

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

2N-65W-22 Powers 2-22

POWERS 2G-27HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

11 March, 2015

Well Coordinates: 14,574,463.06 N, 1,739,562.84 E (40° 07' 49.91" N, 104° 38' 43.06" W)

Ground Level: 4,894.00 usft

Local Coordinate Origin:

Centered on Well POWERS 2G-27HZ

Viewing Datum:

RKB = 17' @ 4911.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N

Site: 2N-65W-22 Powers 2-22

Well: POWERS 2G-27HZ

Wellbore: Plan A

Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

HALLIBURTON

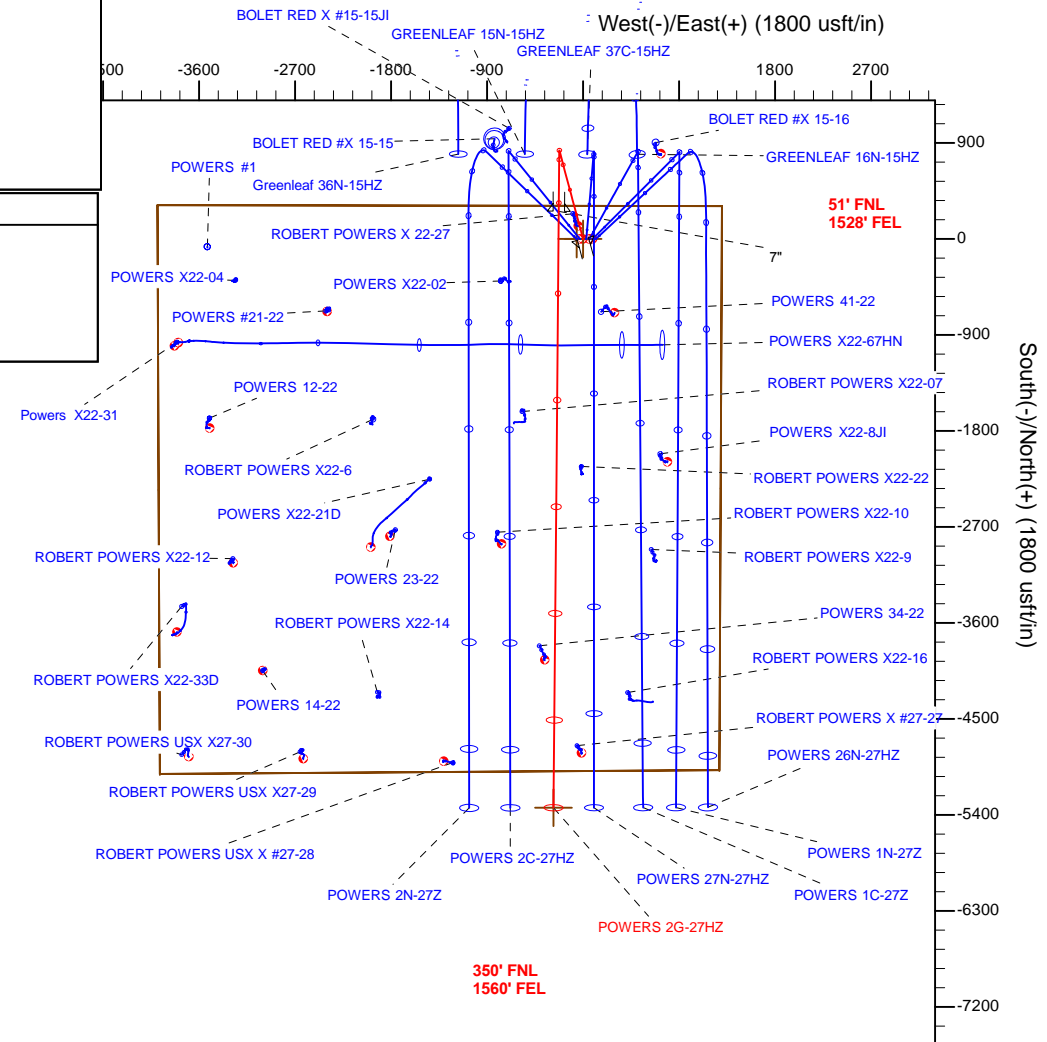
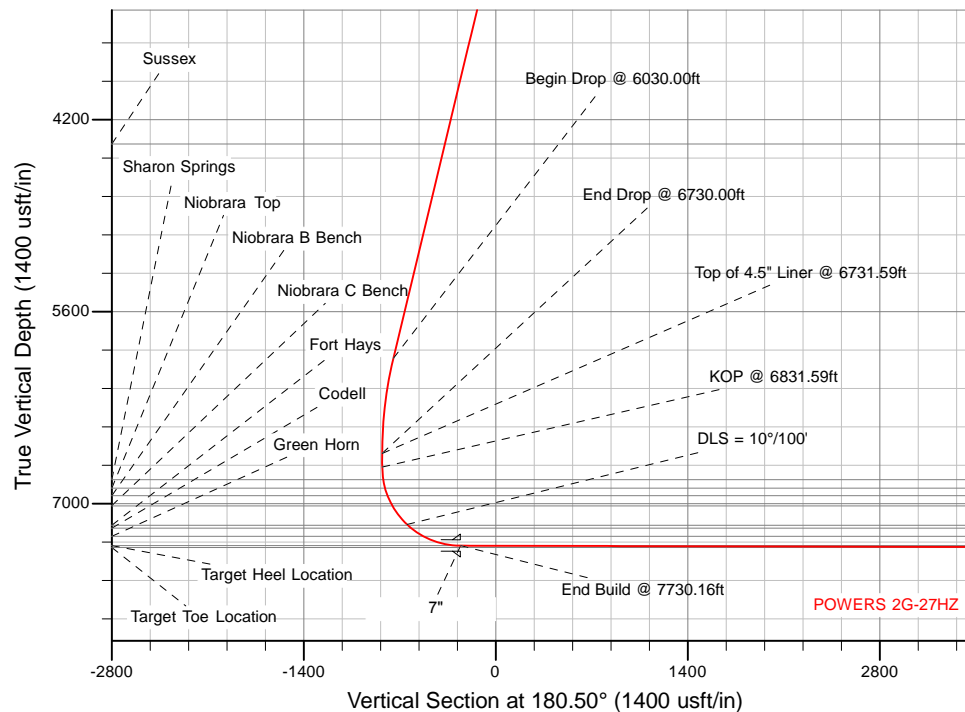
Sperry Drilling

