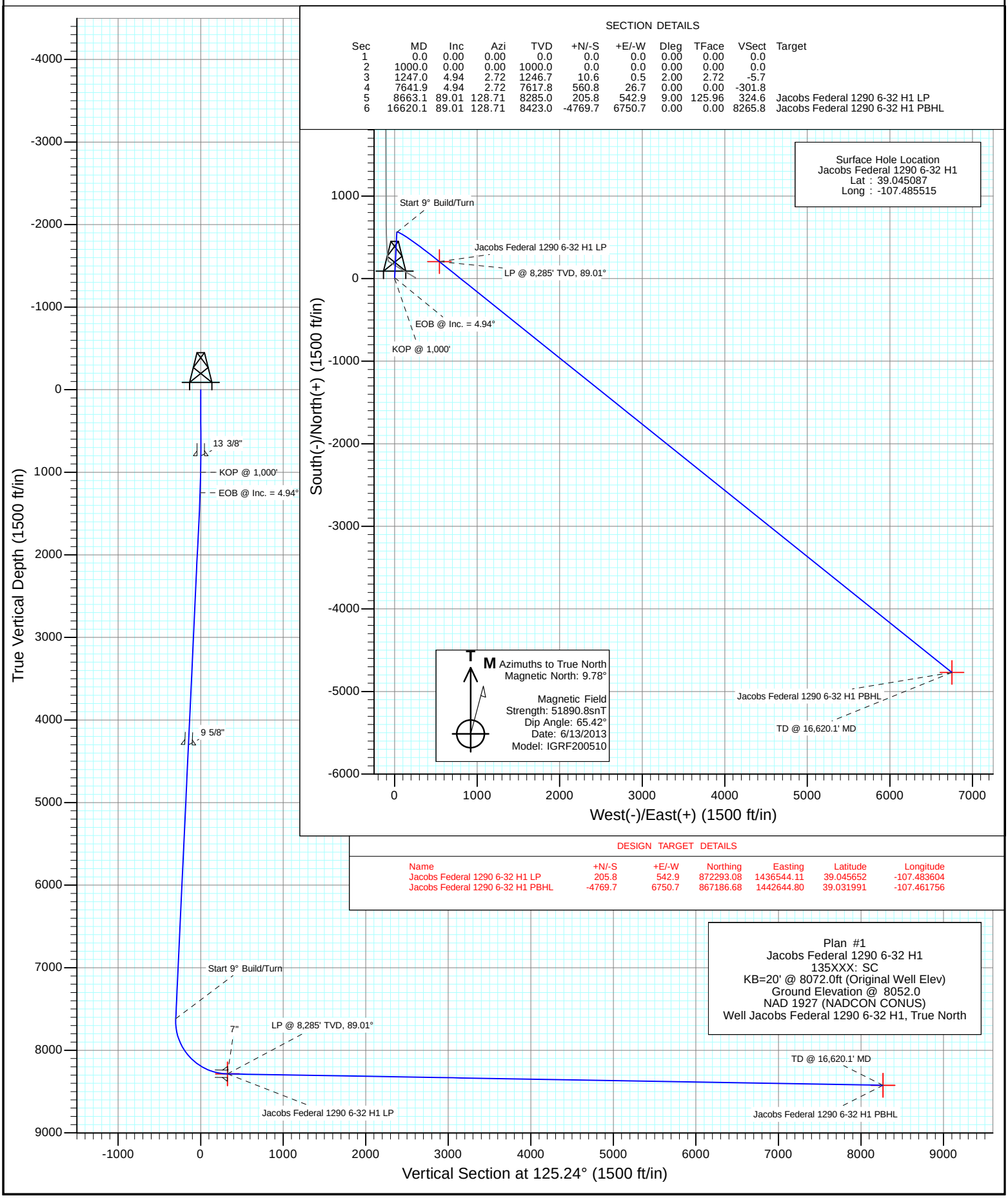
GUNNISON ENERGY CORPORATION

Project: Gunnison County, CO
Site: Jacobs Federal 1290 6-32
Well: Jacobs Federal 1290 6-32 H1
Wellbore: HZ
Design: Plan #1

CATHEDRAL

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 1000.0 | 0.00 | 0.00 | 1000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1247.0 | 4.94 | 2.72 | 1246.7 | 10.6 | 0.5 | 2.00 | 2.72 | -5.7 | |
| 4 | 7641.9 | 4.94 | 2.72 | 7617.8 | 560.8 | 26.7 | 0.00 | 0.00 | -301.8 | |
| 5 | 8663.1 | 89.01 | 128.71 | 8285.0 | 205.8 | 542.9 | 9.00 | 125.96 | 324.6 | Jacobs Federal 1290 6-32 H1 LP |
| 6 | 16620.1 | 89.01 | 128.71 | 8423.0 | -4769.7 | 6750.7 | 0.00 | 0.00 | 8265.8 | Jacobs Federal 1290 6-32 H1 PBHL |




DESIGN TARGET DETAILS

| Name | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|
| Jacobs Federal 1290 6-32 H1 LP | 205.8 | 542.9 | 872293.08 | 1436544.11 | 39.045652 | -107.483604 |
| Jacobs Federal 1290 6-32 H1 PBHL | -4769.7 | 6750.7 | 867186.68 | 1442644.80 | 39.031991 | -107.461756 |

Plan #1
Jacobs Federal 1290 6-32 H1
135XXX: SC
KB=20' @ 8072.0ft (Original Well Elev)
Ground Elevation @ 8052.0
NAD 1927 (NADCON CONUS)
Well Jacobs Federal 1290 6-32 H1, True North

# Cathedral Energy Services

Planning Report

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Company:** | Gunnison Energy Corporation | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **Design:** | Plan #1 | | |

**Project** Gunnison County, CO

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Colorado South 503 | | |

**Site** Jacobs Federal 1290 6-32

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 872,098.84 ft | **Latitude:** | 39.045087 |
| **From:** | Lat/Long | **Easting:** | 1,435,996.98 ft | **Longitude:** | -107.485515 |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | -1.22 ° |

**Well** Jacobs Federal 1290 6-32 H1

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 ft | **Northing:** | 872,098.83 ft | **Latitude:** | 39.045087 |
| | **+E/-W** | 0.0 ft | **Easting:** | 1,435,996.98 ft | **Longitude:** | -107.485515 |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 8,052.0 ft |

**Wellbore** HZ

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF200510 | 6/13/2013 | 9.78 | 65.42 | 51,891 |

