

**HALLIBURTON**

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**Sperry Drilling**

**END OF WELL REPORT**

for

**Anadarko Petroleum Corporation**

**Wagner 13C-3HZ**

**Sec 34-T1N-R67W**

**Weld County, CO**

**Job # 900901383**

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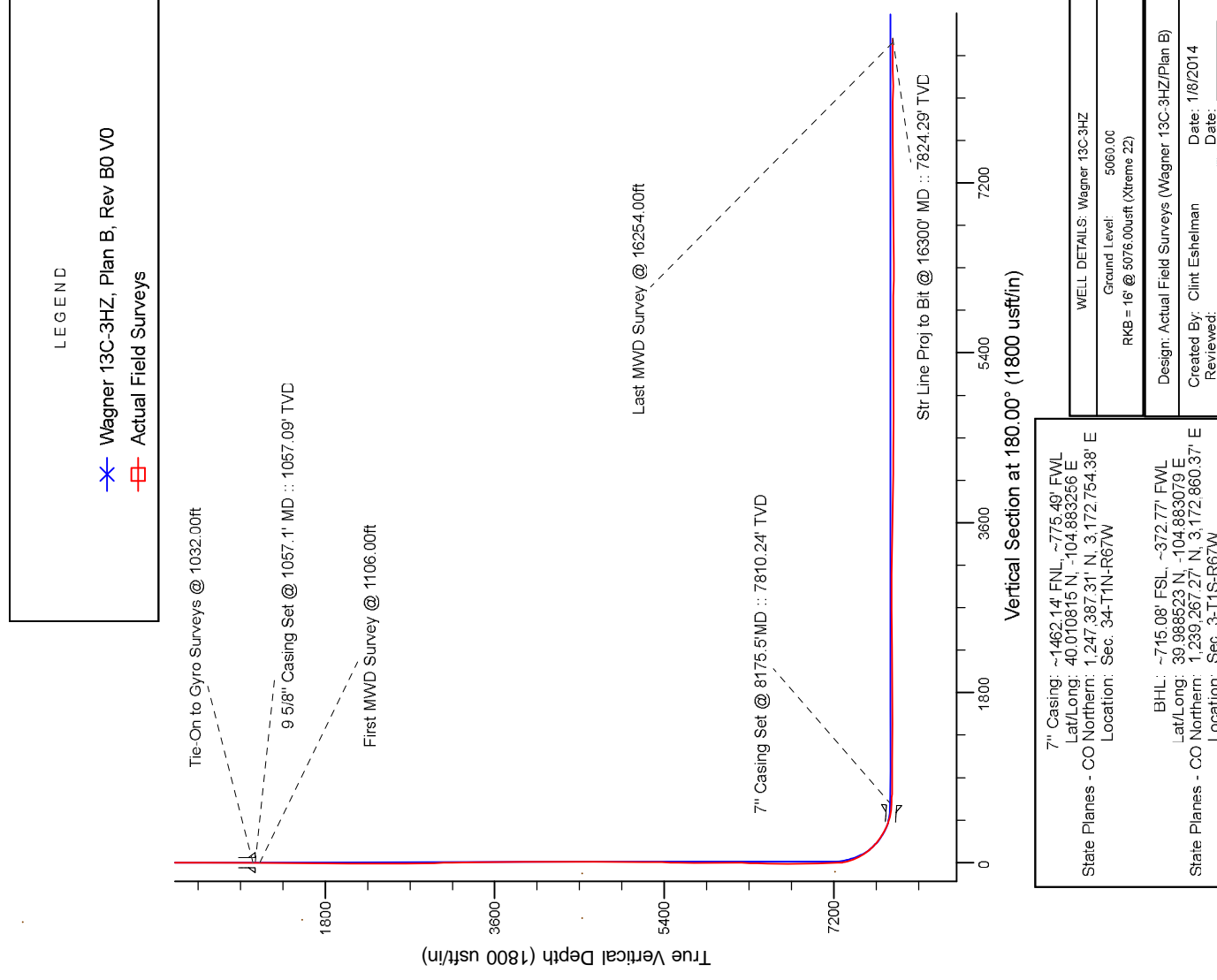
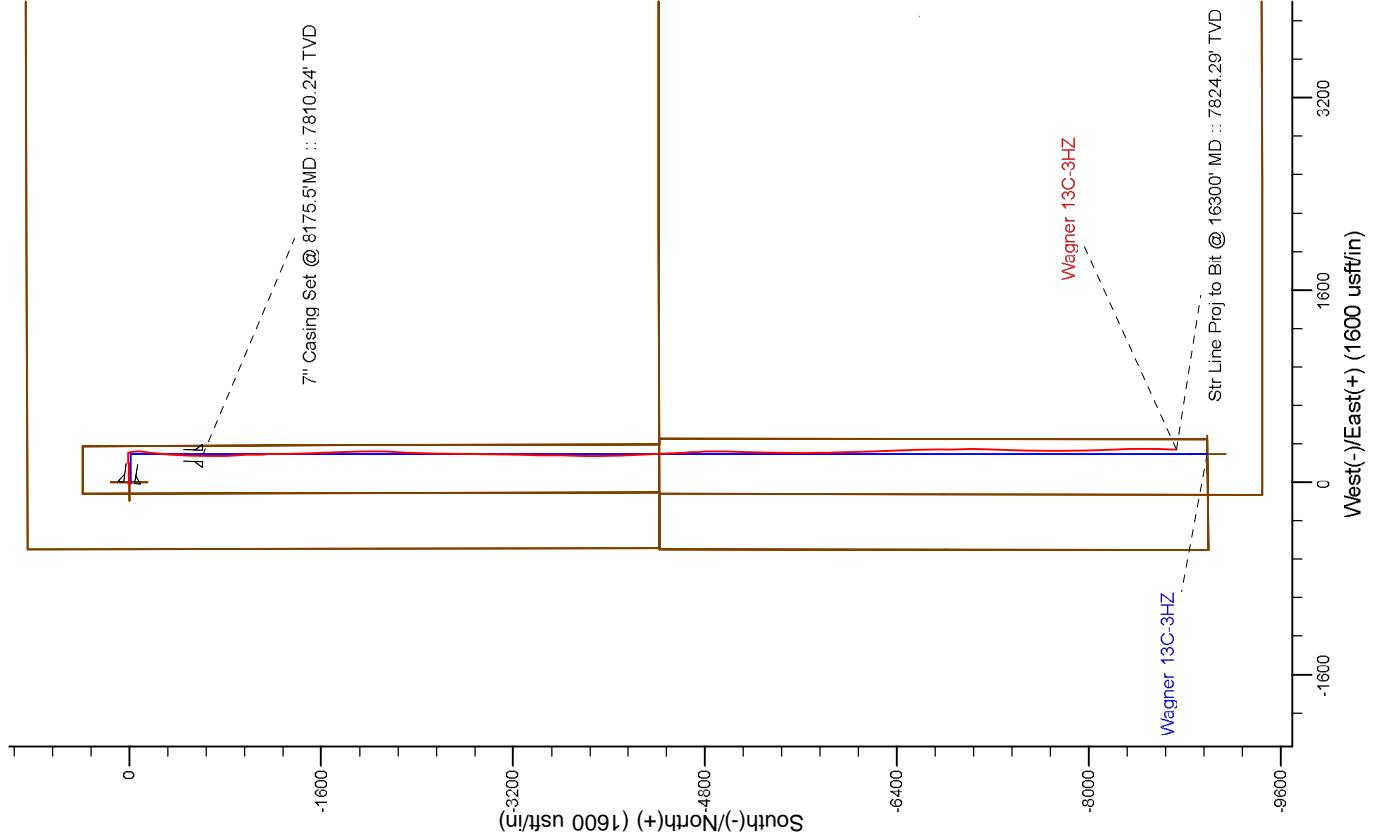
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**Section 1**