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|----------|---------|-------|--------|---------|--------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 2480.00 | 0.00 | 0.00 | 2480.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 3180.00 | 14.00 | 345.00 | 3173.06 | 82.20 | -22.02 | 2.00 | 345.00 | -82.00 | |
| 4 | 6030.00 | 14.00 | 345.00 | 5938.40 | 748.18 | -200.47 | 0.00 | 0.00 | -746.40 | |
| 5 | 6730.00 | 0.00 | 0.00 | 6631.45 | 830.38 | -222.50 | 2.00 | 180.00 | -828.40 | |
| 6 | 6831.59 | 0.00 | 0.00 | 6733.04 | 830.38 | -222.50 | 0.00 | 0.00 | -828.40 | |
| 7 | 7730.16 | 89.86 | 180.50 | 7306.00 | 258.88 | -227.53 | 10.00 | 180.50 | -256.88 | |
| 8 | 13321.71 | 89.86 | 180.50 | 7320.00 | -5332.44 | -276.78 | 0.00 | 0.00 | 5334.65 | POWERS 2G-27HZ_BHL |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|-------------------------------|---------|----------|---------|-----------|-------------|
| 2N-R65W-Sec. 22_Section Lines | 0.00 | 0.00 | -59.82 | 40.130530 | -104.645509 |
| POWERS 2G-27HZ_SHL | 0.00 | 0.00 | 0.00 | 40.130530 | -104.645295 |
| POWERS 2G-27HZ_BHL | 7320.00 | -5332.44 | -276.78 | 40.115887 | -104.646285 |



WELL DETAILS: POWERS 2G-27HZ

Ground Level: 4894.00

RKB = 17' @ 4911.00usft (D Rig)

Plan: Permit Rev-1 (POWERS 2G-27HZ/Plan A)

