



Project: Weld County, CO
Site: Sec 25-T10N-R58W
Well: Razor #25N-2440
Wellbore: Hz
Design: APD

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



Azimuths to True North
Magnetic North: 7.84°
Magnetic Field
Strength: 53024.2snT
Dip Angle: 67.38°
Date: 5/13/2015
Model: IGRF2010

FORMATION TOP DETAILS

| MDPath | Formation |
|---------|----------------|
| 1550.00 | Upper Pierre |
| 1551.62 | Hygiene |
| 3500.00 | Lower Pierre |
| 3504.37 | P200 Marker |
| 3650.00 | P300 Marker |
| 3654.58 | P350 Marker |
| 5428.00 | Sharon Springs |
| 5448.00 | Niobrara |
| 5464.00 | Top A Chalk |
| 5524.00 | Top A Marl |
| 5546.10 | A Marl |
| 5582.00 | Top Upper B |
| 5589.00 | Base Upper B |
| 5592.54 | Top Lower B |

WELL DETAILS: Razor #25N-2440

| +N/-S | +E/-W | Northing | Ground Level: Easting | 4701.00 Latitude | Longtitude | Slot |
|-------|-------|------------|--------------------------|---------------------|-------------------|------|
| 0.00 | 0.00 | 1539913.19 | 3466480.86 | 40° 48' 11.800 N | 103° 48' 53.860 W | |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|----------|-------|-------|--------|----------|-----------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 452.03 | 3.04 | 157.05 | 451.96 | -3.71 | 1.57 | 2.00 | 157.05 | -3.70 | |
| 4 | 4722.12 | 3.04 | 157.05 | 4716.04 | -212.29 | 89.90 | 0.00 | 0.00 | -211.47 | |
| 5 | 4874.15 | 0.00 | 0.00 | 4868.00 | -216.00 | 91.48 | 2.00 | 180.00 | -215.17 | |
| 6 | 5074.15 | 0.00 | 0.00 | 5068.00 | -216.00 | 91.48 | 0.00 | 0.00 | -215.17 | |
| 7 | 5892.54 | 90.00 | 360.00 | 5589.00 | 305.00 | 91.48 | 11.00 | 360.00 | 305.81 | |
| 8 | 15796.15 | 90.00 | 360.00 | 5589.00 | 10208.61 | 91.48 | 0.00 | 0.00 | 10209.02 | PBHL 2440 |

ANNOTATIONS

| TVD | MD | Inc | Azi | +N/-S | +E/-W | VSec | Departure | Annotation |
|---------|----------|-------|--------|----------|-------|----------|-----------|---------------------|
| 300.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Build 2°/100' |
| 451.96 | 452.03 | 3.04 | 157.05 | -3.71 | 1.57 | -3.70 | 4.03 | Hold 3.04° Inc |
| 4716.04 | 4722.12 | 3.04 | 157.05 | -212.29 | 89.90 | -211.47 | 230.54 | Drop 2°/100' |
| 4868.00 | 4874.15 | 0.00 | 0.00 | -216.00 | 91.48 | -215.17 | 234.57 | Hold Vertical |
| 5068.00 | 5074.15 | 0.00 | 0.00 | -216.00 | 91.48 | -215.17 | 234.57 | KOP, Build 11°/100' |
| 5589.00 | 5892.54 | 90.00 | 360.00 | 305.00 | 91.48 | 305.81 | 755.57 | LP @ 90° Inc, Hold |
| 5589.00 | 15796.15 | 90.00 | 360.00 | 10208.61 | 91.48 | 10209.02 | 10659.18 | TD at 15796.15 |

