

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 4-T2N-R65W

Reigle 3C-4HZ

Plan A Rev 1

Plan: Plan A Rev 1 Permit

Sperry Drilling Services Proposal Report

20 August, 2012

Well Coordinates: 1,302,930.82 N, 3,232,555.74 E (40° 09' 43.00" N, 104° 40' 04.48" W)

Ground Level: 4,858.00 ft

Local Coordinate Origin:

Centered on Well Reigle 3C-4HZ

Viewing Datum:

RKB=16 @ 4874.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
Site: Sec. 4-T2N-R65W
Well: Reigle 3C-4HZ
Wellbore: Plan A Rev 1
Design: Plan A Rev 1 Permit

Anadarko Petroleum Corp.

HALLIBURTON
Sperry Drilling

SECTION DETAILS

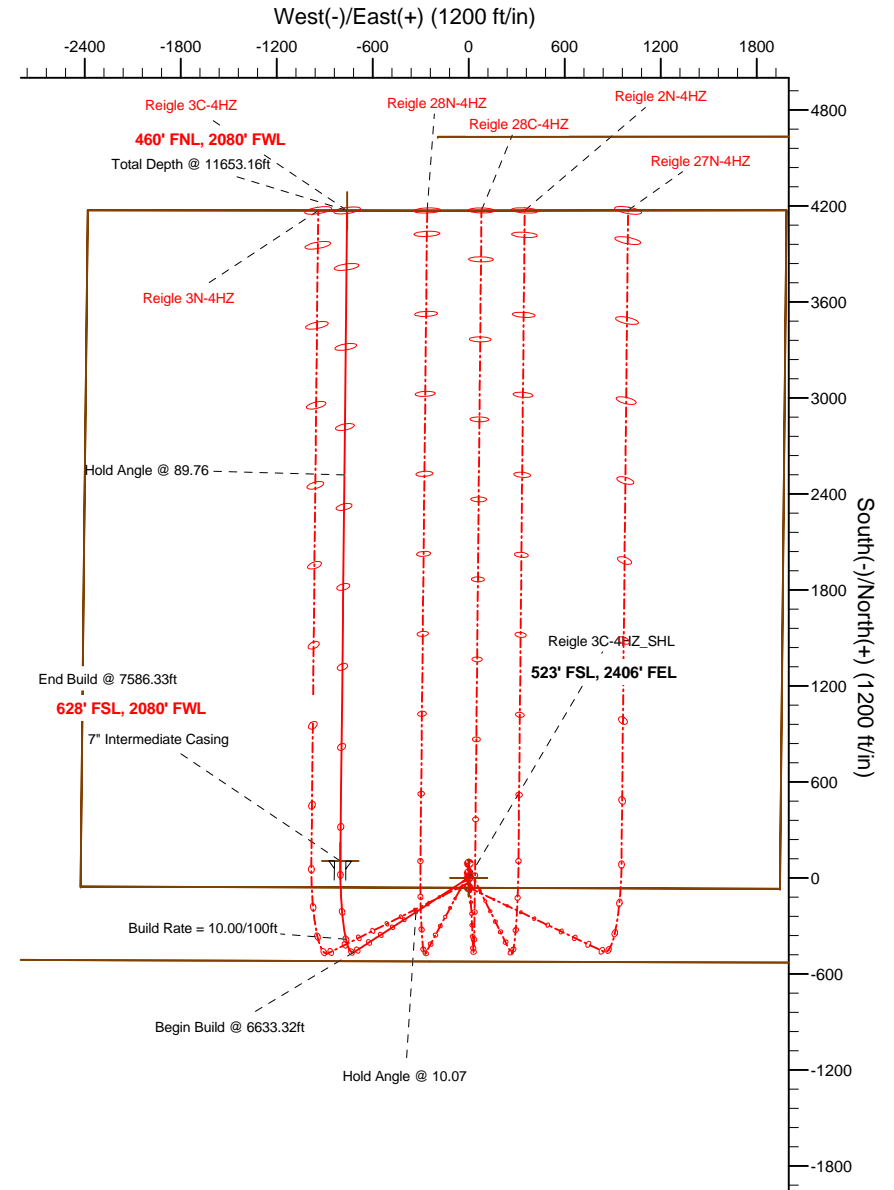
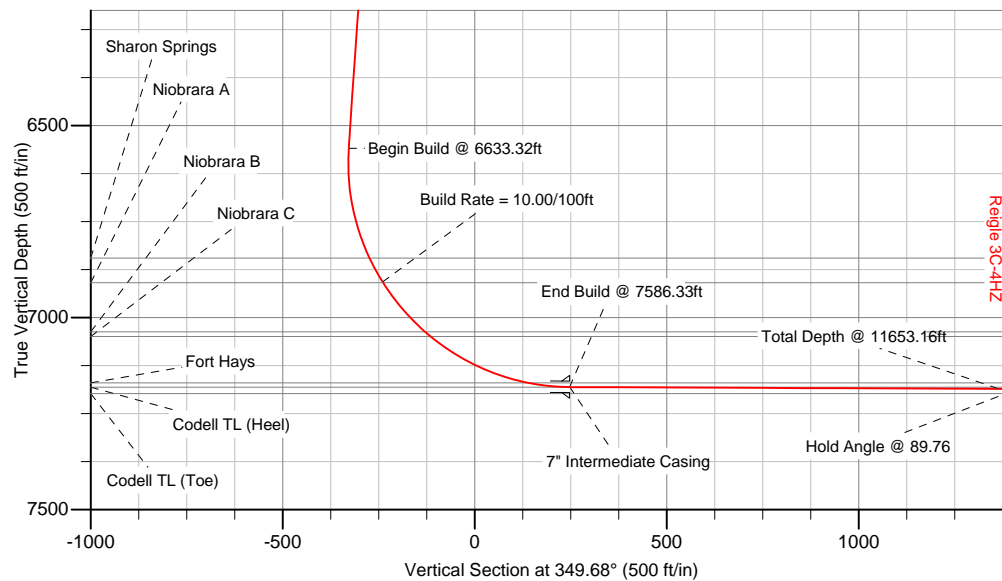
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|---------|---------|-------|--------|---------|----------------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 1500.00 | 0.00 | 0.00 | 1500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 2003.31 | 10.07 | 237.08 | 2000.72 | -23.97 | -37.02 | 2.00 | 237.08 | -16.95 | |