Created By: Clint Eshelman

Date: 3/11/2015

Reviewed:

Date:

Plan Report for POWERS 2G-27HZ - Permit Rev-1

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | Toolface Azimuth (°) |
|---|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|----------------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2N-R65W-Sec. 22_Section Lines - POWERS 2G-27HZ_SHL | | | | | | | | | | |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,362.00 | 0.00 | 0.00 | 1,362.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 5/8" | | | | | | | | | | |
| 1,400.00 | 0.00 | 0.00 | 1,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 0.00 | 0.00 | 1,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 0.00 | 0.00 | 1,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 0.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 0.00 | 0.00 | 2,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 0.00 | 0.00 | 2,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 0.00 | 0.00 | 2,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 0.00 | 0.00 | 2,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,480.00 | 0.00 | 0.00 | 2,480.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Begin Nudge @ 2480.00ft | | | | | | | | | | |
| 2,500.00 | 0.40 | 345.00 | 2,500.00 | 0.07 | -0.02 | -0.07 | 2.00 | 2.00 | 0.00 | 345.00 |
| 2,600.00 | 2.40 | 345.00 | 2,599.96 | 2.43 | -0.65 | -2.42 | 2.00 | 2.00 | 0.00 | 0.00 |
| 2,700.00 | 4.40 | 345.00 | 2,699.78 | 8.16 | -2.19 | -8.14 | 2.00 | 2.00 | 0.00 | 0.00 |
| 2,800.00 | 6.40 | 345.00 | 2,799.33 | 17.25 | -4.62 | -17.20 | 2.00 | 2.00 | 0.00 | 0.00 |
| 2,900.00 | 8.40 | 345.00 | 2,898.50 | 29.69 | -7.95 | -29.61 | 2.00 | 2.00 | 0.00 | 0.00 |
| 3,000.00 | 10.40 | 345.00 | 2,997.15 | 45.46 | -12.18 | -45.35 | 2.00 | 2.00 | 0.00 | 0.00 |
| 3,100.00 | 12.40 | 345.00 | 3,095.17 | 64.55 | -17.30 | -64.40 | 2.00 | 2.00 | 0.00 | 0.00 |
| 3,180.00 | 14.00 | 345.00 | 3,173.06 | 82.20 | -22.02 | -82.00 | 2.00 | 2.00 | 0.00 | 0.00 |
| End Nudge @ 3180.00ft | | | | | | | | | | |
| 3,200.00 | 14.00 | 345.00 | 3,192.46 | 86.87 | -23.28 | -86.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 14.00 | 345.00 | 3,289.49 | 110.24 | -29.54 | -109.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 14.00 | 345.00 | 3,386.52 | 133.61 | -35.80 | -133.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 14.00 | 345.00 | 3,483.55 | 156.97 | -42.06 | -156.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 14.00 | 345.00 | 3,580.58 | 180.34 | -48.32 | -179.91 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 14.00 | 345.00 | 3,677.61 | 203.71 | -54.58 | -203.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 14.00 | 345.00 | 3,774.64 | 227.08 | -60.85 | -226.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 14.00 | 345.00 | 3,871.67 | 250.45 | -67.11 | -249.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 14.00 | 345.00 | 3,968.70 | 273.81 | -73.37 | -273.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 14.00 | 345.00 | 4,065.73 | 297.18 | -79.63 | -296.47 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 14.00 | 345.00 | 4,162.76 | 320.55 | -85.89 | -319.79 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 14.00 | 345.00 | 4,259.79 | 343.92 | -92.15 | -343.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 14.00 | 345.00 | 4,356.82 | 367.28 | -98.41 | -366.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,419.77 | 14.00 | 345.00 | 4,376.00 | 371.90 | -99.65 | -371.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sussex | | | | | | | | | | |
| 4,500.00 | 14.00 | 345.00 | 4,453.85 | 390.65 | -104.68 | -389.72 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 14.00 | 345.00 | 4,550.88 | 414.02 | -110.94 | -413.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 14.00 | 345.00 | 4,647.90 | 437.39 | -117.20 | -436.35 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 14.00 | 345.00 | 4,744.93 | 460.76 | -123.46 | -459.66 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for POWERS 2G-27HZ - Permit Rev-1