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Project: Weld County, CO (NAD 83)  
 Site: Sec. 34-T1N-R67W  
 Well: Wagner 13C-3HZ  
 Wellbore: Plan B  
 Design: Actual Field Surveys



LEGEND

- ✦- Wagner 13C-3HZ, Plan B, Rev B0 V0
- Actual Field Surveys

7" Casing: ~1462.14' FNL, ~775.49' FWL  
 Lat/Long: 40.010815 N, -104.883256 E  
 State Planes - CO Northern: 1,247,387.31' N, 3,172,754.38' E  
 Location: Sec. 34-T1N-R67W

BHL: ~715.08' FSL, ~372.77' FWL  
 Lat/Long: 39.988523 N, -104.883079 E  
 State Planes - CO Northern: 1,239,267.27' N, 3,172,860.37' E  
 Location: Sec. 3-T1S-R67W

|  |                |
|--|----------------|
| WELL DETAILS: Wagner 13C-3HZ                         |                |
| Ground Level:  | 5060.00        |
| RKB = 16' @ 5076.00usft (Xtreme 22)                  |                |
| Design: Actual Field Surveys (Wagner 13C-3HZ/Plan B) |                |
| Created By: Clint Eshelman                           | Date: 1/8/2014 |
| Reviewed:  | Date:          |

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 34-T1N-R67W

Wagner 13C-3HZ

Plan B

Design: Actual Field Surveys

## Sperry Drilling Services

### Standard Report

08 January, 2014

Well Coordinates: 1,247,997.28 N, 3,172,528.72 E (40° 00' 44.98" N, 104° 53' 02.57" W)

Ground Level: 5,060.00 usft

Local Coordinate Origin:

Centered on Well Wagner 13C-3HZ

Viewing Datum:

RKB = 16' @ 5076.00usft (Xtreme 22)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

