



Project: Weld County, CO  
Site: S33-T10N-R58W  
Well: Razor #33O-2812B  
Wellbore: HZ  
Design: Plan #1

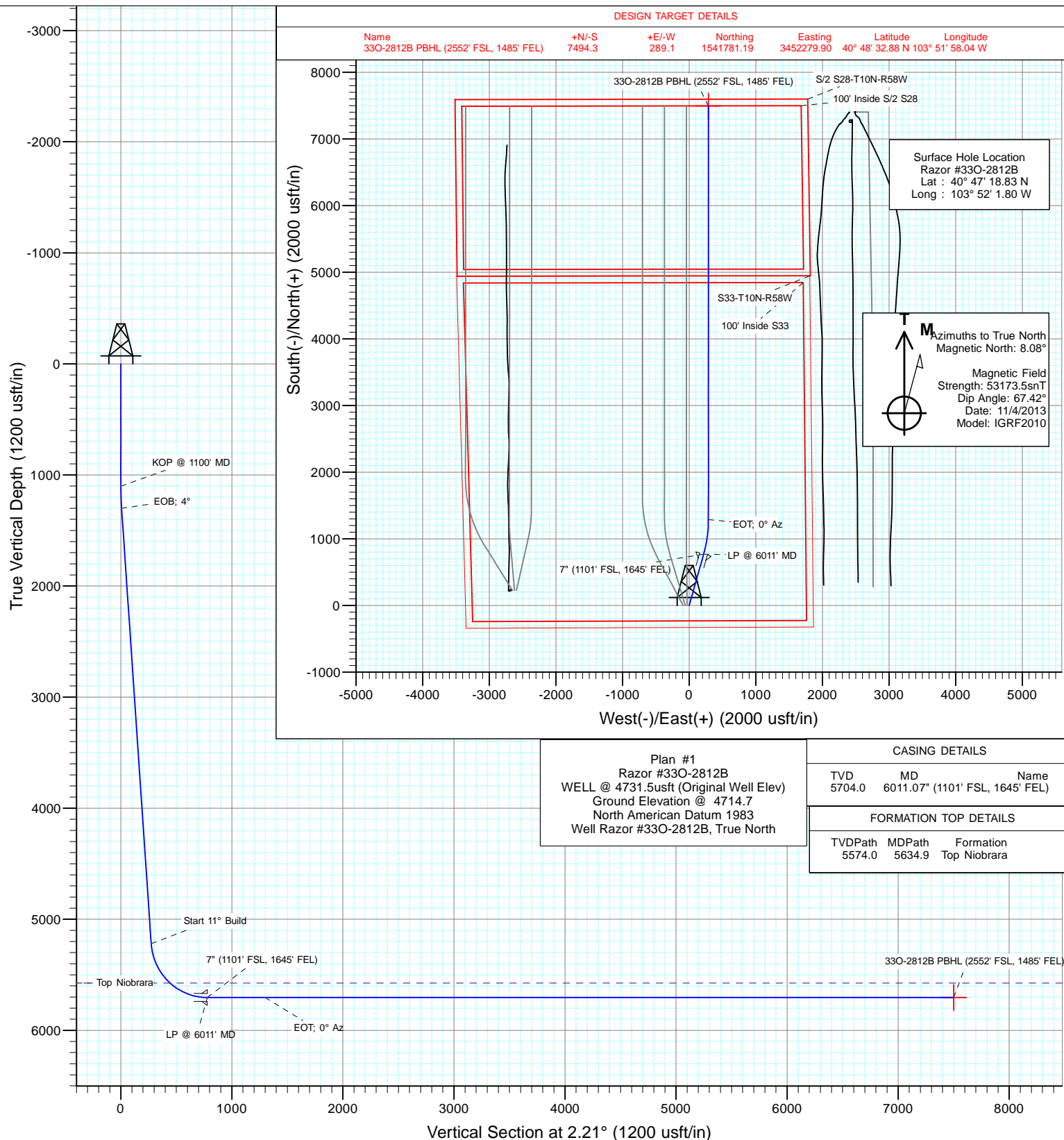


#### SECTION DETAILS

| Sec | MD      | Inc   | Azi   | TVD    | +N/-S  | +E/-W | Dleg  | TFace  | Vsect  | Target                                |
|-----|---------|-------|-------|--------|--------|-------|-------|--------|--------|---------------------------------------|
| 1   | 0.0     | 0.00  | 0.00  | 0.0    | 0.0    | 0.0   | 0.00  | 0.00   | 0.0    |                                       |
| 2   | 1100.0  | 0.00  | 0.00  | 1100.0 | 0.0    | 0.0   | 0.00  | 0.00   | 0.0    |                                       |
| 3   | 1300.0  | 4.00  | 15.75 | 1299.8 | 6.7    | 1.9   | 2.00  | 15.75  | 6.8    |                                       |
| 4   | 5229.2  | 4.00  | 15.75 | 5219.5 | 270.5  | 76.3  | 0.00  | 0.00   | 273.3  |                                       |
| 5   | 6011.0  | 90.00 | 15.75 | 5704.0 | 770.6  | 217.3 | 11.00 | 0.00   | 778.4  |                                       |
| 6   | 6536.0  | 90.00 | 0.00  | 5704.0 | 1289.0 | 289.0 | 3.00  | -90.00 | 1299.2 |                                       |
| 7   | 12741.3 | 90.00 | 0.00  | 5704.0 | 7494.3 | 289.1 | 0.00  | 0.00   | 7499.8 | 33O-2812B PBHL (2552' FSL, 1485' FEL) |

#### DESIGN TARGET DETAILS

| Name                                  | +N/-S  | +E/-W | Northing   | Easting    | Latitude        | Longitude        |
|---------------------------------------|--------|-------|------------|------------|-----------------|------------------|
| 33O-2812B PBHL (2552' FSL, 1485' FEL) | 7494.3 | 289.1 | 1541781.19 | 3452279.90 | 40° 48' 32.88 N | 103° 51' 58.04 W |



|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Database:</b> | USA EDM 5000 Multi Users DB   | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Company:</b>  | Whiting Petroleum Corporation | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO               | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site:</b>     | S33-T10N-R58W                 | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | HZ                            |                                     |  |
| <b>Design:</b>   | Plan #1                       |                                     |  |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Weld County, CO           |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | Colorado Northern Zone    |                      |                |

|                       |          |               |                   |                   |                  |
|-----------------------|----------|---------------|-------------------|-------------------|------------------|
| Site                  |          | S33-T10N-R58W |                   |                   |                  |
| Site Position:        |          | Northing:     | 1,534,460.86 usft | Latitude:         | 40° 47' 21.07 N  |
| From:                 | Lat/Long | Easting:      | 3,449,473.56 usft | Longitude:        | 103° 52' 36.27 W |
| Position Uncertainty: | 0.0 usft | Slot Radius:  | 13-3/16 "         | Grid Convergence: | 1.05 °           |

| Well                 | Razor #33O-2812B |          |                     |                   |               |                 |
|----------------------|------------------|----------|---------------------|-------------------|---------------|-----------------|
| Well Position        | +N/-S            | 0.0 usft | Northing:           | 1,534,282.88 usft | Latitude:     | 40° 47' 18.83 N |
|                      | +E/-W            | 0.0 usft | Easting:            | 3,452,128.80 usft | Longitude:    | 103° 52' 1.80 W |
| Position Uncertainty |                  | 0.0 usft | Wellhead Elevation: | usft              | Ground Level: | 4,714.7 usft    |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | HZ                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 11/4/2013          | 8.08                   | 67.42                | 53,174                     |

|                          |                                |                     |                      |                      |  |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|--|
| <b>Design</b>            | Plan #1                        |                     |                      |                      |  |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |  |
| <b>Version:</b>          | <b>Phase:</b>                  | PLAN                | <b>Tie On Depth:</b> | 0.0                  |  |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (°)</b> |  |
|                          | 0.0                            | 0.0                 | 0.0                  | 2.21                 |  |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target              |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,300.0               | 4.00            | 15.75       | 1,299.8               | 6.7          | 1.9          | 2.00                    | 2.00                   | 0.00                  | 15.75   |                     |
| 5,229.2               | 4.00            | 15.75       | 5,219.5               | 270.5        | 76.3         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 6,011.0               | 90.00           | 15.75       | 5,704.0               | 770.6        | 217.3        | 11.00                   | 11.00                  | 0.00                  | 0.00    |                     |
| 6,536.0               | 90.00           | 0.00        | 5,704.0               | 1,289.0      | 289.0        | 3.00                    | 0.00                   | -3.00                 | -90.00  |                     |
| 12,741.3              | 90.00           | 0.00        | 5,704.0               | 7,494.3      | 289.1        | 0.00                    | 0.00                   | 0.00                  | 0.00    | 33O-2812B PBHL (25) |

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Database:</b> | USA EDM 5000 Multi Users DB   | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Company:</b>  | Whiting Petroleum Corporation | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO               | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site:</b>     | S33-T10N-R58W                 | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | HZ                            |                                     |  |
| <b>Design:</b>   | Plan #1                       |                                     |  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                     |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|---------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100u) | Comments / Formations |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 100.0                 | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 200.0                 | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 300.0                 | 0.00            | 0.00        | 300.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 400.0                 | 0.00            | 0.00        | 400.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 500.0                 | 0.00            | 0.00        | 500.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 600.0                 | 0.00            | 0.00        | 600.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 700.0                 | 0.00            | 0.00        | 700.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 800.0                 | 0.00            | 0.00        | 800.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 900.0                 | 0.00            | 0.00        | 900.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 1,000.0               | 0.00            | 0.00        | 1,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                |                       |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                | KOP @ 1100' MD        |
| 1,200.0               | 2.00            | 15.75       | 1,200.0               | 1.7          | 0.5          | 1.7                     | 2.00                    | 2.00                |                       |
| 1,300.0               | 4.00            | 15.75       | 1,299.8               | 6.7          | 1.9          | 6.8                     | 2.00                    | 2.00                | EOB; 4°               |
| 1,400.0               | 4.00            | 15.75       | 1,399.6               | 13.4         | 3.8          | 13.6                    | 0.00                    | 0.00                |                       |
| 1,500.0               | 4.00            | 15.75       | 1,499.4               | 20.1         | 5.7          | 20.3                    | 0.00                    | 0.00                |                       |
| 1,600.0               | 4.00            | 15.75       | 1,599.1               | 26.9         | 7.6          | 27.1                    | 0.00                    | 0.00                |                       |
| 1,700.0               | 4.00            | 15.75       | 1,698.9               | 33.6         | 9.5          | 33.9                    | 0.00                    | 0.00                |                       |
| 1,800.0               | 4.00            | 15.75       | 1,798.6               | 40.3         | 11.4         | 40.7                    | 0.00                    | 0.00                |                       |
| 1,900.0               | 4.00            | 15.75       | 1,898.4               | 47.0         | 13.3         | 47.5                    | 0.00                    | 0.00                |                       |
| 2,000.0               | 4.00            | 15.75       | 1,998.1               | 53.7         | 15.1         | 54.3                    | 0.00                    | 0.00                |                       |
| 2,100.0               | 4.00            | 15.75       | 2,097.9               | 60.4         | 17.0         | 61.0                    | 0.00                    | 0.00                |                       |
| 2,200.0               | 4.00            | 15.75       | 2,197.6               | 67.1         | 18.9         | 67.8                    | 0.00                    | 0.00                |                       |
| 2,300.0               | 4.00            | 15.75       | 2,297.4               | 73.9         | 20.8         | 74.6                    | 0.00                    | 0.00                |                       |
| 2,400.0               | 4.00            | 15.75       | 2,397.2               | 80.6         | 22.7         | 81.4                    | 0.00                    | 0.00                |                       |
| 2,500.0               | 4.00            | 15.75       | 2,496.9               | 87.3         | 24.6         | 88.2                    | 0.00                    | 0.00                |                       |
| 2,600.0               | 4.00            | 15.75       | 2,596.7               | 94.0         | 26.5         | 94.9                    | 0.00                    | 0.00                |                       |
| 2,700.0               | 4.00            | 15.75       | 2,696.4               | 100.7        | 28.4         | 101.7                   | 0.00                    | 0.00                |                       |
| 2,800.0               | 4.00            | 15.75       | 2,796.2               | 107.4        | 30.3         | 108.5                   | 0.00                    | 0.00                |                       |
| 2,900.0               | 4.00            | 15.75       | 2,895.9               | 114.1        | 32.2         | 115.3                   | 0.00                    | 0.00                |                       |
| 3,000.0               | 4.00            | 15.75       | 2,995.7               | 120.9        | 34.1         | 122.1                   | 0.00                    | 0.00                |                       |
| 3,100.0               | 4.00            | 15.75       | 3,095.5               | 127.6        | 36.0         | 128.9                   | 0.00                    | 0.00                |                       |
| 3,200.0               | 4.00            | 15.75       | 3,195.2               | 134.3        | 37.9         | 135.6                   | 0.00                    | 0.00                |                       |
| 3,300.0               | 4.00            | 15.75       | 3,295.0               | 141.0        | 39.8         | 142.4                   | 0.00                    | 0.00                |                       |
| 3,400.0               | 4.00            | 15.75       | 3,394.7               | 147.7        | 41.7         | 149.2                   | 0.00                    | 0.00                |                       |
| 3,500.0               | 4.00            | 15.75       | 3,494.5               | 154.4        | 43.6         | 156.0                   | 0.00                    | 0.00                |                       |
| 3,600.0               | 4.00            | 15.75       | 3,594.2               | 161.1        | 45.4         | 162.8                   | 0.00                    | 0.00                |                       |
| 3,700.0               | 4.00            | 15.75       | 3,694.0               | 167.8        | 47.3         | 169.5                   | 0.00                    | 0.00                |                       |
| 3,800.0               | 4.00            | 15.75       | 3,793.7               | 174.6        | 49.2         | 176.3                   | 0.00                    | 0.00                |                       |
| 3,900.0               | 4.00            | 15.75       | 3,893.5               | 181.3        | 51.1         | 183.1                   | 0.00                    | 0.00                |                       |
| 4,000.0               | 4.00            | 15.75       | 3,993.3               | 188.0        | 53.0         | 189.9                   | 0.00                    | 0.00                |                       |
| 4,100.0               | 4.00            | 15.75       | 4,093.0               | 194.7        | 54.9         | 196.7                   | 0.00                    | 0.00                |                       |
| 4,200.0               | 4.00            | 15.75       | 4,192.8               | 201.4        | 56.8         | 203.5                   | 0.00                    | 0.00                |                       |
| 4,300.0               | 4.00            | 15.75       | 4,292.5               | 208.1        | 58.7         | 210.2                   | 0.00                    | 0.00                |                       |
| 4,400.0               | 4.00            | 15.75       | 4,392.3               | 214.8        | 60.6         | 217.0                   | 0.00                    | 0.00                |                       |
| 4,500.0               | 4.00            | 15.75       | 4,492.0               | 221.6        | 62.5         | 223.8                   | 0.00                    | 0.00                |                       |
| 4,600.0               | 4.00            | 15.75       | 4,591.8               | 228.3        | 64.4         | 230.6                   | 0.00                    | 0.00                |                       |
| 4,700.0               | 4.00            | 15.75       | 4,691.6               | 235.0        | 66.3         | 237.4                   | 0.00                    | 0.00                |                       |
| 4,800.0               | 4.00            | 15.75       | 4,791.3               | 241.7        | 68.2         | 244.1                   | 0.00                    | 0.00                |                       |
| 4,900.0               | 4.00            | 15.75       | 4,891.1               | 248.4        | 70.1         | 250.9                   | 0.00                    | 0.00                |                       |
| 5,000.0               | 4.00            | 15.75       | 4,990.8               | 255.1        | 72.0         | 257.7                   | 0.00                    | 0.00                |                       |
| 5,100.0               | 4.00            | 15.75       | 5,090.6               | 261.8        | 73.8         | 264.5                   | 0.00                    | 0.00                |                       |

