



Project: Weld County, CO
Site: Sec 29-T10N-R58W
Well: Razor #29H-3216
Wellbore: Hz
Design: APD

PROJECT DETAILS: Weld County, C
Geodetic System: US State Plane 1983
Datum: North American Datum
Ellipsoid: GRS 1980
Zone: Colorado Northern Zor
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.88°
Magnetic Field
Strength: 52822.4nT
Dip Angle: 67.35°
Date: 5/4/2016
Model: IGRF2015

| FORMATION TOP DETAILS | | |
|-----------------------|---------|---------|
| | TVDPath | MDPath |
| Formation | 1550.00 | 1559.26 |
| Upper Pierre | 3500.00 | 3527.51 |
| Hygiene | 3650.00 | 3678.92 |
| Lower Pierre | 5794.00 | 5884.06 |
| P200 Marker | 5829.00 | 5935.64 |
| P300 Marker | 5853.00 | 5974.03 |
| P350 Marker | 5865.00 | 5994.42 |
| Sharon Springs | 5868.00 | 5999.66 |
| Niobrara | 5888.00 | 6036.37 |
| Top A Chalk | 5923.00 | 6110.95 |
| Top A Marl | 5944.00 | 6166.69 |
| A Marl | 5949.00 | 6182.09 |
| Top Upper B | 5969.00 | 6260.99 |
| Base Upper B | 5981.00 | 6384.78 |
| Top Lower B | | |

WELL DETAILS: Razor #29H-3216

| +N/-S | +E/-W | Northing | Ground Level: | 4766.80 | Longitude | Slot |
|-------|-------|------------|---------------|------------|------------------|-------------------|
| 0.00 | 0.00 | 1542191.43 | Easting | 3447658.59 | 40° 48' 37.770 N | 103° 52' 58.030 W |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | Vsect | Target |
|-----|----------|-------|--------|---------|----------|--------|------|--------|---------|---------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 690.42 | 7.81 | 78.29 | 689.22 | 5.39 | 26.01 | 2.00 | 78.29 | -2.66 | |
| 4 | 4794.55 | 7.81 | 78.29 | 4755.28 | 118.61 | 571.99 | 0.00 | 0.00 | -58.51 | |
| 5 | 5184.97 | 0.00 | 0.00 | 5144.50 | 124.00 | 598.00 | 2.00 | 180.00 | -61.18 | |
| 6 | 5384.97 | 0.00 | 0.00 | 5344.50 | 124.00 | 598.00 | 0.00 | 0.00 | -61.18 | |
| 7 | 6384.78 | 90.00 | 178.31 | 5981.00 | -512.22 | 616.82 | 9.00 | 178.31 | 573.56 | |
| 8 | 13906.43 | 90.00 | 178.31 | 5981.00 | -8030.58 | 839.20 | 0.00 | 0.00 | 8074.31 | PBHL Razor 29H-3216 |

ANNOTATIONS

| TVD | MD | Inc | Azi | +N/-S | +E/-W | Vsect | Departure | Annotation |
|---------|----------|-------|--------|----------|--------|---------|-----------|--------------------|
| 300.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Build 2°/100' |
| 689.22 | 690.42 | 7.81 | 78.29 | 5.39 | 26.01 | -2.66 | 26.56 | Hold 7.81° Inc |
| 4755.28 | 4794.55 | 7.81 | 78.29 | 118.61 | 571.99 | -58.51 | 584.16 | Drop 2°/100' |
| 5144.50 | 5184.97 | 0.00 | 0.00 | 124.00 | 598.00 | -61.18 | 610.72 | Hold Vertical |
| 5344.50 | 5384.97 | 0.00 | 0.00 | 124.00 | 598.00 | -61.18 | 610.72 | KOP, Build 9°/100' |
| 5981.00 | 6384.78 | 90.00 | 178.31 | -512.22 | 616.82 | 573.56 | 1247.22 | LP @ 90° Inc, Hold |
| 5981.00 | 13906.43 | 90.00 | 178.31 | -8030.58 | 839.20 | 8074.31 | 8768.87 | TD at 13906.43 |