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | Toolface Azimuth (°) |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|----------------------|
| 4,900.00 | 14.00 | 345.00 | 4,841.96 | 484.12 | -129.72 | -482.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 14.00 | 345.00 | 4,938.99 | 507.49 | -135.98 | -506.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 14.00 | 345.00 | 5,036.02 | 530.86 | -142.24 | -529.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 14.00 | 345.00 | 5,133.05 | 554.23 | -148.50 | -552.91 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 14.00 | 345.00 | 5,230.08 | 577.60 | -154.77 | -576.22 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 14.00 | 345.00 | 5,327.11 | 600.96 | -161.03 | -599.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 14.00 | 345.00 | 5,424.14 | 624.33 | -167.29 | -622.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 14.00 | 345.00 | 5,521.17 | 647.70 | -173.55 | -646.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 14.00 | 345.00 | 5,618.20 | 671.07 | -179.81 | -669.47 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 14.00 | 345.00 | 5,715.23 | 694.43 | -186.07 | -692.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 14.00 | 345.00 | 5,812.26 | 717.80 | -192.33 | -716.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 14.00 | 345.00 | 5,909.29 | 741.17 | -198.60 | -739.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,030.00 | 14.00 | 345.00 | 5,938.40 | 748.18 | -200.47 | -746.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| Begin Drop @ 6030.00ft | | | | | | | | | | |
| 6,100.00 | 12.60 | 345.00 | 6,006.52 | 763.74 | -204.64 | -761.92 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,200.00 | 10.60 | 345.00 | 6,104.47 | 783.16 | -209.85 | -781.30 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,300.00 | 8.60 | 345.00 | 6,203.07 | 799.26 | -214.16 | -797.37 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,400.00 | 6.60 | 345.00 | 6,302.18 | 812.04 | -217.59 | -810.11 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,500.00 | 4.60 | 345.00 | 6,401.70 | 821.46 | -220.11 | -819.51 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,600.00 | 2.60 | 345.00 | 6,501.50 | 827.53 | -221.74 | -825.56 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,700.00 | 0.60 | 345.00 | 6,601.45 | 830.23 | -222.46 | -828.25 | 2.00 | -2.00 | 0.00 | 180.00 |
| 6,730.00 | 0.00 | 0.00 | 6,631.45 | 830.38 | -222.50 | -828.40 | 2.00 | -2.00 | 50.00 | 180.00 |
| End Drop @ 6730.00ft | | | | | | | | | | |
| 6,731.59 | 0.00 | 0.00 | 6,633.04 | 830.38 | -222.50 | -828.40 | 0.00 | 0.00 | 0.00 | 180.00 |
| Top of 4.5" Liner @ 6731.59ft | | | | | | | | | | |
