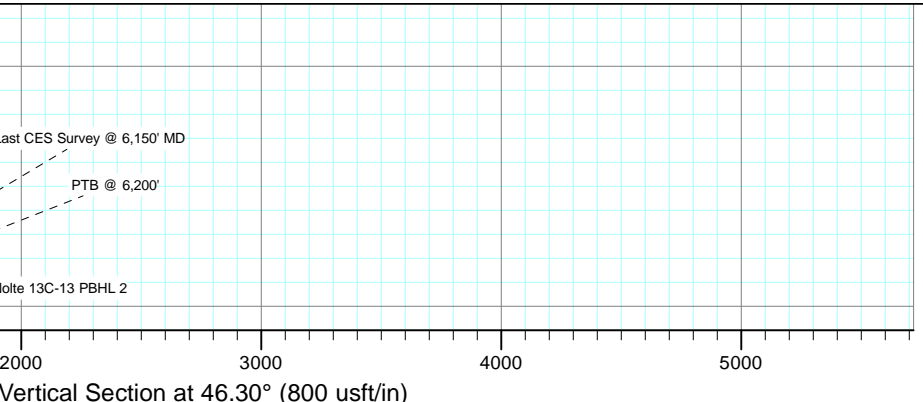


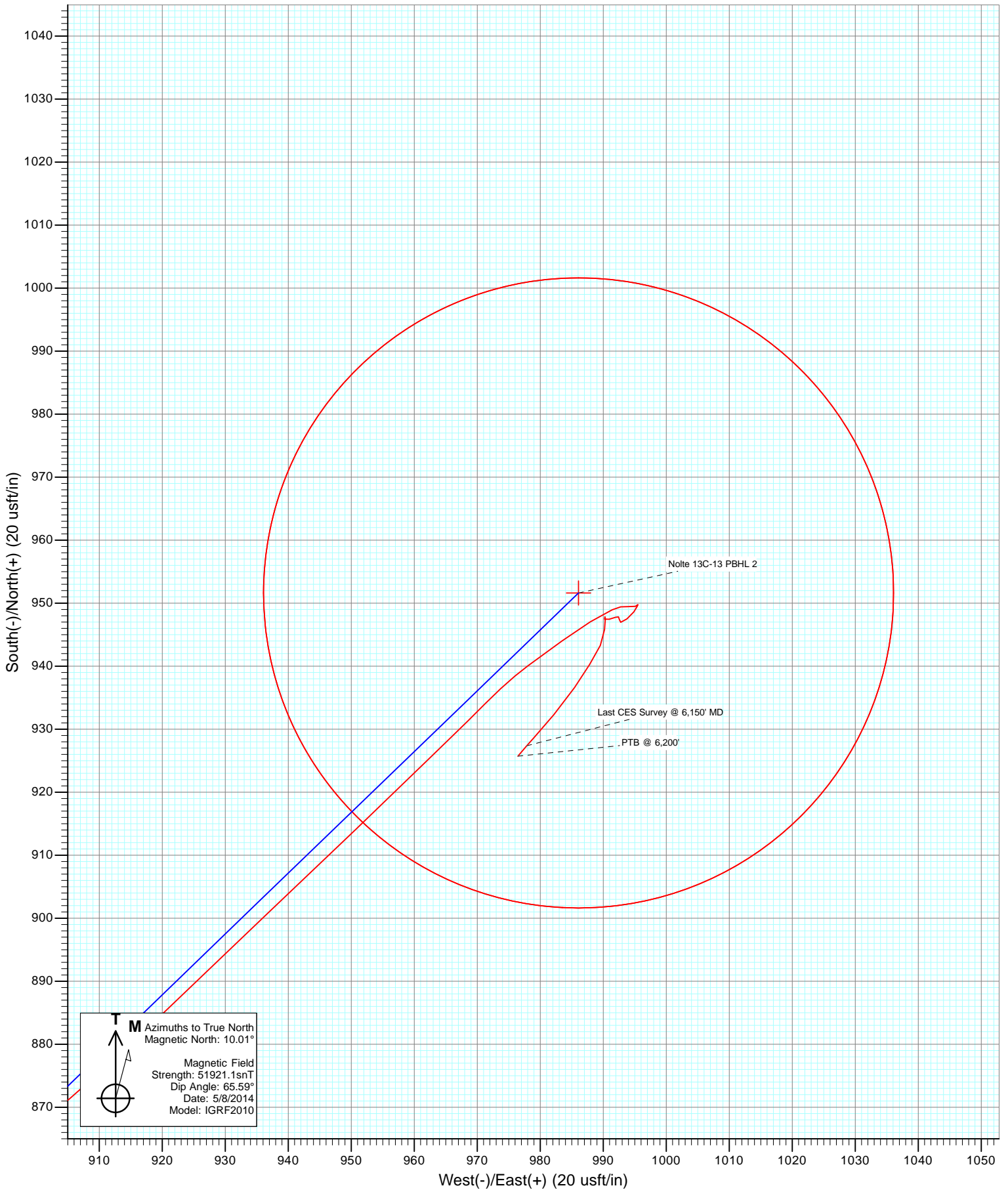
DESIGN TARGET DETAILS

| Name | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---------------------|-------|-------|-----------|------------|-----------|-------------|
| Nolte 13C-13 PBHL 2 | 951.6 | 986.1 | 593573.53 | 1275595.74 | 39.435081 | -108.065039 |





Project: Garfield County, CO
Site: S14-T7S-R96W (Nolte)
Well: Nolte 13C-13
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

| | |
|---|---|
| Company: Caerus Oil & Gas (NAD 27) | Local Co-ordinate Reference: Well Nolte 13C-13 |
| Project: Garfield County, CO | TVD Reference: WELL @ 5107.4usft |
| Site: S14-T7S-R96W (Nolte) | MD Reference: WELL @ 5107.4usft |
| Well: Nolte 13C-13 | North Reference: True |
| Wellbore: DD | Survey Calculation Method: Minimum Curvature |
| Design: FINAL | Database: USA EDM 5000 Multi Users DB |

| | | |
|---|----------------------|----------------|
| Project Garfield County, CO | | |
| Map System: US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum: NAD 1927 (NADCON CONUS) | | |
| Map Zone: Colorado Central 502 | | |

| | | | | | |
|----------------------------------|----------|---------------------|-------------------|--------------------------|-------------|
| Site S14-T7S-R96W (Nolte) | | | | | |
| Site Position: | | Northing: | 592,602.09 usft | Latitude: | 39.432320 |
| From: | Lat/Long | Easting: | 1,274,369.93 usft | Longitude: | -108.069280 |
| Position Uncertainty: | 0.0 usft | Slot Radius: | 13-3/16" | Grid Convergence: | -1.62 ° |

| | | | | | | |
|-----------------------------|--------------|----------|----------------------------|-------------------|----------------------|--------------|
| Well Nolte 13C-13 | | | | | | |
| Well Position | +N/-S | 0.0 usft | Northing: | 592,650.14 usft | Latitude: | 39.432468 |
| | +E/-W | 0.0 usft | Easting: | 1,274,583.14 usft | Longitude: | -108.068530 |
| Position Uncertainty | | 0.0 usft | Wellhead Elevation: | usft | Ground Level: | 5,090.4 usft |

| | | | | | |
|--------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore DD | | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 5/8/2014 | 10.00 | 65.59 | 51,921 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|-----|
| Design FINAL | | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 46.30 | |