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Database:</b> | USA EDM 5000 Multi Users DB   | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Company:</b>  | Whiting Petroleum Corporation | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO               | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site:</b>     | S33-T10N-R58W                 | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | HZ                            |                                     |  |
| <b>Design:</b>   | Plan #1                       |                                     |  |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100u) | Comments / Formations                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|---------------------|---|
| 5,200.0               | 4.00            | 15.75       | 5,190.3               | 268.6        | 75.7         | 271.3                   | 0.00                    | 0.00                |   |
| 5,229.2               | 4.00            | 15.75       | 5,219.5               | 270.5        | 76.3         | 273.3                   | 0.00                    | 0.00                | Start 11° Build                           |
| 5,250.0               | 6.29            | 15.75       | 5,240.2               | 272.3        | 76.8         | 275.1                   | 11.00                   | 11.00               |   |
| 5,300.0               | 11.79           | 15.75       | 5,289.5               | 279.9        | 78.9         | 282.7                   | 11.00                   | 11.00               |   |
| 5,350.0               | 17.29           | 15.75       | 5,337.9               | 291.9        | 82.3         | 294.9                   | 11.00                   | 11.00               |   |
| 5,400.0               | 22.79           | 15.75       | 5,384.9               | 308.4        | 87.0         | 311.5                   | 11.00                   | 11.00               |   |
| 5,450.0               | 28.29           | 15.75       | 5,430.0               | 329.2        | 92.8         | 332.5                   | 11.00                   | 11.00               |   |
| 5,500.0               | 33.79           | 15.75       | 5,472.8               | 354.0        | 99.8         | 357.5                   | 11.00                   | 11.00               |   |
| 5,550.0               | 39.29           | 15.75       | 5,513.0               | 382.6        | 107.9        | 386.5                   | 11.00                   | 11.00               |   |
| 5,600.0               | 44.79           | 15.75       | 5,550.1               | 414.8        | 117.0        | 419.0                   | 11.00                   | 11.00               |   |
| 5,634.9               | 48.63           | 15.75       | 5,574.0               | 439.3        | 123.9        | 443.7                   | 11.00                   | 11.00               | Top Niobrara                              |
| 5,650.0               | 50.29           | 15.75       | 5,583.8               | 450.3        | 127.0        | 454.9                   | 11.00                   | 11.00               |   |
| 5,700.0               | 55.79           | 15.75       | 5,613.9               | 488.7        | 137.8        | 493.7                   | 11.00                   | 11.00               |   |
| 5,750.0               | 61.29           | 15.75       | 5,640.0               | 529.8        | 149.4        | 535.1                   | 11.00                   | 11.00               |   |
| 5,800.0               | 66.79           | 15.75       | 5,661.8               | 573.0        | 161.6        | 578.8                   | 11.00                   | 11.00               |   |
| 5,850.0               | 72.29           | 15.75       | 5,679.3               | 618.1        | 174.3        | 624.4                   | 11.00                   | 11.00               |   |
| 5,900.0               | 77.79           | 15.75       | 5,692.2               | 664.6        | 187.4        | 671.3                   | 11.00                   | 11.00               |   |
| 5,950.0               | 83.29           | 15.75       | 5,700.4               | 712.0        | 200.8        | 719.2                   | 11.00                   | 11.00               |   |
| 6,000.0               | 88.79           | 15.75       | 5,703.9               | 760.0        | 214.3        | 767.7                   | 11.00                   | 11.00               |   |
| 6,011.0               | 90.00           | 15.75       | 5,704.0               | 770.6        | 217.3        | 778.4                   | 11.00                   | 11.00               | LP @ 6011' MD - 7" (1101' FSL, 1645' FEL) |
| 6,100.0               | 90.00           | 13.08       | 5,704.0               | 856.8        | 239.5        | 865.4                   | 3.00                    | 0.00                |   |
| 6,200.0               | 90.00           | 10.08       | 5,704.0               | 954.7        | 259.6        | 964.0                   | 3.00                    | 0.00                |   |
| 6,300.0               | 90.00           | 7.08        | 5,704.0               | 1,053.6      | 274.5        | 1,063.4                 | 3.00                    | 0.00                |   |
| 6,400.0               | 90.00           | 4.08        | 5,704.0               | 1,153.1      | 284.2        | 1,163.2                 | 3.00                    | 0.00                |   |
| 6,500.0               | 90.00           | 1.08        | 5,704.0               | 1,253.0      | 288.7        | 1,263.2                 | 3.00                    | 0.00                |   |
| 6,536.0               | 90.00           | 0.00        | 5,704.0               | 1,289.0      | 289.0        | 1,299.2                 | 3.00                    | 0.00                | EOT; 0° Az                                |
| 6,600.0               | 90.00           | 0.00        | 5,704.0               | 1,353.0      | 289.0        | 1,363.1                 | 0.00                    | 0.00                |   |
| 6,700.0               | 90.00           | 0.00        | 5,704.0               | 1,453.0      | 289.0        | 1,463.1                 | 0.00                    | 0.00                |   |
| 6,800.0               | 90.00           | 0.00        | 5,704.0               | 1,553.0      | 289.0        | 1,563.0                 | 0.00                    | 0.00                |   |
| 6,900.0               | 90.00           | 0.00        | 5,704.0               | 1,653.0      | 289.0        | 1,662.9                 | 0.00                    | 0.00                |   |
| 7,000.0               | 90.00           | 0.00        | 5,704.0               | 1,753.0      | 289.0        | 1,762.8                 | 0.00                    | 0.00                |   |
| 7,100.0               | 90.00           | 0.00        | 5,704.0               | 1,853.0      | 289.0        | 1,862.8                 | 0.00                    | 0.00                |   |
| 7,200.0               | 90.00           | 0.00        | 5,704.0               | 1,953.0      | 289.0        | 1,962.7                 | 0.00                    | 0.00                |   |
| 7,300.0               | 90.00           | 0.00        | 5,704.0               | 2,053.0      | 289.1        | 2,062.6                 | 0.00                    | 0.00                |   |
| 7,400.0               | 90.00           | 0.00        | 5,704.0               | 2,153.0      | 289.1        | 2,162.5                 | 0.00                    | 0.00                |   |
| 7,500.0               | 90.00           | 0.00        | 5,704.0               | 2,253.0      | 289.1        | 2,262.5                 | 0.00                    | 0.00                |   |
| 7,600.0               | 90.00           | 0.00        | 5,704.0               | 2,353.0      | 289.1        | 2,362.4                 | 0.00                    | 0.00                |   |
| 7,700.0               | 90.00           | 0.00        | 5,704.0               | 2,453.0      | 289.1        | 2,462.3                 | 0.00                    | 0.00                |   |
| 7,800.0               | 90.00           | 0.00        | 5,704.0               | 2,553.0      | 289.1        | 2,562.2                 | 0.00                    | 0.00                |   |
| 7,900.0               | 90.00           | 0.00        | 5,704.0               | 2,653.0      | 289.1        | 2,662.2                 | 0.00                    | 0.00                |   |
| 8,000.0               | 90.00           | 0.00        | 5,704.0               | 2,753.0      | 289.1        | 2,762.1                 | 0.00                    | 0.00                |   |
| 8,100.0               | 90.00           | 0.00        | 5,704.0               | 2,853.0      | 289.1        | 2,862.0                 | 0.00                    | 0.00                |   |
| 8,200.0               | 90.00           | 0.00        | 5,704.0               | 2,953.0      | 289.1        | 2,962.0                 | 0.00                    | 0.00                |   |
| 8,300.0               | 90.00           | 0.00        | 5,704.0               | 3,053.0      | 289.1        | 3,061.9                 | 0.00                    | 0.00                |   |
| 8,400.0               | 90.00           | 0.00        | 5,704.0               | 3,153.0      | 289.1        | 3,161.8                 | 0.00                    | 0.00                |   |
| 8,500.0               | 90.00           | 0.00        | 5,704.0               | 3,253.0      | 289.1        | 3,261.7                 | 0.00                    | 0.00                |   |
| 8,600.0               | 90.00           | 0.00        | 5,704.0               | 3,353.0      | 289.1        | 3,361.7                 | 0.00                    | 0.00                |   |
| 8,700.0               | 90.00           | 0.00        | 5,704.0               | 3,453.0      | 289.1        | 3,461.6                 | 0.00                    | 0.00                |   |
| 8,800.0               | 90.00           | 0.00        | 5,704.0               | 3,553.0      | 289.1        | 3,561.5                 | 0.00                    | 0.00                |   |
| 8,900.0               | 90.00           | 0.00        | 5,704.0               | 3,653.0      | 289.1        | 3,661.4                 | 0.00                    | 0.00                |   |
| 9,000.0               | 90.00           | 0.00        | 5,704.0               | 3,753.0      | 289.1        | 3,761.4                 | 0.00                    | 0.00                |   |
| 9,100.0               | 90.00           | 0.00        | 5,704.0               | 3,853.0      | 289.1        | 3,861.3                 | 0.00                    | 0.00                |   |

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Database:</b> | USA EDM 5000 Multi Users DB   | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Company:</b>  | Whiting Petroleum Corporation | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO               | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site:</b>     | S33-T10N-R58W                 | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | HZ                            |                                     |  |
| <b>Design:</b>   | Plan #1                       |                                     |  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                     |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|---------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100u) | Comments / Formations |
| 9,200.0               | 90.00           | 0.00        | 5,704.0               | 3,953.0      | 289.1        | 3,961.2                 | 0.00                    | 0.00                |                       |
| 9,300.0               | 90.00           | 0.00        | 5,704.0               | 4,053.0      | 289.1        | 4,061.1                 | 0.00                    | 0.00                |                       |
| 9,400.0               | 90.00           | 0.00        | 5,704.0               | 4,153.0      | 289.1        | 4,161.1                 | 0.00                    | 0.00                |                       |
| 9,500.0               | 90.00           | 0.00        | 5,704.0               | 4,253.0      | 289.1        | 4,261.0                 | 0.00                    | 0.00                |                       |
| 9,600.0               | 90.00           | 0.00        | 5,704.0               | 4,353.0      | 289.1        | 4,360.9                 | 0.00                    | 0.00                |                       |
| 9,700.0               | 90.00           | 0.00        | 5,704.0               | 4,453.0      | 289.1        | 4,460.8                 | 0.00                    | 0.00                |                       |
| 9,800.0               | 90.00           | 0.00        | 5,704.0               | 4,553.0      | 289.1        | 4,560.8                 | 0.00                    | 0.00                |                       |
| 9,900.0               | 90.00           | 0.00        | 5,704.0               | 4,653.0      | 289.1        | 4,660.7                 | 0.00                    | 0.00                |                       |
| 10,000.0              | 90.00           | 0.00        | 5,704.0               | 4,753.0      | 289.1        | 4,760.6                 | 0.00                    | 0.00                |                       |
| 10,100.0              | 90.00           | 0.00        | 5,704.0               | 4,853.0      | 289.1        | 4,860.5                 | 0.00                    | 0.00                |                       |
| 10,200.0              | 90.00           | 0.00        | 5,704.0               | 4,953.0      | 289.1        | 4,960.5                 | 0.00                    | 0.00                |                       |
| 10,300.0              | 90.00           | 0.00        | 5,704.0               | 5,053.0      | 289.1        | 5,060.4                 | 0.00                    | 0.00                |                       |
| 10,400.0              | 90.00           | 0.00        | 5,704.0               | 5,153.0      | 289.1        | 5,160.3                 | 0.00                    | 0.00                |                       |
| 10,500.0              | 90.00           | 0.00        | 5,704.0               | 5,253.0      | 289.1        | 5,260.2                 | 0.00                    | 0.00                |                       |
| 10,600.0              | 90.00           | 0.00        | 5,704.0               | 5,353.0      | 289.1        | 5,360.2                 | 0.00                    | 0.00                |                       |
| 10,700.0              | 90.00           | 0.00        | 5,704.0               | 5,453.0      | 289.1        | 5,460.1                 | 0.00                    | 0.00                |                       |
| 10,800.0              | 90.00           | 0.00        | 5,704.0               | 5,553.0      | 289.1        | 5,560.0                 | 0.00                    | 0.00                |                       |
| 10,900.0              | 90.00           | 0.00        | 5,704.0               | 5,653.0      | 289.1        | 5,659.9                 | 0.00                    | 0.00                |                       |
| 11,000.0              | 90.00           | 0.00        | 5,704.0               | 5,753.0      | 289.1        | 5,759.9                 | 0.00                    | 0.00                |                       |
| 11,100.0              | 90.00           | 0.00        | 5,704.0               | 5,853.0      | 289.1        | 5,859.8                 | 0.00                    | 0.00                |                       |
| 11,200.0              | 90.00           | 0.00        | 5,704.0               | 5,953.0      | 289.1        | 5,959.7                 | 0.00                    | 0.00                |                       |
| 11,300.0              | 90.00           | 0.00        | 5,704.0               | 6,053.0      | 289.1        | 6,059.6                 | 0.00                    | 0.00                |                       |
| 11,400.0              | 90.00           | 0.00        | 5,704.0               | 6,153.0      | 289.1        | 6,159.6                 | 0.00                    | 0.00                |                       |
| 11,500.0              | 90.00           | 0.00        | 5,704.0               | 6,253.0      | 289.1        | 6,259.5                 | 0.00                    | 0.00                |                       |
| 11,600.0              | 90.00           | 0.00        | 5,704.0               | 6,353.0      | 289.1        | 6,359.4                 | 0.00                    | 0.00                |                       |
| 11,700.0              | 90.00           | 0.00        | 5,704.0               | 6,453.0      | 289.1        | 6,459.4                 | 0.00                    | 0.00                |                       |
| 11,800.0              | 90.00           | 0.00        | 5,704.0               | 6,553.0      | 289.1        | 6,559.3                 | 0.00                    | 0.00                |                       |
| 11,900.0              | 90.00           | 0.00        | 5,704.0               | 6,653.0      | 289.1        | 6,659.2                 | 0.00                    | 0.00                |                       |
| 12,000.0              | 90.00           | 0.00        | 5,704.0               | 6,753.0      | 289.1        | 6,759.1                 | 0.00                    | 0.00                |                       |
| 12,100.0              | 90.00           | 0.00        | 5,704.0               | 6,853.0      | 289.1        | 6,859.1                 | 0.00                    | 0.00                |                       |
| 12,200.0              | 90.00           | 0.00        | 5,704.0               | 6,953.0      | 289.1        | 6,959.0                 | 0.00                    | 0.00                |                       |
| 12,300.0              | 90.00           | 0.00        | 5,704.0               | 7,053.0      | 289.1        | 7,058.9                 | 0.00                    | 0.00                |                       |
| 12,400.0              | 90.00           | 0.00        | 5,704.0               | 7,153.0      | 289.1        | 7,158.8                 | 0.00                    | 0.00                |                       |
| 12,500.0              | 90.00           | 0.00        | 5,704.0               | 7,253.0      | 289.1        | 7,258.8                 | 0.00                    | 0.00                |                       |
| 12,600.0              | 90.00           | 0.00        | 5,704.0               | 7,353.0      | 289.1        | 7,358.7                 | 0.00                    | 0.00                |                       |
| 12,700.0              | 90.00           | 0.00        | 5,704.0               | 7,453.0      | 289.1        | 7,458.6                 | 0.00                    | 0.00                |                       |
| 12,741.3              | 90.00           | 0.00        | 5,704.0               | 7,494.3      | 289.1        | 7,499.8                 | 0.00                    | 0.00                | PBHL @ 12741' MD      |

| Targets                   |               |              |            |              |              |                 |                |                 |                  |
|---------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------------|------------------|
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude        | Longitude        |
| 33O-2812B PBHL (2552)     | 0.00          | 1.06         | 5,704.0    | 7,494.3      | 289.1        | 1,541,781.19    | 3,452,279.90   | 40° 48' 32.88 N | 103° 51' 58.04 W |
| - hit/miss target         |               |              |            |              |              |                 |                |                 |                  |
| - Shape                   |               |              |            |              |              |                 |                |                 |                  |
| - plan hits target center |               |              |            |              |              |                 |                |                 |                  |
| - Point                   |               |              |            |              |              |                 |                |                 |                  |

**Database:** USA EDM 5000 Multi Users DB  
**Company:** Whiting Petroleum Corporation  
**Project:** Weld County, CO  
**Site:** S33-T10N-R58W  
**Well:** Razor #33O-2812B  
**Wellbore:** HZ  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Razor #33O-2812B  
**TVD Reference:** WELL @ 4731.5usft (Original Well Elev)  
**MD Reference:** WELL @ 4731.5usft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

**Casing Points**

| Measured Depth (usft) | Vertical Depth (usft) | Name                      | Casing Diameter (") | Hole Diameter (") |
|-----------------------|-----------------------|---------------------------|---------------------|-------------------|
| 6,011.0               | 5,704.0               | 7" (1101' FSL, 1645' FEL) | 7                   | 7-1/2             |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name         | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------|-----------------------|--------------|-----------|---------|-------------------|
| 5,634.9               | 5,574.0               | Top Niobrara |           | 0.00    |                   |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment          |
|-----------------------|-----------------------|-------------------|--------------|------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                  |
| 1,100.0               | 1,100.0               | 0.0               | 0.0          | KOP @ 1100' MD   |
| 1,300.0               | 1,299.8               | 6.7               | 1.9          | EOB; 4°          |
| 5,229.2               | 5,219.5               | 270.5             | 76.3         | Start 11° Build  |
| 6,011.0               | 5,704.0               | 770.6             | 217.3        | LP @ 6011' MD    |
| 6,536.0               | 5,704.0               | 1,289.0           | 289.0        | EOT; 0° Az       |
| 12,741.3              | 5,704.0               | 7,494.3           | 289.1        | PBHL @ 12741' MD |