| 4 | 6633.32 | 10.07 | 237.08 | 6559.46 | -463.83 | -716.30 | 0.00 | 0.00 | -327.97 | |
| 5 | 7586.33 | 89.76 | 0.59 | 7181.00 | 105.00 | -802.00 | 10.00 | 123.15 | 247.02 | Reigle 3C-4HZ_Casing Point |
| 6 | 11653.16 | 89.76 | 0.59 | 7198.00 | 4171.57 | -759.83 | 0.00 | 0.00 | 4240.21 | Reigle 3C-4HZ_BHL |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|-----------------------------|---------|---------|---------|-----------|-------------|---------|
| Reigle 3C-4HZ_Section Lines | 0.00 | 0.00 | 0.00 | 40.161945 | -104.667911 | Polygon |
| Reigle 3C-4HZ_Setback Lines | 0.00 | 0.00 | 0.00 | 40.161945 | -104.667911 | Polygon |
| Reigle 3C-4HZ_SHL | 0.00 | 0.00 | 0.00 | 40.161945 | -104.667911 | Point |
| Reigle 3C-4HZ_Casing Point | 7181.00 | 105.00 | -802.00 | 40.162233 | -104.670780 | Point |
| Reigle 3C-4HZ_BHL | 7198.00 | 4171.57 | -759.83 | 40.173396 | -104.670630 | Point |

Target Line:

7016.07' TVDkb @ 0° VS Drilling 90.48°



WELL DETAILS: Reigle 3C-4HZ

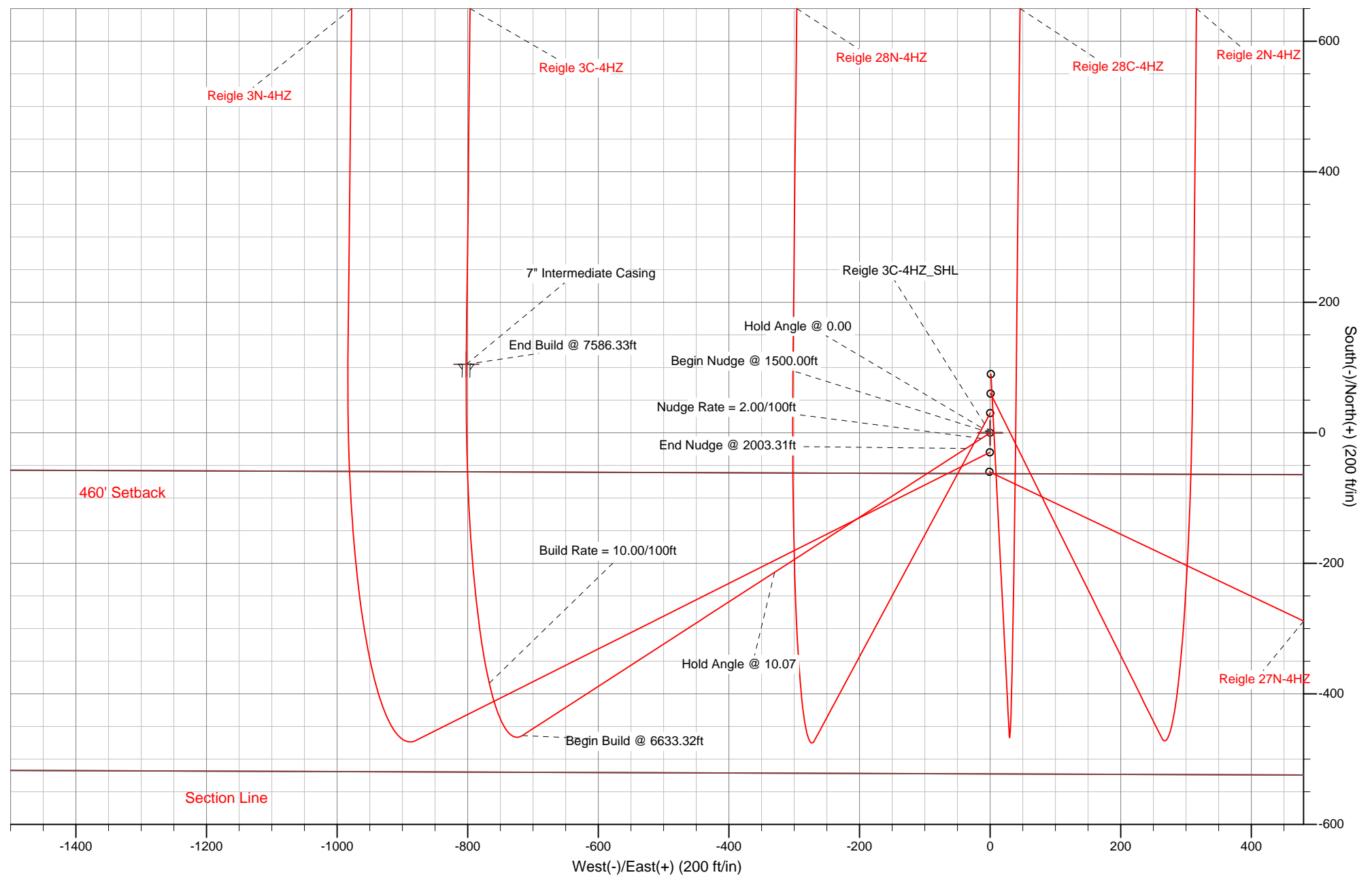
Ground Level: 4858.00 RKB=16 @ 4874.00ft (Drilling Rig)