**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 | 125.24 |

**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 | |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,247.0 | 4.94 | 2.72 | 1,246.7 | 10.6 | 0.5 | 2.00 | 2.00 | 0.00 | 2.72 | |
| 7,641.9 | 4.94 | 2.72 | 7,617.8 | 560.8 | 26.7 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,663.1 | 89.01 | 128.71 | 8,285.0 | 205.8 | 542.9 | 9.00 | 8.23 | 12.34 | 125.96 | Jacobs Federal 1290 |
| 16,620.1 | 89.01 | 128.71 | 8,423.0 | -4,769.7 | 6,750.7 | 0.00 | 0.00 | 0.00 | 0.00 | Jacobs Federal 1290 |

| | | | |
|---|---|---|---|
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| **Company:** | Gunnison Energy Corporation | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **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 | |
| 100.0 | 0.00 | 0.00 | 100.0 | 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 | |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 13 3/8" |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP @ 1,000' |
| 1,100.0 | 2.00 | 2.72 | 1,100.0 | 1.7 | 0.1 | -0.9 | 2.00 | 2.00 | |
| 1,200.0 | 4.00 | 2.72 | 1,199.8 | 7.0 | 0.3 | -3.8 | 2.00 | 2.00 | |
| 1,247.0 | 4.94 | 2.72 | 1,246.7 | 10.6 | 0.5 | -5.7 | 2.00 | 2.00 | EOB @ Inc. = 4.94° |
| 1,300.0 | 4.94 | 2.72 | 1,299.5 | 15.2 | 0.7 | -8.2 | 0.00 | 0.00 | |
| 1,400.0 | 4.94 | 2.72 | 1,399.1 | 23.8 | 1.1 | -12.8 | 0.00 | 0.00 | |
| 1,500.0 | 4.94 | 2.72 | 1,498.8 | 32.4 | 1.5 | -17.4 | 0.00 | 0.00 | |
| 1,600.0 | 4.94 | 2.72 | 1,598.4 | 41.0 | 1.9 | -22.1 | 0.00 | 0.00 | |
| 1,700.0 | 4.94 | 2.72 | 1,698.0 | 49.6 | 2.4 | -26.7 | 0.00 | 0.00 | |
| 1,800.0 | 4.94 | 2.72 | 1,797.6 | 58.2 | 2.8 | -31.3 | 0.00 | 0.00 | |
| 1,900.0 | 4.94 | 2.72 | 1,897.3 | 66.8 | 3.2 | -36.0 | 0.00 | 0.00 | |
| 2,000.0 | 4.94 | 2.72 | 1,996.9 | 75.4 | 3.6 | -40.6 | 0.00 | 0.00 | |
| 2,100.0 | 4.94 | 2.72 | 2,096.5 | 84.0 | 4.0 | -45.2 | 0.00 | 0.00 | |
| 2,200.0 | 4.94 | 2.72 | 2,196.2 | 92.6 | 4.4 | -49.8 | 0.00 | 0.00 | |
| 2,300.0 | 4.94 | 2.72 | 2,295.8 | 101.2 | 4.8 | -54.5 | 0.00 | 0.00 | |
| 2,400.0 | 4.94 | 2.72 | 2,395.4 | 109.8 | 5.2 | -59.1 | 0.00 | 0.00 | |
| 2,500.0 | 4.94 | 2.72 | 2,495.0 | 118.4 | 5.6 | -63.7 | 0.00 | 0.00 | |
| 2,600.0 | 4.94 | 2.72 | 2,594.7 | 127.0 | 6.0 | -68.4 | 0.00 | 0.00 | |
| 2,700.0 | 4.94 | 2.72 | 2,694.3 | 135.6 | 6.4 | -73.0 | 0.00 | 0.00 | |
| 2,800.0 | 4.94 | 2.72 | 2,793.9 | 144.2 | 6.9 | -77.6 | 0.00 | 0.00 | |
| 2,900.0 | 4.94 | 2.72 | 2,893.6 | 152.8 | 7.3 | -82.3 | 0.00 | 0.00 | |
| 3,000.0 | 4.94 | 2.72 | 2,993.2 | 161.4 | 7.7 | -86.9 | 0.00 | 0.00 | |
| 3,100.0 | 4.94 | 2.72 | 3,092.8 | 170.0 | 8.1 | -91.5 | 0.00 | 0.00 | |
| 3,200.0 | 4.94 | 2.72 | 3,192.4 | 178.6 | 8.5 | -96.2 | 0.00 | 0.00 | |
| 3,300.0 | 4.94 | 2.72 | 3,292.1 | 187.3 | 8.9 | -100.8 | 0.00 | 0.00 | |
| 3,400.0 | 4.94 | 2.72 | 3,391.7 | 195.9 | 9.3 | -105.4 | 0.00 | 0.00 | |
| 3,500.0 | 4.94 | 2.72 | 3,491.3 | 204.5 | 9.7 | -110.0 | 0.00 | 0.00 | |
| 3,600.0 | 4.94 | 2.72 | 3,591.0 | 213.1 | 10.1 | -114.7 | 0.00 | 0.00 | |
| 3,700.0 | 4.94 | 2.72 | 3,690.6 | 221.7 | 10.5 | -119.3 | 0.00 | 0.00 | |
| 3,800.0 | 4.94 | 2.72 | 3,790.2 | 230.3 | 10.9 | -123.9 | 0.00 | 0.00 | |
| 3,900.0 | 4.94 | 2.72 | 3,889.8 | 238.9 | 11.4 | -128.6 | 0.00 | 0.00 | |
| 4,000.0 | 4.94 | 2.72 | 3,989.5 | 247.5 | 11.8 | -133.2 | 0.00 | 0.00 | |
| 4,100.0 | 4.94 | 2.72 | 4,089.1 | 256.1 | 12.2 | -137.8 | 0.00 | 0.00 | |
| 4,200.0 | 4.94 | 2.72 | 4,188.7 | 264.7 | 12.6 | -142.5 | 0.00 | 0.00 | |
| 4,300.0 | 4.94 | 2.72 | 4,288.3 | 273.3 | 13.0 | -147.1 | 0.00 | 0.00 | |
| 4,311.7 | 4.94 | 2.72 | 4,300.0 | 274.3 | 13.0 | -147.6 | 0.00 | 0.00 | 9 5/8" |
| 4,400.0 | 4.94 | 2.72 | 4,388.0 | 281.9 | 13.4 | -151.7 | 0.00 | 0.00 | |
| 4,500.0 | 4.94 | 2.72 | 4,487.6 | 290.5 | 13.8 | -156.3 | 0.00 | 0.00 | |
| 4,600.0 | 4.94 | 2.72 | 4,587.2 | 299.1 | 14.2 | -161.0 | 0.00 | 0.00 | |
| 4,700.0 | 4.94 | 2.72 | 4,686.9 | 307.7 | 14.6 | -165.6 | 0.00 | 0.00 | |
| 4,800.0 | 4.94 | 2.72 | 4,786.5 | 316.3 | 15.0 | -170.2 | 0.00 | 0.00 | |
| 4,900.0 | 4.94 | 2.72 | 4,886.1 | 324.9 | 15.4 | -174.9 | 0.00 | 0.00 | |