| | | |
|-----------------------|------------------|--------------------------|
| Survey Program | | Date 5/12/2014 |
| From (usft) | To (usft) | Survey (Wellbore) |
| 145.0 | 6,200.0 | Survey #1 (DD) |
| | | Tool Name |
| | | MWD |
| | | Description |
| | | Geolink MWD |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 145.0 | 0.40 | 173.10 | 145.0 | -0.5 | 0.1 | -0.3 | 0.28 | 0.28 | |
| 176.0 | 0.30 | 100.00 | 176.0 | -0.6 | 0.2 | -0.3 | 1.37 | -0.32 | |
| 205.0 | 0.70 | 58.30 | 205.0 | -0.5 | 0.4 | -0.1 | 1.78 | 1.38 | |
| 236.0 | 1.20 | 68.00 | 236.0 | -0.3 | 0.8 | 0.4 | 1.69 | 1.61 | |
| 298.0 | 2.80 | 39.40 | 298.0 | 1.1 | 2.4 | 2.5 | 2.97 | 2.58 | |
| 329.0 | 3.40 | 46.50 | 328.9 | 2.3 | 3.6 | 4.2 | 2.29 | 1.94 | |
| 359.0 | 4.40 | 47.40 | 358.8 | 3.7 | 5.0 | 6.2 | 3.34 | 3.33 | |
| 421.0 | 6.50 | 42.50 | 420.6 | 7.9 | 9.2 | 12.1 | 3.47 | 3.39 | |
| 512.0 | 10.40 | 45.60 | 510.6 | 17.4 | 18.5 | 25.4 | 4.31 | 4.29 | |
| 604.0 | 13.80 | 47.30 | 600.5 | 30.7 | 32.5 | 44.7 | 3.72 | 3.70 | |
| 696.0 | 17.00 | 48.90 | 689.2 | 47.0 | 50.7 | 69.1 | 3.51 | 3.48 | |
| 788.0 | 20.30 | 48.40 | 776.3 | 66.4 | 72.8 | 98.5 | 3.59 | 3.59 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|---------------------------|-------------------------------------|-----------------------------|
| Company: | Caerus Oil & Gas (NAD 27) | Local Co-ordinate Reference: | Well Nolte 13C-13 |
| Project: | Garfield County, CO | TVD Reference: | WELL @ 5107.4usft |
| Site: | S14-T7S-R96W (Nolte) | MVD Reference: | WELL @ 5107.4usft |
| Well: | Nolte 13C-13 | North Reference: | True |
| Wellbore: | DD | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
| 879.0 | 23.10 | 47.30 | 860.9 | 89.0 | 97.7 | 132.2 | 3.11 | 3.08 | |
| 970.0 | 25.50 | 45.30 | 943.8 | 114.9 | 124.8 | 169.6 | 2.79 | 2.64 | |
| 1,076.0 | 25.80 | 45.80 | 1,039.4 | 147.0 | 157.5 | 215.5 | 0.35 | 0.28 | |
| 1,171.0 | 27.20 | 46.00 | 1,124.4 | 176.5 | 188.0 | 257.9 | 1.48 | 1.47 | |
| 1,266.0 | 29.30 | 48.50 | 1,208.1 | 207.0 | 221.0 | 302.8 | 2.54 | 2.21 | |
| 1,361.0 | 28.30 | 48.30 | 1,291.3 | 237.4 | 255.2 | 348.5 | 1.06 | -1.05 | |
| 1,456.0 | 28.40 | 45.40 | 1,374.9 | 268.3 | 288.1 | 393.6 | 1.45 | 0.11 | |
| 1,551.0 | 27.00 | 44.40 | 1,459.0 | 299.5 | 319.3 | 437.8 | 1.55 | -1.47 | |
| 1,647.0 | 26.50 | 43.10 | 1,544.8 | 330.7 | 349.2 | 481.0 | 0.80 | -0.52 | |
| 1,742.0 | 27.90 | 46.70 | 1,629.3 | 361.5 | 379.8 | 524.3 | 2.27 | 1.47 | |
| 1,837.0 | 29.50 | 47.70 | 1,712.6 | 392.4 | 413.3 | 570.0 | 1.76 | 1.68 | |
| 1,931.0 | 28.10 | 47.80 | 1,795.0 | 422.9 | 446.8 | 615.2 | 1.49 | -1.49 | |
| 2,026.0 | 30.80 | 47.40 | 1,877.7 | 454.4 | 481.3 | 661.9 | 2.85 | 2.84 | |
| 2,121.0 | 30.40 | 45.70 | 1,959.4 | 487.6 | 516.4 | 710.3 | 1.00 | -0.42 | |
| 2,216.0 | 29.90 | 47.30 | 2,041.6 | 520.5 | 551.0 | 758.0 | 1.00 | -0.53 | |
| 2,311.0 | 29.10 | 46.20 | 2,124.3 | 552.5 | 585.1 | 804.8 | 1.02 | -0.84 | |
