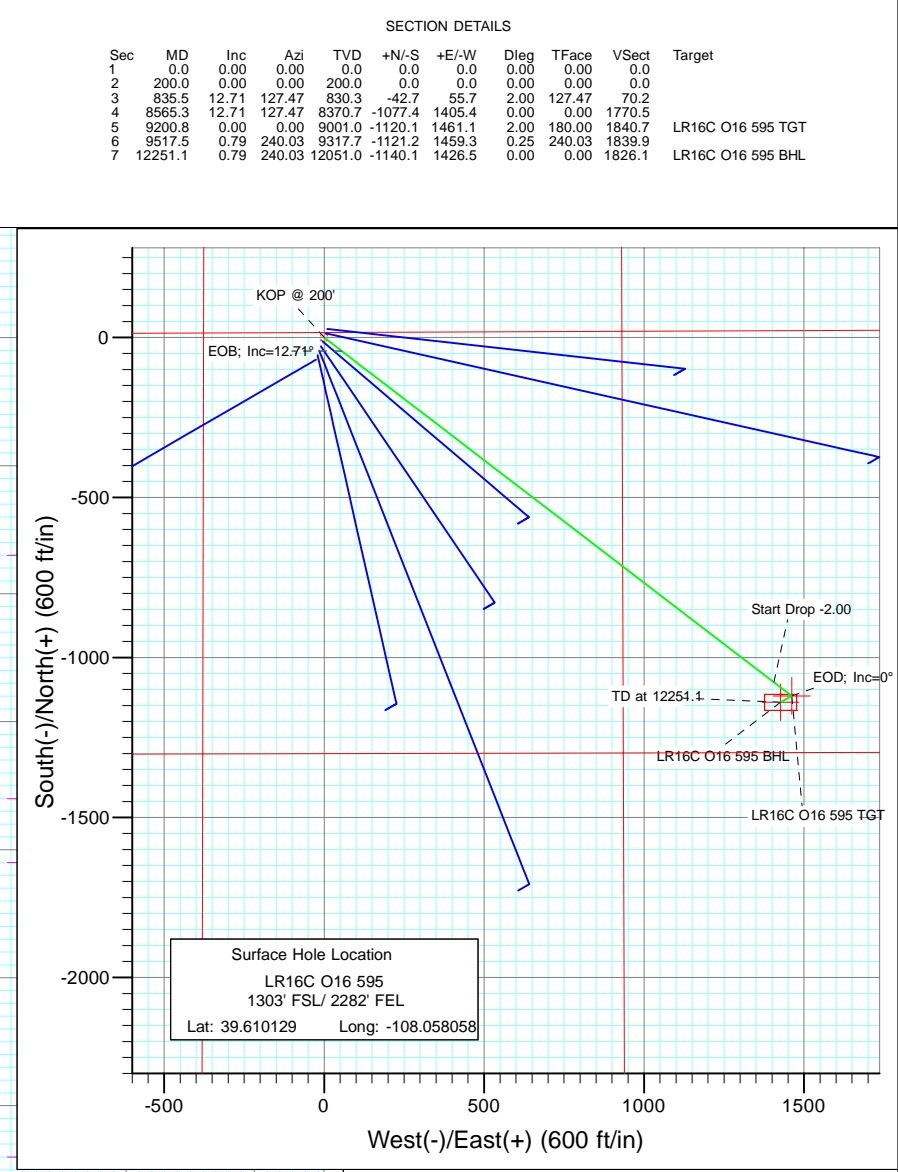
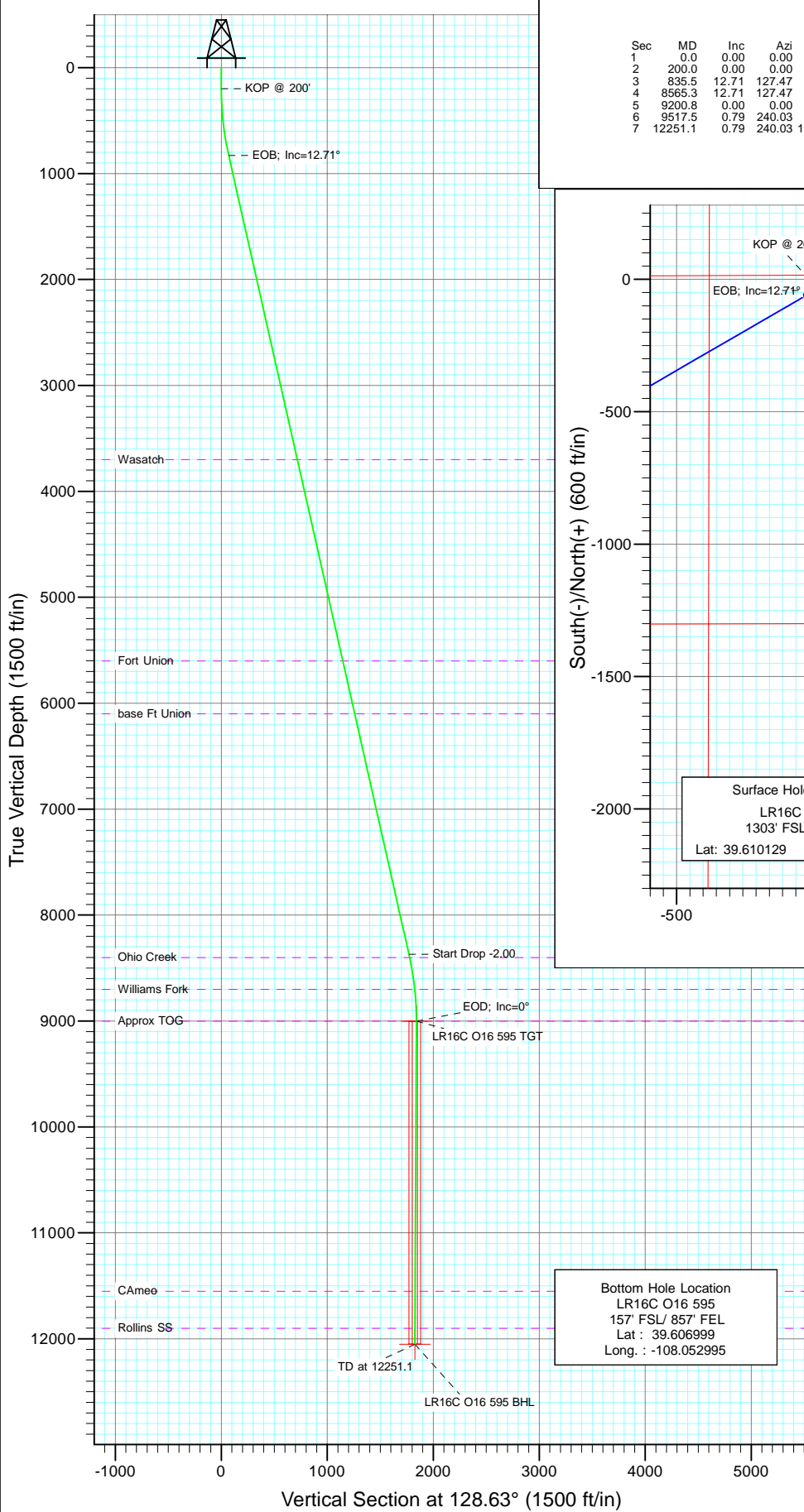




Project: Garfield County
Site: O16 595 Pad
Well: LR16C O16 595
Wellbore: DD
Design: Plan #1



Azimuths to True North
Magnetic North: 10.46°

Magnetic Field
Strength: 52388.3snT
Dip Angle: 65.85°
Date: 9/27/2010
Model: IGRF200510

FORMATION TOP DETAILS

| TVDPPath | MDPath | Formation |
|----------|---------|---------------|
| 3701.0 | 3778.3 | Wasatch |
| 5601.0 | 5726.0 | Fort Union |
| 6101.0 | 6238.6 | base Ft Union |
| 8401.0 | 8596.3 | Ohio Creek |
| 8701.0 | 8900.3 | Williams Fork |
| 9001.0 | 9200.8 | Approx TOG |
| 11551.0 | 11751.0 | Cameo |
| 11901.0 | 12101.1 | Rollins SS |