DESIGN TARGET DETAILS

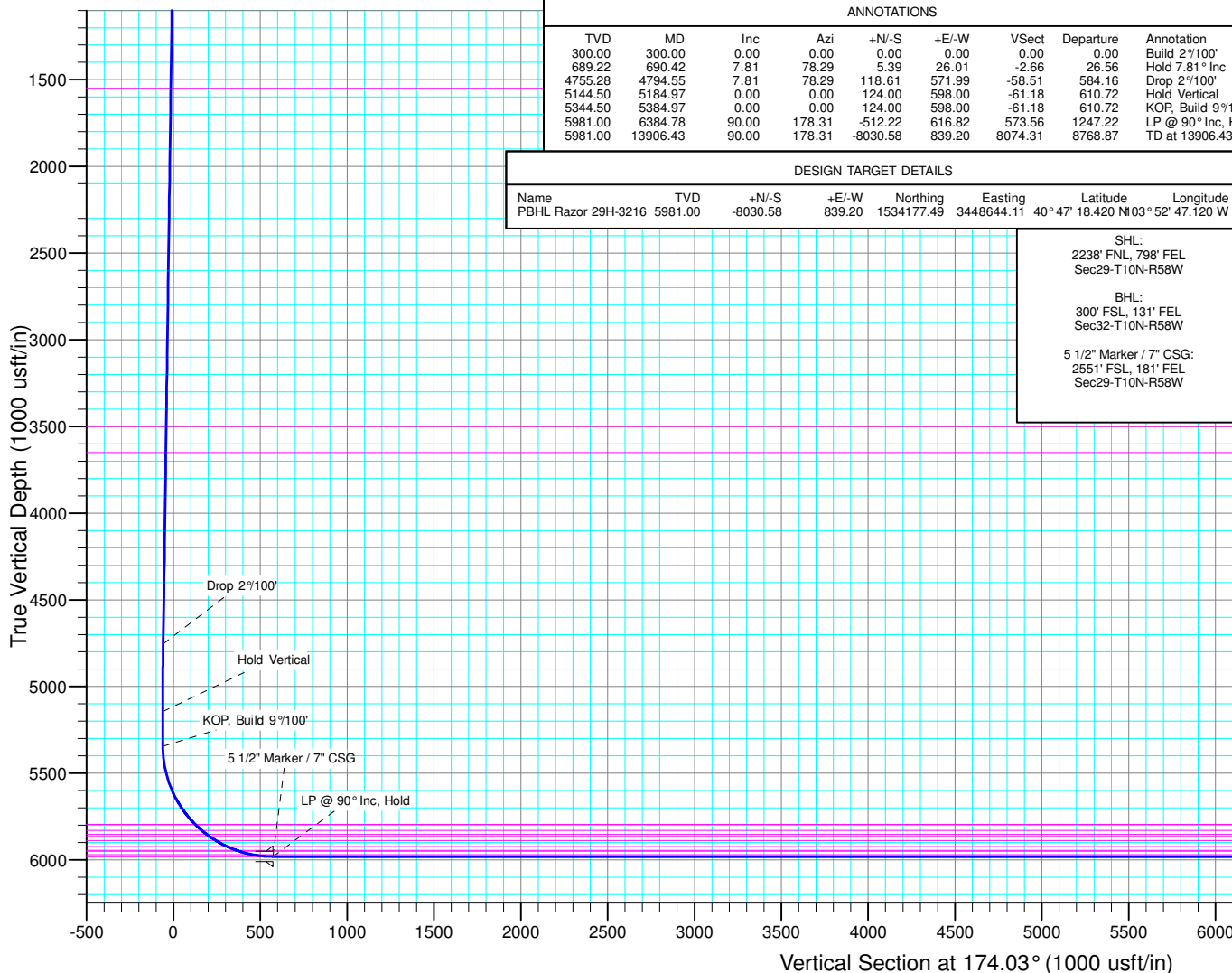
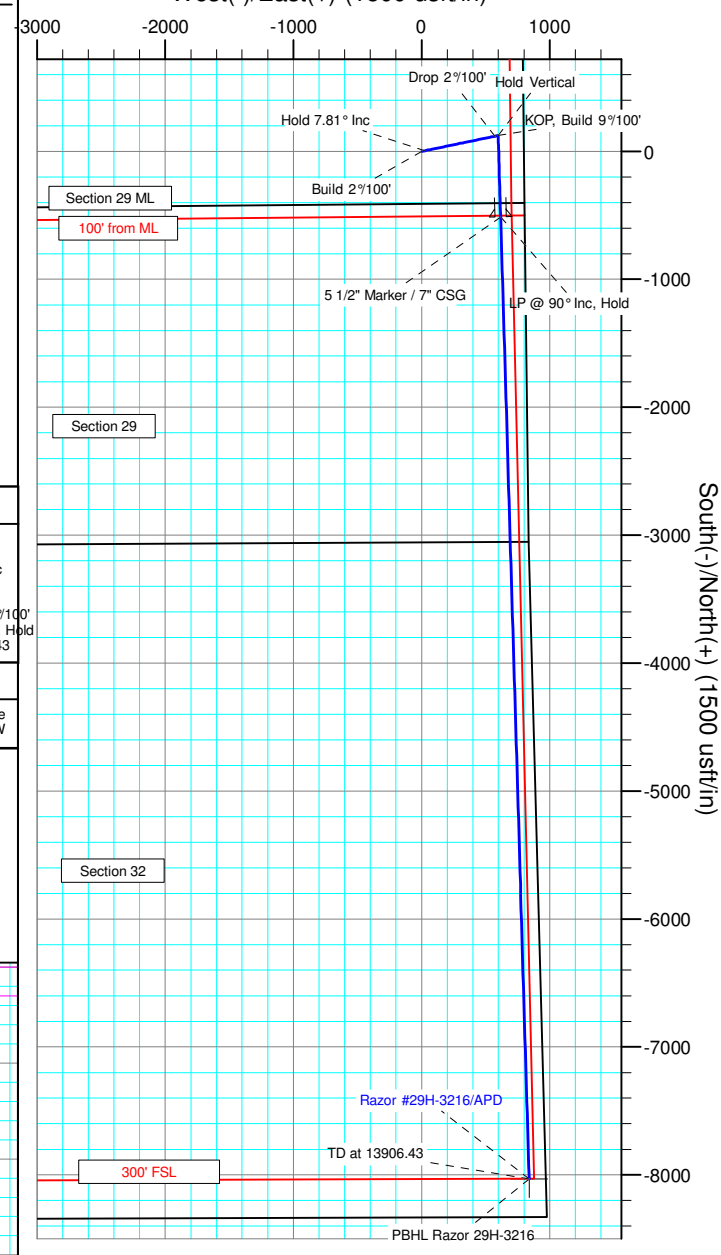
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---------------------|---------|----------|--------|------------|------------|-----------------------------------|-----------|
| PBHL Razor 29H-3216 | 5981.00 | -8030.58 | 839.20 | 1534177.49 | 3448644.11 | 40° 47' 18.420 N 03° 52' 47.120 W | |