| 6,800.00 | 0.00 | 0.00 | 6,701.45 | 830.38 | -222.50 | -828.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,831.59 | 0.00 | 0.00 | 6,733.04 | 830.38 | -222.50 | -828.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| KOP @ 6831.59ft | | | | | | | | | | |
| 6,900.00 | 6.84 | 180.50 | 6,801.29 | 826.30 | -222.53 | -824.33 | 10.00 | 10.00 | 0.00 | 180.50 |
| 6,924.14 | 9.26 | 180.50 | 6,825.19 | 822.92 | -222.56 | -820.95 | 10.00 | 10.00 | 0.00 | 0.00 |
| Sharon Springs | | | | | | | | | | |
| 6,986.62 | 15.50 | 180.50 | 6,886.19 | 809.53 | -222.68 | -807.56 | 10.00 | 10.00 | 0.00 | 0.00 |
| Niobrara Top | | | | | | | | | | |
| 7,000.00 | 16.84 | 180.50 | 6,899.04 | 805.81 | -222.72 | -803.83 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,045.41 | 21.38 | 180.50 | 6,941.93 | 790.94 | -222.85 | -788.97 | 10.00 | 10.00 | 0.00 | 0.00 |
| Niobrara B Bench | | | | | | | | | | |
| 7,100.00 | 26.84 | 180.50 | 6,991.74 | 768.65 | -223.04 | -766.68 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,126.54 | 29.50 | 180.50 | 7,015.14 | 756.12 | -223.15 | -754.15 | 10.00 | 10.00 | 0.00 | 0.00 |
| Niobrara C Bench | | | | | | | | | | |
| 7,200.00 | 36.84 | 180.50 | 7,076.59 | 715.96 | -223.51 | -713.99 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,300.00 | 46.84 | 180.50 | 7,150.99 | 649.34 | -224.09 | -647.36 | 10.00 | 10.00 | 0.00 | 0.00 |
| DLS = 10°/100' | | | | | | | | | | |
| 7,307.83 | 47.62 | 180.50 | 7,156.31 | 643.60 | -224.14 | -641.62 | 10.00 | 10.00 | 0.00 | 0.00 |
| Fort Hays | | | | | | | | | | |
| 7,341.58 | 51.00 | 180.50 | 7,178.31 | 618.01 | -224.37 | -616.03 | 10.00 | 10.00 | 0.00 | 0.00 |
| Codell | | | | | | | | | | |
| 7,400.00 | 56.84 | 180.50 | 7,212.70 | 570.82 | -224.79 | -568.83 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,448.91 | 61.73 | 180.50 | 7,237.67 | 528.78 | -225.16 | -526.79 | 10.00 | 10.00 | 0.00 | 0.00 |
| Green Horn | | | | | | | | | | |
| 7,500.00 | 66.84 | 180.50 | 7,259.83 | 482.77 | -225.56 | -480.78 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,600.00 | 76.84 | 180.50 | 7,290.96 | 387.87 | -226.40 | -385.88 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,700.00 | 86.84 | 180.50 | 7,305.13 | 289.02 | -227.27 | -287.02 | 10.00 | 10.00 | 0.00 | 0.00 |
| 7,730.16 | 89.86 | 180.50 | 7,306.00 | 258.87 | -227.53 | -256.88 | 10.00 | 10.00 | 0.00 | 0.00 |
| End Build @ 7730.16ft - Target Heel Location - 7" | | | | | | | | | | |
| 7,800.00 | 89.86 | 180.50 | 7,306.17 | 189.04 | -228.15 | -187.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 89.86 | 180.50 | 7,306.42 | 89.04 | -229.03 | -87.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 89.86 | 180.50 | 7,306.67 | -10.96 | -229.91 | 12.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 89.86 | 180.50 | 7,306.93 | -110.95 | -230.79 | 112.96 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for POWERS 2G-27HZ - Permit Rev-1