DESIGN TARGET DETAILS

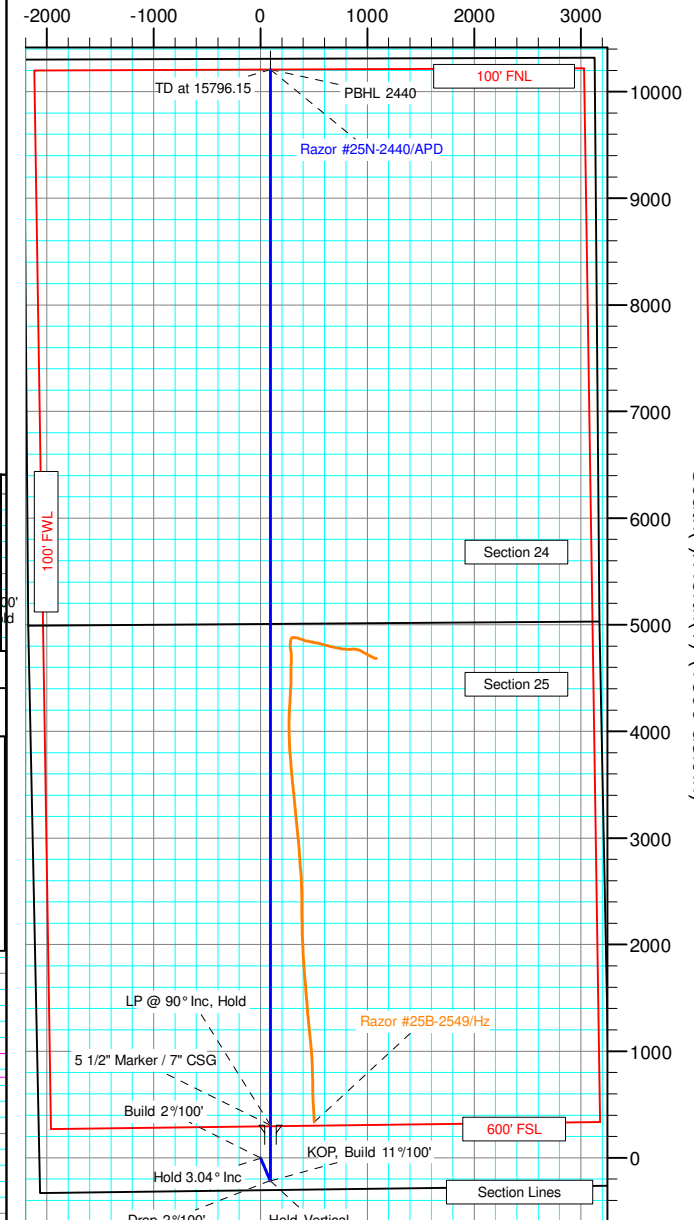
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|-----------|---------|----------|-------|------------|------------|------------------|-------------------|
| PBHL 2440 | 5589.00 | 10208.61 | 91.48 | 1550121.70 | 3466378.34 | 40° 49' 52.670 N | 103° 48' 52.670 W |

SHL:
305' FSL, 2070' FWL
Sec25-T10N-R58W

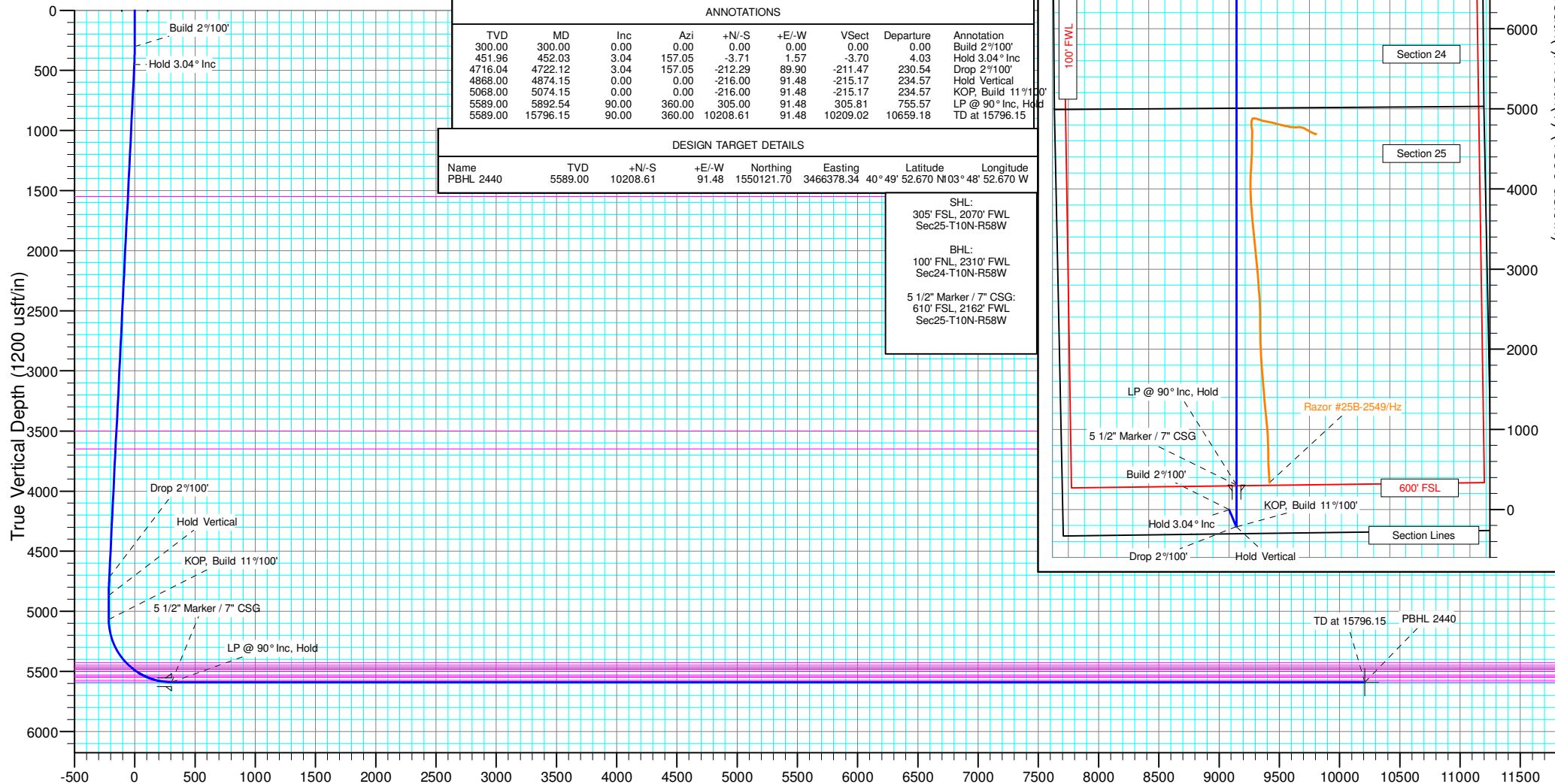
BHL:
100' FNL, 2310' FWL
Sec24-T10N-R58W