SHL:
2238' FNL, 798' FEL
Sec29-T10N-R58W

BHL:
300' FSL, 131' FEL
Sec32-T10N-R58W

5 1/2" Marker / 7" CSG:
2551' FSL, 181' FEL
Sec29-T10N-R58W

West(-)/East(+) (1500 usft/in)





Whiting Petroleum Corp.

**Weld County, CO
Sec 29-T10N-R58W
Razor #29H-3216**

Hz

Plan: APD

Standard Planning Report

25 August, 2016



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

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

| | | | | | |
|-----------------------|-----------|------------------|-------------------|-------------------|-------------------|
| Site | | Sec 29-T10N-R58W | | | |
| Site Position: | | Northing: | 1,544,286.15 usft | Latitude: | 40° 48' 59.281 N |
| From: | Lat/Long | Easting: | 3,443,100.91 usft | Longitude: | 103° 53' 56.800 W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13.200 in | Grid Convergence: | 1.03 ° |

| Well | Razor #29H-3216 | | | | | |
|----------------------|-----------------|----------------|---------------------|-------------------|---------------|-------------------|
| Well Position | +N/-S | -2,176.65 usft | Northing: | 1,542,191.43 usft | Latitude: | 40° 48' 37.770 N |
| | +E/-W | 4,519.12 usft | Easting: | 3,447,658.59 usft | Longitude: | 103° 52' 58.030 W |
| Position Uncertainty | | 0.00 usft | Wellhead Elevation: | 0.00 usft | Ground Level: | 4,766.80 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Hz | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2015 | 5/4/2016 | 7.88 | 67.35 | 52,822 |

| | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| Design | APD | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PROTOTYPE | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
| | 0.00 | 0.00 | 0.00 | 174.03 |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|------------------------------|-----------------------------|----------------------------|----------------|--------------------|
| Plan Sections | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 690.42 | 7.81 | 78.29 | 689.22 | 5.39 | 26.01 | 2.00 | 2.00 | 0.00 | 78.29 | |
| 4,794.55 | 7.81 | 78.29 | 4,755.28 | 118.61 | 571.99 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,184.97 | 0.00 | 0.00 | 5,144.50 | 124.00 | 598.00 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 5,384.97 | 0.00 | 0.00 | 5,344.50 | 124.00 | 598.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,384.78 | 90.00 | 178.31 | 5,981.00 | -512.22 | 616.82 | 9.00 | 9.00 | 0.00 | 178.31 | |
| 13,906.43 | 90.00 | 178.31 | 5,981.00 | -8,030.58 | 839.20 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL Razor 29H-321 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | APD | | |