Plan: Plan A Rev 1 Permit (Reigle 3C-4HZ/Plan A Rev 1)

Created By: Fred Hartmann Date: 08/02/2012
Reviewed: _____ Date: _____

Project: Weld County, CO (NAD 83)
Site: Sec. 4-T2N-R65W
Well: Reigle 3C-4HZ
Wellbore: Plan A Rev 1
Design: Plan A Rev 1 Permit

Anadarko Petroleum Corp.



Plan Report for Reigle 3C-4HZ - Plan A Rev 1 Permit

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Toolface Azimuth (°) |
|--|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|---------------------------|----------------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Reigle 3C-4HZ_SHL - Reigle 3C-4HZ_Section Lines - Reigle 3C-4HZ_Setback Lines | | | | | | | | | | |
| 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 |
| Hold Angle @ 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 |
| 1,400.00 | 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 |
| Begin Nudge @ 1500.00ft | | | | | | | | | | |
| 1,600.00 | 2.00 | 237.08 | 1,599.98 | -0.95 | -1.46 | -0.67 | 2.00 | 2.00 | 0.00 | 237.08 |
| 1,700.00 | 4.00 | 237.08 | 1,699.84 | -3.79 | -5.86 | -2.68 | 2.00 | 2.00 | 0.00 | 0.00 |
| 1,800.00 | 6.00 | 237.08 | 1,799.45 | -8.53 | -13.17 | -6.03 | 2.00 | 2.00 | 0.00 | 0.00 |
| Nudge Rate = 2.00/100ft | | | | | | | | | | |
| 1,900.00 | 8.00 | 237.08 | 1,898.70 | -15.15 | -23.40 | -10.71 | 2.00 | 2.00 | 0.00 | 0.00 |
| 2,000.00 | 10.00 | 237.08 | 1,997.47 | -23.66 | -36.53 | -16.73 | 2.00 | 2.00 | 0.00 | 0.00 |
| 2,003.31 | 10.07 | 237.08 | 2,000.72 | -23.97 | -37.02 | -16.95 | 2.00 | 2.00 | 0.00 | 0.00 |
| End Nudge @ 2003.31ft | | | | | | | | | | |
| 2,100.00 | 10.07 | 237.08 | 2,095.93 | -33.16 | -51.20 | -23.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 10.07 | 237.08 | 2,194.39 | -42.66 | -65.87 | -30.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 10.07 | 237.08 | 2,292.85 | -52.16 | -80.54 | -36.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 10.07 | 237.08 | 2,391.31 | -61.66 | -95.22 | -43.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 10.07 | 237.08 | 2,489.77 | -71.16 | -109.89 | -50.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 10.07 | 237.08 | 2,588.23 | -80.66 | -124.56 | -57.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 10.07 | 237.08 | 2,686.69 | -90.16 | -139.23 | -63.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 10.07 | 237.08 | 2,785.15 | -99.66 | -153.90 | -70.47 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 10.07 | 237.08 | 2,883.61 | -109.16 | -168.57 | -77.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 10.07 | 237.08 | 2,982.07 | -118.66 | -183.24 | -83.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 10.07 | 237.08 | 3,080.53 | -128.16 | -197.91 | -90.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 10.07 | 237.08 | 3,178.99 | -137.66 | -212.59 | -97.34 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 10.07 | 237.08 | 3,277.45 | -147.16 | -227.26 | -104.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 10.07 | 237.08 | 3,375.91 | -156.66 | -241.93 | -110.77 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 10.07 | 237.08 | 3,474.38 | -166.16 | -256.60 | -117.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 10.07 | 237.08 | 3,572.84 | -175.66 | -271.27 | -124.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 10.07 | 237.08 | 3,671.30 | -185.16 | -285.94 | -130.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 10.07 | 237.08 | 3,769.76 | -194.66 | -300.61 | -137.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 10.07 | 237.08 | 3,868.22 | -204.16 | -315.28 | -144.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.79 | 10.07 | 237.08 | 3,869.00 | -204.24 | -315.40 | -144.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| Parkman | | | | | | | | | | |
| 4,000.00 | 10.07 | 237.08 | 3,966.68 | -213.66 | -329.96 | -151.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hold Angle @ 10.07 | | | | | | | | | | |
| 4,100.00 | 10.07 | 237.08 | 4,065.14 | -223.16 | -344.63 | -157.79 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 10.07 | 237.08 | 4,163.60 | -232.66 | -359.30 | -164.51 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 10.07 | 237.08 | 4,262.06 | -242.16 | -373.97 | -171.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 10.07 | 237.08 | 4,360.52 | -251.66 | -388.64 | -177.94 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 10.07 | 237.08 | 4,458.98 | -261.16 | -403.31 | -184.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,501.03 | 10.07 | 237.08 | 4,460.00 | -261.26 | -403.46 | -184.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sussex | | | | | | | | | | |
| 4,600.00 | 10.07 | 237.08 | 4,557.44 | -270.66 | -417.98 | -191.38 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for Reigle 3C-4HZ - Plan A Rev 1 Permit