5 1/2" Marker / 7" CSG:
610' FSL, 2162' FWL
Sec25-T10N-R58W

West(-)/East(+) (1800 usft/in)



South(-)/North(+) (1800 usft/in)



Vertical Section at 0.51° (1200 usft/in)



Whiting Petroleum Corp.

**Weld County, CO
Sec 25-T10N-R58W
Razor #25N-2440**

Hz

Plan: APD

Standard Planning Report

19 February, 2016



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #25N-2440 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | 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 25-T10N-R58W | | | |
| Site Position: | | Northing: | 1,544,564.45 usft | Latitude: 40° 48' 58.050 N |
| From: | Lat/Long | Easting: | 3,464,883.62 usft | Longitude: 103° 49' 13.480 W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13.200 in | Grid Convergence: 1.09 ° |

| | | | | |
|-----------------------------|-----------------|----------------------------|------------------|------------------------------------|
| Well | Razor #25N-2440 | | | |
| Well Position | +N/-S | -4,680.67 usft | Northing: | 1,539,913.20 usft |
| | +E/-W | 1,508.85 usft | Easting: | 3,466,480.85 usft |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: | | Ground Level: 4,701.00 usft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Hz | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 5/13/2015 | 7.84 | 67.38 | 53,024 |

| | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| 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 | 0.51 |