| Planned Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Build 2°/100' | | | | | | | | | |
| 400.00 | 2.00 | 78.29 | 399.98 | 0.35 | 1.71 | -0.17 | 2.00 | 2.00 | 0.00 |
| 500.00 | 4.00 | 78.29 | 499.84 | 1.42 | 6.83 | -0.70 | 2.00 | 2.00 | 0.00 |
| 600.00 | 6.00 | 78.29 | 599.45 | 3.19 | 15.37 | -1.57 | 2.00 | 2.00 | 0.00 |
| 690.42 | 7.81 | 78.29 | 689.22 | 5.39 | 26.01 | -2.66 | 2.00 | 2.00 | 0.00 |
| Hold 7.81° Inc | | | | | | | | | |
| 700.00 | 7.81 | 78.29 | 698.70 | 5.66 | 27.28 | -2.79 | 0.00 | 0.00 | 0.00 |
| 800.00 | 7.81 | 78.29 | 797.78 | 8.42 | 40.59 | -4.15 | 0.00 | 0.00 | 0.00 |
| 900.00 | 7.81 | 78.29 | 896.85 | 11.17 | 53.89 | -5.51 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 7.81 | 78.29 | 995.92 | 13.93 | 67.19 | -6.87 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 7.81 | 78.29 | 1,094.99 | 16.69 | 80.50 | -8.23 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 7.81 | 78.29 | 1,194.07 | 19.45 | 93.80 | -9.60 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 7.81 | 78.29 | 1,293.14 | 22.21 | 107.10 | -10.96 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 7.81 | 78.29 | 1,392.21 | 24.97 | 120.41 | -12.32 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 7.81 | 78.29 | 1,491.29 | 27.73 | 133.71 | -13.68 | 0.00 | 0.00 | 0.00 |
| 1,559.26 | 7.81 | 78.29 | 1,550.00 | 29.36 | 141.59 | -14.48 | 0.00 | 0.00 | 0.00 |
| Upper Pierre | | | | | | | | | |
| 1,600.00 | 7.81 | 78.29 | 1,590.36 | 30.48 | 147.01 | -15.04 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 7.81 | 78.29 | 1,689.43 | 33.24 | 160.32 | -16.40 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 7.81 | 78.29 | 1,788.50 | 36.00 | 173.62 | -17.76 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 7.81 | 78.29 | 1,887.58 | 38.76 | 186.92 | -19.12 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 7.81 | 78.29 | 1,986.65 | 41.52 | 200.23 | -20.48 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 7.81 | 78.29 | 2,085.72 | 44.28 | 213.53 | -21.84 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 7.81 | 78.29 | 2,184.80 | 47.04 | 226.83 | -23.20 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 7.81 | 78.29 | 2,283.87 | 49.79 | 240.14 | -24.57 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 7.81 | 78.29 | 2,382.94 | 52.55 | 253.44 | -25.93 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 7.81 | 78.29 | 2,482.01 | 55.31 | 266.74 | -27.29 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 7.81 | 78.29 | 2,581.09 | 58.07 | 280.04 | -28.65 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 7.81 | 78.29 | 2,680.16 | 60.83 | 293.35 | -30.01 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 7.81 | 78.29 | 2,779.23 | 63.59 | 306.65 | -31.37 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 7.81 | 78.29 | 2,878.30 | 66.35 | 319.95 | -32.73 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 7.81 | 78.29 | 2,977.38 | 69.10 | 333.26 | -34.09 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 7.81 | 78.29 | 3,076.45 | 71.86 | 346.56 | -35.45 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 7.81 | 78.29 | 3,175.52 | 74.62 | 359.86 | -36.81 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 7.81 | 78.29 | 3,274.60 | 77.38 | 373.17 | -38.17 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 7.81 | 78.29 | 3,373.67 | 80.14 | 386.47 | -39.54 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 7.81 | 78.29 | 3,472.74 | 82.90 | 399.77 | -40.90 | 0.00 | 0.00 | 0.00 |
| 3,527.51 | 7.81 | 78.29 | 3,500.00 | 83.66 | 403.43 | -41.27 | 0.00 | 0.00 | 0.00 |
| Hygiene | | | | | | | | | |
| 3,600.00 | 7.81 | 78.29 | 3,571.81 | 85.65 | 413.08 | -42.26 | 0.00 | 0.00 | 0.00 |
| 3,678.92 | 7.81 | 78.29 | 3,650.00 | 87.83 | 423.58 | -43.33 | 0.00 | 0.00 | 0.00 |
| Lower Pierre | | | | | | | | | |
| 3,700.00 | 7.81 | 78.29 | 3,670.89 | 88.41 | 426.38 | -43.62 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 7.81 | 78.29 | 3,769.96 | 91.17 | 439.68 | -44.98 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 7.81 | 78.29 | 3,869.03 | 93.93 | 452.99 | -46.34 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 7.81 | 78.29 | 3,968.11 | 96.69 | 466.29 | -47.70 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 7.81 | 78.29 | 4,067.18 | 99.45 | 479.59 | -49.06 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 7.81 | 78.29 | 4,166.25 | 102.21 | 492.90 | -50.42 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 7.81 | 78.29 | 4,265.32 | 104.96 | 506.20 | -51.78 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 7.81 | 78.29 | 4,364.40 | 107.72 | 519.50 | -53.14 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