| | | | |
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| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **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 |
|---|---|---|---|---|---|---|---|---|---|
| 5,000.0 | 4.94 | 2.72 | 4,985.7 | 333.5 | 15.9 | -179.5 | 0.00 | 0.00 | |
| 5,100.0 | 4.94 | 2.72 | 5,085.4 | 342.1 | 16.3 | -184.1 | 0.00 | 0.00 | |
| 5,200.0 | 4.94 | 2.72 | 5,185.0 | 350.7 | 16.7 | -188.8 | 0.00 | 0.00 | |
| 5,300.0 | 4.94 | 2.72 | 5,284.6 | 359.3 | 17.1 | -193.4 | 0.00 | 0.00 | |
| 5,400.0 | 4.94 | 2.72 | 5,384.3 | 367.9 | 17.5 | -198.0 | 0.00 | 0.00 | |
| 5,500.0 | 4.94 | 2.72 | 5,483.9 | 376.5 | 17.9 | -202.6 | 0.00 | 0.00 | |
| 5,600.0 | 4.94 | 2.72 | 5,583.5 | 385.1 | 18.3 | -207.3 | 0.00 | 0.00 | |
| 5,700.0 | 4.94 | 2.72 | 5,683.1 | 393.7 | 18.7 | -211.9 | 0.00 | 0.00 | |
| 5,800.0 | 4.94 | 2.72 | 5,782.8 | 402.3 | 19.1 | -216.5 | 0.00 | 0.00 | |
| 5,900.0 | 4.94 | 2.72 | 5,882.4 | 410.9 | 19.5 | -221.2 | 0.00 | 0.00 | |
| 6,000.0 | 4.94 | 2.72 | 5,982.0 | 419.5 | 20.0 | -225.8 | 0.00 | 0.00 | |
| 6,100.0 | 4.94 | 2.72 | 6,081.7 | 428.1 | 20.4 | -230.4 | 0.00 | 0.00 | |
| 6,200.0 | 4.94 | 2.72 | 6,181.3 | 436.7 | 20.8 | -235.1 | 0.00 | 0.00 | |
| 6,300.0 | 4.94 | 2.72 | 6,280.9 | 445.3 | 21.2 | -239.7 | 0.00 | 0.00 | |
| 6,400.0 | 4.94 | 2.72 | 6,380.5 | 453.9 | 21.6 | -244.3 | 0.00 | 0.00 | |
| 6,500.0 | 4.94 | 2.72 | 6,480.2 | 462.6 | 22.0 | -249.0 | 0.00 | 0.00 | |
| 6,600.0 | 4.94 | 2.72 | 6,579.8 | 471.2 | 22.4 | -253.6 | 0.00 | 0.00 | |
| 6,700.0 | 4.94 | 2.72 | 6,679.4 | 479.8 | 22.8 | -258.2 | 0.00 | 0.00 | |
| 6,800.0 | 4.94 | 2.72 | 6,779.1 | 488.4 | 23.2 | -262.8 | 0.00 | 0.00 | |
| 6,900.0 | 4.94 | 2.72 | 6,878.7 | 497.0 | 23.6 | -267.5 | 0.00 | 0.00 | |
| 7,000.0 | 4.94 | 2.72 | 6,978.3 | 505.6 | 24.0 | -272.1 | 0.00 | 0.00 | |
| 7,100.0 | 4.94 | 2.72 | 7,077.9 | 514.2 | 24.5 | -276.7 | 0.00 | 0.00 | |
| 7,200.0 | 4.94 | 2.72 | 7,177.6 | 522.8 | 24.9 | -281.4 | 0.00 | 0.00 | |
| 7,300.0 | 4.94 | 2.72 | 7,277.2 | 531.4 | 25.3 | -286.0 | 0.00 | 0.00 | |
| 7,400.0 | 4.94 | 2.72 | 7,376.8 | 540.0 | 25.7 | -290.6 | 0.00 | 0.00 | |
| 7,500.0 | 4.94 | 2.72 | 7,476.5 | 548.6 | 26.1 | -295.3 | 0.00 | 0.00 | |
| 7,600.0 | 4.94 | 2.72 | 7,576.1 | 557.2 | 26.5 | -299.9 | 0.00 | 0.00 | |
| 7,641.9 | 4.94 | 2.72 | 7,617.8 | 560.8 | 26.7 | -301.8 | 0.00 | 0.00 | Start 9° Build/Turn |
| 7,650.0 | 4.55 | 10.17 | 7,625.9 | 561.5 | 26.7 | -302.1 | 9.00 | -4.81 | |
| 7,700.0 | 4.62 | 68.96 | 7,675.8 | 564.1 | 29.0 | -301.9 | 9.00 | 0.14 | |
| 7,750.0 | 7.90 | 98.55 | 7,725.5 | 564.3 | 34.3 | -297.7 | 9.00 | 6.56 | |
| 7,800.0 | 12.00 | 109.58 | 7,774.7 | 562.1 | 42.6 | -289.6 | 9.00 | 8.19 | |
| 7,850.0 | 16.31 | 114.96 | 7,823.2 | 557.4 | 53.8 | -277.7 | 9.00 | 8.62 | |
| 7,900.0 | 20.69 | 118.12 | 7,870.6 | 550.3 | 68.0 | -262.0 | 9.00 | 8.78 | |
| 7,950.0 | 25.12 | 120.21 | 7,916.6 | 540.7 | 85.0 | -242.7 | 9.00 | 8.85 | |
| 8,000.0 | 29.57 | 121.71 | 7,961.0 | 528.9 | 104.6 | -219.8 | 9.00 | 8.90 | |
| 8,050.0 | 34.03 | 122.84 | 8,003.5 | 514.8 | 126.9 | -193.5 | 9.00 | 8.92 | |
| 8,100.0 | 38.50 | 123.74 | 8,043.8 | 498.6 | 151.6 | -163.9 | 9.00 | 8.94 | |
| 8,150.0 | 42.97 | 124.48 | 8,081.7 | 480.3 | 178.6 | -131.3 | 9.00 | 8.95 | |
| 8,200.0 | 47.45 | 125.10 | 8,116.9 | 460.0 | 207.7 | -95.8 | 9.00 | 8.96 | |
| 8,250.0 | 51.93 | 125.64 | 8,149.3 | 438.0 | 238.8 | -57.7 | 9.00 | 8.96 | |
| 8,300.0 | 56.41 | 126.12 | 8,178.5 | 414.2 | 271.6 | -17.2 | 9.00 | 8.97 | |
| 8,350.0 | 60.90 | 126.55 | 8,204.5 | 388.9 | 306.0 | 25.5 | 9.00 | 8.97 | |
| 8,400.0 | 65.39 | 126.95 | 8,227.1 | 362.2 | 341.8 | 70.1 | 9.00 | 8.97 | |
| 8,450.0 | 69.87 | 127.31 | 8,246.1 | 334.3 | 378.6 | 116.3 | 9.00 | 8.97 | |
| 8,500.0 | 74.36 | 127.66 | 8,261.5 | 305.4 | 416.4 | 163.8 | 9.00 | 8.98 | |
| 8,550.0 | 78.85 | 127.99 | 8,273.1 | 275.6 | 454.8 | 212.4 | 9.00 | 8.98 | |
| 8,600.0 | 83.34 | 128.31 | 8,280.8 | 245.0 | 493.6 | 261.7 | 9.00 | 8.98 | |
| 8,650.0 | 87.83 | 128.63 | 8,284.7 | 214.0 | 532.6 | 311.5 | 9.00 | 8.98 | |
| 8,663.1 | 89.00 | 128.71 | 8,285.0 | 205.9 | 542.8 | 324.6 | 9.00 | 8.98 | LP @ 8,285' TVD, 89.01° - 7" |
| 8,700.0 | 89.01 | 128.71 | 8,285.7 | 182.8 | 571.6 | 361.4 | 0.01 | 0.01 | |
| 8,800.0 | 89.01 | 128.71 | 8,287.4 | 120.3 | 649.7 | 461.2 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
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| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **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 |
|---|---|---|---|---|---|---|---|---|---|
| 8,900.0 | 89.01 | 128.71 | 8,289.1 | 57.7 | 727.7 | 561.0 | 0.00 | 0.00 | |
| 9,000.0 | 89.01 | 128.71 | 8,290.9 | -4.8 | 805.7 | 660.8 | 0.00 | 0.00 | |
| 9,100.0 | 89.01 | 128.71 | 8,292.6 | -67.3 | 883.7 | 760.6 | 0.00 | 0.00 | |
| 9,200.0 | 89.01 | 128.71 | 8,294.3 | -129.9 | 961.7 | 860.4 | 0.00 | 0.00 | |
| 9,300.0 | 89.01 | 128.71 | 8,296.1 | -192.4 | 1,039.7 | 960.2 | 0.00 | 0.00 | |
| 9,400.0 | 89.01 | 128.71 | 8,297.8 | -254.9 | 1,117.8 | 1,060.0 | 0.00 | 0.00 | |
| 9,500.0 | 89.01 | 128.71 | 8,299.5 | -317.5 | 1,195.8 | 1,159.8 | 0.00 | 0.00 | |
| 9,600.0 | 89.01 | 128.71 | 8,301.3 | -380.0 | 1,273.8 | 1,259.6 | 0.00 | 0.00 | |
| 9,700.0 | 89.01 | 128.71 | 8,303.0 | -442.5 | 1,351.8 | 1,359.4 | 0.00 | 0.00 | |
| 9,800.0 | 89.01 | 128.71 | 8,304.7 | -505.1 | 1,429.8 | 1,459.2 | 0.00 | 0.00 | |
| 9,900.0 | 89.01 | 128.71 | 8,306.5 | -567.6 | 1,507.9 | 1,559.0 | 0.00 | 0.00 | |
| 10,000.0 | 89.01 | 128.71 | 8,308.2 | -630.1 | 1,585.9 | 1,658.8 | 0.00 | 0.00 | |
| 10,100.0 | 89.01 | 128.71 | 8,309.9 | -692.7 | 1,663.9 | 1,758.6 | 0.00 | 0.00 | |
| 10,200.0 | 89.01 | 128.71 | 8,311.7 | -755.2 | 1,741.9 | 1,858.4 | 0.00 | 0.00 | |
| 10,300.0 | 89.01 | 128.71 | 8,313.4 | -817.7 | 1,819.9 | 1,958.2 | 0.00 | 0.00 | |
| 10,400.0 | 89.01 | 128.71 | 8,315.1 | -880.3 | 1,897.9 | 2,058.0 | 0.00 | 0.00 | |
| 10,500.0 | 89.01 | 128.71 | 8,316.9 | -942.8 | 1,976.0 | 2,157.8 | 0.00 | 0.00 | |
| 10,600.0 | 89.01 | 128.71 | 8,318.6 | -1,005.3 | 2,054.0 | 2,257.6 | 0.00 | 0.00 | |
| 10,700.0 | 89.01 | 128.71 | 8,320.3 | -1,067.8 | 2,132.0 | 2,357.4 | 0.00 | 0.00 | |
| 10,800.0 | 89.01 | 128.71 | 8,322.1 | -1,130.4 | 2,210.0 | 2,457.2 | 0.00 | 0.00 | |
| 10,900.0 | 89.01 | 128.71 | 8,323.8 | -1,192.9 | 2,288.0 | 2,557.0 | 0.00 | 0.00 | |
| 11,000.0 | 89.01 | 128.71 | 8,325.5 | -1,255.4 | 2,366.1 | 2,656.8 | 0.00 | 0.00 | |
| 11,100.0 | 89.01 | 128.71 | 8,327.3 | -1,318.0 | 2,444.1 | 2,756.6 | 0.00 | 0.00 | |