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N-S (ft) | +E-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Toolface Azimuth (°) |
|---|-----------------|-------------|---------------------|-----------|-----------|-----------------------|-----------------------|----------------------|---------------------|----------------------|
| 4,700.00 | 10.07 | 237.08 | 4,655.90 | -280.16 | -432.65 | -198.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 10.07 | 237.08 | 4,754.36 | -289.66 | -447.33 | -204.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 10.07 | 237.08 | 4,852.82 | -299.16 | -462.00 | -211.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 10.07 | 237.08 | 4,951.29 | -308.66 | -476.67 | -218.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 10.07 | 237.08 | 5,049.75 | -318.16 | -491.34 | -224.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 10.07 | 237.08 | 5,148.21 | -327.66 | -506.01 | -231.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 10.07 | 237.08 | 5,246.67 | -337.16 | -520.68 | -238.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 10.07 | 237.08 | 5,345.13 | -346.66 | -535.35 | -245.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 10.07 | 237.08 | 5,443.59 | -356.16 | -550.02 | -251.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 10.07 | 237.08 | 5,542.05 | -365.66 | -564.70 | -258.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 10.07 | 237.08 | 5,640.51 | -375.17 | -579.37 | -265.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 10.07 | 237.08 | 5,738.97 | -384.67 | -594.04 | -271.99 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 10.07 | 237.08 | 5,837.43 | -394.17 | -608.71 | -278.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 10.07 | 237.08 | 5,935.89 | -403.67 | -623.38 | -285.42 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 10.07 | 237.08 | 6,034.35 | -413.17 | -638.05 | -292.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 10.07 | 237.08 | 6,132.81 | -422.67 | -652.72 | -298.86 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 10.07 | 237.08 | 6,231.27 | -432.17 | -667.39 | -305.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 10.07 | 237.08 | 6,329.73 | -441.67 | -682.07 | -312.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 10.07 | 237.08 | 6,428.19 | -451.17 | -696.74 | -319.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 10.07 | 237.08 | 6,526.66 | -460.67 | -711.41 | -325.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,633.32 | 10.07 | 237.08 | 6,559.46 | -463.83 | -716.30 | -327.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| Begin Build @ 6633.32ft | | | | | | | | | | |
| 6,700.00 | 8.49 | 278.27 | 6,625.34 | -466.30 | -726.07 | -328.64 | 10.00 | -2.36 | 61.78 | 123.15 |
| 6,800.00 | 13.92 | 323.97 | 6,723.57 | -455.48 | -740.48 | -315.42 | 10.00 | 5.43 | 45.70 | 82.44 |
| 6,900.00 | 22.67 | 339.88 | 6,818.48 | -427.59 | -754.22 | -285.52 | 10.00 | 8.75 | 15.91 | 37.48 |
| 6,929.03 | 25.38 | 342.46 | 6,845.00 | -416.40 | -758.02 | -273.83 | 10.00 | 9.33 | 8.86 | 22.32 |
| Sharon Springs | | | | | | | | | | |
| 7,000.00 | 32.13 | 347.01 | 6,907.19 | -383.47 | -766.86 | -239.85 | 10.00 | 9.52 | 6.41 | 19.97 |
| Build Rate = 10.00/100ft | | | | | | | | | | |
| 7,002.14 | 32.34 | 347.12 | 6,909.00 | -382.36 | -767.11 | -238.71 | 10.00 | 9.62 | 5.14 | 15.97 |
| Niobrara A | | | | | | | | | | |
| 7,100.00 | 41.83 | 351.11 | 6,986.99 | -324.47 | -778.02 | -179.80 | 10.00 | 9.70 | 4.09 | 15.88 |
| 7,171.14 | 48.79 | 353.18 | 7,037.00 | -274.39 | -784.86 | -129.31 | 10.00 | 9.78 | 2.91 | 12.68 |
| Niobrara B | | | | | | | | | | |
| 7,189.70 | 50.61 | 353.65 | 7,049.00 | -260.34 | -786.49 | -115.19 | 10.00 | 9.81 | 2.52 | 11.22 |
| Niobrara C | | | | | | | | | | |
| 7,200.00 | 51.62 | 353.90 | 7,055.47 | -252.37 | -787.35 | -107.19 | 10.00 | 9.82 | 2.42 | 10.92 |
| 7,300.00 | 61.46 | 356.02 | 7,110.54 | -169.36 | -794.59 | -24.23 | 10.00 | 9.84 | 2.11 | 10.76 |
| 7,400.00 | 71.34 | 357.77 | 7,150.53 | -77.98 | -799.50 | 66.55 | 10.00 | 9.87 | 1.75 | 9.59 |
| 7,475.66 | 78.81 | 358.95 | 7,170.00 | -4.95 | -801.58 | 138.77 | 10.00 | 9.88 | 1.57 | 8.89 |
| Fort Hays | | | | | | | | | | |
| 7,500.00 | 81.22 | 359.32 | 7,174.22 | 19.01 | -801.94 | 162.41 | 10.00 | 9.89 | 1.51 | 8.58 |
| 7,586.33 | 89.76 | 0.59 | 7,181.00 | 105.00 | -802.00 | 247.02 | 10.00 | 9.89 | 1.48 | 8.52 |
| End Build @ 7586.33ft - Codell TL (Heel) - 7" Intermediate Casing - Reigle 3C-4HZ Casing Point | | | | | | | | | | |
| 7,600.00 | 89.76 | 0.59 | 7,181.06 | 118.66 | -801.86 | 260.43 | 0.00 | 0.00 | 0.00 | 8.42 |
| 7,700.00 | 89.76 | 0.59 | 7,181.48 | 218.66 | -800.82 | 358.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 89.76 | 0.59 | 7,181.89 | 318.65 | -799.78 | 456.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 89.76 | 0.59 | 7,182.31 | 418.65 | -798.75 | 555.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 89.76 | 0.59 | 7,182.73 | 518.64 | -797.71 | 653.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 89.76 | 0.59 | 7,183.15 | 618.63 | -796.67 | 751.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 89.76 | 0.59 | 7,183.57 | 718.63 | -795.64 | 849.57 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 89.76 | 0.59 | 7,183.98 | 818.62 | -794.60 | 947.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 89.76 | 0.59 | 7,184.40 | 918.61 | -793.56 | 1,045.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 89.76 | 0.59 | 7,184.82 | 1,018.61 | -792.53 | 1,144.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 89.76 | 0.59 | 7,185.24 | 1,118.60 | -791.49 | 1,242.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 89.76 | 0.59 | 7,185.66 | 1,218.60 | -790.45 | 1,340.52 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 89.76 | 0.59 | 7,186.07 | 1,318.59 | -789.42 | 1,438.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 89.76 | 0.59 | 7,186.49 | 1,418.58 | -788.38 | 1,536.90 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for Reigle 3C-4HZ - Plan A Rev 1 Permit

