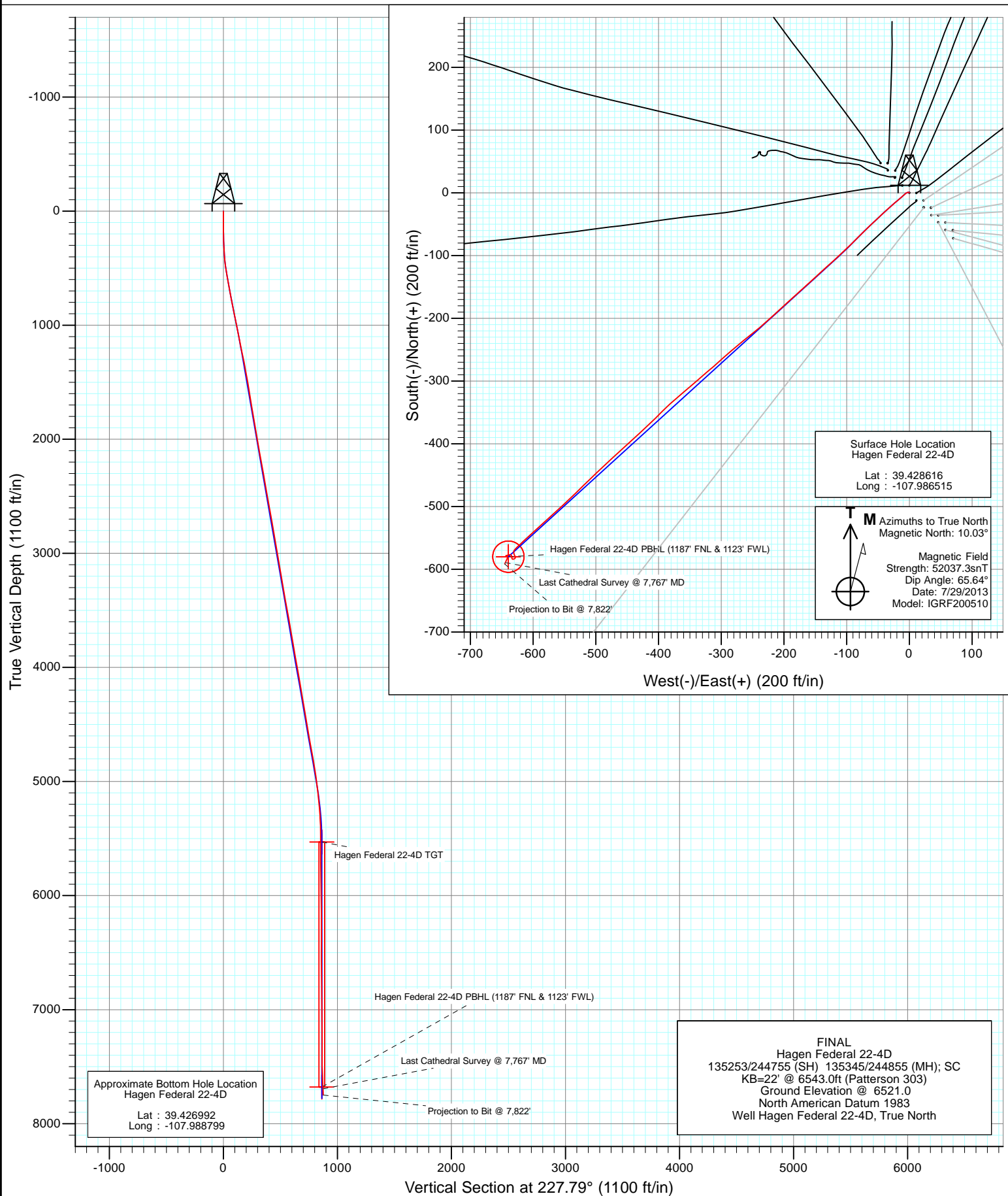


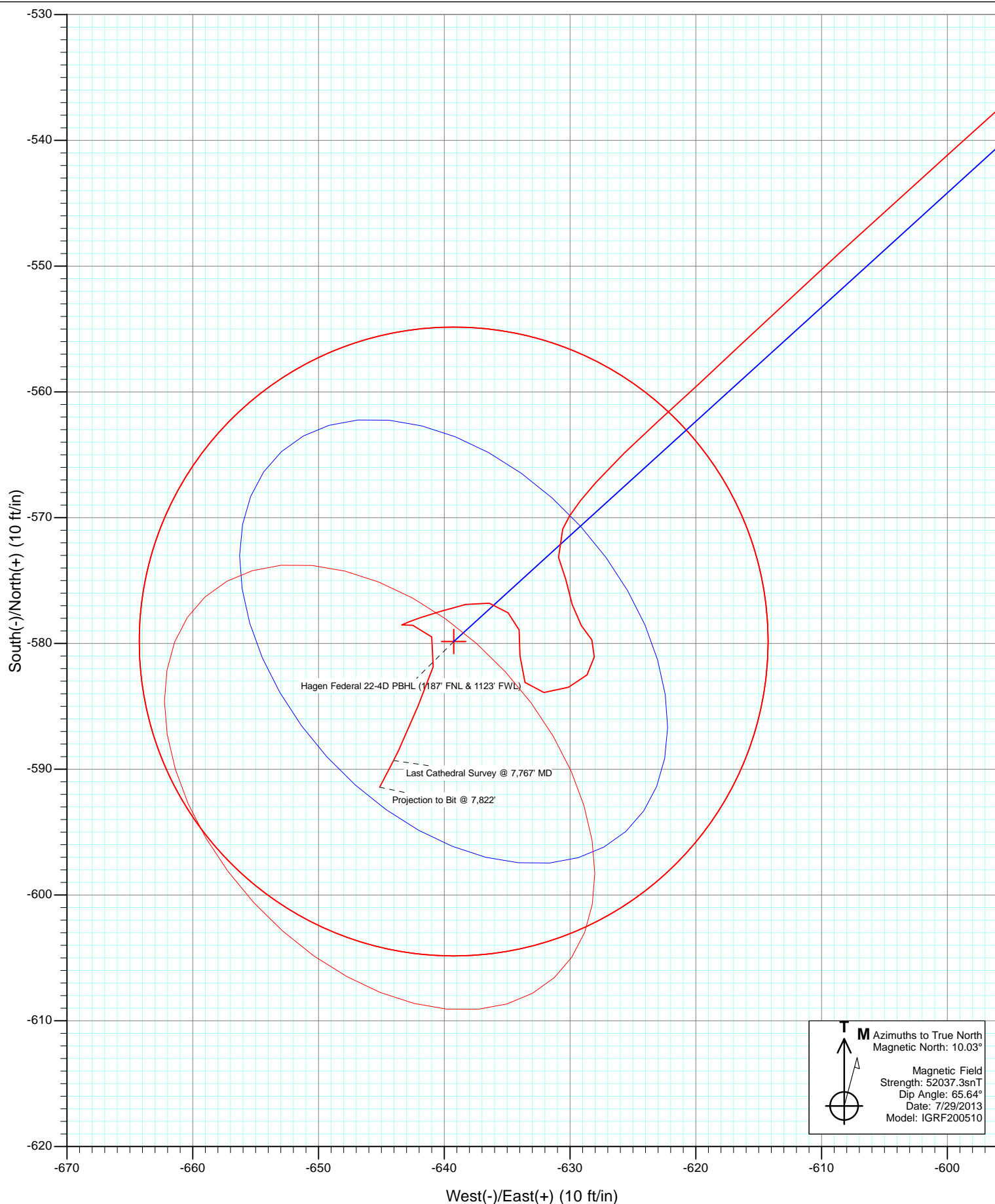


Project: S. Piceance (Parachute)
Site: PC-22 Pad NENW 2 7S 95W
Well: Hagen Federal 22-4D
Wellbore: OH
Design: FINAL