**HALLIBURTON**

**Design Report for Wagner 13C-3HZ - Actual Field Surveys**

| Measured Depth (usft)                                 | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 0.00  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    |
| 16.00   | 0.00            | 0.00        | 16.00                 | 0.00         | 0.00         | 0.00                    | 0.00                    |
| 116.00  | 0.33            | 195.58      | 116.00                | -0.28        | -0.08        | 0.28                    | 0.33                    |
| 216.00  | 0.54            | 277.17      | 216.00                | -0.50        | -0.62        | 0.50                    | 0.59                    |
| 316.00  | 0.44            | 243.97      | 315.99                | -0.61        | -1.43        | 0.61                    | 0.30                    |
| 416.00  | 0.32            | 27.01       | 415.99                | -0.53        | -1.65        | 0.53                    | 0.72                    |
| 516.00  | 0.33            | 332.64      | 515.99                | -0.02        | -1.66        | 0.02                    | 0.30                    |
| 616.00  | 0.18            | 154.02      | 615.99                | 0.09         | -1.72        | -0.09                   | 0.51                    |
| 716.00  | 0.23            | 16.50       | 715.99                | 0.14         | -1.60        | -0.14                   | 0.38                    |
| 816.00  | 0.29            | 3.35        | 815.99                | 0.59         | -1.52        | -0.59                   | 0.08                    |
| 916.00  | 0.43            | 284.69      | 915.99                | 0.94         | -1.87        | -0.94                   | 0.47                    |
| 1,016.00  | 0.25            | 196.19      | 1,015.99              | 0.82         | -2.30        | -0.82                   | 0.49                    |
| 1,032.00  | 0.20            | 206.52      | 1,031.99              | 0.77         | -2.32        | -0.77                   | 0.40                    |
| <b>Tie-On to Gyro Surveys @ 1032.00ft</b>             |                 |             |                       |              |              |                         |                         |
| 1,057.10  | 0.17            | 277.76      | 1,057.09              | 0.73         | -2.38        | -0.73                   | 0.87                    |
| <b>9 5/8" Casing Set @ 1057.1' MD :: 1057.09' TVD</b> |                 |             |                       |              |              |                         |                         |
| 1,106.00  | 0.53            | 321.87      | 1,105.99              | 0.92         | -2.59        | -0.92                   | 0.87                    |
| <b>First MWD Survey @ 1106.00ft</b>                   |                 |             |                       |              |              |                         |                         |
| 1,201.00  | 0.37            | 2.57        | 1,200.98              | 1.57         | -2.85        | -1.57                   | 0.37                    |
| 1,296.00  | 0.28            | 306.59      | 1,295.98              | 2.02         | -3.02        | -2.02                   | 0.33                    |
| 1,391.00  | 0.74            | 332.31      | 1,390.98              | 2.70         | -3.49        | -2.70                   | 0.53                    |
| 1,486.00  | 0.75            | 345.85      | 1,485.97              | 3.84         | -3.93        | -3.84                   | 0.19                    |
| 1,579.00  | 0.62            | 322.30      | 1,578.96              | 4.83         | -4.38        | -4.83                   | 0.33                    |
| 1,674.00  | 0.94            | 334.52      | 1,673.95              | 5.94         | -5.03        | -5.94                   | 0.38                    |
| 1,765.00  | 0.83            | 335.64      | 1,764.94              | 7.22         | -5.63        | -7.22                   | 0.12                    |
| 1,858.00  | 0.28            | 228.87      | 1,857.94              | 7.68         | -6.07        | -7.68                   | 1.02                    |
| 1,949.00  | 0.52            | 250.86      | 1,948.94              | 7.40         | -6.63        | -7.40                   | 0.31                    |
| 2,042.00  | 0.43            | 306.86      | 2,041.94              | 7.47         | -7.31        | -7.47                   | 0.49                    |
| 2,135.00  | 0.62            | 279.09      | 2,134.93              | 7.76         | -8.09        | -7.76                   | 0.34                    |
| 2,226.00  | 0.11            | 20.23       | 2,225.93              | 7.92         | -8.54        | -7.92                   | 0.71                    |
| 2,318.00  | 0.31            | 132.43      | 2,317.93              | 7.83         | -8.33        | -7.83                   | 0.40                    |
| 2,411.00  | 0.32            | 337.28      | 2,410.93              | 7.90         | -8.24        | -7.90                   | 0.66                    |
| 2,503.00  | 0.22            | 309.76      | 2,502.93              | 8.25         | -8.48        | -8.25                   | 0.18                    |
| 2,595.00  | 0.58            | 213.95      | 2,594.93              | 7.98         | -8.87        | -7.98                   | 0.70                    |
| 2,687.00  | 0.80            | 214.03      | 2,686.92              | 7.06         | -9.49        | -7.06                   | 0.24                    |
| 2,779.00  | 0.97            | 121.78      | 2,778.91              | 6.12         | -9.19        | -6.12                   | 1.39                    |
| 2,871.00  | 0.79            | 123.30      | 2,870.90              | 5.36         | -8.00        | -5.36                   | 0.20                    |
| 2,963.00  | 1.18            | 114.97      | 2,962.89              | 4.61         | -6.61        | -4.61                   | 0.45                    |
| 3,055.00  | 1.25            | 140.54      | 3,054.87              | 3.44         | -5.11        | -3.44                   | 0.59                    |
| 3,147.00  | 0.86            | 199.41      | 3,146.85              | 2.01         | -4.70        | -2.01                   | 1.19                    |
| 3,233.00  | 0.88            | 200.39      | 3,232.84              | 0.78         | -5.15        | -0.78                   | 0.03                    |
| 3,319.00  | 0.94            | 198.46      | 3,318.83              | -0.50        | -5.60        | 0.50                    | 0.08                    |
| 3,405.00  | 0.72            | 208.56      | 3,404.82              | -1.65        | -6.08        | 1.65                    | 0.31                    |
| 3,490.00  | 0.49            | 216.29      | 3,489.82              | -2.41        | -6.55        | 2.41                    | 0.29                    |
| 3,576.00  | 0.74            | 205.44      | 3,575.81              | -3.21        | -7.01        | 3.21                    | 0.32                    |
| 3,662.00  | 0.75            | 215.99      | 3,661.81              | -4.17        | -7.58        | 4.17                    | 0.16                    |
| 3,747.00  | 0.97            | 219.41      | 3,746.80              | -5.17        | -8.36        | 5.17                    | 0.27                    |
| 3,833.00  | 0.96            | 201.41      | 3,832.79              | -6.40        | -9.09        | 6.40                    | 0.35                    |
| 3,919.00  | 0.34            | 301.40      | 3,918.78              | -6.94        | -9.57        | 6.94                    | 1.25                    |
| 4,004.00  | 0.43            | 226.28      | 4,003.78              | -7.03        | -10.02       | 7.03                    | 0.56                    |