DESIGN DETAILS: Plan #1

105XXX; BH

KBE @ 8318.0ft (Patterson 302)

| Target | Azimuth | Origin | N/S | E/W | From TVD |
|-------------------|---------|--------|-----|-----|----------|
| LR16C O16 595 BHL | 128.63 | Slot | 0.0 | 0.0 | 0.0 |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| Project | Garfield County | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | |

| Site | | Long Ridge O16 595 Pad | | | |
|-----------------------|----------|------------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,657,293.80 ft | Latitude: | 39.610202 |
| From: | Lat/Long | Easting: | 2,279,395.79 ft | Longitude: | -108.058023 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | -1.61 ° |

| | | | | | | |
|----------------------|---------------|--------|---------------------|-----------------|---------------|-------------|
| Well | LR16C O16 595 | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,657,267.48 ft | Latitude: | 39.610129 |
| | +E/-W | 0.0 ft | Easting: | 2,279,385.18 ft | Longitude: | -108.058058 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 8,303.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | DD | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF200510 | 9/27/2010 | 10.46 | 65.85 | 52,388 |

| | | | | |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| Design | Plan #1 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 128.63 |

| Plan Sections | | | | | | | | | | |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 835.5 | 12.71 | 127.47 | 830.3 | -42.7 | 55.7 | 2.00 | 2.00 | 0.00 | 127.47 | |
| 8,565.3 | 12.71 | 127.47 | 8,370.7 | -1,077.4 | 1,405.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 9,200.8 | 0.00 | 0.00 | 9,001.0 | -1,120.1 | 1,461.1 | 2.00 | -2.00 | 0.00 | 180.00 | LR16C O16 595 TGT |
| 9,517.5 | 0.79 | 240.03 | 9,317.7 | -1,121.2 | 1,459.3 | 0.25 | 0.25 | -37.88 | 240.03 | |
| 12,251.1 | 0.79 | 240.03 | 12,051.0 | -1,140.1 | 1,426.5 | 0.00 | 0.00 | 0.00 | 0.00 | LR16C O16 595 BHL |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 30.0 | 0.00 | 0.00 | 30.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 60.0 | 0.00 | 0.00 | 60.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 90.0 | 0.00 | 0.00 | 90.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 150.0 | 0.00 | 0.00 | 150.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 180.0 | 0.00 | 0.00 | 180.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP @ 200' |
| 210.0 | 0.20 | 127.47 | 210.0 | 0.0 | 0.0 | 0.0 | 2.00 | 2.00 | |
| 240.0 | 0.80 | 127.47 | 240.0 | -0.2 | 0.2 | 0.3 | 2.00 | 2.00 | |
| 270.0 | 1.40 | 127.47 | 270.0 | -0.5 | 0.7 | 0.9 | 2.00 | 2.00 | |
| 300.0 | 2.00 | 127.47 | 300.0 | -1.1 | 1.4 | 1.7 | 2.00 | 2.00 | |
| 330.0 | 2.60 | 127.47 | 330.0 | -1.8 | 2.3 | 2.9 | 2.00 | 2.00 | |
| 360.0 | 3.20 | 127.47 | 359.9 | -2.7 | 3.5 | 4.5 | 2.00 | 2.00 | |
| 390.0 | 3.80 | 127.47 | 389.9 | -3.8 | 5.0 | 6.3 | 2.00 | 2.00 | |
| 420.0 | 4.40 | 127.47 | 419.8 | -5.1 | 6.7 | 8.4 | 2.00 | 2.00 | |
| 450.0 | 5.00 | 127.47 | 449.7 | -6.6 | 8.7 | 10.9 | 2.00 | 2.00 | |
| 480.0 | 5.60 | 127.47 | 479.6 | -8.3 | 10.9 | 13.7 | 2.00 | 2.00 | |
| 510.0 | 6.20 | 127.47 | 509.4 | -10.2 | 13.3 | 16.8 | 2.00 | 2.00 | |
| 540.0 | 6.80 | 127.47 | 539.2 | -12.3 | 16.0 | 20.1 | 2.00 | 2.00 | |
| 570.0 | 7.40 | 127.47 | 569.0 | -14.5 | 18.9 | 23.9 | 2.00 | 2.00 | |
| 600.0 | 8.00 | 127.47 | 598.7 | -17.0 | 22.1 | 27.9 | 2.00 | 2.00 | |
| 630.0 | 8.60 | 127.47 | 628.4 | -19.6 | 25.6 | 32.2 | 2.00 | 2.00 | |
| 660.0 | 9.20 | 127.47 | 658.0 | -22.4 | 29.2 | 36.8 | 2.00 | 2.00 | |
| 690.0 | 9.80 | 127.47 | 687.6 | -25.4 | 33.2 | 41.8 | 2.00 | 2.00 | |
| 720.0 | 10.40 | 127.47 | 717.1 | -28.6 | 37.4 | 47.1 | 2.00 | 2.00 | |
| 750.0 | 11.00 | 127.47 | 746.6 | -32.0 | 41.8 | 52.6 | 2.00 | 2.00 | |
| 780.0 | 11.60 | 127.47 | 776.0 | -35.6 | 46.4 | 58.5 | 2.00 | 2.00 | |
| 810.0 | 12.20 | 127.47 | 805.4 | -39.4 | 51.3 | 64.7 | 2.00 | 2.00 | |
| 835.5 | 12.71 | 127.47 | 830.3 | -42.7 | 55.7 | 70.2 | 2.00 | 2.00 | EOB; Inc=12.71° |
| 840.0 | 12.71 | 127.47 | 834.7 | -43.3 | 56.5 | 71.2 | 0.00 | 0.00 | |
| 870.0 | 12.71 | 127.47 | 864.0 | -47.3 | 61.7 | 77.8 | 0.00 | 0.00 | |
| 900.0 | 12.71 | 127.47 | 893.2 | -51.3 | 67.0 | 84.4 | 0.00 | 0.00 | |