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | Toolface Azimuth (°) |
|---|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|----------------------------|
| 8,200.00 | 89.86 | 180.50 | 7,307.18 | -210.95 | -231.67 | 212.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 89.86 | 180.50 | 7,307.43 | -310.94 | -232.55 | 312.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 89.86 | 180.50 | 7,307.68 | -410.94 | -233.43 | 412.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 89.86 | 180.50 | 7,307.93 | -510.94 | -234.31 | 512.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 89.86 | 180.50 | 7,308.18 | -610.93 | -235.19 | 612.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 89.86 | 180.50 | 7,308.43 | -710.93 | -236.07 | 712.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 89.86 | 180.50 | 7,308.68 | -810.92 | -236.96 | 812.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 89.86 | 180.50 | 7,308.93 | -910.92 | -237.84 | 912.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 89.86 | 180.50 | 7,309.18 | -1,010.91 | -238.72 | 1,012.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 89.86 | 180.50 | 7,309.43 | -1,110.91 | -239.60 | 1,112.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 89.86 | 180.50 | 7,309.68 | -1,210.91 | -240.48 | 1,212.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 89.86 | 180.50 | 7,309.93 | -1,310.90 | -241.36 | 1,312.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 89.86 | 180.50 | 7,310.18 | -1,410.90 | -242.24 | 1,412.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 89.86 | 180.50 | 7,310.43 | -1,510.89 | -243.12 | 1,512.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 89.86 | 180.50 | 7,310.68 | -1,610.89 | -244.00 | 1,612.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 89.86 | 180.50 | 7,310.93 | -1,710.89 | -244.88 | 1,712.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 89.86 | 180.50 | 7,311.18 | -1,810.88 | -245.76 | 1,812.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 89.86 | 180.50 | 7,311.43 | -1,910.88 | -246.64 | 1,912.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 89.86 | 180.50 | 7,311.68 | -2,010.87 | -247.52 | 2,012.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 89.86 | 180.50 | 7,311.93 | -2,110.87 | -248.41 | 2,112.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 89.86 | 180.50 | 7,312.18 | -2,210.86 | -249.29 | 2,212.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 89.86 | 180.50 | 7,312.43 | -2,310.86 | -250.17 | 2,312.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 89.86 | 180.50 | 7,312.68 | -2,410.86 | -251.05 | 2,412.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 89.86 | 180.50 | 7,312.93 | -2,510.85 | -251.93 | 2,512.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 89.86 | 180.50 | 7,313.19 | -2,610.85 | -252.81 | 2,612.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 89.86 | 180.50 | 7,313.44 | -2,710.84 | -253.69 | 2,712.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 89.86 | 180.50 | 7,313.69 | -2,810.84 | -254.57 | 2,812.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 89.86 | 180.50 | 7,313.94 | -2,910.83 | -255.45 | 2,912.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 89.86 | 180.50 | 7,314.19 | -3,010.83 | -256.33 | 3,012.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 89.86 | 180.50 | 7,314.44 | -3,110.83 | -257.21 | 3,112.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 89.86 | 180.50 | 7,314.69 | -3,210.82 | -258.09 | 3,212.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 89.86 | 180.50 | 7,314.94 | -3,310.82 | -258.97 | 3,312.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 89.86 | 180.50 | 7,315.19 | -3,410.81 | -259.85 | 3,412.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 89.86 | 180.50 | 7,315.44 | -3,510.81 | -260.74 | 3,512.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 89.86 | 180.50 | 7,315.69 | -3,610.81 | -261.62 | 3,612.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 89.86 | 180.50 | 7,315.94 | -3,710.80 | -262.50 | 3,712.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 89.86 | 180.50 | 7,316.19 | -3,810.80 | -263.38 | 3,812.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 89.86 | 180.50 | 7,316.44 | -3,910.79 | -264.26 | 3,912.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 89.86 | 180.50 | 7,316.69 | -4,010.79 | -265.14 | 4,012.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 89.86 | 180.50 | 7,316.94 | -4,110.78 | -266.02 | 4,112.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 89.86 | 180.50 | 7,317.19 | -4,210.78 | -266.90 | 4,212.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 89.86 | 180.50 | 7,317.44 | -4,310.78 | -267.78 | 4,312.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 89.86 | 180.50 | 7,317.69 | -4,410.77 | -268.66 | 4,412.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 89.86 | 180.50 | 7,317.94 | -4,510.77 | -269.54 | 4,512.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 89.86 | 180.50 | 7,318.19 | -4,610.76 | -270.42 | 4,612.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 89.86 | 180.50 | 7,318.44 | -4,710.76 | -271.30 | 4,712.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 89.86 | 180.50 | 7,318.69 | -4,810.76 | -272.19 | 4,812.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 89.86 | 180.50 | 7,318.94 | -4,910.75 | -273.07 | 4,912.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 89.86 | 180.50 | 7,319.19 | -5,010.75 | -273.95 | 5,012.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 89.86 | 180.50 | 7,319.44 | -5,110.74 | -274.83 | 5,112.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 89.86 | 180.50 | 7,319.70 | -5,210.74 | -275.71 | 5,212.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 89.86 | 180.50 | 7,319.95 | -5,310.73 | -276.59 | 5,312.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,321.70 | 89.86 | 180.50 | 7,320.00 | -5,332.43 | -276.78 | 5,334.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| Target Toe Location | | | | | | | | | | |
| 13,321.71 | 89.86 | 180.50 | 7,320.00 | -5,332.44 | -276.78 | 5,334.65 | 0.01 | 0.00 | 0.00 | 0.00 |
| TD Well @ 13321.71ft - POWERS 2G-27HZ_BHL | | | | | | | | | | |