**Design Report for Wagner 13C-3HZ - Actual Field Surveys**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 4,090.00              | 1.14            | 230.77      | 4,089.77              | -7.80        | -10.91       | 7.80                    | 0.83                    |
| 4,176.00              | 0.37            | 253.77      | 4,175.76              | -8.41        | -11.84       | 8.41                    | 0.94                    |
| 4,262.00              | 0.71            | 234.43      | 4,261.76              | -8.80        | -12.54       | 8.80                    | 0.44                    |
| 4,347.00              | 0.07            | 301.40      | 4,346.76              | -9.08        | -13.01       | 9.08                    | 0.81                    |
| 4,433.00              | 0.58            | 309.28      | 4,432.76              | -8.78        | -13.40       | 8.78                    | 0.59                    |
| 4,519.00              | 0.81            | 294.08      | 4,518.75              | -8.25        | -14.29       | 8.25                    | 0.34                    |
| 4,604.00              | 1.11            | 299.93      | 4,603.74              | -7.60        | -15.55       | 7.60                    | 0.37                    |
| 4,690.00              | 0.62            | 348.59      | 4,689.73              | -6.73        | -16.36       | 6.73                    | 0.98                    |
| 4,776.00              | 0.92            | 80.05       | 4,775.72              | -6.15        | -15.78       | 6.15                    | 1.31                    |
| 4,862.00              | 0.70            | 70.14       | 4,861.71              | -5.85        | -14.60       | 5.85                    | 0.30                    |
| 4,905.00              | 0.35            | 86.79       | 4,904.71              | -5.76        | -14.22       | 5.76                    | 0.88                    |
| 4,948.00              | 0.62            | 69.83       | 4,947.71              | -5.67        | -13.87       | 5.67                    | 0.70                    |
| 4,990.00              | 0.33            | 41.77       | 4,989.71              | -5.50        | -13.58       | 5.50                    | 0.87                    |
| 5,033.00              | 0.50            | 87.23       | 5,032.71              | -5.40        | -13.31       | 5.40                    | 0.83                    |
| 5,076.00              | 1.02            | 62.12       | 5,075.70              | -5.21        | -12.78       | 5.21                    | 1.41                    |
| 5,119.00              | 1.57            | 68.35       | 5,118.69              | -4.81        | -11.90       | 4.81                    | 1.32                    |
| 5,162.00              | 2.31            | 83.70       | 5,161.67              | -4.50        | -10.49       | 4.50                    | 2.09                    |
| 5,205.00              | 3.41            | 81.18       | 5,204.61              | -4.21        | -8.36        | 4.21                    | 2.57                    |
| 5,290.00              | 4.14            | 91.28       | 5,289.43              | -3.89        | -2.80        | 3.89                    | 1.16                    |
| 5,376.00              | 5.02            | 82.20       | 5,375.16              | -3.45        | 4.03         | 3.45                    | 1.32                    |
| 5,462.00              | 5.55            | 78.59       | 5,460.79              | -2.12        | 11.84        | 2.12                    | 0.73                    |
| 5,547.00              | 6.96            | 79.04       | 5,545.28              | -0.33        | 20.92        | 0.33                    | 1.66                    |
| 5,633.00              | 8.31            | 82.71       | 5,630.52              | 1.45         | 32.20        | -1.45                   | 1.67                    |
| 5,719.00              | 9.53            | 81.83       | 5,715.48              | 3.25         | 45.42        | -3.25                   | 1.43                    |
| 5,804.00              | 10.42           | 88.13       | 5,799.19              | 4.51         | 60.06        | -4.51                   | 1.66                    |
| 5,890.00              | 11.23           | 94.64       | 5,883.67              | 4.08         | 76.18        | -4.08                   | 1.70                    |
| 5,976.00              | 10.23           | 93.89       | 5,968.16              | 2.89         | 92.15        | -2.89                   | 1.17                    |
| 6,061.00              | 10.31           | 88.80       | 6,051.80              | 2.53         | 107.29       | -2.53                   | 1.07                    |
| 6,147.00              | 10.56           | 89.36       | 6,136.38              | 2.78         | 122.86       | -2.78                   | 0.31                    |
| 6,232.00              | 9.04            | 85.36       | 6,220.14              | 3.41         | 137.31       | -3.41                   | 1.96                    |
| 6,318.00              | 9.39            | 85.62       | 6,305.03              | 4.49         | 151.04       | -4.49                   | 0.41                    |
| 6,404.00              | 9.03            | 79.24       | 6,389.92              | 6.29         | 164.66       | -6.29                   | 1.26                    |
| 6,489.00              | 9.71            | 79.03       | 6,473.79              | 8.90         | 178.25       | -8.90                   | 0.80                    |
| 6,575.00              | 9.25            | 82.98       | 6,558.61              | 11.12        | 192.23       | -11.12                  | 0.93                    |
| 6,661.00              | 8.63            | 92.76       | 6,643.57              | 11.66        | 205.54       | -11.66                  | 1.91                    |
| 6,746.00              | 7.07            | 89.22       | 6,727.77              | 11.42        | 217.14       | -11.42                  | 1.92                    |
| 6,832.00              | 5.79            | 87.07       | 6,813.23              | 11.71        | 226.76       | -11.71                  | 1.51                    |
| 6,918.00              | 4.76            | 106.57      | 6,898.87              | 10.92        | 234.52       | -10.92                  | 2.39                    |
| 7,004.00              | 3.14            | 109.62      | 6,984.66              | 9.11         | 240.16       | -9.11                   | 1.90                    |
| 7,089.00              | 1.91            | 116.51      | 7,069.58              | 7.70         | 243.62       | -7.70                   | 1.49                    |
| 7,175.00              | 1.28            | 127.91      | 7,155.55              | 6.47         | 245.66       | -6.47                   | 0.82                    |
| 7,218.00              | 1.98            | 141.22      | 7,198.53              | 5.59         | 246.50       | -5.59                   | 1.84                    |
| 7,261.00              | 6.51            | 162.19      | 7,241.40              | 2.69         | 247.71       | -2.69                   | 10.96                   |
| 7,304.00              | 9.96            | 169.21      | 7,283.95              | -3.29        | 249.15       | 3.29                    | 8.34                    |
| 7,347.00              | 12.33           | 166.00      | 7,326.14              | -11.39       | 250.96       | 11.39                   | 5.70                    |
| 7,389.00              | 17.85           | 169.48      | 7,366.68              | -22.08       | 253.22       | 22.08                   | 13.31                   |
| 7,432.00              | 21.26           | 171.75      | 7,407.19              | -36.28       | 255.55       | 36.28                   | 8.12                    |
| 7,475.00              | 25.30           | 178.72      | 7,446.69              | -53.19       | 256.87       | 53.19                   | 11.36                   |
| 7,518.00              | 29.37           | 182.76      | 7,484.88              | -72.92       | 256.57       | 72.92                   | 10.40                   |
| 7,561.00              | 33.30           | 185.70      | 7,521.61              | -95.21       | 254.89       | 95.21                   | 9.80                    |
| 7,604.00              | 37.08           | 186.76      | 7,556.74              | -119.84      | 252.19       | 119.84                  | 8.90                    |