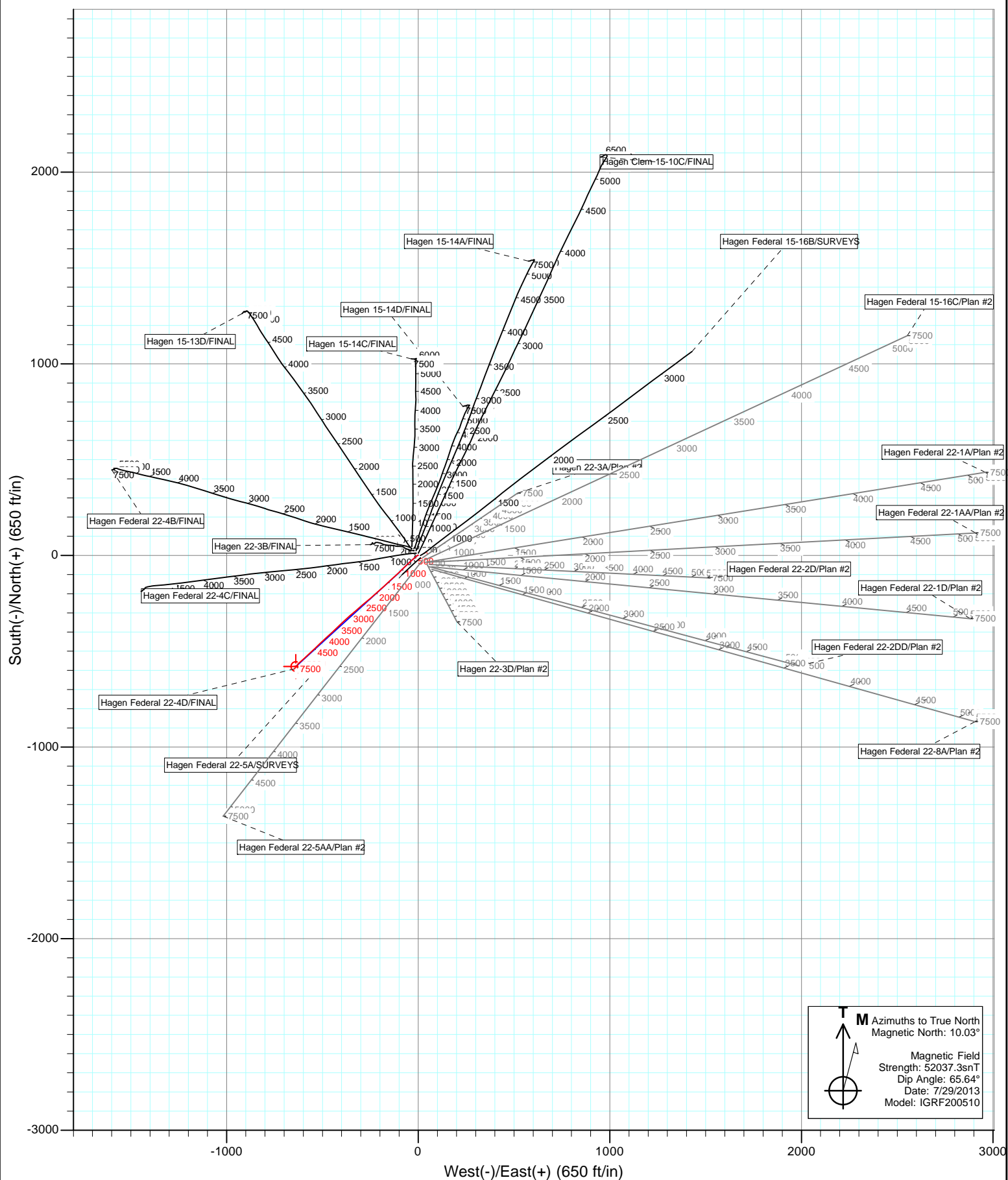


Project: S. Piceance (Parachute)
Site: PC-22 Pad NENW 2 7S 95W
Well: Hagen Federal 22-4D
Wellbore: OH
Design: FINAL





Project: S. Piceance (Parachute)
Site: PC-22 Pad NENW 2 7S 95W
Well: Hagen Federal 22-4D
Design: FINAL



Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Hagen Federal 22-4D |
| Project: | S. Piceance (Parachute) | TVD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Site: | PC-22 Pad NENW 2 7S 95W | MD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Well: | Hagen Federal 22-4D | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| | | | |
|--------------------|--|----------------------|----------------|
| Project | S. Piceance (Parachute), Garfield County, CO | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | |

| | | | | |
|------------------------------|-------------------------|---------------------|-----------------|----------------------------------|
| Site | PC-22 Pad NENW 2 7S 95W | | | |
| Site Position: | | Northing: | 1,590,596.09 ft | Latitude: 39.428560 |
| From: | Lat/Long | Easting: | 2,297,773.66 ft | Longitude: -107.986340 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: -1.57 ° |

| | | | | |
|-----------------------------|---------------------|----------------------------|------------------|---------------------------------|
| Well | Hagen Federal 22-4D | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,590,617.82 ft |
| | +E/-W | 0.0 ft | Easting: | 2,297,724.81 ft |
| Position Uncertainty | 0.0 ft | Wellhead Elevation: | ft | Ground Level: 6,521.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF200510 | 7/29/2013 | 10.03 | 65.64 | 52,037 |

| | | | | |
|--------------------------|-------------------------|-------------------|-------------------|--------------------------|
| Design | FINAL | | | |
| Audit Notes: | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: 0.0 |
| Vertical Section: | Depth From (TVD) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 227.79 |

| | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|
| Survey Program | Date | 8/5/2013 | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 110.0 | 7,822.0 | Survey #1 (OH) | Geolink MWD | Geolink MWD |

| | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|------------------------------|
| Survey | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 110.0 | 0.60 | 326.40 | 110.0 | 0.5 | -0.3 | -0.1 | 0.55 | 0.55 | |
| 141.0 | 0.70 | 310.80 | 141.0 | 0.7 | -0.6 | -0.1 | 0.65 | 0.32 | |
| 171.0 | 1.00 | 272.60 | 171.0 | 0.9 | -1.0 | 0.1 | 2.08 | 1.00 | |
| 202.0 | 1.40 | 262.70 | 202.0 | 0.8 | -1.6 | 0.6 | 1.45 | 1.29 | |
| 232.0 | 1.80 | 249.50 | 232.0 | 0.6 | -2.4 | 1.4 | 1.80 | 1.33 | |
| 262.0 | 1.90 | 251.60 | 262.0 | 0.3 | -3.3 | 2.3 | 0.40 | 0.33 | |
| 293.0 | 2.20 | 246.00 | 292.9 | -0.1 | -4.3 | 3.3 | 1.16 | 0.97 | |
| 324.0 | 2.40 | 238.30 | 323.9 | -0.7 | -5.4 | 4.5 | 1.19 | 0.65 | |
| 354.0 | 3.40 | 227.10 | 353.9 | -1.6 | -6.6 | 6.0 | 3.82 | 3.33 | |
| 385.0 | 4.30 | 226.40 | 384.8 | -3.0 | -8.1 | 8.1 | 2.91 | 2.90 | |
| 416.0 | 5.10 | 228.60 | 415.7 | -4.8 | -10.0 | 10.6 | 2.64 | 2.58 | |
| 508.0 | 8.60 | 230.10 | 507.0 | -11.9 | -18.4 | 21.6 | 3.81 | 3.80 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Hagen Federal 22-4D |
| Project: | S. Piceance (Parachute) | TVD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Site: | PC-22 Pad NENW 2 7S 95W | MD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Well: | Hagen Federal 22-4D | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 600.0 | 10.20 | 228.40 | 597.8 | -21.7 | -29.7 | 36.6 | 1.76 | 1.74 | |
| 692.0 | 10.60 | 226.90 | 688.3 | -32.9 | -42.0 | 53.2 | 0.53 | 0.43 | |
| 784.0 | 10.90 | 227.00 | 778.7 | -44.6 | -54.5 | 70.4 | 0.33 | 0.33 | |
| 876.0 | 11.20 | 226.40 | 869.0 | -56.7 | -67.4 | 88.0 | 0.35 | 0.33 | |
| 967.0 | 11.50 | 224.70 | 958.2 | -69.2 | -80.2 | 105.9 | 0.49 | 0.33 | |
| 1,064.0 | 11.60 | 226.10 | 1,053.2 | -82.9 | -94.0 | 125.3 | 0.31 | 0.10 | |
| 1,155.0 | 11.50 | 226.60 | 1,142.4 | -95.5 | -107.2 | 143.5 | 0.16 | -0.11 | |
| 1,247.0 | 11.30 | 227.50 | 1,232.6 | -107.8 | -120.5 | 161.7 | 0.29 | -0.22 | |
| 1,338.0 | 11.30 | 228.40 | 1,321.8 | -119.8 | -133.7 | 179.5 | 0.19 | 0.00 | |
| 1,430.0 | 10.20 | 226.50 | 1,412.2 | -131.4 | -146.4 | 196.7 | 1.26 | -1.20 | |
| 1,522.0 | 9.80 | 228.00 | 1,502.8 | -142.2 | -158.1 | 212.7 | 0.52 | -0.43 | |
| 1,614.0 | 9.20 | 228.80 | 1,593.5 | -152.3 | -169.4 | 227.8 | 0.67 | -0.65 | |
| 1,705.0 | 9.80 | 227.50 | 1,683.3 | -162.3 | -180.6 | 242.9 | 0.70 | 0.66 | |
| 1,797.0 | 9.40 | 226.80 | 1,774.0 | -172.8 | -191.9 | 258.2 | 0.45 | -0.43 | |
| 1,889.0 | 9.90 | 228.70 | 1,864.7 | -183.1 | -203.3 | 273.6 | 0.64 | 0.54 | |
| 1,980.0 | 9.60 | 227.40 | 1,954.4 | -193.4 | -214.8 | 289.0 | 0.41 | -0.33 | |
| 2,071.0 | 9.40 | 227.80 | 2,044.1 | -203.6 | -225.9 | 304.0 | 0.23 | -0.22 | |
| 2,163.0 | 10.70 | 230.20 | 2,134.7 | -214.1 | -238.0 | 320.1 | 1.48 | 1.41 | |