| 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 | |
| 452.03 | 3.04 | 157.05 | 451.96 | -3.71 | 1.57 | 2.00 | 2.00 | 0.00 | 157.05 | |
| 4,722.12 | 3.04 | 157.05 | 4,716.04 | -212.29 | 89.90 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,874.15 | 0.00 | 0.00 | 4,868.00 | -216.00 | 91.48 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 5,074.15 | 0.00 | 0.00 | 5,068.00 | -216.00 | 91.48 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,892.54 | 90.00 | 360.00 | 5,589.00 | 305.00 | 91.48 | 11.00 | 11.00 | 0.00 | 360.00 | |
| 15,796.15 | 90.00 | 360.00 | 5,589.00 | 10,208.61 | 91.48 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL 2440 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
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| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | 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 | 157.05 | 399.98 | -1.61 | 0.68 | -1.60 | 2.00 | 2.00 | 0.00 |
| 452.03 | 3.04 | 157.05 | 451.96 | -3.71 | 1.57 | -3.70 | 2.00 | 2.00 | 0.00 |
| Hold 3.04° Inc | | | | | | | | | |
| 500.00 | 3.04 | 157.05 | 499.86 | -6.06 | 2.57 | -6.03 | 0.00 | 0.00 | 0.00 |
| 600.00 | 3.04 | 157.05 | 599.72 | -10.94 | 4.63 | -10.90 | 0.00 | 0.00 | 0.00 |
| 700.00 | 3.04 | 157.05 | 699.58 | -15.83 | 6.70 | -15.77 | 0.00 | 0.00 | 0.00 |
| 800.00 | 3.04 | 157.05 | 799.44 | -20.71 | 8.77 | -20.63 | 0.00 | 0.00 | 0.00 |
| 900.00 | 3.04 | 157.05 | 899.30 | -25.59 | 10.84 | -25.50 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 3.04 | 157.05 | 999.16 | -30.48 | 12.91 | -30.36 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 3.04 | 157.05 | 1,099.02 | -35.36 | 14.98 | -35.23 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 3.04 | 157.05 | 1,198.88 | -40.25 | 17.05 | -40.09 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 3.04 | 157.05 | 1,298.73 | -45.13 | 19.11 | -44.96 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 3.04 | 157.05 | 1,398.59 | -50.02 | 21.18 | -49.83 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 3.04 | 157.05 | 1,498.45 | -54.90 | 23.25 | -54.69 | 0.00 | 0.00 | 0.00 |
| 1,551.62 | 3.04 | 157.05 | 1,550.00 | -57.42 | 24.32 | -57.20 | 0.00 | 0.00 | 0.00 |
| Upper Pierre | | | | | | | | | |
| 1,600.00 | 3.04 | 157.05 | 1,598.31 | -59.79 | 25.32 | -59.56 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 3.04 | 157.05 | 1,698.17 | -64.67 | 27.39 | -64.42 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 3.04 | 157.05 | 1,798.03 | -69.56 | 29.46 | -69.29 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 3.04 | 157.05 | 1,897.89 | -74.44 | 31.53 | -74.15 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 3.04 | 157.05 | 1,997.75 | -79.32 | 33.59 | -79.02 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 3.04 | 157.05 | 2,097.61 | -84.21 | 35.66 | -83.89 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 3.04 | 157.05 | 2,197.47 | -89.09 | 37.73 | -88.75 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 3.04 | 157.05 | 2,297.33 | -93.98 | 39.80 | -93.62 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 3.04 | 157.05 | 2,397.19 | -98.86 | 41.87 | -98.48 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 3.04 | 157.05 | 2,497.05 | -103.75 | 43.94 | -103.35 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 3.04 | 157.05 | 2,596.90 | -108.63 | 46.01 | -108.21 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 3.04 | 157.05 | 2,696.76 | -113.52 | 48.07 | -113.08 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 3.04 | 157.05 | 2,796.62 | -118.40 | 50.14 | -117.95 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 3.04 | 157.05 | 2,896.48 | -123.28 | 52.21 | -122.81 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 3.04 | 157.05 | 2,996.34 | -128.17 | 54.28 | -127.68 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 3.04 | 157.05 | 3,096.20 | -133.05 | 56.35 | -132.54 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 3.04 | 157.05 | 3,196.06 | -137.94 | 58.42 | -137.41 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 3.04 | 157.05 | 3,295.92 | -142.82 | 60.49 | -142.27 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 3.04 | 157.05 | 3,395.78 | -147.71 | 62.55 | -147.14 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 3.04 | 157.05 | 3,495.64 | -152.59 | 64.62 | -152.01 | 0.00 | 0.00 | 0.00 |
| 3,504.37 | 3.04 | 157.05 | 3,500.00 | -152.81 | 64.71 | -152.22 | 0.00 | 0.00 | 0.00 |
| Hygiene | | | | | | | | | |
| 3,600.00 | 3.04 | 157.05 | 3,595.50 | -157.48 | 66.69 | -156.87 | 0.00 | 0.00 | 0.00 |
| 3,654.58 | 3.04 | 157.05 | 3,650.00 | -160.14 | 67.82 | -159.53 | 0.00 | 0.00 | 0.00 |
| Lower Pierre | | | | | | | | | |