**Design Report for Wagner 13C-3HZ - Actual Field Surveys**

| Measured Depth (usft)                            | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 7,647.00   | 42.18           | 187.26      | 7,589.85              | -147.05      | 248.84       | 147.05                  | 11.88                   |
| 7,690.00   | 46.51           | 186.84      | 7,620.59              | -176.87      | 245.15       | 176.87                  | 10.09                   |
| 7,733.00   | 51.05           | 185.43      | 7,648.92              | -209.02      | 241.71       | 209.02                  | 10.84                   |
| 7,776.00   | 54.26           | 184.33      | 7,675.00              | -243.08      | 238.81       | 243.08                  | 7.74                    |
| 7,818.00   | 55.49           | 184.52      | 7,699.17              | -277.33      | 236.16       | 277.33                  | 2.95                    |
| 7,861.00   | 59.82           | 184.07      | 7,722.17              | -313.54      | 233.44       | 313.54                  | 10.11                   |
| 7,904.00   | 62.91           | 184.57      | 7,742.77              | -351.17      | 230.60       | 351.17                  | 7.26                    |
| 7,947.00   | 67.03           | 182.76      | 7,760.96              | -390.04      | 228.12       | 390.04                  | 10.31                   |
| 7,989.00   | 70.66           | 181.21      | 7,776.12              | -429.18      | 226.77       | 429.18                  | 9.30                    |
| 8,032.00   | 73.09           | 181.81      | 7,789.49              | -470.03      | 225.69       | 470.03                  | 5.80                    |
| 8,075.00   | 78.96           | 182.25      | 7,799.87              | -511.71      | 224.21       | 511.71                  | 13.69                   |
| 8,137.00   | 86.17           | 181.45      | 7,807.89              | -573.12      | 222.23       | 573.12                  | 11.70                   |
| 8,175.50   | 86.83           | 180.95      | 7,810.24              | -611.54      | 221.43       | 611.54                  | 2.15                    |
| <b>7" Casing Set @ 8175.5'MD :: 7810.24' TVD</b> |                 |             |                       |              |              |                         |                         |
| 8,290.00   | 88.80           | 179.46      | 7,814.61              | -725.95      | 221.02       | 725.95                  | 2.15                    |
| 8,461.00   | 90.28           | 178.28      | 7,815.98              | -896.90      | 224.39       | 896.90                  | 1.11                    |
| 8,632.00   | 89.01           | 177.14      | 7,817.04              | -1,067.75    | 231.22       | 1,067.75                | 1.00                    |
| 8,804.00   | 91.57           | 179.30      | 7,816.17              | -1,239.64    | 236.57       | 1,239.64                | 1.95                    |
| 8,975.00   | 88.55           | 178.45      | 7,815.99              | -1,410.59    | 239.92       | 1,410.59                | 1.83                    |
| 9,147.00   | 89.85           | 177.80      | 7,818.39              | -1,582.48    | 245.55       | 1,582.48                | 0.85                    |
| 9,330.00   | 90.37           | 178.11      | 7,818.04              | -1,765.36    | 252.08       | 1,765.36                | 0.33                    |
| 9,514.00   | 90.65           | 178.40      | 7,816.40              | -1,949.27    | 257.68       | 1,949.27                | 0.22                    |
| 9,700.00   | 90.80           | 182.39      | 7,814.05              | -2,135.21    | 256.40       | 2,135.21                | 2.15                    |
| 9,883.00   | 90.25           | 182.53      | 7,812.37              | -2,318.03    | 248.55       | 2,318.03                | 0.31                    |
| 10,068.00  | 89.01           | 181.32      | 7,813.56              | -2,502.92    | 242.33       | 2,502.92                | 0.94                    |
| 10,252.00  | 91.36           | 180.85      | 7,812.97              | -2,686.87    | 238.85       | 2,686.87                | 1.30                    |
| 10,436.00  | 89.08           | 180.55      | 7,812.26              | -2,870.84    | 236.60       | 2,870.84                | 1.25                    |
| 10,620.00  | 89.94           | 180.79      | 7,813.84              | -3,054.82    | 234.45       | 3,054.82                | 0.49                    |
| 10,805.00  | 89.94           | 182.24      | 7,814.03              | -3,239.75    | 229.56       | 3,239.75                | 0.78                    |
| 10,990.00  | 88.03           | 180.39      | 7,817.31              | -3,424.66    | 225.31       | 3,424.66                | 1.44                    |
| 11,168.00  | 89.60           | 180.01      | 7,820.99              | -3,602.61    | 224.69       | 3,602.61                | 0.91                    |
| 11,339.00  | 89.88           | 181.58      | 7,821.77              | -3,773.59    | 222.32       | 3,773.59                | 0.93                    |
| 11,510.00  | 88.83           | 178.86      | 7,823.69              | -3,944.56    | 221.66       | 3,944.56                | 1.70                    |
| 11,682.00  | 90.34           | 179.06      | 7,824.94              | -4,116.52    | 224.78       | 4,116.52                | 0.89                    |
| 11,853.00  | 88.30           | 175.87      | 7,826.97              | -4,287.31    | 232.34       | 4,287.31                | 2.21                    |
| 12,024.00  | 90.43           | 179.11      | 7,828.86              | -4,458.10    | 239.83       | 4,458.10                | 2.27                    |
| 12,196.00  | 89.75           | 176.11      | 7,828.59              | -4,629.93    | 247.00       | 4,629.93                | 1.79                    |
| 12,368.00  | 89.57           | 178.88      | 7,829.61              | -4,801.75    | 254.52       | 4,801.75                | 1.61                    |
| 12,539.00  | 89.85           | 180.90      | 7,830.48              | -4,972.74    | 254.85       | 4,972.74                | 1.19                    |
| 12,711.00  | 89.85           | 181.44      | 7,830.93              | -5,144.70    | 251.34       | 5,144.70                | 0.31                    |
| 12,882.00  | 90.00           | 181.12      | 7,831.15              | -5,315.66    | 247.52       | 5,315.66                | 0.21                    |
| 13,054.00  | 89.57           | 180.51      | 7,831.80              | -5,487.64    | 245.07       | 5,487.64                | 0.43                    |
| 13,225.00  | 90.62           | 180.23      | 7,831.51              | -5,658.63    | 243.96       | 5,658.63                | 0.64                    |
| 13,397.00  | 89.44           | 178.11      | 7,831.42              | -5,830.60    | 246.46       | 5,830.60                | 1.41                    |
| 13,568.00  | 90.18           | 178.11      | 7,831.99              | -6,001.50    | 252.10       | 6,001.50                | 0.43                    |
| 13,739.00  | 89.29           | 178.09      | 7,832.78              | -6,172.41    | 257.76       | 6,172.41                | 0.52                    |
| 13,911.00  | 90.15           | 177.50      | 7,833.62              | -6,344.27    | 264.38       | 6,344.27                | 0.61                    |
| 14,082.00  | 91.51           | 178.36      | 7,831.15              | -6,515.14    | 270.56       | 6,515.14                | 0.94                    |
| 14,253.00  | 90.25           | 179.23      | 7,828.52              | -6,686.08    | 274.15       | 6,686.08                | 0.90                    |
| 14,425.00  | 89.88           | 180.15      | 7,828.32              | -6,858.07    | 275.08       | 6,858.07                | 0.58                    |
| 14,596.00  | 90.22           | 179.77      | 7,828.18              | -7,029.07    | 275.20       | 7,029.07                | 0.30                    |