| 2,254.0 | 10.40 | 231.10 | 2,224.2 | -224.6 | -250.9 | 336.7 | 0.38 | -0.33 | |
| 2,345.0 | 9.90 | 230.50 | 2,313.7 | -234.8 | -263.3 | 352.7 | 0.56 | -0.55 | |
| 2,437.0 | 9.50 | 230.10 | 2,404.4 | -244.7 | -275.2 | 368.2 | 0.44 | -0.43 | |
| 2,528.0 | 10.30 | 229.40 | 2,494.1 | -254.8 | -287.2 | 383.9 | 0.89 | 0.88 | |
| 2,620.0 | 10.20 | 228.00 | 2,584.6 | -265.6 | -299.5 | 400.2 | 0.29 | -0.11 | |
| 2,712.0 | 10.00 | 229.60 | 2,675.2 | -276.2 | -311.6 | 416.4 | 0.37 | -0.22 | |
| 2,803.0 | 10.10 | 229.70 | 2,764.8 | -286.5 | -323.7 | 432.2 | 0.11 | 0.11 | |
| 2,894.0 | 10.00 | 229.00 | 2,854.4 | -296.8 | -335.7 | 448.1 | 0.17 | -0.11 | |
| 2,986.0 | 9.90 | 229.00 | 2,945.0 | -307.3 | -347.7 | 464.0 | 0.11 | -0.11 | |
| 3,078.0 | 9.80 | 229.40 | 3,035.6 | -317.6 | -359.7 | 479.7 | 0.13 | -0.11 | |
| 3,169.0 | 8.90 | 229.30 | 3,125.4 | -327.2 | -370.9 | 494.5 | 0.99 | -0.99 | |
| 3,261.0 | 9.70 | 228.80 | 3,216.2 | -336.9 | -382.1 | 509.4 | 0.87 | 0.87 | |
| 3,353.0 | 10.20 | 224.90 | 3,306.8 | -347.8 | -393.7 | 525.3 | 0.91 | 0.54 | |
| 3,445.0 | 9.80 | 224.00 | 3,397.4 | -359.2 | -404.9 | 541.2 | 0.47 | -0.43 | |
| 3,537.0 | 10.40 | 227.70 | 3,488.0 | -370.4 | -416.5 | 557.3 | 0.96 | 0.65 | |
| 3,628.0 | 10.20 | 227.30 | 3,577.6 | -381.4 | -428.4 | 573.6 | 0.23 | -0.22 | |
| 3,720.0 | 9.80 | 227.40 | 3,668.2 | -392.2 | -440.2 | 589.6 | 0.44 | -0.43 | |
| 3,812.0 | 9.50 | 227.20 | 3,758.9 | -402.7 | -451.5 | 605.0 | 0.33 | -0.33 | |
| 3,903.0 | 9.30 | 227.30 | 3,848.6 | -412.8 | -462.4 | 619.9 | 0.22 | -0.22 | |
| 3,994.0 | 10.70 | 227.60 | 3,938.2 | -423.5 | -474.1 | 635.7 | 1.54 | 1.54 | |
| 4,086.0 | 10.00 | 227.20 | 4,028.7 | -434.7 | -486.3 | 652.2 | 0.76 | -0.76 | |
| 4,178.0 | 9.90 | 226.00 | 4,119.4 | -445.6 | -497.8 | 668.1 | 0.25 | -0.11 | |
| 4,269.0 | 10.00 | 226.30 | 4,209.0 | -456.5 | -509.1 | 683.8 | 0.12 | 0.11 | |
| 4,360.0 | 9.50 | 225.50 | 4,298.7 | -467.2 | -520.2 | 699.2 | 0.57 | -0.55 | |
| 4,451.0 | 8.90 | 226.00 | 4,388.5 | -477.3 | -530.6 | 713.7 | 0.67 | -0.66 | |
| 4,542.0 | 9.30 | 226.40 | 4,478.4 | -487.3 | -541.0 | 728.1 | 0.45 | 0.44 | |
| 4,634.0 | 10.40 | 227.50 | 4,569.0 | -498.0 | -552.5 | 743.9 | 1.21 | 1.20 | |
| 4,725.0 | 10.20 | 228.00 | 4,658.5 | -509.0 | -564.6 | 760.1 | 0.24 | -0.22 | |
| 4,817.0 | 10.10 | 227.20 | 4,749.1 | -519.9 | -576.5 | 776.3 | 0.19 | -0.11 | |
| 4,908.0 | 9.80 | 228.00 | 4,838.7 | -530.5 | -588.2 | 792.1 | 0.36 | -0.33 | |
| 5,000.0 | 8.90 | 228.00 | 4,929.5 | -540.5 | -599.3 | 807.0 | 0.98 | -0.98 | |
| 5,092.0 | 6.90 | 227.60 | 5,020.6 | -549.0 | -608.6 | 819.7 | 2.17 | -2.17 | |
| 5,183.0 | 6.30 | 226.60 | 5,111.0 | -556.1 | -616.3 | 830.1 | 0.67 | -0.66 | |
| 5,275.0 | 5.00 | 227.90 | 5,202.6 | -562.3 | -622.9 | 839.2 | 1.42 | -1.41 | |