| 3,700.00 | 3.04 | 157.05 | 3,695.36 | -162.36 | 68.76 | -161.74 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 3.04 | 157.05 | 3,795.22 | -167.25 | 70.83 | -166.60 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 3.04 | 157.05 | 3,895.07 | -172.13 | 72.90 | -171.47 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 3.04 | 157.05 | 3,994.93 | -177.01 | 74.97 | -176.34 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 3.04 | 157.05 | 4,094.79 | -181.90 | 77.04 | -181.20 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 3.04 | 157.05 | 4,194.65 | -186.78 | 79.10 | -186.07 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 3.04 | 157.05 | 4,294.51 | -191.67 | 81.17 | -190.93 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 3.04 | 157.05 | 4,394.37 | -196.55 | 83.24 | -195.80 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #25N-2440 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | 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 | 3.04 | 157.05 | 4,494.23 | -201.44 | 85.31 | -200.66 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 3.04 | 157.05 | 4,594.09 | -206.32 | 87.38 | -205.53 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 3.04 | 157.05 | 4,693.95 | -211.21 | 89.45 | -210.40 | 0.00 | 0.00 | 0.00 |
| 4,722.12 | 3.04 | 157.05 | 4,716.04 | -212.29 | 89.90 | -211.47 | 0.00 | 0.00 | 0.00 |
| Drop 2°/100' | | | | | | | | | |
| 4,800.00 | 1.48 | 157.05 | 4,793.85 | -215.12 | 91.10 | -214.29 | 2.00 | -2.00 | 0.00 |
| 4,874.15 | 0.00 | 0.00 | 4,868.00 | -216.00 | 91.48 | -215.17 | 2.00 | -2.00 | 0.00 |
| Hold Vertical | | | | | | | | | |
| 4,900.00 | 0.00 | 0.00 | 4,893.85 | -216.00 | 91.48 | -215.17 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 0.00 | 0.00 | 4,993.85 | -216.00 | 91.48 | -215.17 | 0.00 | 0.00 | 0.00 |
| 5,074.15 | 0.00 | 0.00 | 5,068.00 | -216.00 | 91.48 | -215.17 | 0.00 | 0.00 | 0.00 |
| KOP, Build 11°/100' | | | | | | | | | |
| 5,100.00 | 2.84 | 360.00 | 5,093.84 | -215.36 | 91.48 | -214.53 | 11.00 | 11.00 | 0.00 |
| 5,200.00 | 13.84 | 360.00 | 5,192.63 | -200.87 | 91.48 | -200.05 | 11.00 | 11.00 | 0.00 |
| 5,300.00 | 24.84 | 360.00 | 5,286.84 | -167.81 | 91.48 | -166.99 | 11.00 | 11.00 | 0.00 |
| 5,400.00 | 35.83 | 360.00 | 5,373.01 | -117.38 | 91.48 | -116.56 | 11.00 | 11.00 | 0.00 |
| 5,471.60 | 43.71 | 360.00 | 5,428.00 | -71.62 | 91.48 | -70.80 | 11.00 | 11.00 | 0.00 |
| P200 Marker | | | | | | | | | |
| 5,500.00 | 46.83 | 360.00 | 5,447.99 | -51.44 | 91.48 | -50.62 | 11.00 | 11.00 | 0.00 |
| 5,500.02 | 46.83 | 360.00 | 5,448.00 | -51.43 | 91.48 | -50.61 | 0.00 | 0.00 | 0.00 |
| P300 Marker | | | | | | | | | |
| 5,524.00 | 49.47 | 360.00 | 5,464.00 | -33.56 | 91.48 | -32.74 | 11.01 | 11.01 | 0.00 |
| P350 Marker | | | | | | | | | |
| 5,546.10 | 51.90 | 360.00 | 5,478.00 | -16.47 | 91.48 | -15.65 | 11.00 | 11.00 | 0.00 |
| Sharon Springs | | | | | | | | | |
| 5,552.64 | 52.62 | 360.00 | 5,482.00 | -11.30 | 91.48 | -10.48 | 11.00 | 11.00 | 0.00 |
| Niobrara | | | | | | | | | |
| 5,581.72 | 55.82 | 360.00 | 5,499.00 | 12.29 | 91.48 | 13.11 | 11.00 | 11.00 | 0.00 |
| Top A Chalk | | | | | | | | | |
| 5,600.00 | 57.83 | 360.00 | 5,509.01 | 27.59 | 91.48 | 28.41 | 11.00 | 11.00 | 0.00 |
| 5,640.04 | 62.23 | 360.00 | 5,529.00 | 62.27 | 91.48 | 63.08 | 11.00 | 11.00 | 0.00 |
| Top A Marl | | | | | | | | | |
| 5,667.14 | 65.21 | 360.00 | 5,541.00 | 86.57 | 91.48 | 87.39 | 11.00 | 11.00 | 0.00 |
| A Marl | | | | | | | | | |
| 5,687.05 | 67.40 | 360.00 | 5,549.00 | 104.80 | 91.48 | 105.62 | 11.00 | 11.00 | 0.00 |
| Top Upper B | | | | | | | | | |
| 5,700.00 | 68.83 | 360.00 | 5,553.83 | 116.81 | 91.48 | 117.63 | 11.00 | 11.00 | 0.00 |
| 5,763.09 | 75.76 | 360.00 | 5,573.00 | 176.88 | 91.48 | 177.69 | 11.00 | 11.00 | 0.00 |
| Base Upper B | | | | | | | | | |
| 5,800.00 | 79.82 | 360.00 | 5,580.80 | 212.95 | 91.48 | 213.76 | 11.00 | 11.00 | 0.00 |
| 5,892.54 | 90.00 | 360.00 | 5,589.00 | 305.00 | 91.48 | 305.81 | 11.00 | 11.00 | 0.00 |
| LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG | | | | | | | | | |
| 5,900.00 | 90.00 | 360.00 | 5,589.00 | 312.46 | 91.48 | 313.27 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 90.00 | 360.00 | 5,589.00 | 412.46 | 91.48 | 413.26 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 90.00 | 360.00 | 5,589.00 | 512.46 | 91.48 | 513.26 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 90.00 | 360.00 | 5,589.00 | 612.46 | 91.48 | 613.26 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 90.00 | 360.00 | 5,589.00 | 712.46 | 91.48 | 713.25 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 90.00 | 360.00 | 5,589.00 | 812.46 | 91.48 | 813.25 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 90.00 | 360.00 | 5,589.00 | 912.46 | 91.48 | 913.24 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 90.00 | 360.00 | 5,589.00 | 1,012.46 | 91.48 | 1,013.24 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 90.00 | 360.00 | 5,589.00 | 1,112.46 | 91.48 | 1,113.24 