| 2,406.0 | 28.50 | 44.50 | 2,207.5 | 584.7 | 617.7 | 850.5 | 1.07 | -0.63 | |
| 2,501.0 | 28.30 | 43.80 | 2,291.1 | 617.1 | 649.1 | 895.7 | 0.41 | -0.21 | |
| 2,596.0 | 27.90 | 44.60 | 2,374.9 | 649.2 | 680.3 | 940.4 | 0.58 | -0.42 | |
| 2,692.0 | 27.70 | 45.20 | 2,459.8 | 680.9 | 711.9 | 985.1 | 0.36 | -0.21 | |
| 2,787.0 | 27.20 | 42.60 | 2,544.1 | 712.4 | 742.3 | 1,028.9 | 1.37 | -0.53 | |
| 2,882.0 | 25.80 | 43.70 | 2,629.1 | 743.4 | 771.3 | 1,071.2 | 1.56 | -1.47 | |
| 2,977.0 | 24.60 | 42.40 | 2,715.1 | 772.9 | 798.9 | 1,111.6 | 1.39 | -1.26 | |
| 3,072.0 | 23.40 | 47.90 | 2,801.9 | 800.2 | 826.2 | 1,150.2 | 2.67 | -1.26 | |
| 3,167.0 | 22.30 | 48.10 | 2,889.4 | 824.9 | 853.7 | 1,187.1 | 1.16 | -1.16 | |
| 3,262.0 | 19.60 | 47.10 | 2,978.2 | 847.8 | 878.8 | 1,221.0 | 2.87 | -2.84 | |
| 3,357.0 | 17.30 | 49.50 | 3,068.3 | 867.8 | 901.2 | 1,251.0 | 2.55 | -2.42 | |
| 3,452.0 | 14.60 | 45.90 | 3,159.6 | 885.3 | 920.5 | 1,277.1 | 3.03 | -2.84 | |
| 3,547.0 | 12.80 | 46.80 | 3,251.9 | 900.8 | 936.8 | 1,299.6 | 1.91 | -1.89 | |
| 3,642.0 | 10.50 | 45.90 | 3,344.9 | 914.1 | 950.7 | 1,318.8 | 2.43 | -2.42 | |
| 3,737.0 | 8.80 | 46.10 | 3,438.6 | 925.1 | 962.1 | 1,334.7 | 1.79 | -1.79 | |
| 3,832.0 | 6.70 | 45.00 | 3,532.7 | 934.1 | 971.3 | 1,347.5 | 2.22 | -2.21 | |
| 3,926.0 | 4.40 | 53.70 | 3,626.3 | 940.1 | 978.1 | 1,356.6 | 2.60 | -2.45 | |
| 4,021.0 | 3.70 | 54.50 | 3,721.0 | 944.0 | 983.5 | 1,363.2 | 0.74 | -0.74 | |
| 4,116.0 | 2.80 | 57.60 | 3,815.9 | 947.1 | 988.0 | 1,368.6 | 0.96 | -0.95 | |
| 4,211.0 | 2.00 | 66.20 | 3,910.8 | 949.0 | 991.4 | 1,372.4 | 0.92 | -0.84 | |
| 4,306.0 | 1.10 | 100.00 | 4,005.8 | 949.5 | 993.8 | 1,374.5 | 1.31 | -0.95 | |
| 4,401.0 | 0.50 | 60.60 | 4,100.7 | 949.5 | 995.1 | 1,375.4 | 0.82 | -0.63 | |
| 4,496.0 | 0.10 | 35.80 | 4,195.7 | 949.8 | 995.5 | 1,375.9 | 0.43 | -0.42 | |
| 4,591.0 | 0.50 | 205.40 | 4,290.7 | 949.5 | 995.4 | 1,375.6 | 0.63 | 0.42 | |
| 4,686.0 | 0.70 | 214.70 | 4,385.7 | 948.6 | 994.9 | 1,374.7 | 0.23 | 0.21 | |
| 4,781.0 | 1.20 | 230.20 | 4,480.7 | 947.5 | 993.8 | 1,373.1 | 0.59 | 0.53 | |
| 4,877.0 | 0.30 | 297.00 | 4,576.7 | 947.0 | 992.8 | 1,372.0 | 1.16 | -0.94 | |
| 4,972.0 | 0.40 | 2.10 | 4,671.7 | 947.4 | 992.6 | 1,372.2 | 0.41 | 0.11 | |
| 5,067.0 | 0.20 | 297.40 | 4,766.7 | 947.8 | 992.4 | 1,372.3 | 0.38 | -0.21 | |
| 5,162.0 | 0.40 | 249.50 | 4,861.7 | 947.8 | 992.0 | 1,372.0 | 0.32 | 0.21 | |
| 5,257.0 | 0.90 | 253.10 | 4,956.7 | 947.5 | 991.0 | 1,371.0 | 0.53 | 0.53 | |
| 5,352.0 | 0.30 | 352.00 | 5,051.7 | 947.5 | 990.2 | 1,370.5 | 1.04 | -0.63 | |
| 5,447.0 | 0.20 | 48.70 | 5,146.7 | 947.9 | 990.3 | 1,370.8 | 0.27 | -0.11 | |
| 5,541.0 | 0.60 | 190.80 | 5,240.7 | 947.5 | 990.3 | 1,370.6 | 0.82 | 0.43 | |
| 5,636.0 | 1.40 | 181.40 | 5,335.7 | 945.8 | 990.2 | 1,369.3 | 0.86 | 0.84 | |
| 5,731.0 | 1.80 | 204.70 | 5,430.6 | 943.3 | 989.6 | 1,367.1 | 0.80 | 0.42 | |
| 5,825.0 | 2.40 | 212.70 | 5,524.6 | 940.3 | 987.9 | 1,363.8 | 0.71 | 0.64 | |