| 5,367.0 | 3.80 | 222.20 | 5,294.3 | -567.2 | -628.0 | 846.2 | 1.39 | -1.30 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Hagen Federal 22-4D |
| Project: | S. Piceance (Parachute) | TVD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Site: | PC-22 Pad NENW 2 7S 95W | MD Reference: | KB=22' @ 6543.0ft (Patterson 303) |
| Well: | Hagen Federal 22-4D | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 5,459.0 | 1.90 | 201.80 | 5,386.2 | -570.9 | -630.6 | 850.6 | 2.31 | -2.07 | |
| 5,550.0 | 1.10 | 164.90 | 5,477.2 | -573.2 | -630.9 | 852.4 | 1.34 | -0.88 | |
| 5,642.0 | 1.20 | 159.20 | 5,569.1 | -574.9 | -630.3 | 853.1 | 0.17 | 0.11 | |
| 5,733.0 | 1.40 | 170.90 | 5,660.1 | -576.9 | -629.8 | 854.1 | 0.36 | 0.22 | |
| 5,825.0 | 1.00 | 136.70 | 5,752.1 | -578.6 | -629.1 | 854.7 | 0.87 | -0.43 | |
| 5,916.0 | 0.80 | 152.20 | 5,843.1 | -579.7 | -628.3 | 854.8 | 0.34 | -0.22 | |
| 6,007.0 | 1.00 | 187.70 | 5,934.1 | -581.1 | -628.1 | 855.6 | 0.64 | 0.22 | |
| 6,098.0 | 1.00 | 217.10 | 6,025.1 | -582.5 | -628.6 | 857.0 | 0.56 | 0.00 | |
| 6,190.0 | 1.30 | 250.80 | 6,117.0 | -583.5 | -630.1 | 858.7 | 0.79 | 0.33 | |
| 6,282.0 | 1.20 | 265.70 | 6,209.0 | -583.9 | -632.1 | 860.5 | 0.37 | -0.11 | |
| 6,373.0 | 1.30 | 327.40 | 6,300.0 | -583.1 | -633.6 | 861.0 | 1.41 | 0.11 | |
| 6,464.0 | 1.60 | 7.10 | 6,391.0 | -581.0 | -634.0 | 859.9 | 1.13 | 0.33 | |
| 6,556.0 | 1.00 | 342.90 | 6,483.0 | -578.9 | -634.0 | 858.6 | 0.87 | -0.65 | |
| 6,647.0 | 1.10 | 313.90 | 6,573.9 | -577.6 | -634.9 | 858.3 | 0.59 | 0.11 | |
| 6,739.0 | 1.10 | 280.10 | 6,665.9 | -576.8 | -636.4 | 858.9 | 0.70 | 0.00 | |
| 6,831.0 | 1.30 | 255.90 | 6,757.9 | -576.9 | -638.3 | 860.4 | 0.59 | 0.22 | |
| 6,922.0 | 1.30 | 253.30 | 6,848.9 | -577.4 | -640.3 | 862.2 | 0.06 | 0.00 | |
| 7,014.0 | 0.80 | 251.40 | 6,940.9 | -577.9 | -641.9 | 863.7 | 0.54 | -0.54 | |
| 7,105.0 | 0.40 | 245.90 | 7,031.9 | -578.3 | -642.8 | 864.6 | 0.44 | -0.44 | |
| 7,197.0 | 0.20 | 247.70 | 7,123.9 | -578.5 | -643.2 | 865.1 | 0.22 | -0.22 | |
| 7,288.0 | 0.00 | 68.30 | 7,214.9 | -578.5 | -643.4 | 865.2 | 0.22 | -0.22 | |
| 7,380.0 | 1.10 | 91.30 | 7,306.9 | -578.6 | -642.5 | 864.6 | 1.20 | 1.20 | |
| 7,471.0 | 1.40 | 145.60 | 7,397.8 | -579.5 | -641.0 | 864.1 | 1.29 | 0.33 | |
| 7,563.0 | 1.90 | 200.00 | 7,489.8 | -581.8 | -640.9 | 865.6 | 1.71 | 0.54 | |
| 7,654.0 | 2.30 | 201.80 | 7,580.7 | -585.0 | -642.1 | 868.6 | 0.45 | 0.44 | |
| 7,746.0 | 2.50 | 205.40 | 7,672.7 | -588.5 | -643.6 | 872.1 | 0.27 | 0.22 | |
| 7,767.0 | 2.50 | 207.50 | 7,693.6 | -589.3 | -644.0 | 872.9 | 0.44 | 0.00 | Last Cathedral Survey @ 7,767' MD |
| 7,822.0 | 2.50 | 207.50 | 7,748.6 | -591.4 | -645.1 | 875.2 | 0.00 | 0.00 | Projection to Bit @ 7,822' |