| 930.0 | 12.71 | 127.47 | 922.5 | -55.4 | 72.2 | 91.0 | 0.00 | 0.00 | |
| 960.0 | 12.71 | 127.47 | 951.8 | -59.4 | 77.5 | 97.6 | 0.00 | 0.00 | |
| 990.0 | 12.71 | 127.47 | 981.0 | -63.4 | 82.7 | 104.2 | 0.00 | 0.00 | |
| 1,020.0 | 12.71 | 127.47 | 1,010.3 | -67.4 | 87.9 | 110.8 | 0.00 | 0.00 | |
| 1,050.0 | 12.71 | 127.47 | 1,039.5 | -71.4 | 93.2 | 117.4 | 0.00 | 0.00 | |
| 1,080.0 | 12.71 | 127.47 | 1,068.8 | -75.4 | 98.4 | 124.0 | 0.00 | 0.00 | |
| 1,110.0 | 12.71 | 127.47 | 1,098.1 | -79.5 | 103.6 | 130.6 | 0.00 | 0.00 | |
| 1,140.0 | 12.71 | 127.47 | 1,127.3 | -83.5 | 108.9 | 137.2 | 0.00 | 0.00 | |
| 1,170.0 | 12.71 | 127.47 | 1,156.6 | -87.5 | 114.1 | 143.8 | 0.00 | 0.00 | |
| 1,200.0 | 12.71 | 127.47 | 1,185.9 | -91.5 | 119.4 | 150.4 | 0.00 | 0.00 | |
| 1,230.0 | 12.71 | 127.47 | 1,215.1 | -95.5 | 124.6 | 157.0 | 0.00 | 0.00 | |
| 1,260.0 | 12.71 | 127.47 | 1,244.4 | -99.5 | 129.8 | 163.6 | 0.00 | 0.00 | |
| 1,290.0 | 12.71 | 127.47 | 1,273.7 | -103.5 | 135.1 | 170.2 | 0.00 | 0.00 | |
| 1,320.0 | 12.71 | 127.47 | 1,302.9 | -107.6 | 140.3 | 176.8 | 0.00 | 0.00 | |
| 1,350.0 | 12.71 | 127.47 | 1,332.2 | -111.6 | 145.6 | 183.4 | 0.00 | 0.00 | |
| 1,380.0 | 12.71 | 127.47 | 1,361.5 | -115.6 | 150.8 | 190.0 | 0.00 | 0.00 | |
| 1,410.0 | 12.71 | 127.47 | 1,390.7 | -119.6 | 156.0 | 196.6 | 0.00 | 0.00 | |
| 1,440.0 | 12.71 | 127.47 | 1,420.0 | -123.6 | 161.3 | 203.2 | 0.00 | 0.00 | |
| 1,470.0 | 12.71 | 127.47 | 1,449.3 | -127.6 | 166.5 | 209.8 | 0.00 | 0.00 | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 1,500.0 | 12.71 | 127.47 | 1,478.5 | -131.7 | 171.7 | 216.4 | 0.00 | 0.00 | |
| 1,530.0 | 12.71 | 127.47 | 1,507.8 | -135.7 | 177.0 | 223.0 | 0.00 | 0.00 | |
| 1,560.0 | 12.71 | 127.47 | 1,537.0 | -139.7 | 182.2 | 229.6 | 0.00 | 0.00 | |
| 1,590.0 | 12.71 | 127.47 | 1,566.3 | -143.7 | 187.5 | 236.2 | 0.00 | 0.00 | |
| 1,620.0 | 12.71 | 127.47 | 1,595.6 | -147.7 | 192.7 | 242.8 | 0.00 | 0.00 | |
| 1,650.0 | 12.71 | 127.47 | 1,624.8 | -151.7 | 197.9 | 249.4 | 0.00 | 0.00 | |
| 1,680.0 | 12.71 | 127.47 | 1,654.1 | -155.7 | 203.2 | 255.9 | 0.00 | 0.00 | |
| 1,710.0 | 12.71 | 127.47 | 1,683.4 | -159.8 | 208.4 | 262.5 | 0.00 | 0.00 | |
| 1,740.0 | 12.71 | 127.47 | 1,712.6 | -163.8 | 213.6 | 269.1 | 0.00 | 0.00 | |
| 1,770.0 | 12.71 | 127.47 | 1,741.9 | -167.8 | 218.9 | 275.7 | 0.00 | 0.00 | |
| 1,800.0 | 12.71 | 127.47 | 1,771.2 | -171.8 | 224.1 | 282.3 | 0.00 | 0.00 | |
| 1,830.0 | 12.71 | 127.47 | 1,800.4 | -175.8 | 229.4 | 288.9 | 0.00 | 0.00 | |
| 1,860.0 | 12.71 | 127.47 | 1,829.7 | -179.8 | 234.6 | 295.5 | 0.00 | 0.00 | |
| 1,890.0 | 12.71 | 127.47 | 1,859.0 | -183.9 | 239.8 | 302.1 | 0.00 | 0.00 | |
| 1,920.0 | 12.71 | 127.47 | 1,888.2 | -187.9 | 245.1 | 308.7 | 0.00 | 0.00 | |
| 1,950.0 | 12.71 | 127.47 | 1,917.5 | -191.9 | 250.3 | 315.3 | 0.00 | 0.00 | |
| 1,980.0 | 12.71 | 127.47 | 1,946.8 | -195.9 | 255.6 | 321.9 | 0.00 | 0.00 | |
| 2,010.0 | 12.71 | 127.47 | 1,976.0 | -199.9 | 260.8 | 328.5 | 0.00 | 0.00 | |
| 2,040.0 | 12.71 | 127.47 | 2,005.3 | -203.9 | 266.0 | 335.1 | 0.00 | 0.00 | |
| 2,070.0 | 12.71 | 127.47 | 2,034.6 | -208.0 | 271.3 | 341.7 | 0.00 | 0.00 | |
| 2,100.0 | 12.71 | 127.47 | 2,063.8 | -212.0 | 276.5 | 348.3 | 0.00 | 0.00 | |
| 2,130.0 | 12.71 | 127.47 | 2,093.1 | -216.0 | 281.7 | 354.9 | 0.00 | 0.00 | |
| 2,160.0 | 12.71 | 127.47 | 2,122.3 | -220.0 | 287.0 | 361.5 | 0.00 | 0.00 | |
| 2,190.0 | 12.71 | 127.47 | 2,151.6 | -224.0 | 292.2 | 368.1 | 0.00 | 0.00 | |
| 2,220.0 | 12.71 | 127.47 | 2,180.9 | -228.0 | 297.5 | 374.7 | 0.00 | 0.00 | |
| 2,250.0 | 12.71 | 127.47 | 2,210.1 | -232.0 | 302.7 | 381.3 | 0.00 | 0.00 | |
| 2,280.0 | 12.71 | 127.47 | 2,239.4 | -236.1 | 307.9 | 387.9 | 0.00 | 0.00 | |
| 2,310.0 | 12.71 | 127.47 | 2,268.7 | -240.1 | 313.2 | 394.5 | 0.00 | 0.00 | |
| 2,340.0 | 12.71 | 127.47 | 2,297.9 | -244.1 | 318.4 | 401.1 | 0.00 | 0.00 | |
| 2,370.0 | 12.71 | 127.47 | 2,327.2 | -248.1 | 323.7 | 407.7 | 0.00 | 0.00 | |
| 2,400.0 | 12.71 | 127.47 | 2,356.5 | -252.1 | 328.9 | 414.3 | 0.00 | 0.00 | |
| 2,430.0 | 12.71 | 127.47 | 2,385.7 | -256.1 | 334.1 | 420.9 | 0.00 | 0.00 | |
| 2,460.0 | 12.71 | 127.47 | 2,415.0 | -260.2 | 339.4 | 427.5 | 0.00 | 0.00 | |
| 2,490.0 | 12.71 | 127.47 | 2,444.3 | -264.2 | 344.6 | 434.1 | 0.00 | 0.00 | |