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 90.00 | 360.00 | 5,589.00 | 1,212.46 | 91.48 | 1,213.23 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #25N-2440 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | 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 | 360.00 | 5,589.00 | 1,312.46 | 91.48 | 1,313.23 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 90.00 | 360.00 | 5,589.00 | 1,412.46 | 91.48 | 1,413.22 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 90.00 | 360.00 | 5,589.00 | 1,512.46 | 91.48 | 1,513.22 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 90.00 | 360.00 | 5,589.00 | 1,612.46 | 91.48 | 1,613.22 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 90.00 | 360.00 | 5,589.00 | 1,712.46 | 91.48 | 1,713.21 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 90.00 | 360.00 | 5,589.00 | 1,812.46 | 91.48 | 1,813.21 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 90.00 | 360.00 | 5,589.00 | 1,912.46 | 91.48 | 1,913.20 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 90.00 | 360.00 | 5,589.00 | 2,012.46 | 91.48 | 2,013.20 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 90.00 | 360.00 | 5,589.00 | 2,112.46 | 91.48 | 2,113.20 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.00 | 360.00 | 5,589.00 | 2,212.46 | 91.48 | 2,213.19 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.00 | 360.00 | 5,589.00 | 2,312.46 | 91.48 | 2,313.19 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.00 | 360.00 | 5,589.00 | 2,412.46 | 91.48 | 2,413.18 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.00 | 360.00 | 5,589.00 | 2,512.46 | 91.48 | 2,513.18 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.00 | 360.00 | 5,589.00 | 2,612.46 | 91.48 | 2,613.18 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.00 | 360.00 | 5,589.00 | 2,712.46 | 91.48 | 2,713.17 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.00 | 360.00 | 5,589.00 | 2,812.46 | 91.48 | 2,813.17 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.00 | 360.00 | 5,589.00 | 2,912.46 | 91.48 | 2,913.16 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.00 | 360.00 | 5,589.00 | 3,012.46 | 91.48 | 3,013.16 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.00 | 360.00 | 5,589.00 | 3,112.46 | 91.48 | 3,113.16 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.00 | 360.00 | 5,589.00 | 3,212.46 | 91.48 | 3,213.15 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.00 | 360.00 | 5,589.00 | 3,312.46 | 91.48 | 3,313.15 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.00 | 360.00 | 5,589.00 | 3,412.46 | 91.48 | 3,413.14 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.00 | 360.00 | 5,589.00 | 3,512.46 | 91.48 | 3,513.14 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.00 | 360.00 | 5,589.00 | 3,612.46 | 91.48 | 3,613.14 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.00 | 360.00 | 5,589.00 | 3,712.46 | 91.48 | 3,713.13 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.00 | 360.00 | 5,589.00 | 3,812.46 | 91.48 | 3,813.13 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.00 | 360.00 | 5,589.00 | 3,912.46 | 91.48 | 3,913.12 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.00 | 360.00 | 5,589.00 | 4,012.46 | 91.48 | 4,013.12 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.00 | 360.00 | 5,589.00 | 4,112.46 | 91.48 | 4,113.12 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.00 | 360.00 | 5,589.00 | 4,212.46 | 91.48 | 4,213.11 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.00 | 360.00 | 5,589.00 | 4,312.46 | 91.48 | 4,313.11 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.00 | 360.00 | 5,589.00 | 4,412.46 | 91.48 | 4,413.10 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.00 | 360.00 | 5,589.00 | 4,512.46 | 91.48 | 4,513.10 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 360.00 | 5,589.00 | 4,612.46 | 91.48 | 4,613.10 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 360.00 | 5,589.00 | 4,712.46 | 91.48 | 4,713.09 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 360.00 | 5,589.00 | 4,812.46 | 91.48 | 4,813.09 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 360.00 | 5,589.00 | 4,912.46 | 91.48 | 4,913.08 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 360.00 | 5,589.00 | 5,012.46 | 91.48 | 5,013.08 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.00 | 360.00 | 5,589.00 | 5,112.46 | 91.48 | 5,113.08 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.00 | 360.00 | 5,589.00 | 5,212.46 | 91.48 | 5,213.07 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.00 | 360.00 | 5,589.00 | 5,312.46 | 91.48 | 5,313.07 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.00 | 360.00 | 5,589.00 | 5,412.46 | 91.48 | 5,413.06 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 360.00 | 5,589.00 | 5,512.46 | 91.48 | 5,513.06 