**Design Report for Wagner 13C-3HZ - Actual Field Surveys**

| Measured Depth (usft)                                   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|
| 14,767.00   | 90.19           | 182.10      | 7,827.56              | -7,200.03    | 272.41       | 7,200.03                | 1.36                    |
| 14,939.00   | 91.79           | 181.69      | 7,824.59              | -7,371.91    | 266.73       | 7,371.91                | 0.96                    |
| 15,110.00   | 90.22           | 181.14      | 7,821.59              | -7,542.82    | 262.51       | 7,542.82                | 0.97                    |
| 15,281.00   | 89.42           | 178.02      | 7,822.13              | -7,713.80    | 263.76       | 7,713.80                | 1.88                    |
| 15,453.00   | 90.59           | 180.24      | 7,822.11              | -7,885.76    | 266.37       | 7,885.76                | 1.46                    |
| 15,624.00   | 88.92           | 178.75      | 7,822.85              | -8,056.74    | 267.88       | 8,056.74                | 1.31                    |
| 15,796.00   | 89.75           | 177.18      | 7,824.84              | -8,228.62    | 273.98       | 8,228.62                | 1.03                    |
| 15,967.00   | 90.89           | 179.63      | 7,823.89              | -8,399.53    | 278.74       | 8,399.53                | 1.58                    |
| 16,139.00   | 89.51           | 182.17      | 7,823.29              | -8,571.49    | 276.04       | 8,571.49                | 1.68                    |
| 16,254.00   | 89.72           | 181.58      | 7,824.06              | -8,686.43    | 272.28       | 8,686.43                | 0.54                    |
| <b>Last MWD Survey @ 16254.00ft</b>                     |                 |             |                       |              |              |                         |                         |
| 16,300.00   | 89.72           | 181.58      | 7,824.28              | -8,732.41    | 271.01       | 8,732.41                | 0.00                    |
| <b>Str Line Proj to Bit @ 16300' MD :: 7824.29' TVD</b> |                 |             |                       |              |              |                         |                         |

**Design Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment  |
|-----------------------|-----------------------|-------------------|--------------|--|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |  |
| 1,032.00              | 1,031.99              | 0.77              | -2.32        | Tie-On to Gyro Surveys @ 1032.00ft               |
| 1,106.00              | 1,105.99              | 0.92              | -2.59        | First MWD Survey @ 1106.00ft                     |
| 16,254.00             | 7,824.06              | -8,686.43         | 272.28       | Last MWD Survey @ 16254.00ft                     |
| 16,300.00             | 7,824.28              | -8,732.41         | 271.01       | Str Line Proj to Bit @ 16300' MD :: 7824.29' TVD |

**Vertical Section Information**

| Angle Type | Target               | Azimuth (°) | Origin Type | +N/_S (usft) | +E/-W (usft) | Start TVD (usft) |
|------------|----------------------|-------------|-------------|--------------|--------------|------------------|
| User       | No Target (Freehand) | 180.00      | Slot        | 0.00         | 0.00         | 0.00             |

**Survey tool program**

| From (usft) | To (usft) | Survey/Plan                | Survey Tool |
|-------------|-----------|----------------------------|-------------|
| 16.00       | 1,032.00  | MS Energy Gyros            | NS-GYRO-MS  |
| 1,106.00    | 8,461.00  | MWD Vertical/Build Surveys | MWD+IFR1+SC |
| 8,632.00    | 16,254.00 | MWD Lateral Surveys        | MWD+IFR1+SC |

**Casing Details**

| Measured Depth (usft) | Vertical Depth (usft) | Name   | Casing Diameter (") | Hole Diameter (") |
|-----------------------|-----------------------|--|---------------------|-------------------|
| 1,057.10              | 1,057.09              | 9 5/8" Casing Set @ 1057.1' MD :: 1057.09' TVD | 9-5/8               | 13-1/2            |
| 8,175.50              | 7,810.24              | 7" Casing Set @ 8175.5' MD :: 7810.24' TVD     | 7                   | 8-3/4             |