Targets

| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| LR16C O16 595 TGT | 0.00 | 0.00 | 9,001.0 | -1,120.1 | 1,461.1 | 1,656,106.69 | 2,280,814.22 | 39.607054 | -108.052872 |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| - plan misses target center by 6706.0ft at 2490.0ft MD (2444.3 TVD, -264.2 N, 344.6 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| LR16C O16 595 BHL | 0.00 | 0.00 | 12,051.0 | -1,140.1 | 1,426.5 | 1,656,087.71 | 2,280,779.05 | 39.606999 | -108.052995 |
| - plan misses target center by 9707.1ft at 2490.0ft MD (2444.3 TVD, -264.2 N, 344.6 E) | | | | | | | | | |
| - Rectangle (sides W50.0 H100.0 D0.0) | | | | | | | | | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 2,500.0 | 12.71 | 127.47 | 2,454.0 | -265.5 | 346.4 | 436.3 | 0.00 | 0.00 | |
| 2,600.0 | 12.71 | 127.47 | 2,551.6 | -278.9 | 363.8 | 458.3 | 0.00 | 0.00 | |
| 2,700.0 | 12.71 | 127.47 | 2,649.1 | -292.3 | 381.3 | 480.3 | 0.00 | 0.00 | |
| 2,800.0 | 12.71 | 127.47 | 2,746.7 | -305.7 | 398.7 | 502.3 | 0.00 | 0.00 | |
| 2,900.0 | 12.71 | 127.47 | 2,844.2 | -319.1 | 416.2 | 524.3 | 0.00 | 0.00 | |
| 3,000.0 | 12.71 | 127.47 | 2,941.8 | -332.4 | 433.7 | 546.3 | 0.00 | 0.00 | |
| 3,100.0 | 12.71 | 127.47 | 3,039.3 | -345.8 | 451.1 | 568.3 | 0.00 | 0.00 | |
| 3,200.0 | 12.71 | 127.47 | 3,136.9 | -359.2 | 468.6 | 590.3 | 0.00 | 0.00 | |
| 3,300.0 | 12.71 | 127.47 | 3,234.4 | -372.6 | 486.0 | 612.3 | 0.00 | 0.00 | |
| 3,400.0 | 12.71 | 127.47 | 3,332.0 | -386.0 | 503.5 | 634.3 | 0.00 | 0.00 | |
| 3,500.0 | 12.71 | 127.47 | 3,429.5 | -399.4 | 521.0 | 656.3 | 0.00 | 0.00 | |
| 3,600.0 | 12.71 | 127.47 | 3,527.1 | -412.8 | 538.4 | 678.3 | 0.00 | 0.00 | |
| 3,700.0 | 12.71 | 127.47 | 3,624.6 | -426.1 | 555.9 | 700.3 | 0.00 | 0.00 | |
| 3,778.3 | 12.71 | 127.47 | 3,701.0 | -436.6 | 569.6 | 717.5 | 0.00 | 0.00 | Wasatch |
| 3,800.0 | 12.71 | 127.47 | 3,722.2 | -439.5 | 573.4 | 722.3 | 0.00 | 0.00 | |
| 3,900.0 | 12.71 | 127.47 | 3,819.7 | -452.9 | 590.8 | 744.3 | 0.00 | 0.00 | |
| 4,000.0 | 12.71 | 127.47 | 3,917.3 | -466.3 | 608.3 | 766.3 | 0.00 | 0.00 | |
| 4,100.0 | 12.71 | 127.47 | 4,014.8 | -479.7 | 625.7 | 788.3 | 0.00 | 0.00 | |
| 4,200.0 | 12.71 | 127.47 | 4,112.4 | -493.1 | 643.2 | 810.3 | 0.00 | 0.00 | |
| 4,300.0 | 12.71 | 127.47 | 4,209.9 | -506.5 | 660.7 | 832.3 | 0.00 | 0.00 | |
| 4,400.0 | 12.71 | 127.47 | 4,307.5 | -519.8 | 678.1 | 854.3 | 0.00 | 0.00 | |
| 4,500.0 | 12.71 | 127.47 | 4,405.0 | -533.2 | 695.6 | 876.3 | 0.00 | 0.00 | |
| 4,600.0 | 12.71 | 127.47 | 4,502.6 | -546.6 | 713.0 | 898.3 | 0.00 | 0.00 | |
| 4,700.0 | 12.71 | 127.47 | 4,600.1 | -560.0 | 730.5 | 920.3 | 0.00 | 0.00 | |
| 4,800.0 | 12.71 | 127.47 | 4,697.7 | -573.4 | 748.0 | 942.3 | 0.00 | 0.00 | |
| 4,900.0 | 12.71 | 127.47 | 4,795.2 | -586.8 | 765.4 | 964.3 | 0.00 | 0.00 | |
| 5,000.0 | 12.71 | 127.47 | 4,892.8 | -600.2 | 782.9 | 986.3 | 0.00 | 0.00 | |
| 5,100.0 | 12.71 | 127.47 | 4,990.3 | -613.5 | 800.3 | 1,008.3 | 0.00 | 0.00 | |
| 5,200.0 | 12.71 | 127.47 | 5,087.9 | -626.9 | 817.8 | 1,030.2 | 0.00 | 0.00 | |
| 5,300.0 | 12.71 | 127.47 | 5,185.4 | -640.3 | 835.3 | 1,052.2 | 0.00 | 0.00 | |
| 5,400.0 | 12.71 | 127.47 | 5,283.0 | -653.7 | 852.7 | 1,074.2 | 0.00 | 0.00 | |
| 5,500.0 | 12.71 | 127.47 | 5,380.5 | -667.1 | 870.2 | 1,096.2 | 0.00 | 0.00 | |
| 5,600.0 | 12.71 | 127.47 | 5,478.1 | -680.5 | 887.7 | 1,118.2 | 0.00 | 0.00 | |
| 5,700.0 | 12.71 | 127.47 | 5,575.6 | -693.9 | 905.1 | 1,140.2 | 0.00 | 0.00 | |
| 5,726.0 | 12.71 | 127.47 | 5,601.0 | -697.3 | 909.7 | 1,146.0 | 0.00 | 0.00 | Fort Union |
| 5,800.0 | 12.71 | 127.47 | 5,673.2 | -707.2 | 922.6 | 1,162.2 | 0.00 | 0.00 | |
| 5,900.0 | 12.71 | 127.47 | 5,770.7 | -720.6 | 940.0 | 1,184.2 | 0.00 | 0.00 | |
| 6,000.0 | 12.71 | 127.47 | 5,868.3 | -734.0 | 957.5 | 1,206.2 | 0.00 | 0.00 | |
| 6,100.0 | 12.71 | 127.47 | 5,965.8 | -747.4 | 975.0 | 1,228.2 | 0.00 | 0.00 | |
| 6,200.0 | 12.71 | 127.47 | 6,063.3 | -760.8 | 992.4 | 1,250.2 | 0.00 | 0.00 | |
| 6,238.6 | 12.71 | 127.47 | 6,101.0 | -765.9 | 999.2 | 1,258.7 | 0.00 | 0.00 | base Ft Union |
| 6,300.0 | 12.71 | 127.47 | 6,160.9 | -774.2 | 1,009.9 | 1,272.2 | 0.00 | 0.00 | |
| 6,400.0 | 12.71 | 127.47 | 6,258.4 | -787.6 | 1,027.3 | 1,294.2 | 0.00 | 0.00 | |
| 6,500.0 | 12.71 | 127.47 | 6,356.0 | -800.9 | 1,044.8 | 1,316.2 | 0.00 | 0.00 | |
| 6,600.0 | 12.71 | 127.47 | 6,453.5 | -814.3 | 1,062.3 | 1,338.2 | 0.00 | 0.00 | |
| 6,700.0 | 12.71 | 127.47 | 6,551.1 | -827.7 | 1,079.7 | 1,360.2 | 0.00 | 0.00 | |
| 6,800.0 | 12.71 | 127.47 | 6,648.6 | -841.1 | 1,097.2 | 1,382.2 | 0.00 | 0.00 | |
| 6,900.0 | 12.71 | 127.47 | 6,746.2 | -854.5 | 1,114.7 | 1,404.2 | 0.00 | 0.00 | |
| 7,000.0 | 12.71 | 127.47 | 6,843.7 | -867.9 | 1,132.1 | 1,426.2 | 0.00 | 0.00 | |
| 7,100.0 | 12.71 | 127.47 | 6,941.3 | -881.3 | 1,149.6 | 1,448.2 | 0.00 | 0.00 | |
| 7,200.0 | 12.71 | 127.47 | 7,038.8 | -894.6 | 1,167.0 | 1,470.2 | 0.00 | 0.00 | |
| 7,300.0 | 12.71 | 127.47 | 7,136.4 | -908.0 | 1,184.5 | 1,492.2 | 0.00 | 0.00 | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|--|
| 7,400.0 | 12.71 | 127.47 | 7,233.9 | -921.4 | 1,202.0 | 1,514.2 | 0.00 | 0.00 | |
| 7,500.0 | 12.71 | 127.47 | 7,331.5 | -934.8 | 1,219.4 | 1,536.2 | 0.00 | 0.00 | |
| 7,600.0 | 12.71 | 127.47 | 7,429.0 | -948.2 | 1,236.9 | 1,558.2 | 0.00 | 0.00 | |