| 11,200.0 | 89.01 | 128.71 | 8,329.0 | -1,380.5 | 2,522.1 | 2,856.4 | 0.00 | 0.00 | |
| 11,300.0 | 89.01 | 128.71 | 8,330.7 | -1,443.0 | 2,600.1 | 2,956.2 | 0.00 | 0.00 | |
| 11,400.0 | 89.01 | 128.71 | 8,332.5 | -1,505.6 | 2,678.1 | 3,056.0 | 0.00 | 0.00 | |
| 11,500.0 | 89.01 | 128.71 | 8,334.2 | -1,568.1 | 2,756.1 | 3,155.8 | 0.00 | 0.00 | |
| 11,600.0 | 89.01 | 128.71 | 8,335.9 | -1,630.6 | 2,834.2 | 3,255.6 | 0.00 | 0.00 | |
| 11,700.0 | 89.01 | 128.71 | 8,337.7 | -1,693.2 | 2,912.2 | 3,355.4 | 0.00 | 0.00 | |
| 11,800.0 | 89.01 | 128.71 | 8,339.4 | -1,755.7 | 2,990.2 | 3,455.2 | 0.00 | 0.00 | |
| 11,900.0 | 89.01 | 128.71 | 8,341.1 | -1,818.2 | 3,068.2 | 3,555.0 | 0.00 | 0.00 | |
| 12,000.0 | 89.01 | 128.71 | 8,342.9 | -1,880.8 | 3,146.2 | 3,654.8 | 0.00 | 0.00 | |
| 12,100.0 | 89.01 | 128.71 | 8,344.6 | -1,943.3 | 3,224.3 | 3,754.6 | 0.00 | 0.00 | |
| 12,200.0 | 89.01 | 128.71 | 8,346.4 | -2,005.8 | 3,302.3 | 3,854.4 | 0.00 | 0.00 | |
| 12,300.0 | 89.01 | 128.71 | 8,348.1 | -2,068.3 | 3,380.3 | 3,954.3 | 0.00 | 0.00 | |
| 12,400.0 | 89.01 | 128.71 | 8,349.8 | -2,130.9 | 3,458.3 | 4,054.1 | 0.00 | 0.00 | |
| 12,500.0 | 89.01 | 128.71 | 8,351.6 | -2,193.4 | 3,536.3 | 4,153.9 | 0.00 | 0.00 | |
| 12,600.0 | 89.01 | 128.71 | 8,353.3 | -2,255.9 | 3,614.3 | 4,253.7 | 0.00 | 0.00 | |
| 12,700.0 | 89.01 | 128.71 | 8,355.0 | -2,318.5 | 3,692.4 | 4,353.5 | 0.00 | 0.00 | |
| 12,800.0 | 89.01 | 128.71 | 8,356.8 | -2,381.0 | 3,770.4 | 4,453.3 | 0.00 | 0.00 | |
| 12,900.0 | 89.01 | 128.71 | 8,358.5 | -2,443.5 | 3,848.4 | 4,553.1 | 0.00 | 0.00 | |
| 13,000.0 | 89.01 | 128.71 | 8,360.2 | -2,506.1 | 3,926.4 | 4,652.9 | 0.00 | 0.00 | |
| 13,100.0 | 89.01 | 128.71 | 8,362.0 | -2,568.6 | 4,004.4 | 4,752.7 | 0.00 | 0.00 | |
| 13,200.0 | 89.01 | 128.71 | 8,363.7 | -2,631.1 | 4,082.5 | 4,852.5 | 0.00 | 0.00 | |
| 13,300.0 | 89.01 | 128.71 | 8,365.4 | -2,693.7 | 4,160.5 | 4,952.3 | 0.00 | 0.00 | |
| 13,400.0 | 89.01 | 128.71 | 8,367.2 | -2,756.2 | 4,238.5 | 5,052.1 | 0.00 | 0.00 | |
| 13,500.0 | 89.01 | 128.71 | 8,368.9 | -2,818.7 | 4,316.5 | 5,151.9 | 0.00 | 0.00 | |
| 13,600.0 | 89.01 | 128.71 | 8,370.6 | -2,881.3 | 4,394.5 | 5,251.7 | 0.00 | 0.00 | |
| 13,700.0 | 89.01 | 128.71 | 8,372.4 | -2,943.8 | 4,472.5 | 5,351.5 | 0.00 | 0.00 | |
| 13,800.0 | 89.01 | 128.71 | 8,374.1 | -3,006.3 | 4,550.6 | 5,451.3 | 0.00 | 0.00 | |
| 13,900.0 | 89.01 | 128.71 | 8,375.8 | -3,068.8 | 4,628.6 | 5,551.1 | 0.00 | 0.00 | |
| 14,000.0 | 89.01 | 128.71 | 8,377.6 | -3,131.4 | 4,706.6 | 5,650.9 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Company:** | Gunnison Energy Corporation | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **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 |
|---|---|---|---|---|---|---|---|---|---|
| 14,100.0 | 89.01 | 128.71 | 8,379.3 | -3,193.9 | 4,784.6 | 5,750.7 | 0.00 | 0.00 | |
| 14,200.0 | 89.01 | 128.71 | 8,381.0 | -3,256.4 | 4,862.6 | 5,850.5 | 0.00 | 0.00 | |
| 14,300.0 | 89.01 | 128.71 | 8,382.8 | -3,319.0 | 4,940.7 | 5,950.3 | 0.00 | 0.00 | |
| 14,400.0 | 89.01 | 128.71 | 8,384.5 | -3,381.5 | 5,018.7 | 6,050.1 | 0.00 | 0.00 | |
| 14,500.0 | 89.01 | 128.71 | 8,386.2 | -3,444.0 | 5,096.7 | 6,149.9 | 0.00 | 0.00 | |
| 14,600.0 | 89.01 | 128.71 | 8,388.0 | -3,506.6 | 5,174.7 | 6,249.7 | 0.00 | 0.00 | |
| 14,700.0 | 89.01 | 128.71 | 8,389.7 | -3,569.1 | 5,252.7 | 6,349.5 | 0.00 | 0.00 | |
| 14,800.0 | 89.01 | 128.71 | 8,391.4 | -3,631.6 | 5,330.7 | 6,449.3 | 0.00 | 0.00 | |
| 14,900.0 | 89.01 | 128.71 | 8,393.2 | -3,694.2 | 5,408.8 | 6,549.1 | 0.00 | 0.00 | |
| 15,000.0 | 89.01 | 128.71 | 8,394.9 | -3,756.7 | 5,486.8 | 6,648.9 | 0.00 | 0.00 | |
| 15,100.0 | 89.01 | 128.71 | 8,396.6 | -3,819.2 | 5,564.8 | 6,748.7 | 0.00 | 0.00 | |
| 15,200.0 | 89.01 | 128.71 | 8,398.4 | -3,881.8 | 5,642.8 | 6,848.5 | 0.00 | 0.00 | |
| 15,300.0 | 89.01 | 128.71 | 8,400.1 | -3,944.3 | 5,720.8 | 6,948.3 | 0.00 | 0.00 | |
| 15,400.0 | 89.01 | 128.71 | 8,401.8 | -4,006.8 | 5,798.8 | 7,048.1 | 0.00 | 0.00 | |
| 15,500.0 | 89.01 | 128.71 | 8,403.6 | -4,069.3 | 5,876.9 | 7,147.9 | 0.00 | 0.00 | |
| 15,600.0 | 89.01 | 128.71 | 8,405.3 | -4,131.9 | 5,954.9 | 7,247.7 | 0.00 | 0.00 | |
| 15,700.0 | 89.01 | 128.71 | 8,407.0 | -4,194.4 | 6,032.9 | 7,347.5 | 0.00 | 0.00 | |
| 15,800.0 | 89.01 | 128.71 | 8,408.8 | -4,256.9 | 6,110.9 | 7,447.3 | 0.00 | 0.00 | |
| 15,900.0 | 89.01 | 128.71 | 8,410.5 | -4,319.5 | 6,188.9 | 7,547.1 | 0.00 | 0.00 | |
| 16,000.0 | 89.01 | 128.71 | 8,412.2 | -4,382.0 | 6,267.0 | 7,646.9 | 0.00 | 0.00 | |
| 16,100.0 | 89.01 | 128.71 | 8,414.0 | -4,444.5 | 6,345.0 | 7,746.7 | 0.00 | 0.00 | |
| 16,200.0 | 89.01 | 128.71 | 8,415.7 | -4,507.1 | 6,423.0 | 7,846.5 | 0.00 | 0.00 | |
| 16,300.0 | 89.01 | 128.71 | 8,417.4 | -4,569.6 | 6,501.0 | 7,946.3 | 0.00 | 0.00 | |
| 16,400.0 | 89.01 | 128.71 | 8,419.2 | -4,632.1 | 6,579.0 | 8,046.1 | 0.00 | 0.00 | |
| 16,500.0 | 89.01 | 128.71 | 8,420.9 | -4,694.7 | 6,657.0 | 8,145.9 | 0.00 | 0.00 | |
| 16,600.0 | 89.01 | 128.71 | 8,422.7 | -4,757.2 | 6,735.1 | 8,245.7 | 0.00 | 0.00 | |
| 16,620.1 | 89.01 | 128.71 | 8,423.0 | -4,769.7 | 6,750.7 | 8,265.8 | 0.00 | 0.00 | TD @ 16,620.1' MD |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Jacobs Federal 1290 6-3<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 8,285.0 | 205.8 | 542.9 | 872,293.08 | 1,436,544.11 | 39.045652 | -107.483604 |
| Jacobs Federal 1290 6-3<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 8,423.0 | -4,769.7 | 6,750.7 | 867,186.68 | 1,442,644.80 | 39.031991 | -107.461756 |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 800.0 | 800.0 | 13 3/8" | 13.375 | 17.500 |
| 4,311.7 | 4,300.0 | 9 5/8" | 9.625 | 12.250 |
| 8,663.1 | 8,285.0 | 7" | 7.000 | 8.500 |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Company:** | Gunnison Energy Corporation | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Project:** | Gunnison County, CO | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site:** | Jacobs Federal 1290 6-32 | **North Reference:** | True |
| **Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | HZ | | |
| **Design:** | Plan #1 | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,000.0 | 1,000.0 | 0.0 | 0.0 | KOP @ 1,000' |
| 1,247.0 | 1,246.7 | 10.6 | 0.5 | EOB @ Inc. = 4.94° |
| 7,641.9 | 7,617.8 | 560.8 | 26.7 | Start 9° Build/Turn |
| 8,663.1 | 8,285.0 | 205.8 | 542.9 | LP @ 8,285' TVD, 89.01° |
| 16,620.1 | 8,423.0 | -4,769.7 | 6,750.7 | TD @ 16,620.1' MD |