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 360.00 | 5,589.00 | 5,612.46 | 91.48 | 5,613.06 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 360.00 | 5,589.00 | 5,712.46 | 91.48 | 5,713.05 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 360.00 | 5,589.00 | 5,812.46 | 91.48 | 5,813.05 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 360.00 | 5,589.00 | 5,912.46 | 91.48 | 5,913.04 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.00 | 360.00 | 5,589.00 | 6,012.46 | 91.48 | 6,013.04 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 360.00 | 5,589.00 | 6,112.46 | 91.48 | 6,113.04 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 360.00 | 5,589.00 | 6,212.46 | 91.48 | 6,213.03 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 360.00 | 5,589.00 | 6,312.46 | 91.48 | 6,313.03 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 360.00 | 5,589.00 | 6,412.46 | 91.48 | 6,413.02 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 360.00 | 5,589.00 | 6,512.46 | 91.48 | 6,513.02 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 360.00 | 5,589.00 | 6,612.46 | 91.48 | 6,613.02 | 0.00 | 0.00 | 0.00 |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #25N-2440 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | 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 | 360.00 | 5,589.00 | 6,712.46 | 91.48 | 6,713.01 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.00 | 360.00 | 5,589.00 | 6,812.46 | 91.48 | 6,813.01 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 360.00 | 5,589.00 | 6,912.46 | 91.48 | 6,913.00 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 360.00 | 5,589.00 | 7,012.46 | 91.48 | 7,013.00 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 360.00 | 5,589.00 | 7,112.46 | 91.48 | 7,113.00 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 360.00 | 5,589.00 | 7,212.46 | 91.48 | 7,212.99 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 360.00 | 5,589.00 | 7,312.46 | 91.48 | 7,312.99 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 360.00 | 5,589.00 | 7,412.46 | 91.48 | 7,412.98 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 360.00 | 5,589.00 | 7,512.46 | 91.48 | 7,512.98 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 360.00 | 5,589.00 | 7,612.46 | 91.48 | 7,612.97 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 360.00 | 5,589.00 | 7,712.46 | 91.48 | 7,712.97 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 360.00 | 5,589.00 | 7,812.46 | 91.48 | 7,812.97 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 360.00 | 5,589.00 | 7,912.46 | 91.48 | 7,912.96 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 360.00 | 5,589.00 | 8,012.46 | 91.48 | 8,012.96 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 360.00 | 5,589.00 | 8,112.46 | 91.48 | 8,112.95 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 360.00 | 5,589.00 | 8,212.46 | 91.48 | 8,212.95 | 0.00 | 0.00 | 0.00 |
| 13,900.00 | 90.00 | 360.00 | 5,589.00 | 8,312.46 | 91.48 | 8,312.95 | 0.00 | 0.00 | 0.00 |
| 14,000.00 | 90.00 | 360.00 | 5,589.00 | 8,412.46 | 91.48 | 8,412.94 | 0.00 | 0.00 | 0.00 |
| 14,100.00 | 90.00 | 360.00 | 5,589.00 | 8,512.46 | 91.48 | 8,512.94 | 0.00 | 0.00 | 0.00 |
| 14,200.00 | 90.00 | 360.00 | 5,589.00 | 8,612.46 | 91.48 | 8,612.93 | 0.00 | 0.00 | 0.00 |
| 14,300.00 | 90.00 | 360.00 | 5,589.00 | 8,712.46 | 91.48 | 8,712.93 | 0.00 | 0.00 | 0.00 |
| 14,400.00 | 90.00 | 360.00 | 5,589.00 | 8,812.46 | 91.48 | 8,812.93 | 0.00 | 0.00 | 0.00 |
| 14,500.00 | 90.00 | 360.00 | 5,589.00 | 8,912.46 | 91.48 | 8,912.92 | 0.00 | 0.00 | 0.00 |
| 14,600.00 | 90.00 | 360.00 | 5,589.00 | 9,012.46 | 91.48 | 9,012.92 | 0.00 | 0.00 | 0.00 |
| 14,700.00 | 90.00 | 360.00 | 5,589.00 | 9,112.46 | 91.48 | 9,112.91 | 0.00 | 0.00 | 0.00 |
| 14,800.00 | 90.00 | 360.00 | 5,589.00 | 9,212.46 | 91.48 | 9,212.91 | 0.00 | 0.00 | 0.00 |
| 14,900.00 | 90.00 | 360.00 | 5,589.00 | 9,312.46 | 91.48 | 9,312.91 | 0.00 | 0.00 | 0.00 |
| 15,000.00 | 90.00 | 360.00 | 5,589.00 | 9,412.46 | 91.48 | 9,412.90 | 0.00 | 0.00 | 0.00 |
| 15,100.00 | 90.00 | 360.00 | 5,589.00 | 9,512.46 | 91.48 | 9,512.90 | 0.00 | 0.00 | 0.00 |
| 15,200.00 | 90.00 | 360.00 | 5,589.00 | 9,612.46 | 91.48 | 9,612.89 | 0.00 | 0.00 | 0.00 |
| 15,300.00 | 90.00 | 360.00 | 5,589.00 | 9,712.46 | 91.48 | 9,712.89 | 0.00 | 0.00 | 0.00 |
| 15,400.00 | 90.00 | 360.00 | 5,589.00 | 9,812.46 | 91.48 | 9,812.89 | 0.00 | 0.00 | 0.00 |
| 15,500.00 | 90.00 | 360.00 | 5,589.00 | 9,912.46 | 91.48 | 9,912.88 | 0.00 | 0.00 | 0.00 |
| 15,600.00 | 90.00 | 360.00 | 5,589.00 | 10,012.46 | 91.48 | 10,012.88 | 0.00 | 0.00 | 0.00 |
| 15,700.00 | 90.00 | 360.00 | 5,589.00 | 10,112.46 | 91.48 | 10,112.87 | 0.00 | 0.00 | 0.00 |
| 15,796.15 | 90.00 | 360.00 | 5,589.00 | 10,208.61 | 91.48 | 10,209.02 | 0.00 | 0.00 | 0.00 |
| TD at 15796.15 | | | | | | | | | |