| 7,700.0 | 12.71 | 127.47 | 7,526.6 | -961.6 | 1,254.3 | 1,580.2 | 0.00 | 0.00 | |
| 7,800.0 | 12.71 | 127.47 | 7,624.1 | -975.0 | 1,271.8 | 1,602.2 | 0.00 | 0.00 | |
| 7,900.0 | 12.71 | 127.47 | 7,721.7 | -988.3 | 1,289.3 | 1,624.2 | 0.00 | 0.00 | |
| 8,000.0 | 12.71 | 127.47 | 7,819.2 | -1,001.7 | 1,306.7 | 1,646.2 | 0.00 | 0.00 | |
| 8,100.0 | 12.71 | 127.47 | 7,916.8 | -1,015.1 | 1,324.2 | 1,668.2 | 0.00 | 0.00 | |
| 8,200.0 | 12.71 | 127.47 | 8,014.3 | -1,028.5 | 1,341.7 | 1,690.2 | 0.00 | 0.00 | |
| 8,300.0 | 12.71 | 127.47 | 8,111.9 | -1,041.9 | 1,359.1 | 1,712.2 | 0.00 | 0.00 | |
| 8,400.0 | 12.71 | 127.47 | 8,209.4 | -1,055.3 | 1,376.6 | 1,734.2 | 0.00 | 0.00 | |
| 8,500.0 | 12.71 | 127.47 | 8,307.0 | -1,068.6 | 1,394.0 | 1,756.2 | 0.00 | 0.00 | |
| 8,565.3 | 12.71 | 127.47 | 8,370.7 | -1,077.4 | 1,405.4 | 1,770.5 | 0.00 | 0.00 | Start Drop -2.00 |
| 8,596.3 | 12.09 | 127.47 | 8,401.0 | -1,081.4 | 1,410.7 | 1,777.2 | 2.00 | -2.00 | Ohio Creek |
| 8,600.0 | 12.02 | 127.47 | 8,404.6 | -1,081.9 | 1,411.3 | 1,777.9 | 2.00 | -2.00 | |
| 8,700.0 | 10.02 | 127.47 | 8,502.7 | -1,093.5 | 1,426.5 | 1,797.1 | 2.00 | -2.00 | |
| 8,800.0 | 8.02 | 127.47 | 8,601.5 | -1,103.1 | 1,438.9 | 1,812.7 | 2.00 | -2.00 | |
| 8,900.0 | 6.02 | 127.47 | 8,700.7 | -1,110.5 | 1,448.6 | 1,824.9 | 2.00 | -2.00 | |
| 8,900.3 | 6.01 | 127.47 | 8,701.0 | -1,110.5 | 1,448.6 | 1,825.0 | 2.00 | -2.00 | Williams Fork |
| 9,000.0 | 4.02 | 127.47 | 8,800.4 | -1,115.8 | 1,455.6 | 1,833.7 | 2.00 | -2.00 | |
| 9,100.0 | 2.02 | 127.47 | 8,900.2 | -1,119.0 | 1,459.7 | 1,838.9 | 2.00 | -2.00 | |
| 9,200.0 | 0.02 | 127.47 | 9,000.2 | -1,120.1 | 1,461.1 | 1,840.7 | 2.00 | -2.00 | |
| 9,200.8 | 0.00 | 0.00 | 9,001.0 | -1,120.1 | 1,461.1 | 1,840.7 | 2.00 | -2.00 | EOD; Inc=0° - Approx TOG - LR16C O16 595 T |
| 9,300.0 | 0.25 | 240.03 | 9,100.2 | -1,120.2 | 1,461.0 | 1,840.6 | 0.25 | 0.25 | |
| 9,400.0 | 0.50 | 240.03 | 9,200.2 | -1,120.5 | 1,460.4 | 1,840.4 | 0.25 | 0.25 | |
| 9,500.0 | 0.75 | 240.03 | 9,300.2 | -1,121.1 | 1,459.5 | 1,840.0 | 0.25 | 0.25 | |
| 9,517.5 | 0.79 | 240.03 | 9,317.7 | -1,121.2 | 1,459.3 | 1,839.9 | 0.25 | 0.25 | |
| 9,600.0 | 0.79 | 240.03 | 9,400.2 | -1,121.8 | 1,458.3 | 1,839.5 | 0.00 | 0.00 | |
| 9,700.0 | 0.79 | 240.03 | 9,500.2 | -1,122.5 | 1,457.1 | 1,839.0 | 0.00 | 0.00 | |
| 9,800.0 | 0.79 | 240.03 | 9,600.2 | -1,123.1 | 1,455.9 | 1,838.5 | 0.00 | 0.00 | |
| 9,900.0 | 0.79 | 240.03 | 9,700.1 | -1,123.8 | 1,454.7 | 1,838.0 | 0.00 | 0.00 | |
| 10,000.0 | 0.79 | 240.03 | 9,800.1 | -1,124.5 | 1,453.5 | 1,837.5 | 0.00 | 0.00 | |
| 10,100.0 | 0.79 | 240.03 | 9,900.1 | -1,125.2 | 1,452.3 | 1,837.0 | 0.00 | 0.00 | |
| 10,200.0 | 0.79 | 240.03 | 10,000.1 | -1,125.9 | 1,451.1 | 1,836.5 | 0.00 | 0.00 | |
| 10,300.0 | 0.79 | 240.03 | 10,100.1 | -1,126.6 | 1,449.9 | 1,836.0 | 0.00 | 0.00 | |
| 10,400.0 | 0.79 | 240.03 | 10,200.1 | -1,127.3 | 1,448.7 | 1,835.5 | 0.00 | 0.00 | |
| 10,500.0 | 0.79 | 240.03 | 10,300.1 | -1,128.0 | 1,447.5 | 1,835.0 | 0.00 | 0.00 | |
| 10,600.0 | 0.79 | 240.03 | 10,400.1 | -1,128.7 | 1,446.3 | 1,834.5 | 0.00 | 0.00 | |
| 10,700.0 | 0.79 | 240.03 | 10,500.1 | -1,129.4 | 1,445.1 | 1,833.9 | 0.00 | 0.00 | |
| 10,800.0 | 0.79 | 240.03 | 10,600.1 | -1,130.0 | 1,443.9 | 1,833.4 | 0.00 | 0.00 | |
| 10,900.0 | 0.79 | 240.03 | 10,700.0 | -1,130.7 | 1,442.7 | 1,832.9 | 0.00 | 0.00 | |
| 11,000.0 | 0.79 | 240.03 | 10,800.0 | -1,131.4 | 1,441.5 | 1,832.4 | 0.00 | 0.00 | |
| 11,100.0 | 0.79 | 240.03 | 10,900.0 | -1,132.1 | 1,440.3 | 1,831.9 | 0.00 | 0.00 | |
| 11,200.0 | 0.79 | 240.03 | 11,000.0 | -1,132.8 | 1,439.1 | 1,831.4 | 0.00 | 0.00 | |
| 11,300.0 | 0.79 | 240.03 | 11,100.0 | -1,133.5 | 1,437.9 | 1,830.9 | 0.00 | 0.00 | |
| 11,400.0 | 0.79 | 240.03 | 11,200.0 | -1,134.2 | 1,436.7 | 1,830.4 | 0.00 | 0.00 | |
| 11,500.0 | 0.79 | 240.03 | 11,300.0 | -1,134.9 | 1,435.5 | 1,829.9 | 0.00 | 0.00 | |
| 11,600.0 | 0.79 | 240.03 | 11,400.0 | -1,135.6 | 1,434.3 | 1,829.4 | 0.00 | 0.00 | |
| 11,700.0 | 0.79 | 240.03 | 11,500.0 | -1,136.3 | 1,433.1 | 1,828.9 | 0.00 | 0.00 | |
| 11,751.0 | 0.79 | 240.03 | 11,551.0 | -1,136.6 | 1,432.5 | 1,828.6 | 0.00 | 0.00 | CAmeo |
| 11,800.0 | 0.79 | 240.03 | 11,600.0 | -1,136.9 | 1,431.9 | 1,828.4 | 0.00 | 0.00 | |
| 11,900.0 | 0.79 | 240.03 | 11,700.0 | -1,137.6 | 1,430.7 | 1,827.9 | 0.00 | 0.00 | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000.1 US Multi Users DB | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Company: | Berry Petroleum Company (NAD 83) | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Project: | Garfield County | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site: | Long Ridge O16 595 Pad | North Reference: | True |
| Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DD | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 12,000.0 | 0.79 | 240.03 | 11,799.9 | -1,138.3 | 1,429.5 | 1,827.4 | 0.00 | 0.00 | |
| 12,100.0 | 0.79 | 240.03 | 11,899.9 | -1,139.0 | 1,428.3 | 1,826.9 | 0.00 | 0.00 | |
| 12,101.1 | 0.79 | 240.03 | 11,901.0 | -1,139.0 | 1,428.3 | 1,826.9 | 0.00 | 0.00 | Rollins SS |
| 12,200.0 | 0.79 | 240.03 | 11,999.9 | -1,139.7 | 1,427.1 | 1,826.4 | 0.00 | 0.00 | |
| 12,251.1 | 0.79 | 240.03 | 12,051.0 | -1,140.1 | 1,426.5 | 1,826.1 | 0.00 | 0.00 | LR16C O16 595 BHL |