# Gunnison Energy Corporation

**Gunnison County, CO**
**Jacobs Federal 1290 6-32**
**Jacobs Federal 1290 6-32 H1**
**HZ**
**Plan #1**

# Anticollision Report

**13 June, 2013**

| | | | |
|---|---|---|---|
| **Company:** | Gunnison Energy Corporation | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Project:** | Gunnison County, CO | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Reference Site:** | Jacobs Federal 1290 6-32 | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | HZ | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #1 | **Offset TVD Reference:** | Offset Datum |

**Reference** Plan #1

| | | | |
|---|---|---|---|
| **Filter type:** | GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference | | |
| **Interpolation Method:** | MD Interval 100.0ft | **Error Model:** | Systematic Ellipse |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 1,862.0ft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | | |

**Survey Tool Program** **Date** 6/13/2013

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 16,620.1 | Plan #1 (HZ) | MWD | MWD |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| Jacobs Federal 1290 6-32 | | | | | | |
| Jacobs Federal 1290 6-32 H2 - HZ - Plan #1 | 3,458.4 | 3,463.6 | 179.1 | 166.5 | 14.193 | CC |
| Jacobs Federal 1290 6-32 H2 - HZ - Plan #1 | 3,600.0 | 3,604.8 | 179.4 | 166.3 | 13.689 | ES |
| Jacobs Federal 1290 6-32 H2 - HZ - Plan #1 | 8,100.0 | 8,191.4 | 316.7 | 286.1 | 10.329 | SF |