**WHITING PETROLEUM CORPORATION**

# **Whiting Petroleum Corporation**

**Weld County, CO**

**S33-T10N-R58W**

**Razor #33O-2812B**

**HZ**

**Plan #1**

## **Anticollision Report**

**04 November, 2013**

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Reference                    | Plan #1   |                |                     |
|------------------------------|---|----------------|---------------------|
| Filter type:                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                |                     |
| Interpolation Method:        | Stations  | Error Model:   | Systematic Ellipse  |
| Depth Range:                 | Unlimited   | Scan Method:   | Closest Approach 3D |
| Results Limited by:          | Maximum center-center distance of 1,550.0usft                       | Error Surface: | Elliptical Conic    |
| Warning Levels Evaluated at: | 2.00 Sigma  |                |                     |

| Survey Tool Program |              | Date              | 11/4/2013  |              |  |
|---------------------|--------------|-------------------|------------|--------------|--|
| From<br>(usft)      | To<br>(usft) | Survey (Wellbore) | Tool Name  | Description  |  |
| 0.0                 | 12,719.5     | Plan #1 (HZ)      | ISCWSA MWD | MWD - ISCWSA |  |

| Summary  |                                 |                              |                                 |                                  |                   |              |
|--|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|--------------|
| Site Name  | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning      |
| <b>Offset Well - Wellbore - Design</b>           |                                 |                              |                                 |                                  |                   |              |
| S27-T10N-R58W                                    |                                 |                              |                                 |                                  |                   |              |
| Razor #27L-3401B - Hz - Hz                       |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #27L-3403B - Hz - Plan #5                  |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #27L-3404B - Hz - Hz                       |                                 |                              |                                 |                                  |                   | Out of range |
| RAZOR 27-3414H (EXISTING) - EXSITING - SURVEYS   |                                 |                              |                                 |                                  |                   | Out of range |
| S33-T10N-R58W                                    |                                 |                              |                                 |                                  |                   |              |
| Razor #33M-2801A - HZ - Plan #1                  |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #33M-2803A - HZ - AT                       |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #33M-2803A - HZ - Plan #1                  |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #33M-2804B - HZ - Plan #1                  |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #33M-2813H(EXISTING) - EXISTING - EXISTING |                                 |                              |                                 |                                  |                   | Out of range |
| Razor #33O-2809A - HZ - Plan #1                  | 800.0                           | 800.0                        | 90.0                            | 86.7                             | 26.996            | CC, ES       |
| Razor #33O-2809A - HZ - Plan #1                  | 12,720.0                        | 12,784.4                     | 993.0                           | 709.1                            | 3.498             | SF           |
| Razor #33O-2810B - HZ - Plan #1                  | 900.0                           | 900.0                        | 60.0                            | 56.2                             | 15.859            | CC, ES       |
| Razor #33O-2810B - HZ - Plan #1                  | 12,720.0                        | 12,761.6                     | 659.8                           | 374.8                            | 2.315             | SF           |
| Razor #33O-2811A - HZ - Plan #1                  | 1,000.0                         | 1,000.0                      | 30.0                            | 25.8                             | 7.087             | CC           |
| Razor #33O-2811A - HZ - Plan #1                  | 1,100.0                         | 1,099.8                      | 30.3                            | 25.6                             | 6.471             | ES           |
| Razor #33O-2811A - HZ - Plan #1                  | 12,720.0                        | 12,630.9                     | 339.7                           | 61.3                             | 1.220             | Level 2, SF  |



|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2809A - HZ - Plan #1 |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |               | Offset Site Error: | 0.0 usft |
|---|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|---|-----------------|------------------------------|----------------------|---------|---------------|--------------------|----------|
| Survey Program: 0-ISCSA MWD                                   |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |               | Offset Well Error: | 0.0 usft |
| Reference   |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning |               |                    |          |
| Measured<br>Depth<br>(usft)                                   | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                      |         |               |                    |          |
| 0.0   | 0.0                         | 0.0                         | 0.0                         | 0.0                 | 0.0              | -91.04                      | -1.6                                      | -90.0           | 90.0                         |                      |         |               |                    |          |
| 100.0   | 100.0                       | 100.0                       | 100.0                       | 0.1                 | 0.1              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 89.8                 | 0.19    | 481.253       |                    |          |
| 200.0   | 200.0                       | 200.0                       | 200.0                       | 0.3                 | 0.3              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 89.4                 | 0.64    | 141.385       |                    |          |
| 300.0   | 300.0                       | 300.0                       | 300.0                       | 0.5                 | 0.5              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 88.9                 | 1.09    | 82.865        |                    |          |
| 400.0   | 400.0                       | 400.0                       | 400.0                       | 0.8                 | 0.8              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 88.5                 | 1.54    | 58.607        |                    |          |
| 500.0   | 500.0                       | 500.0                       | 500.0                       | 1.0                 | 1.0              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 88.0                 | 1.99    | 45.336        |                    |          |
| 600.0   | 600.0                       | 600.0                       | 600.0                       | 1.2                 | 1.2              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 87.6                 | 2.43    | 36.965        |                    |          |
| 700.0   | 700.0                       | 700.0                       | 700.0                       | 1.4                 | 1.4              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 87.1                 | 2.88    | 31.203        |                    |          |
| 800.0   | 800.0                       | 800.0                       | 800.0                       | 1.7                 | 1.7              | -91.04                      | -1.6                                      | -90.0           | 90.0                         | 86.7                 | 3.33    | 26.996 CC, ES |                    |          |
| 900.0   | 900.0                       | 898.3                       | 898.3                       | 1.9                 | 1.9              | -90.13                      | -0.2                                      | -90.9           | 90.9                         | 87.1                 | 3.78    | 24.071        |                    |          |
| 1,000.0   | 1,000.0                     | 996.4                       | 996.3                       | 2.1                 | 2.1              | -87.54                      | 4.0                                       | -93.6           | 93.8                         | 89.6                 | 4.22    | 22.228        |                    |          |
| 1,100.0   | 1,100.0                     | 1,096.1                     | 1,095.7                     | 2.3                 | 2.3              | -84.22                      | 9.9                                       | -97.4           | 98.0                         | 93.3                 | 4.67    | 20.983        |                    |          |
| 1,200.0   | 1,200.0                     | 1,195.9                     | 1,195.3                     | 2.6                 | 2.6              | -91.16                      | 15.7                                      | -101.2          | 102.5                        | 97.4                 | 5.12    | 20.023        |                    |          |
| 1,300.0   | 1,299.8                     | 1,295.8                     | 1,295.0                     | 2.8                 | 2.8              | -91.04                      | 21.6                                      | -105.0          | 107.2                        | 101.6                | 5.57    | 19.230        |                    |          |
| 1,400.0   | 1,399.6                     | 1,395.7                     | 1,394.6                     | 3.0                 | 3.1              | -91.91                      | 27.4                                      | -108.8          | 111.9                        | 105.9                | 6.04    | 18.542        |                    |          |
| 1,500.0   | 1,499.4                     | 1,495.6                     | 1,494.2                     | 3.2                 | 3.3              | -92.71                      | 33.3                                      | -112.5          | 116.6                        | 110.1                | 6.50    | 17.937        |                    |          |
| 1,600.0   | 1,599.1                     | 1,595.5                     | 1,593.8                     | 3.5                 | 3.5              | -93.45                      | 39.1                                      | -116.3          | 121.4                        | 114.4                | 6.98    | 17.403        |                    |          |
| 1,700.0   | 1,698.9                     | 1,695.3                     | 1,693.5                     | 3.7                 | 3.8              | -94.13                      | 45.0                                      | -120.1          | 126.2                        | 118.7                | 7.45    | 16.930        |                    |          |
| 1,800.0   | 1,798.6                     | 1,795.2                     | 1,793.1                     | 4.0                 | 4.0              | -94.76                      | 50.8                                      | -123.9          | 131.0                        | 123.0                | 7.93    | 16.509        |                    |          |
| 1,900.0   | 1,898.4                     | 1,895.1                     | 1,892.7                     | 4.2                 | 4.3              | -95.35                      | 56.7                                      | -127.7          | 135.8                        | 127.3                | 8.42    | 16.131        |                    |          |
| 2,000.0   | 1,998.1                     | 1,995.0                     | 1,992.4                     | 4.4                 | 4.5              | -95.89                      | 62.5                                      | -131.4          | 140.6                        | 131.7                | 8.90    | 15.792        |                    |          |
| 2,100.0   | 2,097.9                     | 2,094.8                     | 2,092.0                     | 4.7                 | 4.8              | -96.41                      | 68.4                                      | -135.2          | 145.4                        | 136.0                | 9.39    | 15.486        |                    |          |
| 2,200.0   | 2,197.6                     | 2,194.7                     | 2,191.6                     | 4.9                 | 5.0              | -96.88                      | 74.2                                      | -139.0          | 150.2                        | 140.4                | 9.88    | 15.208        |                    |          |
| 2,300.0   | 2,297.4                     | 2,294.6                     | 2,291.3                     | 5.2                 | 5.3              | -97.33                      | 80.1                                      | -142.8          | 155.1                        | 144.7                | 10.37   | 14.955        |                    |          |
| 2,400.0   | 2,397.2                     | 2,394.5                     | 2,390.9                     | 5.4                 | 5.5              | -97.75                      | 85.9                                      | -146.6          | 160.0                        | 149.1                | 10.86   | 14.724        |                    |          |
| 2,500.0   | 2,496.9                     | 2,494.3                     | 2,490.5                     | 5.7                 | 5.8              | -98.15                      | 91.8                                      | -150.3          | 164.8                        | 153.5                | 11.36   | 14.512        |                    |          |
| 2,600.0   | 2,596.7                     | 2,594.2                     | 2,590.2                     | 5.9                 | 6.1              | -98.52                      | 97.6                                      | -154.1          | 169.7                        | 157.8                | 11.85   | 14.317        |                    |          |
| 2,700.0   | 2,696.4                     | 2,694.1                     | 2,689.8                     | 6.2                 | 6.3              | -98.87                      | 103.5                                     | -157.9          | 174.6                        | 162.2                | 12.35   | 14.137        |                    |          |
| 2,800.0   | 2,796.2                     | 2,794.0                     | 2,789.4                     | 6.4                 | 6.6              | -99.21                      | 109.3                                     | -161.7          | 179.5                        | 166.6                | 12.85   | 13.971        |                    |          |
| 2,900.0   | 2,895.9                     | 2,893.8                     | 2,889.1                     | 6.7                 | 6.8              | -99.52                      | 115.2                                     | -165.5          | 184.4                        | 171.0                | 13.34   | 13.817        |                    |          |
| 3,000.0   | 2,995.7                     | 2,993.7                     | 2,988.7                     | 6.9                 | 7.1              | -99.82                      | 121.0                                     | -169.3          | 189.3                        | 175.4                | 13.84   | 13.673        |                    |          |
| 3,100.0   | 3,095.5                     | 3,093.6                     | 3,088.3                     | 7.2                 | 7.3              | -100.11                     | 126.9                                     | -173.0          | 194.2                        | 179.8                | 14.34   | 13.540        |                    |          |
| 3,200.0   | 3,195.2                     | 3,193.5                     | 3,188.0                     | 7.4                 | 7.6              | -100.38                     | 132.7                                     | -176.8          | 199.1                        | 184.2                | 14.84   | 13.415        |                    |          |
| 3,300.0   | 3,295.0                     | 3,293.3                     | 3,287.6                     | 7.7                 | 7.8              | -100.63                     | 138.6                                     | -180.6          | 204.0                        | 188.6                | 15.34   | 13.298        |                    |          |
| 3,400.0   | 3,394.7                     | 3,393.2                     | 3,387.2                     | 7.9                 | 8.1              | -100.88                     | 144.4                                     | -184.4          | 208.9                        | 193.1                | 15.84   | 13.189        |                    |          |
| 3,500.0   | 3,494.5                     | 3,493.1                     | 3,486.9                     | 8.2                 | 8.3              | -101.11                     | 150.3                                     | -188.2          | 213.8                        | 197.5                | 16.34   | 13.086        |                    |          |
| 3,600.0   | 3,594.2                     | 3,593.0                     | 3,586.5                     | 8.4                 | 8.6              | -101.34                     | 156.2                                     | -191.9          | 218.7                        | 201.9                | 16.84   | 12.989        |                    |          |
| 3,700.0   | 3,694.0                     | 3,692.8                     | 3,686.1                     | 8.7                 | 8.9              | -101.55                     | 162.0                                     | -195.7          | 223.7                        | 206.3                | 17.34   | 12.898        |                    |          |
| 3,800.0   | 3,793.7                     | 3,792.7                     | 3,785.7                     | 9.0                 | 9.1              | -101.75                     | 167.9                                     | -199.5          | 228.6                        | 210.8                | 17.84   | 12.811        |                    |          |
| 3,900.0   | 3,893.5                     | 3,892.6                     | 3,885.4                     | 9.2                 | 9.4              | -101.95                     | 173.7                                     | -203.3          | 233.5                        | 215.2                | 18.35   | 12.730        |                    |          |
| 4,000.0   | 3,993.3                     | 3,992.5                     | 3,985.0                     | 9.5                 | 9.6              | -102.14                     | 179.6                                     | -207.1          | 238.5                        | 219.6                | 18.85   | 12.653        |                    |          |
| 4,100.0   | 4,093.0                     | 4,092.3                     | 4,084.6                     | 9.7                 | 9.9              | -102.32                     | 185.4                                     | -210.8          | 243.4                        | 224.1                | 19.35   | 12.579        |                    |          |
| 4,200.0   | 4,192.8                     | 4,192.2                     | 4,184.3                     | 10.0                | 10.1             | -102.49                     | 191.3                                     | -214.6          | 248.3                        | 228.5                | 19.85   | 12.510        |                    |          |
| 4,300.0   | 4,292.5                     | 4,292.1                     | 4,283.9                     | 10.2                | 10.4             | -102.65                     | 197.1                                     | -218.4          | 253.3                        | 232.9                | 20.35   | 12.444        |                    |          |
| 4,400.0   | 4,392.3                     | 4,392.0                     | 4,383.5                     | 10.5                | 10.7             | -102.81                     | 203.0                                     | -222.2          | 258.2                        | 237.4                | 20.86   | 12.381        |                    |          |
| 4,500.0   | 4,492.0                     | 4,491.8                     | 4,483.2                     | 10.7                | 10.9             | -102.97                     | 208.8                                     | -226.0          | 263.2                        | 241.8                | 21.36   | 12.321        |                    |          |
| 4,600.0   | 4,591.8                     | 4,591.7                     | 4,582.8                     | 11.0                | 11.2             | -103.12                     | 214.7                                     | -229.7          | 268.1                        | 246.3                | 21.86   | 12.264        |                    |          |
| 4,700.0   | 4,691.6                     | 4,691.6                     | 4,682.4                     | 11.2                | 11.4             | -103.26                     | 220.5                                     | -233.5          | 273.1                        | 250.7                | 22.37   | 12.209        |                    |          |
| 4,800.0   | 4,791.3                     | 4,791.5                     | 4,782.1                     | 11.5                | 11.7             | -103.40                     | 226.4                                     | -237.3          | 278.0                        | 255.2                | 22.87   | 12.157        |                    |          |
| 4,900.0   | 4,891.1                     | 4,891.3                     | 4,881.7                     | 11.8                | 11.9             | -103.53                     | 232.2                                     | -241.1          | 283.0                        | 259.6                | 23.37   | 12.107        |                    |          |
| 5,000.0   | 4,990.8                     | 4,991.2                     | 4,981.3                     | 12.0                | 12.2             | -103.66                     | 238.1                                     | -244.9          | 287.9                        | 264.1                | 23.88   | 12.059        |                    |          |
| 5,100.0   | 5,090.6                     | 5,091.1                     | 5,081.0                     | 12.3                | 12.4             | -103.78                     | 243.9                                     | -248.7          | 292.9                        | 268.5                | 24.38   | 12.013        |                    |          |