Plan Report for POWERS 2G-27HZ - Permit Rev-1

Plan Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------------|-----------------------------|-------------------|-----------------|-------------------------------|
| | | +N/-S (usft) | +E/-W (usft) | |
| 2,480.00 | 2,480.00 | 0.00 | 0.00 | Begin Nudge @ 2480.00ft |
| 3,180.00 | 3,173.06 | 82.20 | -22.02 | End Nudge @ 3180.00ft |
| 6,030.00 | 5,938.40 | 748.18 | -200.47 | Begin Drop @ 6030.00ft |
| 6,730.00 | 6,631.45 | 830.38 | -222.50 | End Drop @ 6730.00ft |
| 6,731.59 | 6,633.04 | 830.38 | -222.50 | Top of 4.5" Liner @ 6731.59ft |
| 6,831.59 | 6,733.04 | 830.38 | -222.50 | KOP @ 6831.59ft |
| 7,300.00 | 7,150.99 | 649.34 | -224.09 | DLS = 10°/100' |
| 7,730.16 | 7,306.00 | 258.87 | -227.53 | End Build @ 7730.16ft |
| 13,321.71 | 7,320.00 | -5,332.44 | -276.78 | TD Well @ 13321.71ft |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin | | Start TVD (usft) |
|---------------|----------------------|----------------|----------------|-----------------|-----------------|------------------------|
| | | | | +N/-S (usft) | +E/-W (usft) | |
| User | No Target (Freehand) | 180.50 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (usft) | To (usft) | Survey/Plan | Survey Tool |
|----------------|--------------|--------------|------------------------------|
| 0.00 | 7,730.16 | Permit Rev-1 | APC_ISCWSA REV 2 MWD+IFR1 |
| 7,730.16 | 13,321.71 | Permit Rev-1 | APC_ISCWSA REV 2 MWD+IFR1 |

Casing Details

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|-----------------------------|-----------------------------|--------|---------------------------|-------------------------|
| 1,362.00 | 1,362.00 | 9 5/8" | 9-5/8 | 13-1/2 |
| 7,730.16 | 7,306.00 | 7" | 7 | 8-3/4 |

Formation Details

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------------|-----------------------------|----------------------|-----------|------------|-------------------------|
| 4,419.77 | 4,376.00 | Sussex | | 0.00 | |
| 6,924.14 | 6,825.19 | Sharon Springs | | 0.00 | |
| 6,986.62 | 6,886.19 | Niobrara Top | | 0.00 | |
| 7,045.41 | 6,941.93 | Niobrara B Bench | | 0.00 | |
| 7,126.54 | 7,015.14 | Niobrara C Bench | | 0.00 | |
| 7,307.83 | 7,156.31 | Fort Hays | | 0.00 | |
| 7,341.58 | 7,178.31 | Codell | | 0.00 | |
| 7,448.91 | 7,237.67 | Green Horn | | 0.00 | |
| 7,730.16 | 7,306.00 | Target Heel Location | | 0.00 | |
| 13,321.70 | 7,320.00 | Target Toe Location | | 0.00 | |

Plan Report for POWERS 2G-27HZ - Permit Rev-1

Targets associated with this wellbore

| Target Name | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Shape |
|-------------------------------|---------------|-----------------|-----------------|---------|
| POWERS 2G-27HZ_BHL | 7,320.00 | -5,332.44 | -276.78 | Point |
| 2N-R65W-Sec. 22_Section Lines | 0.00 | 0.00 | -59.82 | Polygon |
| POWERS 2G-27HZ_SHL | 0.00 | 0.00 | 0.00 | Point |

North Reference Sheet for 2N-65W-22 Powers 22-2 - POWERS 2G-27HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 17' @ 4911.00usft (D Rig). Northing and Easting are relative to POWERS 2G-27HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99961124

Grid Coordinates of Well: 14,574,463.06 usft N, 1,739,562.84 usft E

Geographical Coordinates of Well: 40° 07' 49.91" N, 104° 38' 43.06" W

Grid Convergence at Surface is: 0.23°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,321.71usft
the Bottom Hole Displacement is 5,339.62usft in the Direction of 182.97° (True).

Magnetic Convergence at surface is: -8.07° (12 January 2015, , IGRF2010)