| | | | |
|---|---|---|---|
| **Company:** | Gunnison Energy Corporation | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Project:** | Gunnison County, CO | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Reference Site:** | Jacobs Federal 1290 6-32 | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | HZ | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Jacobs Federal 1290 6-32 - Jacobs Federal 1290 6-32 H2 - HZ - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 87.68 | 10.2 | 251.4 | 251.6 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 87.68 | 10.2 | 251.4 | 251.6 | 251.3 | 0.28 | 901.027 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 87.68 | 10.2 | 251.4 | 251.6 | 251.0 | 0.63 | 400.464 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 87.68 | 10.2 | 251.4 | 251.6 | 250.6 | 0.98 | 257.441 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 87.68 | 10.2 | 251.4 | 251.6 | 250.3 | 1.33 | 189.694 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 0.8 | 0.8 | 87.68 | 10.2 | 251.4 | 251.6 | 249.9 | 1.68 | 150.174 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.0 | 1.0 | 87.68 | 10.2 | 251.4 | 251.6 | 249.6 | 2.02 | 124.282 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.2 | 1.2 | 87.68 | 10.2 | 251.4 | 251.6 | 249.2 | 2.37 | 106.005 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.4 | 1.4 | 87.68 | 10.2 | 251.4 | 251.6 | 248.9 | 2.72 | 92.415 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.5 | 1.5 | 87.68 | 10.2 | 251.4 | 251.6 | 248.5 | 3.07 | 81.913 | |
| 1,000.0 | 1,000.0 | 1,000.0 | 1,000.0 | 1.7 | 1.7 | 87.68 | 10.2 | 251.4 | 251.6 | 248.2 | 3.42 | 73.555 | |
| 1,100.0 | 1,100.0 | 1,100.0 | 1,100.0 | 1.9 | 1.9 | 85.35 | 10.2 | 251.4 | 251.5 | 247.7 | 3.77 | 66.688 | |
| 1,200.0 | 1,199.8 | 1,207.8 | 1,207.7 | 2.1 | 2.1 | 86.43 | 11.3 | 249.7 | 249.5 | 245.4 | 4.14 | 60.255 | |
| 1,300.0 | 1,299.5 | 1,311.7 | 1,311.5 | 2.3 | 2.3 | 87.79 | 14.1 | 245.1 | 244.6 | 240.1 | 4.51 | 54.188 | |
| 1,400.0 | 1,399.1 | 1,411.4 | 1,411.0 | 2.5 | 2.4 | 89.15 | 17.0 | 240.2 | 239.5 | 234.6 | 4.89 | 48.981 | |
| 1,500.0 | 1,498.8 | 1,511.1 | 1,510.6 | 2.7 | 2.6 | 90.56 | 20.0 | 235.3 | 234.4 | 229.1 | 5.27 | 44.494 | |
| 1,600.0 | 1,598.4 | 1,610.8 | 1,610.1 | 2.9 | 2.8 | 92.03 | 23.0 | 230.4 | 229.5 | 223.8 | 5.65 | 40.608 | |
| 1,700.0 | 1,698.0 | 1,710.5 | 1,709.6 | 3.1 | 3.0 | 93.56 | 26.0 | 225.5 | 224.7 | 218.7 | 6.04 | 37.225 | |
| 1,800.0 | 1,797.6 | 1,810.2 | 1,809.2 | 3.3 | 3.2 | 95.16 | 28.9 | 220.7 | 220.2 | 213.7 | 6.43 | 34.265 | |
| 1,900.0 | 1,897.3 | 1,909.9 | 1,908.7 | 3.5 | 3.4 | 96.83 | 31.9 | 215.8 | 215.8 | 208.9 | 6.81 | 31.664 | |
| 2,000.0 | 1,996.9 | 2,009.6 | 2,008.3 | 3.7 | 3.6 | 98.57 | 34.9 | 210.9 | 211.5 | 204.3 | 7.20 | 29.370 | |
| 2,100.0 | 2,096.5 | 2,109.3 | 2,107.8 | 3.9 | 3.8 | 100.37 | 37.9 | 206.0 | 207.5 | 199.9 | 7.59 | 27.338 | |
| 2,200.0 | 2,196.2 | 2,209.0 | 2,207.3 | 4.2 | 4.0 | 102.24 | 40.9 | 201.1 | 203.7 | 195.8 | 7.98 | 25.535 | |
| 2,300.0 | 2,295.8 | 2,308.7 | 2,306.9 | 4.4 | 4.2 | 104.18 | 43.8 | 196.3 | 200.2 | 191.8 | 8.37 | 23.930 | |
| 2,400.0 | 2,395.4 | 2,408.4 | 2,406.4 | 4.6 | 4.4 | 106.19 | 46.8 | 191.4 | 196.8 | 188.1 | 8.75 | 22.499 | |
| 2,500.0 | 2,495.0 | 2,508.1 | 2,505.9 | 4.8 | 4.6 | 108.26 | 49.8 | 186.5 | 193.8 | 184.6 | 9.13 | 21.221 | |
| 2,600.0 | 2,594.7 | 2,607.8 | 2,605.5 | 5.1 | 4.8 | 110.40 | 52.8 | 181.6 | 190.9 | 181.4 | 9.51 | 20.080 | |
| 2,700.0 | 2,694.3 | 2,707.5 | 2,705.0 | 5.3 | 4.9 | 112.60 | 55.7 | 176.7 | 188.4 | 178.5 | 9.88 | 19.060 | |
| 2,800.0 | 2,793.9 | 2,807.2 | 2,804.6 | 5.5 | 5.1 | 114.85 | 58.7 | 171.9 | 186.1 | 175.9 | 10.26 | 18.149 | |
| 2,900.0 | 2,893.6 | 2,906.9 | 2,904.1 | 5.7 | 5.3 | 117.16 | 61.7 | 167.0 | 184.2 | 173.6 | 10.63 | 17.335 | |
| 3,000.0 | 2,993.2 | 3,006.6 | 3,003.6 | 5.9 | 5.5 | 119.51 | 64.7 | 162.1 | 182.5 | 171.5 | 10.99 | 16.609 | |
| 3,100.0 | 3,092.8 | 3,106.3 | 3,103.2 | 6.2 | 5.7 | 121.90 | 67.7 | 157.2 | 181.2 | 169.8 | 11.35 | 15.963 | |
| 3,200.0 | 3,192.4 | 3,206.0 | 3,202.7 | 6.4 | 5.9 | 124.32 | 70.6 | 152.3 | 180.2 | 168.5 | 11.71 | 15.389 | |
| 3,300.0 | 3,292.1 | 3,305.7 | 3,302.2 | 6.6 | 6.1 | 126.76 | 73.6 | 147.5 | 179.5 | 167.4 | 12.06 | 14.880 | |
| 3,400.0 | 3,391.7 | 3,405.4 | 3,401.8 | 6.9 | 6.3 | 129.22 | 76.6 | 142.6 | 179.1 | 166.7 | 12.41 | 14.431 | |
| 3,458.4 | 3,449.9 | 3,463.6 | 3,459.9 | 7.0 | 6.4 | 130.66 | 78.3 | 139.7 | 179.1 | 166.5 | 12.62 | 14.193 | CC |