Targets

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| LR16C O16 595 TGT - plan hits target center - Point | 0.00 | 0.00 | 9,001.0 | -1,120.1 | 1,461.1 | 1,656,106.69 | 2,280,814.22 | 39.607054 | -108.052872 |
| LR16C O16 595 BHL - plan hits target center - Rectangle (sides W50.0 H100.0 D0.0) | 0.00 | 0.00 | 12,051.0 | -1,140.1 | 1,426.5 | 1,656,087.71 | 2,280,779.05 | 39.606999 | -108.052995 |

Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|---------------|-----------|---------|-------------------|
| 3,778.3 | 3,701.0 | Wasatch | | 0.00 | |
| 5,726.0 | 5,601.0 | Fort Union | | 0.00 | |
| 6,238.6 | 6,101.0 | base Ft Union | | 0.00 | |
| 8,596.3 | 8,401.0 | Ohio Creek | | 0.00 | |
| 8,900.3 | 8,701.0 | Williams Fork | | 0.00 | |
| 9,200.8 | 9,001.0 | Approx TOG | | 0.00 | |
| 11,751.0 | 11,551.0 | Cameo | | 0.00 | |
| 12,101.1 | 11,901.0 | Rollins SS | | 0.00 | |

Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Comment |
|---------------------|---------------------|------------|------------|------------------|
| 200.0 | 200.0 | 0.0 | 0.0 | KOP @ 200' |
| 835.5 | 830.3 | -42.7 | 55.7 | EOB; Inc=12.71° |
| 8,565.3 | 8,370.7 | -1,077.4 | 1,405.4 | Start Drop -2.00 |
| 9,200.8 | 9,001.0 | -1,120.1 | 1,461.1 | EOD; Inc=0° |
| 12,251.1 | 12,051.0 | -1,121.2 | 1,459.3 | TD at 12251.1 |

Berry Petroleum Company (NAD 83)

**Garfield County
Long Ridge O16 595 Pad
LR16C O16 595
DD
Plan #1**

Anticollision Report

28 September, 2010

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Reference | Plan #1 | | |
|------------------------------|---|----------------|---------------------|
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | Stations | Error Model: | Systematic Ellipse |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 100.0ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| Survey Tool Program | | Date | 9/28/2010 | | |
|---------------------|------------|-------------------|-----------|-------------|--|
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 0.0 | 12,251.1 | Plan #1 (DD) | MWD | Geolink MWD | |