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Toolface Azimuth (°) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|----------------------|
| 9,000.00 | 89.76 | 0.59 | 7,186.91 | 1,518.58 | -787.34 | 1,635.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 89.76 | 0.59 | 7,187.33 | 1,618.57 | -786.31 | 1,733.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 89.76 | 0.59 | 7,187.75 | 1,718.56 | -785.27 | 1,831.46 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 89.76 | 0.59 | 7,188.16 | 1,818.56 | -784.23 | 1,929.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 89.76 | 0.59 | 7,188.58 | 1,918.55 | -783.19 | 2,027.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 89.76 | 0.59 | 7,189.00 | 2,018.55 | -782.16 | 2,126.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 89.76 | 0.59 | 7,189.42 | 2,118.54 | -781.12 | 2,224.22 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 89.76 | 0.59 | 7,189.84 | 2,218.53 | -780.08 | 2,322.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 89.76 | 0.59 | 7,190.25 | 2,318.53 | -779.05 | 2,420.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 89.76 | 0.59 | 7,190.67 | 2,418.52 | -778.01 | 2,518.79 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 89.76 | 0.59 | 7,191.09 | 2,518.51 | -776.97 | 2,616.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hold Angle @ 89.76 | | | | | | | | | | |
| 10,100.00 | 89.76 | 0.59 | 7,191.51 | 2,618.51 | -775.94 | 2,715.17 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 89.76 | 0.59 | 7,191.93 | 2,718.50 | -774.90 | 2,813.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 89.76 | 0.59 | 7,192.34 | 2,818.50 | -773.86 | 2,911.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 89.76 | 0.59 | 7,192.76 | 2,918.49 | -772.83 | 3,009.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 89.76 | 0.59 | 7,193.18 | 3,018.48 | -771.79 | 3,107.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 89.76 | 0.59 | 7,193.60 | 3,118.48 | -770.75 | 3,206.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 89.76 | 0.59 | 7,194.02 | 3,218.47 | -769.72 | 3,304.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 89.76 | 0.59 | 7,194.43 | 3,318.46 | -768.68 | 3,402.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 89.76 | 0.59 | 7,194.85 | 3,418.46 | -767.64 | 3,500.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 89.76 | 0.59 | 7,195.27 | 3,518.45 | -766.61 | 3,598.87 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 89.76 | 0.59 | 7,195.69 | 3,618.45 | -765.57 | 3,697.06 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 89.76 | 0.59 | 7,196.11 | 3,718.44 | -764.53 | 3,795.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 89.76 | 0.59 | 7,196.52 | 3,818.43 | -763.49 | 3,893.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 89.76 | 0.59 | 7,196.94 | 3,918.43 | -762.46 | 3,991.63 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 89.76 | 0.59 | 7,197.36 | 4,018.42 | -761.42 | 4,089.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 89.76 | 0.59 | 7,197.78 | 4,118.41 | -760.38 | 4,188.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,653.16 | 89.76 | 0.59 | 7,198.00 | 4,171.57 | -759.83 | 4,240.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Depth @ 11653.16ft - Reigle 3C-4HZ_BHL | | | | | | | | | | |

Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------|---------------------|-------------------|------------|--------------------------|
| | | +N/-S (ft) | +E/-W (ft) | |
| 700.00 | 700.00 | 0.00 | 0.00 | Hold Angle @ 0.00 |
| 1,500.00 | 1,500.00 | 0.00 | 0.00 | Begin Nudge @ 1500.00ft |
| 1,800.00 | 1,799.45 | -8.53 | -13.17 | Nudge Rate = 2.00/100ft |
| 2,003.31 | 2,000.72 | -23.97 | -37.02 | End Nudge @ 2003.31ft |
| 4,000.00 | 3,966.68 | -213.66 | -329.96 | Hold Angle @ 10.07 |
| 6,633.32 | 6,559.46 | -463.83 | -716.30 | Begin Build @ 6633.32ft |
| 7,000.00 | 6,907.19 | -383.47 | -766.86 | Build Rate = 10.00/100ft |
| 7,586.33 | 7,181.00 | 105.00 | -802.00 | End Build @ 7586.33ft |
| 10,000.00 | 7,191.09 | 2,518.51 | -776.97 | Hold Angle @ 89.76 |
| 11,653.16 | 7,198.00 | 4,171.57 | -759.83 | Total Depth @ 11653.16ft |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin | | Start TVD (ft) |
|------------|-------------------|-------------|-------------|------------|------------|----------------|
| | | | | +N/-S (ft) | +E/-W (ft) | |
| Target | Reigle 3C-4HZ_BHL | 349.68 | Slot | 0.00 | 0.00 | 0.00 |