| 3,500.0 | 3,491.3 | 3,505.1 | 3,501.3 | 7.1 | 6.5 | 131.68 | 79.6 | 137.7 | 179.1 | 166.3 | 12.76 | 14.035 | |
| 3,600.0 | 3,591.0 | 3,604.8 | 3,600.9 | 7.3 | 6.7 | 134.14 | 82.5 | 132.8 | 179.4 | 166.3 | 13.11 | 13.689 | ES |
| 3,700.0 | 3,690.6 | 3,704.5 | 3,700.4 | 7.5 | 6.9 | 136.59 | 85.5 | 127.9 | 180.0 | 166.6 | 13.45 | 13.386 | |
| 3,800.0 | 3,790.2 | 3,804.2 | 3,799.9 | 7.8 | 7.1 | 139.01 | 88.5 | 123.1 | 181.0 | 167.2 | 13.79 | 13.124 | |
| 3,900.0 | 3,889.8 | 3,903.9 | 3,899.5 | 8.0 | 7.3 | 141.41 | 91.5 | 118.2 | 182.3 | 168.2 | 14.13 | 12.899 | |
| 4,000.0 | 3,989.5 | 4,003.6 | 3,999.0 | 8.2 | 7.5 | 143.77 | 94.4 | 113.3 | 183.9 | 169.4 | 14.47 | 12.706 | |
| 4,100.0 | 4,089.1 | 4,103.3 | 4,098.5 | 8.4 | 7.7 | 146.08 | 97.4 | 108.4 | 185.8 | 171.0 | 14.81 | 12.542 | |
| 4,200.0 | 4,188.7 | 4,203.0 | 4,198.1 | 8.7 | 7.9 | 148.34 | 100.4 | 103.5 | 188.0 | 172.9 | 15.16 | 12.406 | |
| 4,300.0 | 4,288.3 | 4,302.7 | 4,297.6 | 8.9 | 8.1 | 150.55 | 103.4 | 98.6 | 190.5 | 175.0 | 15.50 | 12.292 | |
| 4,400.0 | 4,388.0 | 4,402.4 | 4,397.2 | 9.1 | 8.3 | 152.70 | 106.4 | 93.8 | 193.3 | 177.4 | 15.84 | 12.200 | |
| 4,500.0 | 4,487.6 | 4,502.1 | 4,496.7 | 9.4 | 8.5 | 154.78 | 109.3 | 88.9 | 196.3 | 180.1 | 16.19 | 12.127 | |
| 4,600.0 | 4,587.2 | 4,601.8 | 4,596.2 | 9.6 | 8.7 | 156.80 | 112.3 | 84.0 | 199.6 | 183.1 | 16.54 | 12.071 | |
| 4,700.0 | 4,686.9 | 4,701.5 | 4,695.8 | 9.8 | 8.9 | 158.75 | 115.3 | 79.1 | 203.1 | 186.2 | 16.89 | 12.029 | |
| 4,800.0 | 4,786.5 | 4,801.2 | 4,795.3 | 10.0 | 9.1 | 160.64 | 118.3 | 74.2 | 206.9 | 189.6 | 17.24 | 12.001 | |
| 4,900.0 | 4,886.1 | 4,900.9 | 4,894.8 | 10.3 | 9.3 | 162.45 | 121.2 | 69.4 | 210.9 | 193.3 | 17.59 | 11.984 | |
| 5,000.0 | 4,985.7 | 5,000.6 | 4,994.4 | 10.5 | 9.5 | 164.20 | 124.2 | 64.5 | 215.0 | 197.1 | 17.95 | 11.978 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Gunnison Energy Corporation | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Project:** | Gunnison County, CO | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Reference Site:** | Jacobs Federal 1290 6-32 | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | HZ | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Jacobs Federal 1290 6-32 - Jacobs Federal 1290 6-32 H2 - HZ - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,085.4 | 5,100.3 | 5,093.9 | 10.7 | 9.7 | 165.87 | 127.2 | 59.6 | 219.4 | 201.1 | 18.31 | 11.980 | |
| 5,200.0 | 5,185.0 | 5,200.0 | 5,193.5 | 11.0 | 9.9 | 167.49 | 130.2 | 54.7 | 224.0 | 205.3 | 18.68 | 11.991 | |
| 5,300.0 | 5,284.6 | 5,299.7 | 5,293.0 | 11.2 | 10.1 | 169.03 | 133.1 | 49.8 | 228.7 | 209.6 | 19.04 | 12.008 | |
| 5,400.0 | 5,384.3 | 5,399.4 | 5,392.5 | 11.4 | 10.3 | 170.51 | 136.1 | 45.0 | 233.6 | 214.1 | 19.41 | 12.031 | |
| 5,500.0 | 5,483.9 | 5,499.1 | 5,492.1 | 11.6 | 10.5 | 171.94 | 139.1 | 40.1 | 238.6 | 218.8 | 19.78 | 12.060 | |
| 5,600.0 | 5,583.5 | 5,598.8 | 5,591.6 | 11.9 | 10.7 | 173.30 | 142.1 | 35.2 | 243.8 | 223.6 | 20.16 | 12.093 | |
| 5,700.0 | 5,683.1 | 5,698.5 | 5,691.1 | 12.1 | 10.9 | 174.60 | 145.1 | 30.3 | 249.1 | 228.5 | 20.53 | 12.130 | |
| 5,800.0 | 5,782.8 | 5,798.2 | 5,790.7 | 12.3 | 11.1 | 175.85 | 148.0 | 25.4 | 254.5 | 233.6 | 20.91 | 12.170 | |
| 5,900.0 | 5,882.4 | 5,897.9 | 5,890.2 | 12.6 | 11.3 | 177.05 | 151.0 | 20.6 | 260.0 | 238.8 | 21.29 | 12.214 | |
| 6,000.0 | 5,982.0 | 5,997.6 | 5,989.7 | 12.8 | 11.5 | 178.20 | 154.0 | 15.7 | 265.7 | 244.0 | 21.67 | 12.260 | |
| 6,100.0 | 6,081.7 | 6,097.3 | 6,089.3 | 13.0 | 11.7 | 179.30 | 157.0 | 10.8 | 271.5 | 249.4 | 22.06 | 12.307 | |
| 6,200.0 | 6,181.3 | 6,197.0 | 6,188.8 | 13.3 | 11.9 | -179.65 | 159.9 | 5.9 | 277.3 | 254.9 | 22.44 | 12.357 | |
| 6,300.0 | 6,280.9 | 6,296.7 | 6,288.4 | 13.5 | 12.1 | -178.64 | 162.9 | 1.0 | 283.2 | 260.4 | 22.83 | 12.408 | |
| 6,400.0 | 6,380.5 | 6,396.4 | 6,387.9 | 13.7 | 12.3 | -177.67 | 165.9 | -3.9 | 289.3 | 266.1 | 23.21 | 12.461 | |
| 6,500.0 | 6,480.2 | 6,496.1 | 6,487.4 | 13.9 | 12.5 | -176.74 | 168.9 | -8.7 | 295.4 | 271.8 | 23.60 | 12.514 | |
| 6,600.0 | 6,579.8 | 6,595.8 | 6,587.0 | 14.2 | 12.7 | -175.85 | 171.8 | -13.6 | 301.5 | 277.6 | 23.99 | 12.568 | |
| 6,700.0 | 6,679.4 | 6,695.5 | 6,686.5 | 14.4 | 12.9 | -175.00 | 174.8 | -18.5 | 307.8 | 283.4 | 24.38 | 12.623 | |
| 6,800.0 | 6,779.1 | 6,795.2 | 6,786.0 | 14.6 | 13.1 | -174.18 | 177.8 | -23.4 | 314.1 | 289.3 | 24.78 | 12.678 | |