| Summary | | | | | | |
|---------------------------------|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|---------|
| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| Long Ridge O16 595 Pad | | | | | | |
| LR02A O16 595 - DD - Plan #1 | 200.0 | 200.0 | 43.9 | 43.2 | 67.953 | CC, ES |
| LR02A O16 595 - DD - Plan #1 | 1,000.0 | 989.7 | 95.9 | 90.8 | 18.757 | SF |
| LR14A O16 595 - DD - Plan #1 | 200.0 | 200.0 | 73.7 | 73.1 | 114.138 | CC, ES |
| LR14A O16 595 - DD - Plan #1 | 600.0 | 587.2 | 96.7 | 94.5 | 44.047 | SF |
| LR15A O16 595 - DD - Plan #1 | 358.8 | 358.8 | 12.7 | 11.5 | 10.441 | CC, ES |
| LR15A O16 595 - DD - Plan #1 | 400.0 | 399.8 | 12.9 | 11.6 | 9.472 | SF |
| LR15C O16 595 - DD - Plan #1 | 200.0 | 200.0 | 58.6 | 58.0 | 90.781 | CC, ES |
| LR15C O16 595 - DD - Plan #1 | 835.5 | 821.4 | 99.9 | 96.2 | 26.558 | SF |
| LR15D O16 595 - DD - Plan #1 | 200.0 | 200.0 | 29.1 | 28.5 | 45.126 | CC, ES |
| LR15D O16 595 - DD - Plan #1 | 1,600.0 | 1,594.0 | 99.4 | 89.5 | 9.978 | SF |
| LR16A O16 595 - DD - Plan #1 | 200.0 | 200.0 | 14.1 | 13.4 | 21.772 | CC, ES |
| LR16A O16 595 - DD - Plan #1 | 700.0 | 698.9 | 32.8 | 29.8 | 10.989 | SF |
| LR16B O16 595 - DD - Plan #1 | 200.0 | 200.0 | 28.4 | 27.7 | 43.904 | CC, ES |
| LR16B O16 595 - DD - Plan #1 | 1,100.0 | 1,094.2 | 97.6 | 91.5 | 16.099 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Long Ridge O16 595 Pad - LR02A O16 595 - DD - Plan #1 | | Offset Site Error: | | 0.0 ft |
|-----------------|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|-------------------|------------|---|--|--------------------|---------|--------|
| Survey Program: | | | | | | | | | | | | | 0-MWD | | Offset Well Error: | | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | | | Warning | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Total Uncertainty | Separation | | | | | |
| Depth (ft) | Depth (ft) | Depth (ft) | Depth (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | Axis | Factor | | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -159.71 | -41.2 | -15.2 | 43.9 | | | | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -159.71 | -41.2 | -15.2 | 43.9 | 43.6 | 0.30 | 147.899 | | | | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -159.71 | -41.2 | -15.2 | 43.9 | 43.2 | 0.65 | 67.953 | CC, ES | | | | |
| 300.0 | 300.0 | 298.9 | 298.8 | 0.5 | 0.5 | 73.45 | -42.7 | -14.6 | 44.7 | 43.7 | 1.00 | 44.749 | | | | | |
| 400.0 | 399.8 | 397.7 | 397.5 | 0.7 | 0.7 | 75.25 | -47.5 | -12.7 | 47.0 | 45.6 | 1.37 | 34.204 | | | | | |
| 500.0 | 499.5 | 496.4 | 495.9 | 0.9 | 0.9 | 77.86 | -55.4 | -9.6 | 51.0 | 49.2 | 1.80 | 28.360 | | | | | |
| 600.0 | 598.7 | 595.0 | 593.7 | 1.2 | 1.2 | 80.87 | -66.5 | -5.3 | 56.8 | 54.5 | 2.30 | 24.733 | | | | | |
| 700.0 | 697.5 | 693.3 | 690.9 | 1.5 | 1.5 | 83.91 | -80.6 | 0.3 | 64.4 | 61.5 | 2.88 | 22.314 | | | | | |
| 800.0 | 795.6 | 791.5 | 787.3 | 1.9 | 1.8 | 86.74 | -97.8 | 7.1 | 73.8 | 70.2 | 3.58 | 20.632 | | | | | |
| 835.5 | 830.3 | 826.3 | 821.3 | 2.0 | 2.0 | 87.67 | -104.6 | 9.8 | 77.6 | 73.8 | 3.84 | 20.210 | | | | | |
| 900.0 | 893.2 | 890.3 | 883.9 | 2.3 | 2.2 | 89.38 | -117.4 | 14.8 | 84.7 | 80.4 | 4.33 | 19.555 | | | | | |
| 1,000.0 | 990.8 | 989.7 | 980.9 | 2.7 | 2.6 | 91.53 | -137.4 | 22.7 | 95.9 | 90.8 | 5.11 | 18.757 | SF | | | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design Long Ridge O16 595 Pad - LR14A O16 595 - DD - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | Separation Factor | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -159.88 | -69.2 | -25.4 | 73.7 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -159.88 | -69.2 | -25.4 | 73.7 | 73.4 | 0.30 | 248.418 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -159.88 | -69.2 | -25.4 | 73.7 | 73.1 | 0.65 | 114.138 CC, ES | | |
| 300.0 | 300.0 | 298.0 | 298.0 | 0.5 | 0.5 | 74.71 | -70.0 | -26.8 | 74.6 | 73.6 | 1.00 | 74.839 | | |
| 400.0 | 399.8 | 395.5 | 395.3 | 0.7 | 0.7 | 80.55 | -72.5 | -31.1 | 77.7 | 76.3 | 1.37 | 56.822 | | |
| 500.0 | 499.5 | 492.0 | 491.5 | 0.9 | 0.9 | 89.03 | -76.7 | -38.2 | 84.5 | 82.7 | 1.77 | 47.811 | | |
| 600.0 | 598.7 | 587.2 | 586.0 | 1.2 | 1.2 | 98.41 | -82.3 | -48.0 | 96.7 | 94.5 | 2.19 | 44.047 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design Long Ridge O16 595 Pad - LR15A O16 595 - DD - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -161.66 | -12.7 | -4.2 | 13.4 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -161.66 | -12.7 | -4.2 | 13.4 | 13.1 | 0.30 | 45.267 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -161.66 | -12.7 | -4.2 | 13.4 | 12.8 | 0.65 | 20.798 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 78.18 | -12.7 | -4.2 | 13.0 | 12.0 | 1.00 | 12.986 | | |
| 358.8 | 358.8 | 358.8 | 358.8 | 0.6 | 0.6 | 90.00 | -12.7 | -4.2 | 12.7 | 11.5 | 1.22 | 10.441 CC, ES | | |
| 400.0 | 399.8 | 399.8 | 399.8 | 0.7 | 0.7 | 101.45 | -12.7 | -4.2 | 12.9 | 11.6 | 1.37 | 9.472 SF | | |
| 500.0 | 499.5 | 499.5 | 499.5 | 0.9 | 0.8 | 131.51 | -12.7 | -4.2 | 17.0 | 15.3 | 1.73 | 9.800 | | |
| 600.0 | 598.7 | 599.5 | 599.4 | 1.2 | 1.0 | 149.44 | -13.9 | -2.9 | 25.2 | 23.2 | 2.08 | 12.129 | | |
| 700.0 | 697.5 | 699.8 | 699.7 | 1.5 | 1.2 | 157.85 | -17.3 | 1.1 | 34.8 | 32.3 | 2.43 | 14.319 | | |
| 800.0 | 795.6 | 800.6 | 800.0 | 1.9 | 1.4 | 162.36 | -23.0 | 7.8 | 44.8 | 42.0 | 2.78 | 16.107 | | |
| 835.5 | 830.3 | 836.4 | 835.6 | 2.0 | 1.5 | 163.46 | -25.5 | 10.8 | 48.4 | 45.5 | 2.91 | 16.647 | | |
| 900.0 | 893.2 | 901.7 | 900.4 | 2.3 | 1.7 | 164.85 | -31.0 | 17.2 | 54.3 | 51.1 | 3.14 | 17.279 | | |
| 1,000.0 | 990.8 | 1,003.5 | 1,000.9 | 2.7 | 2.0 | 165.71 | -41.4 | 29.4 | 60.7 | 57.2 | 3.52 | 17.244 | | |
| 1,100.0 | 1,088.3 | 1,103.9 | 1,099.6 | 3.1 | 2.3 | 165.76 | -53.2 | 43.3 | 64.7 | 60.8 | 3.90 | 16.574 | | |
| 1,200.0 | 1,185.9 | 1,203.8 | 1,197.9 | 3.5 | 2.6 | 165.79 | -65.0 | 57.1 | 68.7 | 64.4 | 4.29 | 16.000 | | |
| 1,300.0 | 1,283.4 | 1,303.7 | 1,296.1 | 3.9 | 2.9 | 165.82 | -76.9 | 71.0 | 72.6 | 68.0 | 4.68 | 15.515 | | |
| 1,400.0 | 1,381.0 | 1,403.6 | 1,394.3 | 4.4 | 3.3 | 165.84 | -88.7 | 84.9 | 76.6 | 71.5 | 5.07 | 15.102 | | |
| 1,500.0 | 1,478.5 | 1,503.6 | 1,492.6 | 4.8 | 3.6 | 165.86 | -100.5 | 98.8 | 80.6 | 75.1 | 5.46 | 14.744 | | |
| 1,600.0 | 1,576.1 | 1,603.5 | 1,590.8 | 5.2 | 4.0 | 165.88 | -112.3 | 112.7 | 84.5 | 78.7 | 5.86 | 14.433 | | |
| 1,700.0 | 1,673.6 | 1,703.4 | 1,689.1 | 5.6 | 4.3 | 165.90 | -124.2 | 126.6 | 88.5 | 82.2 | 6.25 | 14.160 | | |
| 1,800.0 | 1,771.2 | 1,803.3 | 1,787.3 | 6.0 | 4.7 | 165.91 | -136.0 | 140.5 | 92.4 | 85.8 | 6.64 | 13.918 | | |
| 1,900.0 | 1,868.7 | 1,903.2 | 1,885.5 | 6.5 | 5.0 | 165.93 | -147.8 | 154.3 | 96.4 | 89.4 | 7.03 | 13.702 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design Long Ridge O16 595 Pad - LR15C O16 595 - DD - Plan #1 | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -159.76 | -55.0 | -20.3 | 58.6 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -159.76 | -55.0 | -20.3 | 58.6 | 58.3 | 0.30 | 197.582 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -159.76 | -55.0 | -20.3 | 58.6 | 58.0 | 0.65 | 90.781 | CC, ES |
| 300.0 | 300.0 | 298.3 | 298.3 | 0.5 | 0.5 | 73.45 | -56.6 | -19.9 | 59.6 | 58.6 | 1.00 | 59.766 | |