Cathedral Energy Services

Survey Report

| | |
|---|---|
| Company: Caerus Oil & Gas (NAD 27) | Local Co-ordinate Reference: Well Nolte 13C-13 |
| Project: Garfield County, CO | TVD Reference: WELL @ 5107.4usft |
| Site: S14-T7S-R96W (Nolte) | MD Reference: WELL @ 5107.4usft |
| Well: Nolte 13C-13 | North Reference: True |
| Wellbore: DD | Survey Calculation Method: Minimum Curvature |
| Design: FINAL | Database: USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|---------------------|-----------------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usf) | Build Rate (°/100u) | Formations / Comments |
| 5,921.0 | 2.90 | 213.70 | 5,620.5 | 936.6 | 985.4 | 1,359.5 | 0.52 | 0.52 | |
| 6,015.0 | 3.70 | 220.00 | 5,714.3 | 932.3 | 982.2 | 1,354.2 | 0.93 | 0.85 | |
| 6,110.0 | 2.20 | 222.70 | 5,809.2 | 928.6 | 979.0 | 1,349.3 | 1.59 | -1.58 | |
| 6,150.0 | 2.50 | 220.50 | 5,849.2 | 927.4 | 977.9 | 1,347.7 | 0.78 | 0.75 | Last CES Survey @ 6,150' MD |
| 6,200.0 | 2.50 | 220.50 | 5,899.1 | 925.7 | 976.5 | 1,345.5 | 0.00 | 0.00 | PTB @ 6,200' |

| Targets | | | | | | | | | |
|--|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
| Nolte 13C-13 PBHL 2 - hit/miss target - Shape | 0.00 | 0.00 | 5,899.8 | 951.6 | 986.1 | 593,573.53 | 1,275,595.74 | 39.435081 | -108.065039 |
| - actual wellpath misses target center by 27.7usft at 6199.5usft MD (5898.7 TVD, 925.7 N, 976.5 E) | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |
| Nolte 13C-13 PBHL - hit/miss target - Shape | 0.00 | 0.00 | 5,899.8 | 951.3 | 995.3 | 593,572.89 | 1,275,604.94 | 39.435080 | -108.065007 |
| - actual wellpath misses target center by 31.7usft at 6199.3usft MD (5898.4 TVD, 925.7 N, 976.5 E) | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |

| Design Annotations | | | | | |
|-----------------------|-----------------------|--------------|--------------|-----------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Comment | |
| 6,150.0 | 5,849.2 | 927.4 | 977.9 | Last CES Survey @ 6,150' MD | |
| 6,200.0 | 5,899.1 | 925.7 | 976.5 | PTB @ 6,200' | |

Checked By: _____ Approved By: _____ Date: _____