| Planned Survey | | | | | | | | | |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 4,500.00 | 7.81 | 78.29 | 4,463.47 | 110.48 | 532.81 | -54.51 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 7.81 | 78.29 | 4,562.54 | 113.24 | 546.11 | -55.87 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 7.81 | 78.29 | 4,661.61 | 116.00 | 559.41 | -57.23 | 0.00 | 0.00 | 0.00 |
| 4,794.55 | 7.81 | 78.29 | 4,755.28 | 118.61 | 571.99 | -58.51 | 0.00 | 0.00 | 0.00 |
| Drop 2°/100' | | | | | | | | | |
| 4,800.00 | 7.70 | 78.29 | 4,760.69 | 118.76 | 572.71 | -58.59 | 2.00 | -2.00 | 0.00 |
| 4,900.00 | 5.70 | 78.29 | 4,860.00 | 121.12 | 584.13 | -59.76 | 2.00 | -2.00 | 0.00 |
| 5,000.00 | 3.70 | 78.29 | 4,959.66 | 122.79 | 592.16 | -60.58 | 2.00 | -2.00 | 0.00 |
| 5,100.00 | 1.70 | 78.29 | 5,059.54 | 123.74 | 596.77 | -61.05 | 2.00 | -2.00 | 0.00 |
| 5,184.97 | 0.00 | 0.00 | 5,144.50 | 124.00 | 598.00 | -61.18 | 2.00 | -2.00 | 0.00 |
| Hold Vertical | | | | | | | | | |
| 5,200.00 | 0.00 | 0.00 | 5,159.53 | 124.00 | 598.00 | -61.18 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 5,259.53 | 124.00 | 598.00 | -61.18 | 0.00 | 0.00 | 0.00 |
| 5,384.97 | 0.00 | 0.00 | 5,344.50 | 124.00 | 598.00 | -61.18 | 0.00 | 0.00 | 0.00 |
| KOP, Build 9°/100' | | | | | | | | | |
| 5,400.00 | 1.35 | 178.31 | 5,359.53 | 123.82 | 598.01 | -61.00 | 9.00 | 9.00 | 0.00 |
| 5,500.00 | 10.35 | 178.31 | 5,458.91 | 113.64 | 598.31 | -50.84 | 9.00 | 9.00 | 0.00 |
| 5,600.00 | 19.36 | 178.31 | 5,555.46 | 88.04 | 599.06 | -25.30 | 9.00 | 9.00 | 0.00 |
| 5,700.00 | 28.36 | 178.31 | 5,646.83 | 47.65 | 600.26 | 15.00 | 9.00 | 9.00 | 0.00 |
| 5,800.00 | 37.36 | 178.31 | 5,730.74 | -6.53 | 601.86 | 69.05 | 9.00 | 9.00 | 0.00 |
| 5,884.06 | 44.93 | 178.31 | 5,794.00 | -61.77 | 603.49 | 124.16 | 9.00 | 9.00 | 0.00 |
| P200 Marker | | | | | | | | | |
| 5,900.00 | 46.36 | 178.31 | 5,805.14 | -73.16 | 603.83 | 135.52 | 9.00 | 9.00 | 0.00 |
| 5,935.64 | 49.57 | 178.31 | 5,829.00 | -99.62 | 604.61 | 161.92 | 9.00 | 9.00 | 0.00 |
| P300 Marker | | | | | | | | | |
| 5,974.03 | 53.03 | 178.31 | 5,853.00 | -129.56 | 605.50 | 191.79 | 9.00 | 9.00 | 0.00 |
| P350 Marker | | | | | | | | | |
| 5,994.42 | 54.86 | 178.31 | 5,865.00 | -146.03 | 605.99 | 208.22 | 9.00 | 9.00 | 0.00 |
| Sharon Springs | | | | | | | | | |
| 5,999.66 | 55.33 | 178.31 | 5,868.00 | -150.33 | 606.11 | 212.51 | 9.00 | 9.00 | 0.00 |
| Niobrara | | | | | | | | | |
| 6,000.00 | 55.36 | 178.31 | 5,868.19 | -150.61 | 606.12 | 212.79 | 9.00 | 9.00 | 0.00 |
| 6,036.37 | 58.64 | 178.31 | 5,888.00 | -181.10 | 607.02 | 243.21 | 9.00 | 9.00 | 0.00 |
| Top A Chalk | | | | | | | | | |
| 6,100.00 | 64.36 | 178.31 | 5,918.35 | -236.97 | 608.68 | 298.95 | 9.00 | 9.00 | 0.00 |
| 6,110.95 | 65.35 | 178.31 | 5,923.00 | -246.88 | 608.97 | 308.83 | 9.00 | 9.00 | 0.00 |
| Top A Marl | | | | | | | | | |
| 6,166.69 | 70.37 | 178.31 | 5,944.00 | -298.46 | 610.50 | 360.30 | 9.00 | 9.00 | 0.00 |
| A Marl | | | | | | | | | |
| 6,182.09 | 71.75 | 178.31 | 5,949.00 | -313.03 | 610.93 | 374.83 | 9.00 | 9.00 | 0.00 |
| Top Upper B | | | | | | | | | |
| 6,200.00 | 73.37 | 178.31 | 5,954.37 | -330.10 | 611.43 | 391.87 | 9.00 | 9.00 | 0.00 |
| 6,260.99 | 78.86 | 178.31 | 5,969.00 | -389.26 | 613.18 | 450.89 | 9.00 | 9.00 | 0.00 |
| Base Upper B | | | | | | | | | |
| 6,300.00 | 82.37 | 178.31 | 5,975.36 | -427.73 | 614.32 | 489.26 | 9.00 | 9.00 | 0.00 |
| 6,384.78 | 90.00 | 178.31 | 5,981.00 | -512.22 | 616.82 | 573.56 | 9.00 | 9.00 | 0.00 |
| LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG | | | | | | | | | |
| 6,400.00 | 90.00 | 178.31 | 5,981.00 | -527.43 | 617.27 | 588.73 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 90.00 | 178.31 | 5,981.00 | -627.39 | 620.23 | 688.46 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 90.00 | 178.31 | 5,981.00 | -727.35 | 623.18 | 788.18 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 90.00 | 178.31 | 5,981.00 | -827.30 | 626.14 | 887.90 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 90.00 | 178.31 | 5,981.00 | -927.26 | 629.10 | 987.62 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