| Targets | | | | | | | | | |
|------------------------|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------------------|
| Target Name | - hit/miss target | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | |
| | - Shape | | | | | | | | Latitude Longitude |
| Hagen Federal 22-4D T1 | - actual wellpath misses target center by 10.3ft at 5603.9ft MD (5531.1 TVD, -574.2 N, -630.6 E) | 0.00 | 0.00 | 5,531.0 | -579.8 | -639.2 | 1,590,055.69 | 2,297,069.93 | 39.427024 -107.988778 |
| Hagen Federal 22-4D PI | - actual wellpath misses target center by 9.9ft at 7750.9ft MD (7677.6 TVD, -588.7 N, -643.7 E) | 0.00 | 0.00 | 7,678.0 | -579.8 | -639.2 | 1,590,055.69 | 2,297,069.93 | 39.427024 -107.988778 |
| | - Circle (radius 25.0) | | | | | | | | |

| Design Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|-----------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | | |
| | | +N/-S (ft) | +E/-W (ft) | Comment | |
| 7,767.0 | 7,693.6 | -589.3 | -644.0 | Last Cathedral Survey @ 7,767' MD | |
| 7,822.0 | 7,748.6 | -591.4 | -645.1 | Projection to Bit @ 7,822' | |

Checked By: _____ Approved By: _____ Date: _____