**Design Report for Wagner 13C-3HZ - Actual Field Surveys****Wellbore Targets**

| Target Name<br>- hit/miss target<br>- Shape  | Dip<br>Angle<br>(°) | Dip<br>Dir.<br>(°) | TVD<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Northing<br>(usft) | Easting<br>(usft) | Latitude     | Longitude   |
|--|---------------------|--------------------|---------------|-----------------|-----------------|--------------------|-------------------|--------------|-------------|
| Wagner 13C-3HZ_SHL<br>- actual wellpath hits target center<br>- Point  | 0.00                | 0.00               | 0.00          | 0.00            | 0.00            | 1,247,997.28       | 3,172,528.72      | 40.012494    | -104.884046 |
| Wagner 13C-3HZ_LD<br>- actual wellpath hits target center<br>- Polygon   | 0.00                | 0.00               | 0.00          | 0.00            | 0.00            | 1,247,997.28       | 3,172,528.72      | 40.012494    | -104.884046 |
| Point 1  |                     |                    |               | 0.00            | 389.59          | -96.91             | 1,248,386.18      | 3,172,429.11 |             |
| Point 2  |                     |                    |               | 0.00            | 390.89          | 301.11             | 1,248,390.24      | 3,172,827.10 |             |
| Point 3  |                     |                    |               | 0.00            | -1,778.70       | 309.16             | 1,246,220.84      | 3,172,850.22 |             |
| Point 4  |                     |                    |               | 0.00            | -4,417.82       | 318.27             | 1,243,581.93      | 3,172,877.66 |             |
| Point 5  |                     |                    |               | 0.00            | -4,417.80       | 363.85             | 1,243,582.27      | 3,172,923.24 |             |
| Point 6  |                     |                    |               | 0.00            | -6,796.43       | 360.82             | 1,241,203.76      | 3,172,936.73 |             |
| Point 7  |                     |                    |               | 0.00            | -8,987.38       | 357.90             | 1,239,012.92      | 3,172,949.03 |             |
| Point 8  |                     |                    |               | 0.00            | -8,996.20       | -562.14            | 1,238,997.71      | 3,172,029.10 |             |
| Point 9  |                     |                    |               | 0.00            | -6,802.58       | -559.23            | 1,241,191.22      | 3,172,016.78 |             |
| Point 10   |                     |                    |               | 0.00            | -4,418.76       | -556.18            | 1,243,574.92      | 3,172,003.27 |             |
| Point 11   |                     |                    |               | 0.00            | -4,418.17       | -84.85             | 1,243,578.78      | 3,172,474.57 |             |
| Point 12   |                     |                    |               | 0.00            | -1,778.96       | -90.79             | 1,246,217.80      | 3,172,450.30 |             |
| Wagner 13C-3HZ_SEC<br>- actual wellpath hits target center<br>- Polygon  | 0.00                | 0.00               | 0.00          | 0.00            | 0.00            | 1,247,997.28       | 3,172,528.72      | 40.012494    | -104.884046 |
| Point 1  |                     |                    |               | 0.00            | 848.11          | -558.22            | 1,248,841.47      | 3,171,964.65 |             |
| Point 2  |                     |                    |               | 0.00            | 856.70          | 2,077.03           | 1,248,868.36      | 3,174,599.68 |             |
| Point 3  |                     |                    |               | 0.00            | 864.62          | 4,712.24           | 1,248,894.58      | 3,177,234.68 |             |
| Point 4  |                     |                    |               | 0.00            | -1,775.20       | 4,730.74           | 1,246,255.05      | 3,177,271.52 |             |
| Point 5  |                     |                    |               | 0.00            | -4,414.34       | 4,748.25           | 1,243,616.18      | 3,177,307.36 |             |
| Point 6  |                     |                    |               | 0.00            | -4,416.26       | 2,101.42           | 1,243,595.88      | 3,174,660.70 |             |
| Point 7  |                     |                    |               | 0.00            | -4,418.58       | -544.86            | 1,243,575.18      | 3,172,014.59 |             |
| Point 8  |                     |                    |               | 0.00            | -4,416.26       | 2,101.42           | 1,243,595.88      | 3,174,660.70 |             |
| Point 9  |                     |                    |               | 0.00            | -4,413.98       | 5,168.82           | 1,243,619.47      | 3,177,727.90 |             |
| Point 10   |                     |                    |               | 0.00            | -6,801.07       | 5,182.71           | 1,241,232.61      | 3,177,758.37 |             |
| Point 11   |                     |                    |               | 0.00            | -9,440.39       | 5,197.95           | 1,238,593.55      | 3,177,791.94 |             |
| Point 12   |                     |                    |               | 0.00            | -9,444.49       | 2,547.24           | 1,238,571.04      | 3,175,141.42 |             |
| Point 13   |                     |                    |               | 0.00            | -9,448.01       | -102.73            | 1,238,549.12      | 3,172,491.63 |             |
| Point 14   |                     |                    |               | 0.00            | -6,795.72       | -99.20             | 1,241,201.27      | 3,172,476.73 |             |
| Point 15   |                     |                    |               | 0.00            | -4,418.19       | -96.17             | 1,243,578.69      | 3,172,463.25 |             |
| Point 16   |                     |                    |               | 0.00            | -4,418.58       | -544.86            | 1,243,575.18      | 3,172,014.59 |             |
| Point 17   |                     |                    |               | 0.00            | -1,779.27       | -550.81            | 1,246,214.29      | 3,171,990.30 |             |
| Wagner 13C-3HZ_BHL<br>- actual wellpath misses target center by 258.96usft at 16300.00usft MD (7824.28 TVD, -8732.41 N, 271.01 E)<br>- Point | 0.00                | 0.00               | 7,796.00      | -8,987.67       | 237.86          | 1,239,011.79       | 3,172,829.00      | 39.987822    | -104.883197 |

**Directional Difficulty Index**

|                                    |                |                               |                                  |
|------------------------------------|----------------|-------------------------------|----------------------------------|
| Average Dogleg over Survey:        | 1.43 °/100usft | Maximum Dogleg over Survey:   | 13.69 °/100usft at 8,075.00 usft |
| Net Tortosity applicable to Plans: | 0.72 °/100usft | Directional Difficulty Index: | 6.642                            |

**Audit Info**

**North Reference Sheet for Sec. 34-T1N-R67W - Wagner 13C-3HZ - Plan B**

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' @ 5076.00usft (Xtreme 22). Northing and Easting are relative to Wagner 13C-3HZ

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 -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996544

Grid Coordinates of Well: 1,247,997.28 usft N, 3,172,528.72 usft E

Geographical Coordinates of Well: 40° 00' 44.98" N, 104° 53' 02.57" W

Grid Convergence at Surface is: 0.40°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,300.00usft the Bottom Hole Displacement is 8,736.61usft in the Direction of 178.22° ( True).

Magnetic Convergence at surface is: -8.21° (18 November 2013, , BGGM2013)