| Planned Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 6,900.00 | 90.00 | 178.31 | 5,981.00 | -1,027.22 | 632.05 | 1,087.34 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 90.00 | 178.31 | 5,981.00 | -1,127.17 | 635.01 | 1,187.07 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 90.00 | 178.31 | 5,981.00 | -1,227.13 | 637.97 | 1,286.79 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 90.00 | 178.31 | 5,981.00 | -1,327.08 | 640.92 | 1,386.51 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 90.00 | 178.31 | 5,981.00 | -1,427.04 | 643.88 | 1,486.23 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 90.00 | 178.31 | 5,981.00 | -1,527.00 | 646.83 | 1,585.96 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 90.00 | 178.31 | 5,981.00 | -1,626.95 | 649.79 | 1,685.68 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 90.00 | 178.31 | 5,981.00 | -1,726.91 | 652.75 | 1,785.40 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 90.00 | 178.31 | 5,981.00 | -1,826.87 | 655.70 | 1,885.12 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.00 | 178.31 | 5,981.00 | -1,926.82 | 658.66 | 1,984.84 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.00 | 178.31 | 5,981.00 | -2,026.78 | 661.62 | 2,084.57 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.00 | 178.31 | 5,981.00 | -2,126.73 | 664.57 | 2,184.29 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.00 | 178.31 | 5,981.00 | -2,226.69 | 667.53 | 2,284.01 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.00 | 178.31 | 5,981.00 | -2,326.65 | 670.49 | 2,383.73 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.00 | 178.31 | 5,981.00 | -2,426.60 | 673.44 | 2,483.46 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.00 | 178.31 | 5,981.00 | -2,526.56 | 676.40 | 2,583.18 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.00 | 178.31 | 5,981.00 | -2,626.52 | 679.36 | 2,682.90 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.00 | 178.31 | 5,981.00 | -2,726.47 | 682.31 | 2,782.62 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.00 | 178.31 | 5,981.00 | -2,826.43 | 685.27 | 2,882.34 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.00 | 178.31 | 5,981.00 | -2,926.38 | 688.23 | 2,982.07 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.00 | 178.31 | 5,981.00 | -3,026.34 | 691.18 | 3,081.79 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.00 | 178.31 | 5,981.00 | -3,126.30 | 694.14 | 3,181.51 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.00 | 178.31 | 5,981.00 | -3,226.25 | 697.10 | 3,281.23 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.00 | 178.31 | 5,981.00 | -3,326.21 | 700.05 | 3,380.96 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.00 | 178.31 | 5,981.00 | -3,426.17 | 703.01 | 3,480.68 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.00 | 178.31 | 5,981.00 | -3,526.12 | 705.97 | 3,580.40 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.00 | 178.31 | 5,981.00 | -3,626.08 | 708.92 | 3,680.12 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.00 | 178.31 | 5,981.00 | -3,726.04 | 711.88 | 3,779.84 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.00 | 178.31 | 5,981.00 | -3,825.99 | 714.84 | 3,879.57 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.00 | 178.31 | 5,981.00 | -3,925.95 | 717.79 | 3,979.29 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.00 | 178.31 | 5,981.00 | -4,025.90 | 720.75 | 4,079.01 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.00 | 178.31 | 5,981.00 | -4,125.86 | 723.71 | 4,178.73 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.00 | 178.31 | 5,981.00 | -4,225.82 | 726.66 | 4,278.46 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 178.31 | 5,981.00 | -4,325.77 | 729.62 | 4,378.18 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 178.31 | 5,981.00 | -4,425.73 | 732.58 | 4,477.90 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 178.31 | 5,981.00 | -4,525.69 | 735.53 | 4,577.62 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 178.31 | 5,981.00 | -4,625.64 | 738.49 | 4,677.34 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 178.31 | 5,981.00 | -4,725.60 | 741.45 | 4,777.07 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.00 | 178.31 | 5,981.00 | -4,825.55 | 744.40 | 4,876.79 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.00 | 178.31 | 5,981.00 | -4,925.51 | 747.36 | 4,976.51 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.00 | 178.31 | 5,981.00 | -5,025.47 | 750.32 | 5,076.23 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.00 | 178.31 | 5,981.00 | -5,125.42 | 753.27 | 5,175.96 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 178.31 | 5,981.00 | -5,225.38 | 756.23 | 5,275.68 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 178.31 | 5,981.00 | -5,325.34 | 759.19 | 5,375.40 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 178.31 | 5,981.00 | -5,425.29 | 762.14 | 5,475.12 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 178.31 | 5,981.00 | -5,525.25 | 765.10 | 5,574.84 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 178.31 | 5,981.00 | -5,625.20 | 768.06 | 5,674.57 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.00 | 178.31 | 5,981.00 | -5,725.16 | 771.01 | 5,774.29 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 178.31 | 5,981.00 | -5,825.12 | 773.97 | 5,874.01 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 178.31 | 5,981.00 | -5,925.07 | 776.93 | 5,973.73 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 178.31 | 5,981.00 | -6,025.03 | 779.88 | 6,073.46 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 178.31 | 5,981.00 | -6,124.99 | 782.84 | 6,173.18 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 178.31 | 5,981.00 | -6,224.94 | 785.80 | 6,272.90 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 178.31 | 5,981.00 | -6,324.90 | 788.75 | 6,372.62 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