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

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2809A - HZ - Plan #1 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        |                   | Offset Site Error: 0.0 usft |  |
|---|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|------------------------|-------------------|-----------------------------|--|
| Survey Program: 0-ISCWSA MWD                                  |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        |                   | Offset Well Error: 0.0 usft |  |
| Reference   |                       | Offset                |                       | Semi Major Axis  |               |                       | Distance                            |              |                        |                         |                        |                   | Warning                     |  |
| Measured Depth (usft)   | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Total Uncertainty Axis | Separation Factor |                             |  |
| 5,200.0   | 5,190.3               | 5,182.0               | 5,171.5               | 12.5             | 12.7          | -103.71               | 250.1                               | -252.7       | 298.5                  | 273.6                   | 24.87                  | 12.001            |                             |  |
| 5,229.2   | 5,219.5               | 5,200.0               | 5,189.3               | 12.6             | 12.7          | -103.48               | 252.4                               | -254.1       | 301.2                  | 276.2                   | 24.99                  | 12.049            |                             |  |
| 5,250.0   | 5,240.2               | 5,220.9               | 5,209.8               | 12.6             | 12.8          | -102.90               | 255.7                               | -256.3       | 303.5                  | 278.3                   | 25.11                  | 12.085            |                             |  |
| 5,300.0   | 5,289.5               | 5,259.2               | 5,247.0               | 12.8             | 13.0          | -101.64               | 263.5                               | -261.3       | 311.1                  | 285.8                   | 25.37                  | 12.263            |                             |  |
| 5,350.0   | 5,337.9               | 5,300.0               | 5,285.7               | 13.0             | 13.2          | -100.29               | 274.3                               | -268.3       | 321.5                  | 295.8                   | 25.69                  | 12.516            |                             |  |
| 5,400.0   | 5,384.9               | 5,333.6               | 5,316.8               | 13.2             | 13.3          | -98.90                | 285.1                               | -275.3       | 334.5                  | 308.4                   | 26.03                  | 12.848            |                             |  |
| 5,450.0   | 5,430.0               | 5,369.5               | 5,349.0               | 13.5             | 13.6          | -97.44                | 298.5                               | -283.9       | 349.8                  | 323.3                   | 26.44                  | 13.230            |                             |  |
| 5,500.0   | 5,472.8               | 5,400.0               | 5,375.4               | 13.8             | 13.7          | -95.82                | 311.3                               | -292.2       | 367.3                  | 340.5                   | 26.87                  | 13.671            |                             |  |
| 5,550.0   | 5,513.0               | 5,438.6               | 5,407.4               | 14.2             | 14.0          | -94.29                | 329.3                               | -303.8       | 386.8                  | 359.4                   | 27.41                  | 14.111            |                             |  |
| 5,600.0   | 5,550.1               | 5,471.6               | 5,433.6               | 14.6             | 14.3          | -92.58                | 346.3                               | -314.8       | 408.1                  | 380.1                   | 27.98                  | 14.585            |                             |  |
| 5,650.0   | 5,583.8               | 5,500.0               | 5,454.9               | 15.0             | 14.5          | -90.65                | 361.9                               | -324.9       | 431.0                  | 402.4                   | 28.57                  | 15.087            |                             |  |
| 5,700.0   | 5,613.9               | 5,534.9               | 5,479.8               | 15.5             | 14.8          | -88.90                | 382.5                               | -338.2       | 455.3                  | 426.0                   | 29.25                  | 15.563            |                             |  |
| 5,750.0   | 5,640.0               | 5,565.2               | 5,500.1               | 16.0             | 15.1          | -86.91                | 401.5                               | -350.5       | 480.8                  | 450.8                   | 29.95                  | 16.055            |                             |  |
| 5,800.0   | 5,661.8               | 5,600.0               | 5,521.6               | 16.6             | 15.5          | -85.10                | 424.4                               | -365.3       | 507.4                  | 476.7                   | 30.71                  | 16.524            |                             |  |
| 5,850.0   | 5,679.3               | 5,623.5               | 5,535.1               | 17.2             | 15.8          | -82.72                | 440.5                               | -375.7       | 534.9                  | 503.5                   | 31.39                  | 17.038            |                             |  |
| 5,900.0   | 5,692.2               | 5,650.0               | 5,549.2               | 17.9             | 16.1          | -80.45                | 459.3                               | -387.8       | 563.0                  | 530.9                   | 32.10                  | 17.539            |                             |  |
| 5,950.0   | 5,700.4               | 5,679.2               | 5,563.5               | 18.6             | 16.4          | -78.33                | 480.7                               | -401.7       | 591.7                  | 558.9                   | 32.86                  | 18.008            |                             |  |
| 6,000.0   | 5,703.9               | 5,706.3               | 5,575.4               | 19.3             | 16.8          | -76.12                | 501.1                               | -414.9       | 620.8                  | 587.2                   | 33.59                  | 18.482            |                             |  |
| 6,011.0   | 5,704.0               | 5,712.2               | 5,577.9               | 19.5             | 16.9          | -75.64                | 505.7                               | -417.8       | 627.3                  | 593.5                   | 33.75                  | 18.584            |                             |  |
| 6,100.0   | 5,704.0               | 5,762.9               | 5,596.2               | 20.7             | 17.6          | -78.74                | 545.4                               | -443.4       | 679.4                  | 643.4                   | 35.96                  | 18.893            |                             |  |
| 6,200.0   | 5,704.0               | 5,826.7               | 5,612.6               | 22.1             | 18.6          | -81.35                | 597.1                               | -476.8       | 737.0                  | 698.6                   | 38.44                  | 19.176            |                             |  |
| 6,300.0   | 5,704.0               | 5,896.4               | 5,621.8               | 23.5             | 19.7          | -82.92                | 655.0                               | -514.3       | 792.5                  | 751.5                   | 41.02                  | 19.321            |                             |  |
| 6,314.2   | 5,704.0               | 5,906.6               | 5,622.4               | 23.7             | 19.9          | -83.06                | 663.7                               | -519.9       | 800.1                  | 758.7                   | 41.39                  | 19.330            |                             |  |
| 6,400.0   | 5,704.0               | 6,010.0               | 5,623.0               | 25.1             | 21.5          | -83.62                | 751.3                               | -574.6       | 845.5                  | 801.4                   | 44.09                  | 19.176            |                             |  |
| 6,500.0   | 5,704.0               | 6,171.3               | 5,623.0               | 26.7             | 24.1          | -84.22                | 893.7                               | -650.5       | 892.4                  | 844.4                   | 47.96                  | 18.606            |                             |  |
| 6,600.0   | 5,704.0               | 6,346.9               | 5,623.0               | 28.4             | 27.1          | -84.68                | 1,055.2                             | -719.1       | 931.4                  | 879.1                   | 52.30                  | 17.808            |                             |  |
| 6,700.0   | 5,704.0               | 6,535.3               | 5,623.0               | 30.1             | 30.3          | -85.00                | 1,234.8                             | -775.9       | 961.5                  | 904.4                   | 57.04                  | 16.854            |                             |  |
| 6,800.0   | 5,704.0               | 6,734.0               | 5,623.0               | 31.8             | 33.6          | -85.21                | 1,429.2                             | -816.3       | 981.8                  | 919.7                   | 62.09                  | 15.811            |                             |  |
| 6,900.0   | 5,704.0               | 6,939.2               | 5,623.0               | 33.5             | 36.9          | -85.31                | 1,633.3                             | -836.6       | 991.7                  | 924.4                   | 67.31                  | 14.732            |                             |  |
| 7,000.0   | 5,704.0               | 7,084.3               | 5,623.0               | 35.3             | 39.2          | -85.32                | 1,778.3                             | -838.6       | 992.6                  | 921.1                   | 71.51                  | 13.881            |                             |  |
| 7,100.0   | 5,704.0               | 7,184.3               | 5,623.0               | 37.0             | 40.8          | -85.32                | 1,878.3                             | -838.6       | 992.6                  | 917.7                   | 74.95                  | 13.243            |                             |  |
| 7,200.0   | 5,704.0               | 7,284.3               | 5,623.0               | 38.8             | 42.3          | -85.32                | 1,978.3                             | -838.6       | 992.6                  | 914.2                   | 78.42                  | 12.657            |                             |  |
| 7,300.0   | 5,704.0               | 7,384.3               | 5,623.0               | 40.6             | 44.0          | -85.32                | 2,078.3                             | -838.6       | 992.6                  | 910.7                   | 81.93                  | 12.116            |                             |  |
| 7,400.0   | 5,704.0               | 7,484.3               | 5,623.0               | 42.4             | 45.6          | -85.32                | 2,178.3                             | -838.6       | 992.6                  | 907.2                   | 85.46                  | 11.616            |                             |  |
| 7,500.0   | 5,704.0               | 7,584.3               | 5,623.0               | 44.3             | 47.3          | -85.32                | 2,278.3                             | -838.6       | 992.6                  | 903.6                   | 89.01                  | 11.152            |                             |  |
| 7,600.0   | 5,704.0               | 7,684.3               | 5,623.0               | 46.1             | 48.9          | -85.32                | 2,378.3                             | -838.6       | 992.6                  | 900.1                   | 92.59                  | 10.721            |                             |  |
| 7,700.0   | 5,704.0               | 7,784.3               | 5,623.0               | 47.9             | 50.6          | -85.32                | 2,478.3                             | -838.6       | 992.6                  | 896.5                   | 96.18                  | 10.321            |                             |  |
| 7,800.0   | 5,704.0               | 7,884.3               | 5,623.0               | 49.8             | 52.3          | -85.32                | 2,578.3                             | -838.6       | 992.6                  | 892.9                   | 99.79                  | 9.947             |                             |  |
| 7,900.0   | 5,704.0               | 7,984.3               | 5,623.0               | 51.6             | 54.1          | -85.32                | 2,678.3                             | -838.6       | 992.7                  | 889.2                   | 103.42                 | 9.598             |                             |  |
| 8,000.0   | 5,704.0               | 8,084.3               | 5,623.0               | 53.5             | 55.8          | -85.32                | 2,778.3                             | -838.6       | 992.7                  | 885.6                   | 107.06                 | 9.272             |                             |  |
| 8,100.0   | 5,704.0               | 8,184.3               | 5,623.0               | 55.3             | 57.5          | -85.32                | 2,878.3                             | -838.6       | 992.7                  | 881.9                   | 110.71                 | 8.966             |                             |  |
| 8,200.0   | 5,704.0               | 8,284.3               | 5,623.0               | 57.2             | 59.3          | -85.32                | 2,978.3                             | -838.6       | 992.7                  | 878.3                   | 114.37                 | 8.679             |                             |  |
| 8,300.0   | 5,704.0               | 8,384.3               | 5,623.0               | 59.0             | 61.1          | -85.32                | 3,078.3                             | -838.5       | 992.7                  | 874.6                   | 118.05                 | 8.409             |                             |  |
| 8,400.0   | 5,704.0               | 8,484.3               | 5,623.0               | 60.9             | 62.8          | -85.32                | 3,178.3                             | -838.5       | 992.7                  | 870.9                   | 121.73                 | 8.155             |                             |  |
| 8,500.0   | 5,704.0               | 8,584.3               | 5,623.0               | 62.8             | 64.6          | -85.32                | 3,278.3                             | -838.5       | 992.7                  | 867.2                   | 125.42                 | 7.915             |                             |  |
| 8,600.0   | 5,704.0               | 8,684.3               | 5,623.0               | 64.6             | 66.4          | -85.32                | 3,378.3                             | -838.5       | 992.7                  | 863.6                   | 129.12                 | 7.688             |                             |  |
| 8,700.0   | 5,704.0               | 8,784.3               | 5,623.0               | 66.5             | 68.2          | -85.32                | 3,478.3                             | -838.5       | 992.7                  | 859.8                   | 132.82                 | 7.474             |                             |  |
| 8,800.0   | 5,704.0               | 8,884.3               | 5,623.0               | 68.4             | 70.0          | -85.32                | 3,578.3                             | -838.5       | 992.7                  | 856.1                   | 136.53                 | 7.271             |                             |  |
| 8,900.0   | 5,704.0               | 8,984.3               | 5,623.0               | 70.3             | 71.8          | -85.32                | 3,678.3                             | -838.5       | 992.7                  | 852.4                   | 140.25                 | 7.078             |                             |  |
| 9,000.0   | 5,704.0               | 9,084.3               | 5,623.0               | 72.1             | 73.6          | -85.32                | 3,778.3                             | -838.5       | 992.7                  | 848.7                   | 143.97                 | 6.895             |                             |  |
| 9,100.0   | 5,704.0               | 9,184.3               | 5,623.0               | 74.0             | 75.4          | -85.32                | 3,878.3                             | -838.5       | 992.7                  | 845.0                   | 147.70                 | 6.721             |                             |  |
| 9,200.0   | 5,704.0               | 9,284.3               | 5,623.0               | 75.9             | 77.3          | -85.32                | 3,978.3                             | -838.5       | 992.7                  | 841.2                   | 151.43                 | 6.555             |                             |  |

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

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #33O-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #33O-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #33O-2809A - HZ - Plan #1 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                   | Offset Site Error: | 0.0 usft |
|---|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|-------------------|--------------------|----------|
| Survey Program: 0-ISCWSA MWD                                  |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                   | Offset Well Error: | 0.0 usft |
| Reference   |                       | Offset                |                       | Semi Major Axis  |               |                       | Distance                            |              |                        |                         | Separation Factor | Warning            |          |
| Measured Depth (usft)   | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) |                   |                    |          |
| 9,300.0   | 5,704.0               | 9,384.3               | 5,623.0               | 77.8             | 79.1          | -85.32                | 4,078.3                             | -838.5       | 992.7                  | 837.5                   | 155.17            | 6.397              |          |
| 9,400.0   | 5,704.0               | 9,484.3               | 5,623.0               | 79.7             | 80.9          | -85.32                | 4,178.3                             | -838.5       | 992.7                  | 833.8                   | 158.91            | 6.247              |          |
| 9,500.0   | 5,704.0               | 9,584.3               | 5,623.0               | 81.6             | 82.8          | -85.32                | 4,278.3                             | -838.5       | 992.7                  | 830.0                   | 162.66            | 6.103              |          |
| 9,600.0   | 5,704.0               | 9,684.3               | 5,623.0               | 83.5             | 84.6          | -85.32                | 4,378.3                             | -838.5       | 992.7                  | 826.3                   | 166.41            | 5.965              |          |
| 9,700.0   | 5,704.0               | 9,784.3               | 5,623.0               | 85.4             | 86.5          | -85.32                | 4,478.3                             | -838.5       | 992.7                  | 822.5                   | 170.16            | 5.834              |          |
| 9,800.0   | 5,704.0               | 9,884.3               | 5,623.0               | 87.2             | 88.3          | -85.32                | 4,578.3                             | -838.5       | 992.7                  | 818.8                   | 173.91            | 5.708              |          |
| 9,900.0   | 5,704.0               | 9,984.3               | 5,623.0               | 89.1             | 90.1          | -85.32                | 4,678.3                             | -838.5       | 992.7                  | 815.0                   | 177.67            | 5.587              |          |
| 10,000.0  | 5,704.0               | 10,084.3              | 5,623.0               | 91.0             | 92.0          | -85.32                | 4,778.3                             | -838.5       | 992.7                  | 811.3                   | 181.43            | 5.472              |          |
| 10,100.0  | 5,704.0               | 10,184.3              | 5,623.0               | 92.9             | 93.9          | -85.32                | 4,878.3                             | -838.5       | 992.7                  | 807.5                   | 185.19            | 5.360              |          |
| 10,200.0  | 5,704.0               | 10,284.3              | 5,623.0               | 94.8             | 95.7          | -85.32                | 4,978.3                             | -838.5       | 992.7                  | 803.8                   | 188.96            | 5.254              |          |
| 10,300.0  | 5,704.0               | 10,384.3              | 5,623.0               | 96.7             | 97.6          | -85.32                | 5,078.3                             | -838.5       | 992.7                  | 800.0                   | 192.72            | 5.151              |          |
| 10,400.0  | 5,704.0               | 10,484.3              | 5,623.0               | 98.6             | 99.4          | -85.32                | 5,178.3                             | -838.5       | 992.7                  | 796.2                   | 196.49            | 5.052              |          |
| 10,500.0  | 5,704.0               | 10,584.3              | 5,623.0               | 100.5            | 101.3         | -85.32                | 5,278.3                             | -838.5       | 992.7                  | 792.4                   | 200.27            | 4.957              |          |
| 10,600.0  | 5,704.0               | 10,684.3              | 5,623.0               | 102.4            | 103.2         | -85.32                | 5,378.3                             | -838.5       | 992.7                  | 788.7                   | 204.04            | 4.865              |          |
| 10,700.0  | 5,704.0               | 10,784.3              | 5,623.0               | 104.3            | 105.0         | -85.32                | 5,478.3                             | -838.4       | 992.7                  | 784.9                   | 207.81            | 4.777              |          |
| 10,800.0  | 5,704.0               | 10,884.3              | 5,623.0               | 106.2            | 106.9         | -85.32                | 5,578.3                             | -838.4       | 992.7                  | 781.1                   | 211.59            | 4.692              |          |
| 10,900.0  | 5,704.0               | 10,984.3              | 5,623.0               | 108.1            | 108.8         | -85.32                | 5,678.3                             | -838.4       | 992.7                  | 777.4                   | 215.37            | 4.609              |          |
| 11,000.0  | 5,704.0               | 11,084.3              | 5,623.0               | 110.0            | 110.6         | -85.32                | 5,778.3                             | -838.4       | 992.7                  | 773.6                   | 219.15            | 4.530              |          |
| 11,100.0  | 5,704.0               | 11,184.3              | 5,623.0               | 111.9            | 112.5         | -85.32                | 5,878.3                             | -838.4       | 992.7                  | 769.8                   | 222.93            | 4.453              |          |
| 11,200.0  | 5,704.0               | 11,284.3              | 5,623.0               | 113.8            | 114.4         | -85.32                | 5,978.3                             | -838.4       | 992.7                  | 766.0                   | 226.71            | 4.379              |          |
| 11,300.0  | 5,704.0               | 11,384.3              | 5,623.0               | 115.7            | 116.3         | -85.32                | 6,078.3                             | -838.4       | 992.7                  | 762.2                   | 230.50            | 4.307              |          |
| 11,400.0  | 5,704.0               | 11,484.3              | 5,623.0               | 117.6            | 118.1         | -85.32                | 6,178.3                             | -838.4       | 992.7                  | 758.5                   | 234.28            | 4.237              |          |
| 11,500.0  | 5,704.0               | 11,584.3              | 5,623.0               | 119.5            | 120.0         | -85.32                | 6,278.3                             | -838.4       | 992.7                  | 754.7                   | 238.07            | 4.170              |          |
| 11,600.0  | 5,704.0               | 11,684.3              | 5,623.0               | 121.4            | 121.9         | -85.32                | 6,378.3                             | -838.4       | 992.7                  | 750.9                   | 241.85            | 4.105              |          |
| 11,700.0  | 5,704.0               | 11,784.3              | 5,623.0               | 123.3            | 123.8         | -85.32                | 6,478.3                             | -838.4       | 992.7                  | 747.1                   | 245.64            | 4.041              |          |
| 11,800.0  | 5,704.0               | 11,884.3              | 5,623.0               | 125.2            | 125.7         | -85.32                | 6,578.3                             | -838.4       | 992.7                  | 743.3                   | 249.43            | 3.980              |          |
| 11,900.0  | 5,704.0               | 11,984.3              | 5,623.0               | 127.2            | 127.6         | -85.32                | 6,678.3                             | -838.4       | 992.7                  | 739.5                   | 253.22            | 3.920              |          |
| 12,000.0  | 5,704.0               | 12,084.3              | 5,623.0               | 129.1            | 129.4         | -85.32                | 6,778.3                             | -838.4       | 992.8                  | 735.7                   | 257.01            | 3.863              |          |
| 12,100.0  | 5,704.0               | 12,184.3              | 5,623.0               | 131.0            | 131.3         | -85.32                | 6,878.3                             | -838.4       | 992.8                  | 731.9                   | 260.81            | 3.806              |          |
| 12,200.0  | 5,704.0               | 12,284.3              | 5,623.0               | 132.9            | 133.2         | -85.32                | 6,978.3                             | -838.4       | 992.8                  | 728.2                   | 264.60            | 3.752              |          |
| 12,300.0  | 5,704.0               | 12,384.3              | 5,623.0               | 134.8            | 135.1         | -85.32                | 7,078.3                             | -838.4       | 992.8                  | 724.4                   | 268.39            | 3.699              |          |
| 12,400.0  | 5,704.0               | 12,484.3              | 5,623.0               | 136.7            | 137.0         | -85.32                | 7,178.3                             | -838.4       | 992.8                  | 720.6                   | 272.19            | 3.647              |          |
| 12,500.0  | 5,704.0               | 12,584.3              | 5,623.0               | 138.6            | 138.9         | -85.32                | 7,278.3                             | -838.4       | 992.8                  | 716.8                   | 275.98            | 3.597              |          |
| 12,600.0  | 5,704.0               | 12,684.3              | 5,623.0               | 140.5            | 140.8         | -85.32                | 7,378.3                             | -838.4       | 992.8                  | 713.0                   | 279.78            | 3.548              |          |
| 12,700.0  | 5,704.0               | 12,784.3              | 5,623.0               | 142.4            | 142.7         | -85.32                | 7,478.3                             | -838.4       | 992.8                  | 709.2                   | 283.58            | 3.501              |          |
| 12,720.0  | 5,704.0               | 12,784.4              | 5,623.0               | 142.7            | 142.7         | -85.32                | 7,478.5                             | -838.4       | 993.0                  | 709.1                   | 283.89            | 3.498 SF           |          |