| 6,900.0 | 6,878.7 | 6,894.9 | 6,885.6 | 14.9 | 13.3 | -173.39 | 180.8 | -28.3 | 320.5 | 295.3 | 25.17 | 12.733 | |
| 7,000.0 | 6,978.3 | 6,994.6 | 6,985.1 | 15.1 | 13.5 | -172.63 | 183.8 | -33.1 | 326.9 | 301.4 | 25.56 | 12.789 | |
| 7,100.0 | 7,077.9 | 7,094.3 | 7,084.7 | 15.3 | 13.7 | -171.91 | 186.7 | -38.0 | 333.4 | 307.5 | 25.96 | 12.845 | |
| 7,200.0 | 7,177.6 | 7,194.0 | 7,184.2 | 15.5 | 13.9 | -171.21 | 189.7 | -42.9 | 339.9 | 313.6 | 26.35 | 12.900 | |
| 7,300.0 | 7,277.2 | 7,293.7 | 7,283.7 | 15.8 | 14.1 | -170.53 | 192.7 | -47.8 | 346.5 | 319.8 | 26.75 | 12.956 | |
| 7,400.0 | 7,376.8 | 7,393.4 | 7,383.3 | 16.0 | 14.3 | -169.88 | 195.7 | -52.7 | 353.2 | 326.0 | 27.14 | 13.011 | |
| 7,500.0 | 7,476.5 | 7,493.1 | 7,482.8 | 16.2 | 14.5 | -169.26 | 198.6 | -57.5 | 359.8 | 332.3 | 27.54 | 13.066 | |
| 7,600.0 | 7,576.1 | 7,592.8 | 7,582.3 | 16.5 | 14.7 | -168.66 | 201.6 | -62.4 | 366.6 | 338.6 | 27.94 | 13.121 | |
| 7,700.0 | 7,675.8 | 7,692.5 | 7,681.8 | 16.7 | 14.9 | 126.00 | 204.6 | -67.3 | 372.3 | 343.9 | 28.35 | 13.130 | |
| 7,800.0 | 7,774.7 | 7,790.5 | 7,779.7 | 16.8 | 15.1 | 88.53 | 207.5 | -72.1 | 372.7 | 343.9 | 28.78 | 12.948 | |
| 7,900.0 | 7,870.6 | 7,962.7 | 7,949.7 | 16.8 | 15.6 | 91.49 | 229.9 | -80.4 | 361.9 | 332.1 | 29.74 | 12.166 | |
| 8,000.0 | 7,961.0 | 8,106.3 | 8,082.8 | 16.8 | 16.1 | 106.04 | 282.5 | -87.0 | 335.1 | 304.3 | 30.78 | 10.887 | |
| 8,100.0 | 8,043.8 | 8,191.4 | 8,155.0 | 16.8 | 16.5 | 118.81 | 327.3 | -90.5 | 316.7 | 286.1 | 30.66 | 10.329 | SF |
| 8,121.5 | 8,060.5 | 8,203.8 | 8,165.0 | 16.8 | 16.6 | 120.68 | 334.6 | -91.0 | 316.0 | 285.5 | 30.51 | 10.357 | |
| 8,200.0 | 8,116.9 | 8,235.6 | 8,189.9 | 16.8 | 16.8 | 124.59 | 354.3 | -92.2 | 326.3 | 296.5 | 29.85 | 10.931 | |
| 8,300.0 | 8,178.5 | 8,253.1 | 8,203.2 | 16.8 | 16.9 | 123.41 | 365.6 | -92.9 | 368.6 | 339.1 | 29.48 | 12.503 | |
| 8,400.0 | 8,227.1 | 8,252.7 | 8,203.0 | 17.1 | 16.9 | 115.53 | 365.4 | -92.8 | 435.3 | 404.9 | 30.36 | 14.339 | |
| 8,500.0 | 8,261.5 | 8,239.8 | 8,193.2 | 17.5 | 16.8 | 100.76 | 357.0 | -92.4 | 515.9 | 483.6 | 32.31 | 15.967 | |
| 8,600.0 | 8,280.8 | 8,217.2 | 8,175.7 | 18.3 | 16.7 | 81.24 | 342.8 | -91.5 | 602.5 | 569.3 | 33.18 | 18.156 | |
| 8,700.0 | 8,285.7 | 8,187.8 | 8,152.1 | 19.4 | 16.5 | 67.89 | 325.2 | -90.4 | 690.2 | 657.6 | 32.55 | 21.204 | |
| 8,800.0 | 8,287.4 | 8,159.8 | 8,128.9 | 20.6 | 16.4 | 65.04 | 309.6 | -89.2 | 779.0 | 745.8 | 33.20 | 23.465 | |
| 8,900.0 | 8,289.1 | 8,135.0 | 8,107.8 | 22.1 | 16.2 | 62.64 | 296.5 | -88.2 | 869.2 | 835.2 | 33.98 | 25.576 | |
| 9,000.0 | 8,290.9 | 8,112.9 | 8,088.6 | 23.7 | 16.1 | 60.60 | 285.6 | -87.2 | 960.5 | 925.6 | 34.87 | 27.541 | |
| 9,100.0 | 8,292.6 | 8,100.0 | 8,077.3 | 25.4 | 16.1 | 59.46 | 279.5 | -86.7 | 1,052.8 | 1,016.7 | 36.04 | 29.212 | |
| 9,200.0 | 8,294.3 | 8,075.3 | 8,055.2 | 27.1 | 16.0 | 57.33 | 268.6 | -85.6 | 1,145.8 | 1,108.9 | 36.88 | 31.066 | |
| 9,300.0 | 8,296.1 | 8,050.0 | 8,032.1 | 29.0 | 15.9 | 55.25 | 258.3 | -84.5 | 1,239.6 | 1,201.9 | 37.68 | 32.897 | |
| 9,400.0 | 8,297.8 | 8,050.0 | 8,032.1 | 30.8 | 15.9 | 55.25 | 258.3 | -84.5 | 1,333.9 | 1,294.7 | 39.26 | 33.977 | |
| 9,500.0 | 8,299.5 | 8,031.6 | 8,015.1 | 32.8 | 15.8 | 53.78 | 251.3 | -83.6 | 1,428.8 | 1,388.5 | 40.25 | 35.500 | |
| 9,600.0 | 8,301.3 | 8,019.5 | 8,003.8 | 34.7 | 15.7 | 52.85 | 247.1 | -83.1 | 1,524.1 | 1,482.7 | 41.43 | 36.789 | |
| 9,700.0 | 8,303.0 | 8,000.0 | 7,985.4 | 36.7 | 15.7 | 51.37 | 240.6 | -82.2 | 1,619.8 | 1,577.5 | 42.31 | 38.283 | |
| 9,800.0 | 8,304.7 | 8,000.0 | 7,985.4 | 38.7 | 15.7 | 51.37 | 240.6 | -82.2 | 1,715.9 | 1,672.0 | 43.90 | 39.082 | |
| 9,900.0 | 8,306.5 | 8,000.0 | 7,985.4 | 40.7 | 15.7 | 51.37 | 240.6 | -82.2 | 1,812.3 | 1,766.8 | 45.51 | 39.822 | |

| | | | |
|---|---|---|---|
| **Company:** | Gunnison Energy Corporation | **Local Co-ordinate Reference:** | Well Jacobs Federal 1290 6-32 H1 |
| **Project:** | Gunnison County, CO | **TVD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Reference Site:** | Jacobs Federal 1290 6-32 | **MD Reference:** | KB=20' @ 8072.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Jacobs Federal 1290 6-32 H1 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | HZ | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to KB=20' @ 8072.0ft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Jacobs Federal 1290 6-32 H1
Coordinate System is US State Plane 1927 (Exact solution), Colorado South 503
Grid Convergence at Surface is: -1.22°