| Planned Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 12,300.00 | 90.00 | 178.31 | 5,981.00 | -6,424.85 | 791.71 | 6,472.34 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.00 | 178.31 | 5,981.00 | -6,524.81 | 794.67 | 6,572.07 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 178.31 | 5,981.00 | -6,624.77 | 797.62 | 6,671.79 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 178.31 | 5,981.00 | -6,724.72 | 800.58 | 6,771.51 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 178.31 | 5,981.00 | -6,824.68 | 803.54 | 6,871.23 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 178.31 | 5,981.00 | -6,924.64 | 806.49 | 6,970.96 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 178.31 | 5,981.00 | -7,024.59 | 809.45 | 7,070.68 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 178.31 | 5,981.00 | -7,124.55 | 812.41 | 7,170.40 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 178.31 | 5,981.00 | -7,224.50 | 815.36 | 7,270.12 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 178.31 | 5,981.00 | -7,324.46 | 818.32 | 7,369.84 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 178.31 | 5,981.00 | -7,424.42 | 821.27 | 7,469.57 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 178.31 | 5,981.00 | -7,524.37 | 824.23 | 7,569.29 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 178.31 | 5,981.00 | -7,624.33 | 827.19 | 7,669.01 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 178.31 | 5,981.00 | -7,724.29 | 830.14 | 7,768.73 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 178.31 | 5,981.00 | -7,824.24 | 833.10 | 7,868.46 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 178.31 | 5,981.00 | -7,924.20 | 836.06 | 7,968.18 | 0.00 | 0.00 | 0.00 |
| 13,900.00 | 90.00 | 178.31 | 5,981.00 | -8,024.16 | 839.01 | 8,067.90 | 0.00 | 0.00 | 0.00 |
| 13,906.43 | 90.00 | 178.31 | 5,981.00 | -8,030.58 | 839.20 | 8,074.31 | 0.00 | 0.00 | 0.00 |
| TD at 13906.43 | | | | | | | | | |