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2810B - HZ - Plan #1 |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |               | Offset Site Error: | 0.0 usft |
|---|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|---|-----------------|------------------------------|----------------------|---------|---------------|--------------------|----------|
| Survey Program: 0-ISCSWA MWD                                  |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |               | Offset Well Error: | 0.0 usft |
| Reference   |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning |               |                    |          |
| Measured<br>Depth<br>(usft)                                   | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                      |         |               |                    |          |
| 0.0   | 0.0                         | 0.0                         | 0.0                         | 0.0                 | 0.0              | -91.04                      | -1.1                                      | -60.0           | 60.0                         |                      |         |               |                    |          |
| 100.0   | 100.0                       | 100.0                       | 100.0                       | 0.1                 | 0.1              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 59.8                 | 0.19    | 320.836       |                    |          |
| 200.0   | 200.0                       | 200.0                       | 200.0                       | 0.3                 | 0.3              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 59.4                 | 0.64    | 94.257        |                    |          |
| 300.0   | 300.0                       | 300.0                       | 300.0                       | 0.5                 | 0.5              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 58.9                 | 1.09    | 55.243        |                    |          |
| 400.0   | 400.0                       | 400.0                       | 400.0                       | 0.8                 | 0.8              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 58.5                 | 1.54    | 39.071        |                    |          |
| 500.0   | 500.0                       | 500.0                       | 500.0                       | 1.0                 | 1.0              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 58.0                 | 1.99    | 30.224        |                    |          |
| 600.0   | 600.0                       | 600.0                       | 600.0                       | 1.2                 | 1.2              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 57.6                 | 2.43    | 24.643        |                    |          |
| 700.0   | 700.0                       | 700.0                       | 700.0                       | 1.4                 | 1.4              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 57.1                 | 2.88    | 20.802        |                    |          |
| 800.0   | 800.0                       | 800.0                       | 800.0                       | 1.7                 | 1.7              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 56.7                 | 3.33    | 17.997        |                    |          |
| 900.0   | 900.0                       | 900.0                       | 900.0                       | 1.9                 | 1.9              | -91.04                      | -1.1                                      | -60.0           | 60.0                         | 56.2                 | 3.78    | 15.859 CC, ES |                    |          |
| 1,000.0   | 1,000.0                     | 999.2                       | 999.2                       | 2.1                 | 2.1              | -89.53                      | 0.5                                       | -60.6           | 60.6                         | 56.4                 | 4.23    | 14.339        |                    |          |
| 1,100.0   | 1,100.0                     | 1,098.2                     | 1,098.0                     | 2.3                 | 2.3              | -85.20                      | 5.3                                       | -62.6           | 62.8                         | 58.2                 | 4.67    | 13.439        |                    |          |
| 1,200.0   | 1,200.0                     | 1,198.0                     | 1,197.6                     | 2.6                 | 2.6              | -90.36                      | 11.7                                      | -65.2           | 66.3                         | 61.2                 | 5.13    | 12.932        |                    |          |
| 1,300.0   | 1,299.8                     | 1,297.9                     | 1,297.3                     | 2.8                 | 2.8              | -89.67                      | 18.2                                      | -67.8           | 69.9                         | 64.3                 | 5.58    | 12.530        |                    |          |
| 1,400.0   | 1,399.6                     | 1,397.9                     | 1,397.0                     | 3.0                 | 3.0              | -90.47                      | 24.6                                      | -70.5           | 73.5                         | 67.5                 | 6.04    | 12.174        |                    |          |
| 1,500.0   | 1,499.4                     | 1,497.8                     | 1,496.7                     | 3.2                 | 3.3              | -91.20                      | 31.1                                      | -73.1           | 77.2                         | 70.6                 | 6.51    | 11.858        |                    |          |
| 1,600.0   | 1,599.1                     | 1,597.7                     | 1,596.3                     | 3.5                 | 3.5              | -91.87                      | 37.5                                      | -75.7           | 80.8                         | 73.8                 | 6.98    | 11.576        |                    |          |
| 1,700.0   | 1,698.9                     | 1,697.7                     | 1,696.0                     | 3.7                 | 3.8              | -92.47                      | 44.0                                      | -78.4           | 84.5                         | 77.0                 | 7.46    | 11.325        |                    |          |
| 1,800.0   | 1,798.6                     | 1,797.6                     | 1,795.7                     | 4.0                 | 4.0              | -93.03                      | 50.4                                      | -81.0           | 88.1                         | 80.2                 | 7.94    | 11.099        |                    |          |
| 1,900.0   | 1,898.4                     | 1,897.5                     | 1,895.4                     | 4.2                 | 4.3              | -93.54                      | 56.9                                      | -83.6           | 91.8                         | 83.4                 | 8.42    | 10.896        |                    |          |
| 2,000.0   | 1,998.1                     | 1,997.4                     | 1,995.1                     | 4.4                 | 4.5              | -94.01                      | 63.3                                      | -86.2           | 95.5                         | 86.6                 | 8.91    | 10.713        |                    |          |
| 2,100.0   | 2,097.9                     | 2,097.4                     | 2,094.8                     | 4.7                 | 4.8              | -94.44                      | 69.8                                      | -88.9           | 99.2                         | 89.8                 | 9.40    | 10.547        |                    |          |
| 2,200.0   | 2,197.6                     | 2,197.3                     | 2,194.5                     | 4.9                 | 5.0              | -94.85                      | 76.3                                      | -91.5           | 102.9                        | 93.0                 | 9.89    | 10.396        |                    |          |
| 2,300.0   | 2,297.4                     | 2,297.2                     | 2,294.1                     | 5.2                 | 5.3              | -95.23                      | 82.7                                      | -94.1           | 106.5                        | 96.2                 | 10.39   | 10.258        |                    |          |
| 2,400.0   | 2,397.2                     | 2,397.2                     | 2,393.8                     | 5.4                 | 5.5              | -95.58                      | 89.2                                      | -96.8           | 110.2                        | 99.4                 | 10.88   | 10.131        |                    |          |
| 2,500.0   | 2,496.9                     | 2,497.1                     | 2,493.5                     | 5.7                 | 5.8              | -95.91                      | 95.6                                      | -99.4           | 114.0                        | 102.6                | 11.38   | 10.015        |                    |          |
| 2,600.0   | 2,596.7                     | 2,597.0                     | 2,593.2                     | 5.9                 | 6.0              | -96.22                      | 102.1                                     | -102.0          | 117.7                        | 105.8                | 11.88   | 9.908         |                    |          |
| 2,700.0   | 2,696.4                     | 2,696.9                     | 2,692.9                     | 6.2                 | 6.3              | -96.50                      | 108.5                                     | -104.7          | 121.4                        | 109.0                | 12.37   | 9.809         |                    |          |
| 2,800.0   | 2,796.2                     | 2,796.9                     | 2,792.6                     | 6.4                 | 6.5              | -96.78                      | 115.0                                     | -107.3          | 125.1                        | 112.2                | 12.87   | 9.717         |                    |          |
| 2,900.0   | 2,895.9                     | 2,896.8                     | 2,892.3                     | 6.7                 | 6.8              | -97.03                      | 121.4                                     | -109.9          | 128.8                        | 115.4                | 13.37   | 9.631         |                    |          |
| 3,000.0   | 2,995.7                     | 2,996.7                     | 2,991.9                     | 6.9                 | 7.0              | -97.28                      | 127.9                                     | -112.5          | 132.5                        | 118.6                | 13.87   | 9.552         |                    |          |
| 3,100.0   | 3,095.5                     | 3,096.7                     | 3,091.6                     | 7.2                 | 7.3              | -97.50                      | 134.4                                     | -115.2          | 136.2                        | 121.9                | 14.37   | 9.478         |                    |          |
| 3,200.0   | 3,195.2                     | 3,196.6                     | 3,191.3                     | 7.4                 | 7.5              | -97.72                      | 140.8                                     | -117.8          | 140.0                        | 125.1                | 14.88   | 9.409         |                    |          |
| 3,300.0   | 3,295.0                     | 3,296.5                     | 3,291.0                     | 7.7                 | 7.8              | -97.93                      | 147.3                                     | -120.4          | 143.7                        | 128.3                | 15.38   | 9.343         |                    |          |
| 3,400.0   | 3,394.7                     | 3,396.4                     | 3,390.7                     | 7.9                 | 8.0              | -98.12                      | 153.7                                     | -123.1          | 147.4                        | 131.5                | 15.88   | 9.282         |                    |          |
| 3,500.0   | 3,494.5                     | 3,496.4                     | 3,490.4                     | 8.2                 | 8.3              | -98.31                      | 160.2                                     | -125.7          | 151.1                        | 134.8                | 16.38   | 9.225         |                    |          |
| 3,600.0   | 3,594.2                     | 3,596.3                     | 3,590.1                     | 8.4                 | 8.6              | -98.48                      | 166.6                                     | -128.3          | 154.9                        | 138.0                | 16.89   | 9.171         |                    |          |
| 3,700.0   | 3,694.0                     | 3,696.2                     | 3,689.8                     | 8.7                 | 8.8              | -98.65                      | 173.1                                     | -131.0          | 158.6                        | 141.2                | 17.39   | 9.120         |                    |          |
| 3,800.0   | 3,793.7                     | 3,796.2                     | 3,789.4                     | 9.0                 | 9.1              | -98.81                      | 179.5                                     | -133.6          | 162.3                        | 144.4                | 17.90   | 9.071         |                    |          |
| 3,900.0   | 3,893.5                     | 3,896.1                     | 3,889.1                     | 9.2                 | 9.3              | -98.97                      | 186.0                                     | -136.2          | 166.1                        | 147.7                | 18.40   | 9.026         |                    |          |
| 4,000.0   | 3,993.3                     | 3,996.0                     | 3,988.8                     | 9.5                 | 9.6              | -99.11                      | 192.5                                     | -138.9          | 169.8                        | 150.9                | 18.90   | 8.982         |                    |          |
| 4,100.0   | 4,093.0                     | 4,096.0                     | 4,088.5                     | 9.7                 | 9.8              | -99.25                      | 198.9                                     | -141.5          | 173.5                        | 154.1                | 19.41   | 8.941         |                    |          |
| 4,200.0   | 4,192.8                     | 4,195.9                     | 4,188.2                     | 10.0                | 10.1             | -99.39                      | 205.4                                     | -144.1          | 177.3                        | 157.4                | 19.91   | 8.902         |                    |          |
| 4,300.0   | 4,292.5                     | 4,295.8                     | 4,287.9                     | 10.2                | 10.3             | -99.52                      | 211.8                                     | -146.7          | 181.0                        | 160.6                | 20.42   | 8.865         |                    |          |
| 4,400.0   | 4,392.3                     | 4,395.7                     | 4,387.6                     | 10.5                | 10.6             | -99.64                      | 218.3                                     | -149.4          | 184.8                        | 163.8                | 20.92   | 8.830         |                    |          |
| 4,500.0   | 4,492.0                     | 4,495.7                     | 4,487.2                     | 10.7                | 10.9             | -99.76                      | 224.7                                     | -152.0          | 188.5                        | 167.1                | 21.43   | 8.796         |                    |          |
| 4,600.0   | 4,591.8                     | 4,595.6                     | 4,586.9                     | 11.0                | 11.1             | -99.87                      | 231.2                                     | -154.6          | 192.2                        | 170.3                | 21.94   | 8.763         |                    |          |
| 4,700.0   | 4,691.6                     | 4,695.5                     | 4,686.6                     | 11.2                | 11.4             | -99.98                      | 237.6                                     | -157.3          | 196.0                        | 173.5                | 22.44   | 8.733         |                    |          |
| 4,800.0   | 4,791.3                     | 4,795.5                     | 4,786.3                     | 11.5                | 11.6             | -100.09                     | 244.1                                     | -159.9          | 199.7                        | 176.8                | 22.95   | 8.703         |                    |          |
| 4,900.0   | 4,891.1                     | 4,895.4                     | 4,886.0                     | 11.8                | 11.9             | -100.19                     | 250.6                                     | -162.5          | 203.5                        | 180.0                | 23.45   | 8.675         |                    |          |
| 5,000.0   | 4,990.8                     | 4,995.3                     | 4,985.7                     | 12.0                | 12.1             | -100.29                     | 257.0                                     | -165.2          | 207.2                        | 183.2                | 23.96   | 8.648         |                    |          |
| 5,100.0   | 5,090.6                     | 5,095.2                     | 5,085.4                     | 12.3                | 12.4             | -100.38                     | 263.5                                     | -167.8          | 210.9                        | 186.5                | 24.47   | 8.622         |                    |          |