| 400.0 | 399.8 | 396.5 | 396.4 | 0.7 | 0.7 | 75.35 | -61.6 | -18.8 | 62.4 | 61.0 | 1.37 | 45.571 | |
| 500.0 | 499.5 | 494.6 | 494.1 | 0.9 | 0.9 | 78.14 | -69.8 | -16.9 | 67.2 | 65.4 | 1.78 | 37.665 | |
| 600.0 | 598.7 | 592.4 | 591.2 | 1.2 | 1.2 | 81.41 | -81.2 | -14.4 | 74.2 | 72.0 | 2.27 | 32.740 | |
| 700.0 | 697.5 | 689.9 | 687.5 | 1.5 | 1.5 | 84.76 | -95.8 | -11.1 | 83.5 | 80.7 | 2.84 | 29.451 | |
| 800.0 | 795.6 | 787.0 | 782.9 | 1.9 | 1.8 | 87.92 | -113.5 | -7.1 | 95.2 | 91.7 | 3.51 | 27.160 | |
| 835.5 | 830.3 | 821.4 | 816.6 | 2.0 | 2.0 | 88.96 | -120.5 | -5.5 | 99.9 | 96.2 | 3.76 | 26.558 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design Long Ridge O16 595 Pad - LR15D O16 595 - DD - Plan #1 | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -159.63 | -27.3 | -10.1 | 29.1 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -159.63 | -27.3 | -10.1 | 29.1 | 28.8 | 0.30 | 98.215 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -159.63 | -27.3 | -10.1 | 29.1 | 28.5 | 0.65 | 45.126 CC, ES | |
| 300.0 | 300.0 | 299.4 | 299.4 | 0.5 | 0.5 | 73.38 | -28.7 | -9.2 | 29.6 | 28.6 | 1.00 | 29.645 | |
| 400.0 | 399.8 | 398.8 | 398.6 | 0.7 | 0.7 | 74.73 | -33.0 | -6.3 | 31.1 | 29.7 | 1.38 | 22.537 | |
| 500.0 | 499.5 | 498.2 | 497.6 | 0.9 | 0.9 | 76.70 | -40.1 | -1.4 | 33.7 | 31.8 | 1.82 | 18.531 | |
| 600.0 | 598.7 | 597.5 | 596.2 | 1.2 | 1.2 | 79.00 | -50.1 | 5.3 | 37.2 | 34.9 | 2.33 | 15.996 | |
| 700.0 | 697.5 | 696.7 | 694.2 | 1.5 | 1.5 | 81.36 | -62.9 | 14.0 | 41.9 | 39.0 | 2.94 | 14.275 | |
| 800.0 | 795.6 | 796.0 | 791.8 | 1.9 | 1.8 | 83.72 | -78.4 | 24.5 | 47.7 | 44.0 | 3.65 | 13.074 | |
| 835.5 | 830.3 | 831.4 | 826.5 | 2.0 | 2.0 | 85.03 | -84.2 | 28.4 | 49.8 | 45.9 | 3.92 | 12.711 | |
| 900.0 | 893.2 | 895.8 | 889.5 | 2.3 | 2.2 | 87.62 | -94.7 | 35.6 | 53.7 | 49.2 | 4.42 | 12.148 | |
| 1,000.0 | 990.8 | 995.5 | 987.3 | 2.7 | 2.6 | 90.97 | -111.0 | 46.7 | 59.9 | 54.7 | 5.21 | 11.501 | |
| 1,100.0 | 1,088.3 | 1,095.3 | 1,085.1 | 3.1 | 3.0 | 93.68 | -127.4 | 57.7 | 66.2 | 60.2 | 6.00 | 11.040 | |
| 1,200.0 | 1,185.9 | 1,195.0 | 1,182.9 | 3.5 | 3.3 | 95.91 | -143.7 | 68.8 | 72.7 | 65.9 | 6.79 | 10.704 | |
| 1,300.0 | 1,283.4 | 1,294.8 | 1,280.7 | 3.9 | 3.7 | 97.78 | -160.1 | 79.9 | 79.3 | 71.7 | 7.59 | 10.450 | |
| 1,400.0 | 1,381.0 | 1,394.5 | 1,378.4 | 4.4 | 4.1 | 99.35 | -176.4 | 91.0 | 86.0 | 77.6 | 8.38 | 10.255 | |
| 1,500.0 | 1,478.5 | 1,494.3 | 1,476.2 | 4.8 | 4.5 | 100.70 | -192.7 | 102.1 | 92.7 | 83.5 | 9.17 | 10.101 | |
| 1,600.0 | 1,576.1 | 1,594.0 | 1,574.0 | 5.2 | 4.9 | 101.87 | -209.1 | 113.2 | 99.4 | 89.5 | 9.96 | 9.978 SF | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design Long Ridge O16 595 Pad - LR16A O16 595 - DD - Plan #1 | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---------------------------|-------------------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | | Separation Factor |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 21.14 | 13.1 | 5.1 | 14.1 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 21.14 | 13.1 | 5.1 | 14.1 | 13.8 | 0.30 | 47.386 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 21.14 | 13.1 | 5.1 | 14.1 | 13.4 | 0.65 | 21.772 | CC, ES |
| 300.0 | 300.0 | 299.9 | 299.9 | 0.5 | 0.5 | -106.12 | 12.7 | 6.8 | 14.8 | 13.8 | 1.00 | 14.784 | |
| 400.0 | 399.8 | 399.8 | 399.6 | 0.7 | 0.7 | -105.61 | 11.6 | 11.9 | 17.1 | 15.7 | 1.39 | 12.273 | |
| 500.0 | 499.5 | 499.6 | 499.1 | 0.9 | 0.9 | -104.99 | 9.7 | 20.3 | 20.8 | 19.0 | 1.84 | 11.330 | |
| 600.0 | 598.7 | 599.4 | 598.1 | 1.2 | 1.2 | -104.40 | 7.0 | 32.2 | 26.0 | 23.7 | 2.36 | 11.027 | |
| 700.0 | 697.5 | 698.9 | 696.4 | 1.5 | 1.5 | -103.90 | 3.7 | 47.4 | 32.8 | 29.8 | 2.98 | 10.989 | SF |
| 800.0 | 795.6 | 798.4 | 794.0 | 1.9 | 1.9 | -103.48 | -0.5 | 65.8 | 41.0 | 37.3 | 3.71 | 11.042 | |
| 835.5 | 830.3 | 833.7 | 828.6 | 2.0 | 2.0 | -103.51 | -2.1 | 73.1 | 44.2 | 40.2 | 3.98 | 11.106 | |
| 900.0 | 893.2 | 897.9 | 891.3 | 2.3 | 2.3 | -104.06 | -5.0 | 86.3 | 50.2 | 45.7 | 4.48 | 11.209 | |
| 1,000.0 | 990.8 | 997.5 | 988.7 | 2.7 | 2.7 | -104.69 | -9.6 | 106.7 | 59.5 | 54.2 | 5.26 | 11.305 | |
| 1,100.0 | 1,088.3 | 1,097.0 | 1,086.0 | 3.1 | 3.1 | -105.15 | -14.2 | 127.1 | 68.8 | 62.7 | 6.05 | 11.360 | |
| 1,200.0 | 1,185.9 | 1,196.6 | 1,183.4 | 3.5 | 3.5 | -105.50 | -18.8 | 147.6 | 78.1 | 71.2 | 6.85 | 11.392 | |
| 1,300.0 | 1,283.4 | 1,296.2 | 1,280.7 | 3.9 | 3.9 | -105.78 | -23.3 | 168.0 | 87.4 | 79.7 | 7.66 | 11.413 | |
| 1,400.0 | 1,381.0 | 1,395.7 | 1,378.0 | 4.4 | 4.3 | -106.00 | -27.9 | 188.5 | 96.7 | 88.2 | 8.46 | 11.425 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Long Ridge O16 595 Pad - LR16B O16 595 - DD - Plan #1 | | Offset Site Error: | | 0.0 ft | | |
|---------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---|--------|--------------------|--|--------------------|--|--------|
| Survey Program: | | | | 0-MWD | | | | | | | | | | | | Offset Well Error: | | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | | | Warning | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.35 | 26.6 | 9.9 | 28.4 | | | | | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 20.35 | 26.6 | 9.9 | 28.4 | 28.1 | 0.30 | 95.555 | | | | | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 20.35 | 26.6 | 9.9 | 28.4 | 27.7 | 0.65 | 43.904 | CC, ES | | | | | |
| 300.0 | 300.0 | 299.8 | 299.7 | 0.5 | 0.5 | -107.06 | 26.4 | 11.6 | 29.3 | 28.3 | 1.00 | 29.250 | | | | | | |
| 400.0 | 399.8 | 399.5 | 399.3 | 0.7 | 0.7 | -106.90 | 25.8 | 16.8 | 32.1 | 30.7 | 1.39 | 23.120 | | | | | | |
| 500.0 | 499.5 | 499.0 | 498.5 | 0.9 | 0.9 | -106.68 | 24.9 | 25.4 | 36.8 | 34.9 | 1.83 | 20.074 | | | | | | |
| 600.0 | 598.7 | 598.5 | 597.2 | 1.2 | 1.2 | -106.43 | 23.5 | 37.4 | 43.3 | 40.9 | 2.35 | 18.409 | | | | | | |
| 700.0 | 697.5 | 697.7 | 695.2 | 1.5 | 1.5 | -106.19 | 21.8 | 52.7 | 51.7 | 48.7 | 2.96 | 17.433 | | | | | | |
| 800.0 | 795.6 | 796.7 | 792.4 | 1.9 | 1.9 | -105.94 | 19.7 | 71.4 | 61.9 | 58.2 | 3.68 | 16.825 | | | | | | |
| 835.5 | 830.3 | 831.8 | 826.7 | 2.0 | 2.0 | -105.86 | 18.9 | 78.8 | 65.9 | 62.0 | 3.95 | 16.692 | | | | | | |
| 900.0 | 893.2 | 895.7 | 888.9 | 2.3 | 2.3 | -105.52 | 17.3 | 93.1 | 73.6 | 69.2 | 4.45 | 16.527 | | | | | | |
| 1,000.0 | 990.8 | 995.0 | 985.6 | 2.7 | 2.7 | -105.01 | 14.8 | 115.5 | 85.6 | 80.3 | 5.25 | 16.296 | | | | | | |
| 1,100.0 | 1,088.3 | 1,094.2 | 1,082.3 | 3.1 | 3.1 | -104.63 | 12.4 | 137.9 | 97.6 | 91.5 | 6.06 | 16.099 | SF | | | | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| Company: | Berry Petroleum Company (NAD 83) | Local Co-ordinate Reference: | Well LR16C O16 595 |
| Project: | Garfield County | TVD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Reference Site: | Long Ridge O16 595 Pad | MD Reference: | KBE @ 8318.0ft (Patterson 302) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | LR16C O16 595 | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DD | Database: | EDM 5000.1 US Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to KBE @ 8318.0ft (Patterson 302)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: LR16C O16 595
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.61°