| Design Targets | | | | | | | | | |
|---------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|-------------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| PBHL Razor 29H-3216 | 0.00 | 0.00 | 5,981.00 | -8,030.58 | 839.20 | 1,534,177.49 | 3,448,644.10 | 40° 47' 18.420 N | 103° 52' 47.120 W |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

| Casing Points | | | | | |
|-----------------------|-----------------------|------------------------|----------------------|--------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) | |
| 6,384.78 | 5,981.00 | 5 1/2" Marker / 7" CSG | 7.000 | 8.750 | |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|----------------------|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #29H-3216 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4787.80usft |
| Project: | Weld County, CO | MD Reference: | KBE @ 4787.80usft |
| Site: | Sec 29-T10N-R58W | North Reference: | True |
| Well: | Razor #29H-3216 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

| Formations | | | | | | |
|-----------------------|-----------------------|----------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 1,559.26 | 1,550.00 | Upper Pierre | | | | |
| 3,527.51 | 3,500.00 | Hygiene | | | | |
| 3,678.92 | 3,650.00 | Lower Pierre | | | | |
| 5,884.06 | 5,794.00 | P200 Marker | | | | |
| 5,935.64 | 5,829.00 | P300 Marker | | | | |
| 5,974.03 | 5,853.00 | P350 Marker | | | | |
| 5,994.42 | 5,865.00 | Sharon Springs | | | | |
| 5,999.66 | 5,868.00 | Niobrara | | | | |
| 6,036.37 | 5,888.00 | Top A Chalk | | | | |
| 6,110.95 | 5,923.00 | Top A Marl | | | | |
| 6,166.69 | 5,944.00 | A Marl | | | | |
| 6,182.09 | 5,949.00 | Top Upper B | | | | |
| 6,260.99 | 5,969.00 | Base Upper B | | | | |
| 6,384.78 | 5,981.00 | Top Lower B | | | | |

| Plan Annotations | | | | | |
|-----------------------|-----------------------|-------------------|--------------|--------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | | |
| | | +N/-S (usft) | +E/-W (usft) | Comment | |
| 300.00 | 300.00 | 0.00 | 0.00 | Build 2°/100' | |
| 690.42 | 689.22 | 5.39 | 26.01 | Hold 7.81° Inc | |
| 4,794.55 | 4,755.28 | 118.61 | 571.99 | Drop 2°/100' | |
| 5,184.97 | 5,144.50 | 124.00 | 598.00 | Hold Vertical | |
| 5,384.97 | 5,344.50 | 124.00 | 598.00 | KOP, Build 9°/100' | |
| 6,384.78 | 5,981.00 | -512.22 | 616.82 | LP @ 90° Inc, Hold | |
| 13,906.43 | 5,981.00 | -8,030.58 | 839.20 | TD at 13906.43 | |