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

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2810B - HZ - Plan #1 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        |                   | Offset Site Error: 0.0 usft |  |
|---|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|------------------------|-------------------|-----------------------------|--|
| Survey Program: 0-ISCWSA MWD                                  |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        |                   | Offset Well Error: 0.0 usft |  |
| Reference   |                       | Offset                |                       | Semi Major Axis  |               |                       | Distance                            |              |                        |                         |                        |                   | Warning                     |  |
| Measured Depth (usft)   | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Total Uncertainty Axis | Separation Factor |                             |  |
| 5,200.0   | 5,190.3               | 5,195.2               | 5,185.0               | 12.5             | 12.6          | -100.47               | 269.9                               | -170.4       | 214.7                  | 189.7                   | 24.97                  | 8.597             |                             |  |
| 5,229.2   | 5,219.5               | 5,224.4               | 5,214.1               | 12.6             | 12.7          | -100.50               | 271.8                               | -171.2       | 215.8                  | 190.7                   | 25.12                  | 8.590             |                             |  |
| 5,250.0   | 5,240.2               | 5,243.2               | 5,232.9               | 12.6             | 12.8          | -100.47               | 273.2                               | -171.7       | 216.7                  | 191.5                   | 25.22                  | 8.592             |                             |  |
| 5,300.0   | 5,289.5               | 5,286.6               | 5,275.9               | 12.8             | 12.9          | -100.35               | 278.7                               | -174.0       | 220.6                  | 195.1                   | 25.50                  | 8.650             |                             |  |
| 5,350.0   | 5,337.9               | 5,329.8               | 5,318.1               | 13.0             | 13.1          | -100.15               | 287.4                               | -177.6       | 226.7                  | 200.9                   | 25.82                  | 8.780             |                             |  |
| 5,400.0   | 5,384.9               | 5,372.7               | 5,359.0               | 13.2             | 13.3          | -99.87                | 299.3                               | -182.4       | 235.1                  | 208.9                   | 26.20                  | 8.975             |                             |  |
| 5,450.0   | 5,430.0               | 5,415.2               | 5,398.4               | 13.5             | 13.5          | -99.47                | 314.1                               | -188.4       | 245.7                  | 219.1                   | 26.63                  | 9.225             |                             |  |
| 5,500.0   | 5,472.8               | 5,457.2               | 5,435.9               | 13.8             | 13.7          | -98.97                | 331.6                               | -195.5       | 258.3                  | 231.2                   | 27.13                  | 9.523             |                             |  |
| 5,550.0   | 5,513.0               | 5,500.0               | 5,472.4               | 14.2             | 14.0          | -98.37                | 352.2                               | -203.9       | 272.9                  | 245.2                   | 27.69                  | 9.854             |                             |  |
| 5,600.0   | 5,550.1               | 5,539.7               | 5,504.6               | 14.6             | 14.3          | -97.57                | 373.8                               | -212.7       | 289.2                  | 260.9                   | 28.32                  | 10.213            |                             |  |
| 5,650.0   | 5,583.8               | 5,580.2               | 5,535.4               | 15.0             | 14.6          | -96.67                | 398.0                               | -222.6       | 307.3                  | 278.2                   | 29.03                  | 10.584            |                             |  |
| 5,700.0   | 5,613.9               | 5,620.2               | 5,563.8               | 15.5             | 15.0          | -95.65                | 424.1                               | -233.2       | 326.8                  | 297.0                   | 29.81                  | 10.961            |                             |  |
| 5,750.0   | 5,640.0               | 5,659.8               | 5,589.7               | 16.0             | 15.3          | -94.50                | 451.8                               | -244.5       | 347.7                  | 317.0                   | 30.67                  | 11.337            |                             |  |
| 5,800.0   | 5,661.8               | 5,700.0               | 5,613.6               | 16.6             | 15.8          | -93.27                | 481.7                               | -256.7       | 369.8                  | 338.2                   | 31.60                  | 11.702            |                             |  |
| 5,850.0   | 5,679.3               | 5,738.1               | 5,633.9               | 17.2             | 16.2          | -91.88                | 511.6                               | -268.9       | 392.8                  | 360.3                   | 32.58                  | 12.058            |                             |  |
| 5,900.0   | 5,692.2               | 5,777.0               | 5,652.1               | 17.9             | 16.7          | -90.44                | 543.4                               | -281.9       | 416.8                  | 383.1                   | 33.62                  | 12.396            |                             |  |
| 5,950.0   | 5,700.4               | 5,815.9               | 5,667.7               | 18.6             | 17.2          | -88.94                | 576.4                               | -295.3       | 441.4                  | 406.7                   | 34.71                  | 12.717            |                             |  |
| 6,000.0   | 5,703.9               | 5,855.0               | 5,680.7               | 19.3             | 17.7          | -87.40                | 610.6                               | -309.2       | 466.5                  | 430.7                   | 35.83                  | 13.019            |                             |  |
| 6,011.0   | 5,704.0               | 5,863.7               | 5,683.2               | 19.5             | 17.8          | -87.07                | 618.3                               | -312.4       | 472.1                  | 436.0                   | 36.09                  | 13.082            |                             |  |
| 6,100.0   | 5,704.0               | 5,937.2               | 5,698.7               | 20.7             | 18.9          | -89.33                | 684.7                               | -339.5       | 516.0                  | 477.6                   | 38.40                  | 13.439            |                             |  |
| 6,200.0   | 5,704.0               | 6,031.6               | 5,704.0               | 22.1             | 20.4          | -90.00                | 772.0                               | -374.9       | 561.4                  | 520.2                   | 41.21                  | 13.624            |                             |  |
| 6,300.0   | 5,704.0               | 6,165.2               | 5,704.0               | 23.5             | 22.4          | -90.00                | 897.9                               | -419.6       | 598.1                  | 553.4                   | 44.67                  | 13.389            |                             |  |
| 6,314.2   | 5,704.0               | 6,185.0               | 5,704.0               | 23.7             | 22.7          | -90.00                | 916.8                               | -425.5       | 602.4                  | 557.2                   | 45.18                  | 13.332            |                             |  |
| 6,400.0   | 5,704.0               | 6,307.0               | 5,704.0               | 25.1             | 24.5          | -90.00                | 1,034.5                             | -457.3       | 624.8                  | 576.5                   | 48.31                  | 12.933            |                             |  |
| 6,500.0   | 5,704.0               | 6,454.0               | 5,704.0               | 26.7             | 26.9          | -90.00                | 1,178.7                             | -485.6       | 644.1                  | 591.8                   | 52.23                  | 12.332            |                             |  |
| 6,600.0   | 5,704.0               | 6,604.6               | 5,704.0               | 28.4             | 29.3          | -90.00                | 1,328.3                             | -503.0       | 655.6                  | 599.3                   | 56.31                  | 11.643            |                             |  |
| 6,700.0   | 5,704.0               | 6,754.8               | 5,704.0               | 30.1             | 31.6          | -90.00                | 1,478.3                             | -508.6       | 659.3                  | 598.8                   | 60.47                  | 10.903            |                             |  |
| 6,800.0   | 5,704.0               | 6,854.8               | 5,704.0               | 31.8             | 33.3          | -90.00                | 1,578.3                             | -508.6       | 659.3                  | 595.4                   | 63.87                  | 10.323            |                             |  |
| 6,900.0   | 5,704.0               | 6,954.8               | 5,704.0               | 33.5             | 34.9          | -90.00                | 1,678.3                             | -508.6       | 659.3                  | 592.0                   | 67.31                  | 9.795             |                             |  |
| 7,000.0   | 5,704.0               | 7,054.8               | 5,704.0               | 35.3             | 36.6          | -90.00                | 1,778.3                             | -508.6       | 659.3                  | 588.5                   | 70.79                  | 9.314             |                             |  |
| 7,100.0   | 5,704.0               | 7,154.8               | 5,704.0               | 37.0             | 38.3          | -90.00                | 1,878.3                             | -508.6       | 659.3                  | 585.0                   | 74.31                  | 8.873             |                             |  |
| 7,200.0   | 5,704.0               | 7,254.8               | 5,704.0               | 38.8             | 40.0          | -90.00                | 1,978.3                             | -508.6       | 659.3                  | 581.5                   | 77.85                  | 8.469             |                             |  |
| 7,300.0   | 5,704.0               | 7,354.8               | 5,704.0               | 40.6             | 41.7          | -90.00                | 2,078.3                             | -508.6       | 659.3                  | 577.9                   | 81.42                  | 8.098             |                             |  |
| 7,400.0   | 5,704.0               | 7,454.8               | 5,704.0               | 42.4             | 43.5          | -90.00                | 2,178.3                             | -508.6       | 659.3                  | 574.3                   | 85.02                  | 7.755             |                             |  |
| 7,500.0   | 5,704.0               | 7,554.8               | 5,704.0               | 44.3             | 45.2          | -90.00                | 2,278.3                             | -508.6       | 659.3                  | 570.7                   | 88.63                  | 7.439             |                             |  |
| 7,600.0   | 5,704.0               | 7,654.8               | 5,704.0               | 46.1             | 47.0          | -90.00                | 2,378.3                             | -508.6       | 659.3                  | 567.1                   | 92.27                  | 7.146             |                             |  |
| 7,700.0   | 5,704.0               | 7,754.8               | 5,704.0               | 47.9             | 48.8          | -90.00                | 2,478.3                             | -508.6       | 659.4                  | 563.4                   | 95.91                  | 6.874             |                             |  |
| 7,800.0   | 5,704.0               | 7,854.8               | 5,704.0               | 49.8             | 50.6          | -90.00                | 2,578.3                             | -508.6       | 659.4                  | 559.8                   | 99.58                  | 6.622             |                             |  |
| 7,900.0   | 5,704.0               | 7,954.8               | 5,704.0               | 51.6             | 52.4          | -90.00                | 2,678.3                             | -508.6       | 659.4                  | 556.1                   | 103.25                 | 6.386             |                             |  |
| 8,000.0   | 5,704.0               | 8,054.8               | 5,704.0               | 53.5             | 54.2          | -90.00                | 2,778.3                             | -508.6       | 659.4                  | 552.4                   | 106.93                 | 6.166             |                             |  |
| 8,100.0   | 5,704.0               | 8,154.8               | 5,704.0               | 55.3             | 56.0          | -90.00                | 2,878.3                             | -508.6       | 659.4                  | 548.7                   | 110.63                 | 5.960             |                             |  |
| 8,200.0   | 5,704.0               | 8,254.8               | 5,704.0               | 57.2             | 57.8          | -90.00                | 2,978.3                             | -508.6       | 659.4                  | 545.0                   | 114.33                 | 5.767             |                             |  |
| 8,300.0   | 5,704.0               | 8,354.8               | 5,704.0               | 59.0             | 59.7          | -90.00                | 3,078.3                             | -508.6       | 659.4                  | 541.3                   | 118.05                 | 5.586             |                             |  |
| 8,400.0   | 5,704.0               | 8,454.8               | 5,704.0               | 60.9             | 61.5          | -90.00                | 3,178.3                             | -508.6       | 659.4                  | 537.6                   | 121.77                 | 5.415             |                             |  |
| 8,500.0   | 5,704.0               | 8,554.8               | 5,704.0               | 62.8             | 63.3          | -90.00                | 3,278.3                             | -508.6       | 659.4                  | 533.9                   | 125.49                 | 5.254             |                             |  |
| 8,600.0   | 5,704.0               | 8,654.8               | 5,704.0               | 64.6             | 65.2          | -90.00                | 3,378.3                             | -508.6       | 659.4                  | 530.2                   | 129.23                 | 5.103             |                             |  |
| 8,700.0   | 5,704.0               | 8,754.8               | 5,704.0               | 66.5             | 67.0          | -90.00                | 3,478.3                             | -508.6       | 659.4                  | 526.4                   | 132.97                 | 4.959             |                             |  |
| 8,800.0   | 5,704.0               | 8,854.8               | 5,704.0               | 68.4             | 68.9          | -90.00                | 3,578.3                             | -508.6       | 659.4                  | 522.7                   | 136.71                 | 4.823             |                             |  |
| 8,900.0   | 5,704.0               | 8,954.8               | 5,704.0               | 70.3             | 70.7          | -90.00                | 3,678.3                             | -508.6       | 659.4                  | 519.0                   | 140.46                 | 4.695             |                             |  |
| 9,000.0   | 5,704.0               | 9,054.8               | 5,704.0               | 72.1             | 72.6          | -90.00                | 3,778.3                             | -508.6       | 659.4                  | 515.2                   | 144.21                 | 4.573             |                             |  |
| 9,100.0   | 5,704.0               | 9,154.8               | 5,704.0               | 74.0             | 74.5          | -90.00                | 3,878.3                             | -508.6       | 659.4                  | 511.5                   | 147.97                 | 4.457             |                             |  |
| 9,200.0   | 5,704.0               | 9,254.8               | 5,704.0               | 75.9             | 76.3          | -90.00                | 3,978.3                             | -508.6       | 659.4                  | 507.7                   | 151.73                 | 4.346             |                             |  |

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

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2810B - HZ - Plan #1 |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         | Offset Site Error: | 0.0 usft |
|---|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|---|-----------------|------------------------------|----------------------|---------|--------------------|----------|
| Survey Program: 0-ISCWSA MWD                                  |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         | Offset Well Error: | 0.0 usft |
| Reference   |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning |                    |          |
| Measured<br>Depth<br>(usft)                                   | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                      |         |                    |          |
| 9,300.0   | 5,704.0                     | 9,354.8                     | 5,704.0                     | 77.8                | 78.2             | -90.00                      | 4,078.3                                   | -508.6          | 659.4                        | 504.0                | 155.49  | 4.241              |          |
| 9,400.0   | 5,704.0                     | 9,454.8                     | 5,704.0                     | 79.7                | 80.1             | -90.00                      | 4,178.3                                   | -508.6          | 659.5                        | 500.2                | 159.26  | 4.141              |          |
| 9,500.0   | 5,704.0                     | 9,554.8                     | 5,704.0                     | 81.6                | 81.9             | -90.00                      | 4,278.3                                   | -508.6          | 659.5                        | 496.4                | 163.03  | 4.045              |          |
| 9,600.0   | 5,704.0                     | 9,654.8                     | 5,704.0                     | 83.5                | 83.8             | -90.00                      | 4,378.3                                   | -508.6          | 659.5                        | 492.7                | 166.81  | 3.953              |          |
| 9,700.0   | 5,704.0                     | 9,754.8                     | 5,704.0                     | 85.4                | 85.7             | -90.00                      | 4,478.3                                   | -508.6          | 659.5                        | 488.9                | 170.58  | 3.866              |          |
| 9,800.0   | 5,704.0                     | 9,854.8                     | 5,704.0                     | 87.2                | 87.5             | -90.00                      | 4,578.3                                   | -508.6          | 659.5                        | 485.1                | 174.36  | 3.782              |          |
| 9,900.0   | 5,704.0                     | 9,954.8                     | 5,704.0                     | 89.1                | 89.4             | -90.00                      | 4,678.3                                   | -508.6          | 659.5                        | 481.3                | 178.14  | 3.702              |          |
| 10,000.0  | 5,704.0                     | 10,054.8                    | 5,704.0                     | 91.0                | 91.3             | -90.00                      | 4,778.3                                   | -508.6          | 659.5                        | 477.6                | 181.93  | 3.625              |          |
| 10,100.0  | 5,704.0                     | 10,154.8                    | 5,704.0                     | 92.9                | 93.2             | -90.00                      | 4,878.3                                   | -508.6          | 659.5                        | 473.8                | 185.71  | 3.551              |          |
| 10,200.0  | 5,704.0                     | 10,254.8                    | 5,704.0                     | 94.8                | 95.1             | -90.00                      | 4,978.3                                   | -508.6          | 659.5                        | 470.0                | 189.50  | 3.480              |          |
| 10,300.0  | 5,704.0                     | 10,354.8                    | 5,704.0                     | 96.7                | 97.0             | -90.00                      | 5,078.3                                   | -508.6          | 659.5                        | 466.2                | 193.29  | 3.412              |          |
| 10,400.0  | 5,704.0                     | 10,454.8                    | 5,704.0                     | 98.6                | 98.8             | -90.00                      | 5,178.3                                   | -508.6          | 659.5                        | 462.4                | 197.08  | 3.346              |          |
| 10,500.0  | 5,704.0                     | 10,554.8                    | 5,704.0                     | 100.5               | 100.7            | -90.00                      | 5,278.3                                   | -508.6          | 659.5                        | 458.6                | 200.87  | 3.283              |          |
| 10,600.0  | 5,704.0                     | 10,654.8                    | 5,704.0                     | 102.4               | 102.6            | -90.00                      | 5,378.3                                   | -508.6          | 659.5                        | 454.9                | 204.66  | 3.222              |          |
| 10,700.0  | 5,704.0                     | 10,754.8                    | 5,704.0                     | 104.3               | 104.5            | -90.00                      | 5,478.3                                   | -508.6          | 659.5                        | 451.1                | 208.46  | 3.164              |          |
| 10,800.0  | 5,704.0                     | 10,854.8                    | 5,704.0                     | 106.2               | 106.4            | -90.00                      | 5,578.3                                   | -508.6          | 659.5                        | 447.3                | 212.26  | 3.107              |          |
| 10,900.0  | 5,704.0                     | 10,954.8                    | 5,704.0                     | 108.1               | 108.3            | -90.00                      | 5,678.3                                   | -508.6          | 659.5                        | 443.5                | 216.05  | 3.053              |          |
| 11,000.0  | 5,704.0                     | 11,054.8                    | 5,704.0                     | 110.0               | 110.2            | -90.00                      | 5,778.3                                   | -508.6          | 659.5                        | 439.7                | 219.85  | 3.000              |          |
| 11,100.0  | 5,704.0                     | 11,154.8                    | 5,704.0                     | 111.9               | 112.1            | -90.00                      | 5,878.3                                   | -508.6          | 659.6                        | 435.9                | 223.65  | 2.949              |          |
| 11,200.0  | 5,704.0                     | 11,254.8                    | 5,704.0                     | 113.8               | 114.0            | -90.00                      | 5,978.3                                   | -508.6          | 659.6                        | 432.1                | 227.46  | 2.900              |          |
| 11,300.0  | 5,704.0                     | 11,354.8                    | 5,704.0                     | 115.7               | 115.9            | -90.00                      | 6,078.3                                   | -508.6          | 659.6                        | 428.3                | 231.26  | 2.852              |          |
| 11,400.0  | 5,704.0                     | 11,454.8                    | 5,704.0                     | 117.6               | 117.8            | -90.00                      | 6,178.3                                   | -508.6          | 659.6                        | 424.5                | 235.06  | 2.806              |          |
| 11,500.0  | 5,704.0                     | 11,554.8                    | 5,704.0                     | 119.5               | 119.6            | -90.00                      | 6,278.3                                   | -508.6          | 659.6                        | 420.7                | 238.87  | 2.761              |          |
| 11,600.0  | 5,704.0                     | 11,654.8                    | 5,704.0                     | 121.4               | 121.5            | -90.00                      | 6,378.3                                   | -508.6          | 659.6                        | 416.9                | 242.67  | 2.718              |          |
| 11,700.0  | 5,704.0                     | 11,754.8                    | 5,704.0                     | 123.3               | 123.4            | -90.00                      | 6,478.3                                   | -508.6          | 659.6                        | 413.1                | 246.48  | 2.676              |          |
| 11,800.0  | 5,704.0                     | 11,854.8                    | 5,704.0                     | 125.2               | 125.3            | -90.00                      | 6,578.3                                   | -508.6          | 659.6                        | 409.3                | 250.28  | 2.635              |          |
| 11,900.0  | 5,704.0                     | 11,954.8                    | 5,704.0                     | 127.2               | 127.2            | -90.00                      | 6,678.3                                   | -508.6          | 659.6                        | 405.5                | 254.09  | 2.596              |          |
| 12,000.0  | 5,704.0                     | 12,054.8                    | 5,704.0                     | 129.1               | 129.1            | -90.00                      | 6,778.3                                   | -508.6          | 659.6                        | 401.7                | 257.90  | 2.558              |          |
| 12,100.0  | 5,704.0                     | 12,154.8                    | 5,704.0                     | 131.0               | 131.0            | -90.00                      | 6,878.3                                   | -508.6          | 659.6                        | 397.9                | 261.71  | 2.520              |          |
| 12,200.0  | 5,704.0                     | 12,254.8                    | 5,704.0                     | 132.9               | 132.9            | -90.00                      | 6,978.3                                   | -508.6          | 659.6                        | 394.1                | 265.52  | 2.484              |          |
| 12,300.0  | 5,704.0                     | 12,354.8                    | 5,704.0                     | 134.8               | 134.8            | -90.00                      | 7,078.3                                   | -508.6          | 659.6                        | 390.3                | 269.33  | 2.449              |          |
| 12,400.0  | 5,704.0                     | 12,454.8                    | 5,704.0                     | 136.7               | 136.7            | -90.00                      | 7,178.3                                   | -508.6          | 659.6                        | 386.5                | 273.14  | 2.415              |          |
| 12,500.0  | 5,704.0                     | 12,554.8                    | 5,704.0                     | 138.6               | 138.6            | -90.00                      | 7,278.3                                   | -508.6          | 659.6                        | 382.7                | 276.95  | 2.382              |          |
| 12,600.0  | 5,704.0                     | 12,654.8                    | 5,704.0                     | 140.5               | 140.5            | -90.00                      | 7,378.3                                   | -508.6          | 659.6                        | 378.9                | 280.76  | 2.349              |          |
| 12,700.0  | 5,704.0                     | 12,754.8                    | 5,704.0                     | 142.4               | 142.4            | -90.00                      | 7,478.3                                   | -508.6          | 659.6                        | 375.1                | 284.58  | 2.318              |          |
| 12,720.0  | 5,704.0                     | 12,761.6                    | 5,704.0                     | 142.7               | 142.6            | -90.00                      | 7,485.2                                   | -508.6          | 659.8                        | 374.8                | 285.02  | 2.315 SF           |          |