Survey tool program

| From (ft) | To (ft) | Survey/Plan | Survey Tool |
|-----------|-----------|---------------------|-------------|
| 0.00 | 11,653.16 | Plan A Rev 1 Permit | MWD |

Plan Report for Reigle 3C-4HZ - Plan A Rev 1 Permit**Casing Details**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---------------------|---------------------|------------------------|---------------------|-------------------|
| 7,586.33 | 7,181.00 | 7" Intermediate Casing | 7 | 8-3/4 |

Formation Details

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|------------------|-----------|---------|-------------------|
| 3,900.79 | 3,869.00 | Parkman | | 0.00 | |
| 4,501.03 | 4,460.00 | Sussex | | 0.00 | |
| 6,929.03 | 6,845.00 | Sharon Springs | | 0.00 | |
| 7,002.14 | 6,909.00 | Niobrara A | | 0.00 | |
| 7,171.14 | 7,037.00 | Niobrara B | | 0.00 | |
| 7,189.70 | 7,049.00 | Niobrara C | | 0.00 | |
| 7,475.66 | 7,170.00 | Fort Hays | | 0.00 | |
| 7,586.33 | 7,181.00 | Codell TL (Heel) | | 0.00 | |
| 11,653.16 | 7,198.00 | Codell TL (Toe) | | 0.00 | |

Targets associated with this wellbore

| Target Name | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Shape |
|-----------------------------|----------|------------|------------|---------|
| Reigle 3C-4HZ_Section Lines | 0.00 | 0.00 | 0.00 | Polygon |
| Reigle 3C-4HZ_BHL | 7,198.00 | 4,171.57 | -759.83 | Point |
| Reigle 3C-4HZ_Casing Point | 7,181.00 | 105.00 | -802.00 | Point |
| Reigle 3C-4HZ_Setback Lines | 0.00 | 0.00 | 0.00 | Polygon |
| Reigle 3C-4HZ_SHL | 0.00 | 0.00 | 0.00 | Point |

North Reference Sheet for Sec. 4-T2N-R65W - Reigle 3C-4HZ - Plan A Rev 1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB=16 @ 4874.00ft (Drilling Rig). Northing and Easting are relative to Reigle 3C-4HZ
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995804

Grid Coordinates of Well: 1,302,930.818322 ft N, 3,232,555.743319 ft E
 Geographical Coordinates of Well: 40° 09' 43.00" N, 104° 40' 04.48" W
 Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,653.16ft
 the Bottom Hole Displacement is 4,240.21ft in the Direction of 349.68° (True).

Magnetic Convergence at surface is: -8.09° (16 August 2012, , BGGM2011)

