.8 | -5,056.5 | 5,086.7 | 0.84 | 0.42 | -0.73 |
| 12,716.0 | 90.00 | 270.40 | 6,891.4 | 554.1 | -5,152.5 | 5,182.1 | 1.70 | 0.31 | 1.67 |
| 12,811.0 | 90.10 | 270.70 | 6,891.3 | 555.0 | -5,247.5 | 5,276.7 | 0.33 | 0.11 | 0.32 |
| 12,923.0 | 89.50 | 270.60 | 6,891.7 | 556.3 | -5,359.5 | 5,388.3 | 0.54 | -0.54 | -0.09 |
| 12,978.0 | 89.50 | 270.60 | 6,892.2 | 556.8 | -5,414.5 | 5,443.0 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|--|-------------------------------------|--------------------------------------|
| Company: | PDC Energy Inc. DJ Basin | Local Co-ordinate Reference: | Well Josephine 19N-404 |
| Project: | SEC.19-T5N-R64W | TVD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Site: | Josephine 5N64W19N Pad Sec.19-T5N-R64W | MD Reference: | WELL @ 4649.0ft (Original Well Elev) |
| Well: | Josephine 19N-404 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Design Targets | | | | | | | | | |
|--|---------------|--------------|----------|------------|------------|-----------------|----------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| SHL 1774'FNL, 2215'FE | 0.00 | 0.00 | 1.0 | 0.0 | 0.0 | 1,385,125.18 | 3,253,129.21 | 40.387010 | -104.591290 |
| - survey hits target center | | | | | | | | | |
| - Point | | | | | | | | | |
| BHL 1244'FNL, 2462'FE | 0.00 | 0.00 | 6,890.0 | 543.4 | -5,415.4 | 1,385,613.06 | 3,247,708.77 | 40.388500 | -104.610730 |
| - survey misses target center by 13.6ft at 12978.0ft MD (6892.2 TVD, 556.8 N, -5414.5 E) | | | | | | | | | |
| - Point | | | | | | | | | |

| Survey Annotations | | | | |
|---------------------|---------------------|-------------------|------------|------------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | +N/-S (ft) | +E/-W (ft) | |
| 10,900.0 | 6,899.5 | 532.5 | -3,337.3 | Deepest TVD Drilled - 6899.49' TVD |

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