|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2811A - HZ - Plan #1 |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |          | Offset Site Error: | 0.0 usft |
|---|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|---|-----------------|------------------------------|----------------------|---------|----------|--------------------|----------|
| Survey Program: 0-ISCSA MWD                                   |                             |                             |                             |                     |                  |                             |   |                 |                              |                      |         |          | Offset Well Error: | 0.0 usft |
| Reference   |                             | Offset                      |                             | Semi Major Axis     |                  | Highside<br>Toolface<br>(°) | Distance                                  |                 | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning |          |                    |          |
| Measured<br>Depth<br>(usft)                                   | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) |                             | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) |                              |                      |         |          |                    |          |
| 0.0   | 0.0                         | 0.0                         | 0.0                         | 0.0                 | 0.0              | -91.04                      | -0.5                                      | -30.0           | 30.0                         |                      |         |          |                    |          |
| 100.0   | 100.0                       | 100.0                       | 100.0                       | 0.1                 | 0.1              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 29.8                 | 0.19    | 160.418  |                    |          |
| 200.0   | 200.0                       | 200.0                       | 200.0                       | 0.3                 | 0.3              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 29.4                 | 0.64    | 47.128   |                    |          |
| 300.0   | 300.0                       | 300.0                       | 300.0                       | 0.5                 | 0.5              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 28.9                 | 1.09    | 27.622   |                    |          |
| 400.0   | 400.0                       | 400.0                       | 400.0                       | 0.8                 | 0.8              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 28.5                 | 1.54    | 19.536   |                    |          |
| 500.0   | 500.0                       | 500.0                       | 500.0                       | 1.0                 | 1.0              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 28.0                 | 1.99    | 15.112   |                    |          |
| 600.0   | 600.0                       | 600.0                       | 600.0                       | 1.2                 | 1.2              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 27.6                 | 2.43    | 12.322   |                    |          |
| 700.0   | 700.0                       | 700.0                       | 700.0                       | 1.4                 | 1.4              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 27.1                 | 2.88    | 10.401   |                    |          |
| 800.0   | 800.0                       | 800.0                       | 800.0                       | 1.7                 | 1.7              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 26.7                 | 3.33    | 8.999    |                    |          |
| 900.0   | 900.0                       | 900.0                       | 900.0                       | 1.9                 | 1.9              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 26.2                 | 3.78    | 7.929    |                    |          |
| 1,000.0   | 1,000.0                     | 1,000.0                     | 1,000.0                     | 2.1                 | 2.1              | -91.04                      | -0.5                                      | -30.0           | 30.0                         | 25.8                 | 4.23    | 7.087 CC |                    |          |
| 1,100.0   | 1,100.0                     | 1,099.8                     | 1,099.8                     | 2.3                 | 2.3              | -87.78                      | 1.2                                       | -30.3           | 30.3                         | 25.6                 | 4.68    | 6.471 ES |                    |          |
| 1,200.0   | 1,200.0                     | 1,199.5                     | 1,199.3                     | 2.6                 | 2.6              | -90.73                      | 6.3                                       | -31.1           | 31.7                         | 26.6                 | 5.13    | 6.182    |                    |          |
| 1,300.0   | 1,299.8                     | 1,299.4                     | 1,299.0                     | 2.8                 | 2.8              | -88.27                      | 13.2                                      | -32.2           | 33.9                         | 28.3                 | 5.58    | 6.073    |                    |          |
| 1,400.0   | 1,399.6                     | 1,399.4                     | 1,398.8                     | 3.0                 | 3.0              | -88.92                      | 20.1                                      | -33.3           | 36.0                         | 30.0                 | 6.04    | 5.968    |                    |          |
| 1,500.0   | 1,499.4                     | 1,499.4                     | 1,498.5                     | 3.2                 | 3.3              | -89.50                      | 27.0                                      | -34.4           | 38.2                         | 31.7                 | 6.50    | 5.872    |                    |          |
| 1,600.0   | 1,599.1                     | 1,599.4                     | 1,598.2                     | 3.5                 | 3.5              | -90.02                      | 33.9                                      | -35.4           | 40.4                         | 33.4                 | 6.98    | 5.785    |                    |          |
| 1,700.0   | 1,698.9                     | 1,699.3                     | 1,698.0                     | 3.7                 | 3.7              | -90.48                      | 40.8                                      | -36.5           | 42.5                         | 35.1                 | 7.46    | 5.705    |                    |          |
| 1,800.0   | 1,798.6                     | 1,799.3                     | 1,797.7                     | 4.0                 | 4.0              | -90.90                      | 47.6                                      | -37.6           | 44.7                         | 36.8                 | 7.94    | 5.632    |                    |          |
| 1,900.0   | 1,898.4                     | 1,899.3                     | 1,897.4                     | 4.2                 | 4.2              | -91.28                      | 54.5                                      | -38.7           | 46.9                         | 38.5                 | 8.42    | 5.565    |                    |          |
| 2,000.0   | 1,998.1                     | 1,999.3                     | 1,997.2                     | 4.4                 | 4.5              | -91.62                      | 61.4                                      | -39.8           | 49.1                         | 40.1                 | 8.91    | 5.504    |                    |          |
| 2,100.0   | 2,097.9                     | 2,099.2                     | 2,096.9                     | 4.7                 | 4.7              | -91.94                      | 68.3                                      | -40.9           | 51.2                         | 41.8                 | 9.40    | 5.448    |                    |          |
| 2,200.0   | 2,197.6                     | 2,199.2                     | 2,196.6                     | 4.9                 | 5.0              | -92.23                      | 75.2                                      | -42.0           | 53.4                         | 43.5                 | 9.90    | 5.397    |                    |          |
| 2,300.0   | 2,297.4                     | 2,299.2                     | 2,296.4                     | 5.2                 | 5.2              | -92.50                      | 82.1                                      | -43.1           | 55.6                         | 45.2                 | 10.39   | 5.350    |                    |          |
| 2,400.0   | 2,397.2                     | 2,399.2                     | 2,396.1                     | 5.4                 | 5.5              | -92.75                      | 89.0                                      | -44.2           | 57.8                         | 46.9                 | 10.89   | 5.306    |                    |          |
| 2,500.0   | 2,496.9                     | 2,499.2                     | 2,495.8                     | 5.7                 | 5.7              | -92.98                      | 95.9                                      | -45.3           | 59.9                         | 48.6                 | 11.38   | 5.266    |                    |          |
| 2,600.0   | 2,596.7                     | 2,599.1                     | 2,595.6                     | 5.9                 | 6.0              | -93.19                      | 102.7                                     | -46.4           | 62.1                         | 50.2                 | 11.88   | 5.228    |                    |          |
| 2,700.0   | 2,696.4                     | 2,699.1                     | 2,695.3                     | 6.2                 | 6.2              | -93.39                      | 109.6                                     | -47.4           | 64.3                         | 51.9                 | 12.38   | 5.194    |                    |          |
| 2,800.0   | 2,796.2                     | 2,799.1                     | 2,795.0                     | 6.4                 | 6.5              | -93.57                      | 116.5                                     | -48.5           | 66.5                         | 53.6                 | 12.88   | 5.161    |                    |          |
| 2,900.0   | 2,895.9                     | 2,899.1                     | 2,894.8                     | 6.7                 | 6.7              | -93.75                      | 123.4                                     | -49.6           | 68.7                         | 55.3                 | 13.39   | 5.131    |                    |          |
| 3,000.0   | 2,995.7                     | 2,999.0                     | 2,994.5                     | 6.9                 | 7.0              | -93.91                      | 130.3                                     | -50.7           | 70.9                         | 57.0                 | 13.89   | 5.103    |                    |          |
| 3,100.0   | 3,095.5                     | 3,099.0                     | 3,094.2                     | 7.2                 | 7.2              | -94.06                      | 137.2                                     | -51.8           | 73.1                         | 58.7                 | 14.39   | 5.076    |                    |          |
| 3,200.0   | 3,195.2                     | 3,199.0                     | 3,194.0                     | 7.4                 | 7.5              | -94.21                      | 144.1                                     | -52.9           | 75.2                         | 60.3                 | 14.89   | 5.052    |                    |          |
| 3,300.0   | 3,295.0                     | 3,299.0                     | 3,293.7                     | 7.7                 | 7.7              | -94.35                      | 151.0                                     | -54.0           | 77.4                         | 62.0                 | 15.40   | 5.028    |                    |          |
| 3,400.0   | 3,394.7                     | 3,398.9                     | 3,393.4                     | 7.9                 | 8.0              | -94.47                      | 157.8                                     | -55.1           | 79.6                         | 63.7                 | 15.90   | 5.006    |                    |          |
| 3,500.0   | 3,494.5                     | 3,498.9                     | 3,493.2                     | 8.2                 | 8.2              | -94.60                      | 164.7                                     | -56.2           | 81.8                         | 65.4                 | 16.41   | 4.986    |                    |          |
| 3,600.0   | 3,594.2                     | 3,598.9                     | 3,592.9                     | 8.4                 | 8.5              | -94.71                      | 171.6                                     | -57.3           | 84.0                         | 67.1                 | 16.91   | 4.966    |                    |          |
| 3,700.0   | 3,694.0                     | 3,698.9                     | 3,692.6                     | 8.7                 | 8.8              | -94.82                      | 178.5                                     | -58.4           | 86.2                         | 68.8                 | 17.42   | 4.947    |                    |          |
| 3,800.0   | 3,793.7                     | 3,798.8                     | 3,792.3                     | 9.0                 | 9.0              | -94.93                      | 185.4                                     | -59.4           | 88.4                         | 70.4                 | 17.92   | 4.930    |                    |          |
| 3,900.0   | 3,893.5                     | 3,898.8                     | 3,892.1                     | 9.2                 | 9.3              | -95.03                      | 192.3                                     | -60.5           | 90.6                         | 72.1                 | 18.43   | 4.913    |                    |          |
| 4,000.0   | 3,993.3                     | 3,998.8                     | 3,991.8                     | 9.5                 | 9.5              | -95.12                      | 199.2                                     | -61.6           | 92.7                         | 73.8                 | 18.94   | 4.897    |                    |          |
| 4,100.0   | 4,093.0                     | 4,098.8                     | 4,091.5                     | 9.7                 | 9.8              | -95.21                      | 206.1                                     | -62.7           | 94.9                         | 75.5                 | 19.44   | 4.882    |                    |          |
| 4,200.0   | 4,192.8                     | 4,198.7                     | 4,191.3                     | 10.0                | 10.0             | -95.30                      | 213.0                                     | -63.8           | 97.1                         | 77.2                 | 19.95   | 4.868    |                    |          |
| 4,300.0   | 4,292.5                     | 4,298.7                     | 4,291.0                     | 10.2                | 10.3             | -95.38                      | 219.8                                     | -64.9           | 99.3                         | 78.9                 | 20.46   | 4.854    |                    |          |
| 4,400.0   | 4,392.3                     | 4,398.7                     | 4,390.7                     | 10.5                | 10.5             | -95.46                      | 226.7                                     | -66.0           | 101.5                        | 80.5                 | 20.97   | 4.841    |                    |          |
| 4,500.0   | 4,492.0                     | 4,498.7                     | 4,490.5                     | 10.7                | 10.8             | -95.53                      | 233.6                                     | -67.1           | 103.7                        | 82.2                 | 21.47   | 4.829    |                    |          |
| 4,600.0   | 4,591.8                     | 4,598.6                     | 4,590.2                     | 11.0                | 11.0             | -95.61                      | 240.5                                     | -68.2           | 105.9                        | 83.9                 | 21.98   | 4.817    |                    |          |
| 4,700.0   | 4,691.6                     | 4,698.6                     | 4,689.9                     | 11.2                | 11.3             | -95.68                      | 247.4                                     | -69.3           | 108.1                        | 85.6                 | 22.49   | 4.806    |                    |          |
| 4,800.0   | 4,791.3                     | 4,798.6                     | 4,789.7                     | 11.5                | 11.6             | -95.74                      | 254.3                                     | -70.4           | 110.3                        | 87.3                 | 23.00   | 4.795    |                    |          |
| 4,900.0   | 4,891.1                     | 4,898.6                     | 4,889.4                     | 11.8                | 11.8             | -95.81                      | 261.2                                     | -71.4           | 112.5                        | 89.0                 | 23.51   | 4.784    |                    |          |
| 5,000.0   | 4,990.8                     | 4,998.6                     | 4,989.1                     | 12.0                | 12.1             | -95.87                      | 268.1                                     | -72.5           | 114.6                        | 90.6                 | 24.01   | 4.774    |                    |          |
| 5,100.0   | 5,090.6                     | 5,098.5                     | 5,088.9                     | 12.3                | 12.3             | -95.93                      | 274.9                                     | -73.6           | 116.8                        | 92.3                 | 24.52   | 4.764    |                    |          |

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



|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2811A - HZ - Plan #1 |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        | Offset Site Error: | 0.0 usft |
|---|-----------------------|-----------------------|-----------------------|------------------|---------------|-----------------------|-------------------------------------|--------------|------------------------|-------------------------|------------------------|--------------------|----------|
| Survey Program: 0-ISCWSA MWD                                  |                       |                       |                       |                  |               |                       |                                     |              |                        |                         |                        | Offset Well Error: | 0.0 usft |
| Reference   |                       | Offset                |                       | Semi Major Axis  |               | Distance              |                                     |              |                        |                         |                        |                    |          |
| Measured Depth (usft)   | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Total Uncertainty Axis | Separation Factor  | Warning  |
| 5,200.0   | 5,190.3               | 5,196.1               | 5,186.0               | 12.5             | 12.6          | -94.95                | 283.8                               | -75.0        | 119.5                  | 94.5                    | 25.04                  | 4.774              |          |
| 5,229.2   | 5,219.5               | 5,223.5               | 5,212.9               | 12.6             | 12.7          | -93.47                | 288.9                               | -75.8        | 121.0                  | 95.8                    | 25.20                  | 4.802              |          |
| 5,250.0   | 5,240.2               | 5,242.9               | 5,231.8               | 12.6             | 12.8          | -92.09                | 293.3                               | -76.5        | 122.4                  | 97.1                    | 25.31                  | 4.834              |          |
| 5,300.0   | 5,289.5               | 5,289.0               | 5,275.8               | 12.8             | 13.0          | -88.95                | 306.6                               | -78.6        | 126.9                  | 101.2                   | 25.63                  | 4.950              |          |
| 5,350.0   | 5,337.9               | 5,334.4               | 5,318.0               | 13.0             | 13.2          | -86.12                | 323.4                               | -81.3        | 133.0                  | 107.0                   | 26.00                  | 5.113              |          |
| 5,400.0   | 5,384.9               | 5,379.3               | 5,357.9               | 13.2             | 13.4          | -83.65                | 343.4                               | -84.5        | 140.4                  | 114.0                   | 26.42                  | 5.316              |          |
| 5,450.0   | 5,430.0               | 5,423.5               | 5,395.4               | 13.5             | 13.7          | -81.53                | 366.5                               | -88.1        | 149.1                  | 122.3                   | 26.88                  | 5.548              |          |
| 5,500.0   | 5,472.8               | 5,467.1               | 5,430.4               | 13.8             | 14.0          | -79.76                | 392.2                               | -92.2        | 158.9                  | 131.5                   | 27.39                  | 5.802              |          |
| 5,550.0   | 5,513.0               | 5,510.1               | 5,462.7               | 14.2             | 14.4          | -78.29                | 420.3                               | -96.7        | 169.6                  | 141.6                   | 27.94                  | 6.069              |          |
| 5,600.0   | 5,550.1               | 5,550.0               | 5,490.4               | 14.6             | 14.7          | -77.06                | 448.7                               | -101.1       | 181.0                  | 152.5                   | 28.52                  | 6.346              |          |
| 5,650.0   | 5,583.8               | 5,584.7               | 5,518.7               | 15.0             | 15.2          | -76.09                | 482.8                               | -106.6       | 193.1                  | 163.8                   | 29.22                  | 6.606              |          |
| 5,700.0   | 5,613.9               | 5,636.4               | 5,542.4               | 15.5             | 15.6          | -75.28                | 516.7                               | -111.9       | 205.7                  | 175.7                   | 29.97                  | 6.863              |          |
| 5,750.0   | 5,640.0               | 5,677.8               | 5,563.1               | 16.0             | 16.1          | -74.62                | 552.1                               | -117.5       | 218.7                  | 187.9                   | 30.79                  | 7.103              |          |
| 5,800.0   | 5,661.8               | 5,718.9               | 5,580.7               | 16.6             | 16.6          | -74.08                | 588.7                               | -123.3       | 232.1                  | 200.4                   | 31.69                  | 7.324              |          |
| 5,850.0   | 5,679.3               | 5,759.7               | 5,595.4               | 17.2             | 17.1          | -73.65                | 626.4                               | -129.3       | 245.8                  | 213.1                   | 32.68                  | 7.521              |          |
| 5,900.0   | 5,692.2               | 5,800.0               | 5,606.8               | 17.9             | 17.6          | -73.29                | 664.5                               | -135.3       | 259.6                  | 225.9                   | 33.73                  | 7.696              |          |
| 5,950.0   | 5,700.4               | 5,841.3               | 5,615.4               | 18.6             | 18.2          | -73.04                | 704.3                               | -141.6       | 273.5                  | 238.6                   | 34.89                  | 7.839              |          |
| 6,000.0   | 5,703.9               | 5,882.1               | 5,620.7               | 19.3             | 18.8          | -72.84                | 744.3                               | -148.0       | 287.4                  | 251.3                   | 36.11                  | 7.959              |          |
| 6,011.0   | 5,704.0               | 5,891.1               | 5,621.5               | 19.5             | 18.9          | -72.80                | 753.1                               | -149.4       | 290.5                  | 254.1                   | 36.39                  | 7.983              |          |
| 6,100.0   | 5,704.0               | 5,977.7               | 5,623.0               | 20.7             | 20.2          | -74.62                | 838.8                               | -162.3       | 314.3                  | 275.1                   | 39.14                  | 8.029              |          |
| 6,200.0   | 5,704.0               | 6,095.2               | 5,623.0               | 22.1             | 21.8          | -75.77                | 955.6                               | -174.2       | 332.3                  | 290.0                   | 42.32                  | 7.853              |          |
| 6,300.0   | 5,704.0               | 6,215.5               | 5,623.0               | 23.5             | 23.6          | -76.18                | 1,075.8                             | -178.9       | 339.4                  | 293.8                   | 45.53                  | 7.453              |          |
| 6,314.2   | 5,704.0               | 6,232.2               | 5,623.0               | 23.7             | 23.8          | -76.19                | 1,092.5                             | -179.0       | 339.5                  | 293.5                   | 45.98                  | 7.383              |          |
| 6,400.0   | 5,704.0               | 6,318.0               | 5,623.0               | 25.1             | 25.2          | -76.19                | 1,178.3                             | -179.0       | 339.5                  | 290.8                   | 48.61                  | 6.983              |          |
| 6,500.0   | 5,704.0               | 6,418.0               | 5,623.0               | 26.7             | 26.8          | -76.19                | 1,278.3                             | -179.0       | 339.5                  | 287.6                   | 51.82                  | 6.551              |          |
| 6,600.0   | 5,704.0               | 6,518.0               | 5,623.0               | 28.4             | 28.5          | -76.19                | 1,378.3                             | -179.0       | 339.5                  | 284.4                   | 55.10                  | 6.161              |          |
| 6,700.0   | 5,704.0               | 6,618.0               | 5,623.0               | 30.1             | 30.2          | -76.19                | 1,478.3                             | -179.0       | 339.5                  | 281.0                   | 58.43                  | 5.810              |          |
| 6,800.0   | 5,704.0               | 6,718.0               | 5,623.0               | 31.8             | 31.9          | -76.19                | 1,578.3                             | -178.9       | 339.5                  | 277.7                   | 61.81                  | 5.492              |          |
| 6,900.0   | 5,704.0               | 6,818.0               | 5,623.0               | 33.5             | 33.7          | -76.19                | 1,678.3                             | -178.9       | 339.5                  | 274.2                   | 65.22                  | 5.205              |          |
| 7,000.0   | 5,704.0               | 6,918.0               | 5,623.0               | 35.3             | 35.5          | -76.19                | 1,778.3                             | -178.9       | 339.5                  | 270.8                   | 68.68                  | 4.943              |          |
| 7,100.0   | 5,704.0               | 7,018.0               | 5,623.0               | 37.0             | 37.2          | -76.19                | 1,878.3                             | -178.9       | 339.5                  | 267.3                   | 72.16                  | 4.705              |          |
| 7,200.0   | 5,704.0               | 7,118.0               | 5,623.0               | 38.8             | 39.0          | -76.19                | 1,978.3                             | -178.9       | 339.5                  | 263.8                   | 75.66                  | 4.487              |          |
| 7,300.0   | 5,704.0               | 7,218.0               | 5,623.0               | 40.6             | 40.9          | -76.19                | 2,078.3                             | -178.9       | 339.5                  | 260.3                   | 79.19                  | 4.287              |          |
| 7,400.0   | 5,704.0               | 7,318.0               | 5,623.0               | 42.4             | 42.7          | -76.19                | 2,178.3                             | -178.9       | 339.5                  | 256.8                   | 82.73                  | 4.103              |          |
| 7,500.0   | 5,704.0               | 7,418.0               | 5,623.0               | 44.3             | 44.5          | -76.19                | 2,278.3                             | -178.9       | 339.5                  | 253.2                   | 86.29                  | 3.934              |          |
| 7,600.0   | 5,704.0               | 7,518.0               | 5,623.0               | 46.1             | 46.3          | -76.19                | 2,378.3                             | -178.9       | 339.5                  | 249.6                   | 89.87                  | 3.778              |          |
| 7,700.0   | 5,704.0               | 7,618.0               | 5,623.0               | 47.9             | 48.2          | -76.19                | 2,478.3                             | -178.9       | 339.5                  | 246.0                   | 93.45                  | 3.633              |          |
| 7,800.0   | 5,704.0               | 7,718.0               | 5,623.0               | 49.8             | 50.0          | -76.19                | 2,578.3                             | -178.9       | 339.5                  | 242.4                   | 97.05                  | 3.498              |          |
| 7,900.0   | 5,704.0               | 7,818.0               | 5,623.0               | 51.6             | 51.9          | -76.19                | 2,678.3                             | -178.9       | 339.5                  | 238.8                   | 100.66                 | 3.373              |          |
| 8,000.0   | 5,704.0               | 7,918.0               | 5,623.0               | 53.5             | 53.7          | -76.19                | 2,778.3                             | -178.9       | 339.5                  | 235.2                   | 104.28                 | 3.256              |          |
| 8,100.0   | 5,704.0               | 8,018.0               | 5,623.0               | 55.3             | 55.6          | -76.19                | 2,878.3                             | -178.9       | 339.5                  | 231.6                   | 107.91                 | 3.146              |          |
| 8,200.0   | 5,704.0               | 8,118.0               | 5,623.0               | 57.2             | 57.4          | -76.19                | 2,978.3                             | -178.9       | 339.5                  | 228.0                   | 111.54                 | 3.044              |          |
| 8,300.0   | 5,704.0               | 8,218.0               | 5,623.0               | 59.0             | 59.3          | -76.19                | 3,078.3                             | -178.9       | 339.5                  | 224.3                   | 115.18                 | 2.947              |          |
| 8,400.0   | 5,704.0               | 8,318.0               | 5,623.0               | 60.9             | 61.2          | -76.19                | 3,178.3                             | -178.9       | 339.5                  | 220.7                   | 118.83                 | 2.857              |          |
| 8,500.0   | 5,704.0               | 8,418.0               | 5,623.0               | 62.8             | 63.0          | -76.19                | 3,278.3                             | -178.9       | 339.5                  | 217.0                   | 122.48                 | 2.772              |          |
| 8,600.0   | 5,704.0               | 8,518.0               | 5,623.0               | 64.6             | 64.9          | -76.19                | 3,378.3                             | -178.9       | 339.5                  | 213.4                   | 126.14                 | 2.692              |          |
| 8,700.0   | 5,704.0               | 8,618.0               | 5,623.0               | 66.5             | 66.8          | -76.19                | 3,478.3                             | -178.9       | 339.5                  | 209.7                   | 129.80                 | 2.616              |          |
| 8,800.0   | 5,704.0               | 8,718.0               | 5,623.0               | 68.4             | 68.7          | -76.19                | 3,578.3                             | -178.9       | 339.5                  | 206.0                   | 133.47                 | 2.544              |          |
| 8,900.0   | 5,704.0               | 8,818.0               | 5,623.0               | 70.3             | 70.6          | -76.19                | 3,678.3                             | -178.9       | 339.5                  | 202.4                   | 137.14                 | 2.476              |          |
| 9,000.0   | 5,704.0               | 8,918.0               | 5,623.0               | 72.1             | 72.4          | -76.19                | 3,778.3                             | -178.9       | 339.5                  | 198.7                   | 140.81                 | 2.411              |          |
| 9,100.0   | 5,704.0               | 9,018.0               | 5,623.0               | 74.0             | 74.3          | -76.19                | 3,878.3                             | -178.9       | 339.5                  | 195.0                   | 144.49                 | 2.350              |          |
| 9,200.0   | 5,704.0               | 9,118.0               | 5,623.0               | 75.9             | 76.2          | -76.19                | 3,978.3                             | -178.9       | 339.5                  | 191.4                   | 148.17                 | 2.291              |          |

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



|                           |                               |                                     |  |
|---------------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>           | Whiting Petroleum Corporation | <b>Local Co-ordinate Reference:</b> | Well Razor #330-2812B                  |
| <b>Project:</b>           | Weld County, CO               | <b>TVD Reference:</b>               | WELL @ 4731.5usft (Original Well Elev) |
| <b>Reference Site:</b>    | S33-T10N-R58W                 | <b>MD Reference:</b>                | WELL @ 4731.5usft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0usft                       | <b>North Reference:</b>             | Grid                                   |
| <b>Reference Well:</b>    | Razor #330-2812B              | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Well Error:</b>        | 0.0usft                       | <b>Output errors are at</b>         | 2.00 sigma                             |
| <b>Reference Wellbore</b> | HZ                            | <b>Database:</b>                    | USA EDM 5000 Multi Users DB            |
| <b>Reference Design:</b>  | Plan #1                       | <b>Offset TVD Reference:</b>        | Offset Datum                           |

| Offset Design S33-T10N-R58W - Razor #330-2811A - HZ - Plan #1 |                             |                             |                             |                     |                  |                             |   |                 |                              |                               |                              |                      | Offset Site Error: 0.0 usft |
|---|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|---|-----------------|------------------------------|-------------------------------|------------------------------|----------------------|-----------------------------|
| Survey Program: 0-ISCSWA MWD                                  |                             |                             |                             |                     |                  |                             |   |                 |                              |                               |                              |                      | Offset Well Error: 0.0 usft |
| Reference   |                             | Offset                      |                             | Semi Major Axis     |                  |                             | Distance                                  |                 |                              |                               | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning                     |
| Measured<br>Depth<br>(usft)                                   | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) |                              |                      |                             |
| 9,300.0   | 5,704.0                     | 9,218.0                     | 5,623.0                     | 77.8                | 78.1             | -76.19                      | 4,078.3                                   | -178.9          | 339.5                        | 187.7                         | 151.85                       | 2.236                |                             |
| 9,400.0   | 5,704.0                     | 9,318.0                     | 5,623.0                     | 79.7                | 80.0             | -76.19                      | 4,178.3                                   | -178.8          | 339.5                        | 184.0                         | 155.54                       | 2.183                |                             |
| 9,500.0   | 5,704.0                     | 9,418.0                     | 5,623.0                     | 81.6                | 81.9             | -76.19                      | 4,278.3                                   | -178.8          | 339.5                        | 180.3                         | 159.23                       | 2.132                |                             |
| 9,600.0   | 5,704.0                     | 9,518.0                     | 5,623.0                     | 83.5                | 83.8             | -76.19                      | 4,378.3                                   | -178.8          | 339.5                        | 176.6                         | 162.92                       | 2.084                |                             |
| 9,700.0   | 5,704.0                     | 9,618.0                     | 5,623.0                     | 85.4                | 85.7             | -76.19                      | 4,478.3                                   | -178.8          | 339.5                        | 172.9                         | 166.61                       | 2.038                |                             |
| 9,800.0   | 5,704.0                     | 9,718.0                     | 5,623.0                     | 87.2                | 87.6             | -76.20                      | 4,578.3                                   | -178.8          | 339.5                        | 169.2                         | 170.30                       | 1.994                |                             |
| 9,900.0   | 5,704.0                     | 9,818.0                     | 5,623.0                     | 89.1                | 89.5             | -76.20                      | 4,678.3                                   | -178.8          | 339.5                        | 165.5                         | 174.00                       | 1.951                |                             |
| 10,000.0  | 5,704.0                     | 9,918.0                     | 5,623.0                     | 91.0                | 91.3             | -76.20                      | 4,778.3                                   | -178.8          | 339.5                        | 161.8                         | 177.70                       | 1.911                |                             |
| 10,100.0  | 5,704.0                     | 10,018.0                    | 5,623.0                     | 92.9                | 93.2             | -76.20                      | 4,878.3                                   | -178.8          | 339.5                        | 158.2                         | 181.40                       | 1.872                |                             |
| 10,200.0  | 5,704.0                     | 10,118.0                    | 5,623.0                     | 94.8                | 95.1             | -76.20                      | 4,978.3                                   | -178.8          | 339.6                        | 154.5                         | 185.10                       | 1.834                |                             |
| 10,300.0  | 5,704.0                     | 10,218.0                    | 5,623.0                     | 96.7                | 97.0             | -76.20                      | 5,078.3                                   | -178.8          | 339.6                        | 150.8                         | 188.80                       | 1.798                |                             |
| 10,400.0  | 5,704.0                     | 10,318.0                    | 5,623.0                     | 98.6                | 98.9             | -76.20                      | 5,178.3                                   | -178.8          | 339.6                        | 147.1                         | 192.51                       | 1.764                |                             |
| 10,500.0  | 5,704.0                     | 10,418.0                    | 5,623.0                     | 100.5               | 100.8            | -76.20                      | 5,278.3                                   | -178.8          | 339.6                        | 143.3                         | 196.21                       | 1.731                |                             |
| 10,600.0  | 5,704.0                     | 10,518.0                    | 5,623.0                     | 102.4               | 102.7            | -76.20                      | 5,378.3                                   | -178.8          | 339.6                        | 139.6                         | 199.92                       | 1.699                |                             |
| 10,700.0  | 5,704.0                     | 10,618.0                    | 5,623.0                     | 104.3               | 104.6            | -76.20                      | 5,478.3                                   | -178.8          | 339.6                        | 135.9                         | 203.63                       | 1.668                |                             |
| 10,800.0  | 5,704.0                     | 10,718.0                    | 5,623.0                     | 106.2               | 106.5            | -76.20                      | 5,578.3                                   | -178.8          | 339.6                        | 132.2                         | 207.33                       | 1.638                |                             |
| 10,900.0  | 5,704.0                     | 10,818.0                    | 5,623.0                     | 108.1               | 108.4            | -76.20                      | 5,678.3                                   | -178.8          | 339.6                        | 128.5                         | 211.04                       | 1.609                |                             |
| 11,000.0  | 5,704.0                     | 10,918.0                    | 5,623.0                     | 110.0               | 110.3            | -76.20                      | 5,778.3                                   | -178.8          | 339.6                        | 124.8                         | 214.76                       | 1.581                |                             |
| 11,100.0  | 5,704.0                     | 11,018.0                    | 5,623.0                     | 111.9               | 112.2            | -76.20                      | 5,878.3                                   | -178.8          | 339.6                        | 121.1                         | 218.47                       | 1.554                |                             |
| 11,200.0  | 5,704.0                     | 11,118.0                    | 5,623.0                     | 113.8               | 114.2            | -76.20                      | 5,978.3                                   | -178.8          | 339.6                        | 117.4                         | 222.18                       | 1.528                |                             |
| 11,300.0  | 5,704.0                     | 11,218.0                    | 5,623.0                     | 115.7               | 116.1            | -76.20                      | 6,078.3                                   | -178.8          | 339.6                        | 113.7                         | 225.89                       | 1.503                |                             |
| 11,400.0  | 5,704.0                     | 11,318.0                    | 5,623.0                     | 117.6               | 118.0            | -76.20                      | 6,178.3                                   | -178.8          | 339.6                        | 110.0                         | 229.61                       | 1.479 Level 3        |                             |
| 11,500.0  | 5,704.0                     | 11,418.0                    | 5,623.0                     | 119.5               | 119.9            | -76.20                      | 6,278.3                                   | -178.8          | 339.6                        | 106.3                         | 233.32                       | 1.455 Level 3        |                             |
| 11,600.0  | 5,704.0                     | 11,518.0                    | 5,623.0                     | 121.4               | 121.8            | -76.20                      | 6,378.3                                   | -178.8          | 339.6                        | 102.5                         | 237.04                       | 1.433 Level 3        |                             |
| 11,700.0  | 5,704.0                     | 11,618.0                    | 5,623.0                     | 123.3               | 123.7            | -76.20                      | 6,478.3                                   | -178.8          | 339.6                        | 98.8                          | 240.76                       | 1.411 Level 3        |                             |
| 11,800.0  | 5,704.0                     | 11,718.0                    | 5,623.0                     | 125.2               | 125.6            | -76.20                      | 6,578.3                                   | -178.8          | 339.6                        | 95.1                          | 244.47                       | 1.389 Level 3        |                             |
| 11,900.0  | 5,704.0                     | 11,818.0                    | 5,623.0                     | 127.2               | 127.5            | -76.20                      | 6,678.3                                   | -178.8          | 339.6                        | 91.4                          | 248.19                       | 1.368 Level 3        |                             |
| 12,000.0  | 5,704.0                     | 11,918.0                    | 5,623.0                     | 129.1               | 129.4            | -76.20                      | 6,778.3                                   | -178.7          | 339.6                        | 87.7                          | 251.91                       | 1.348 Level 3        |                             |
| 12,100.0  | 5,704.0                     | 12,018.0                    | 5,623.0                     | 131.0               | 131.3            | -76.20                      | 6,878.3                                   | -178.7          | 339.6                        | 84.0                          | 255.63                       | 1.328 Level 3        |                             |
| 12,200.0  | 5,704.0                     | 12,118.0                    | 5,623.0                     | 132.9               | 133.2            | -76.20                      | 6,978.3                                   | -178.7          | 339.6                        | 80.3                          | 259.35                       | 1.309 Level 3        |                             |
| 12,300.0  | 5,704.0                     | 12,218.0                    | 5,623.0                     | 134.8               | 135.1            | -76.20                      | 7,078.3                                   | -178.7          | 339.6                        | 76.5                          | 263.07                       | 1.291 Level 3        |                             |
| 12,400.0  | 5,704.0                     | 12,318.0                    | 5,623.0                     | 136.7               | 137.0            | -76.20                      | 7,178.3                                   | -178.7          | 339.6                        | 72.8                          | 266.79                       | 1.273 Level 3        |                             |
| 12,500.0  | 5,704.0                     | 12,418.0                    | 5,623.0                     | 138.6               | 138.9            | -76.20                      | 7,278.3                                   | -178.7          | 339.6                        | 69.1                          | 270.51                       | 1.255 Level 3        |                             |
| 12,600.0  | 5,704.0                     | 12,518.0                    | 5,623.0                     | 140.5               | 140.8            | -76.20                      | 7,378.3                                   | -178.7          | 339.6                        | 65.4                          | 274.23                       | 1.238 Level 2        |                             |
| 12,700.0  | 5,704.0                     | 12,618.0                    | 5,623.0                     | 142.4               | 142.7            | -76.20                      | 7,478.3                                   | -178.7          | 339.6                        | 61.7                          | 277.89                       | 1.222 Level 2        |                             |
| 12,704.1  | 5,704.0                     | 12,622.1                    | 5,623.0                     | 142.5               | 142.7            | -76.20                      | 7,482.4                                   | -178.7          | 339.6                        | 61.6                          | 278.02                       | 1.222 Level 2        |                             |
| 12,720.0  | 5,704.0                     | 12,630.9                    | 5,623.0                     | 142.7               | 142.9            | -76.20                      | 7,491.2                                   | -178.7          | 339.7                        | 61.3                          | 278.39                       | 1.220 Level 2, SF    |                             |

**Company:** Whiting Petroleum Corporation  
**Project:** Weld County, CO  
**Reference Site:** S33-T10N-R58W  
**Site Error:** 0.0usft  
**Reference Well:** Razor #33O-2812B  
**Well Error:** 0.0usft  
**Reference Wellbore:** HZ  
**Reference Design:** Plan #1

**Local Co-ordinate Reference:** Well Razor #33O-2812B  
**TVD Reference:** WELL @ 4731.5usft (Original Well Elev)  
**MD Reference:** WELL @ 4731.5usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** USA EDM 5000 Multi Users DB  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 4731.5usft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.00 W °

Coordinates are relative to: Razor #33O-2812B  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 1.06°