| 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 2440 | 0.00 | 0.00 | 5,589.00 | 10,208.61 | 91.48 | 1,550,121.70 | 3,466,378.34 | 40° 49' 52.670 N | 103° 48' 52.670 W |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |



WOG

Planning Report

| | | | |
|------------------|-------------------------|-------------------------------------|--|
| Database: | LandmarkEDM | Local Co-ordinate Reference: | Well Razor #25N-2440 |
| Company: | Whiting Petroleum Corp. | TVD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Project: | Weld County, CO | MD Reference: | KBE @ 4722.00usft (Original Well Elev) |
| Site: | Sec 25-T10N-R58W | North Reference: | True |
| Well: | Razor #25N-2440 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Hz | | |
| Design: | APD | | |

| Casing Points | | | | | |
|-----------------------|-----------------------|------------------------|----------------------|--------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) | |
| 5,892.54 | 5,589.00 | 5 1/2" Marker / 7" CSG | 7.000 | 8.750 | |

| Formations | | | | | | |
|-----------------------|-----------------------|----------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 1,551.62 | 1,550.00 | Upper Pierre | | | | |
| 3,504.37 | 3,500.00 | Hygiene | | | | |
| 3,654.58 | 3,650.00 | Lower Pierre | | | | |
| 5,471.60 | 5,428.00 | P200 Marker | | | | |
| 5,500.02 | 5,448.00 | P300 Marker | | | | |
| 5,524.00 | 5,464.00 | P350 Marker | | | | |
| 5,546.10 | 5,478.00 | Sharon Springs | | | | |
| 5,552.64 | 5,482.00 | Niobrara | | | | |
| 5,581.72 | 5,499.00 | Top A Chalk | | | | |
| 5,640.04 | 5,529.00 | Top A Marl | | | | |
| 5,667.14 | 5,541.00 | A Marl | | | | |
| 5,687.05 | 5,549.00 | Top Upper B | | | | |
| 5,763.09 | 5,573.00 | Base Upper B | | | | |
| 5,892.54 | 5,589.00 | 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' | |
| 452.03 | 451.96 | -3.71 | 1.57 | Hold 3.04° Inc | |
| 4,722.12 | 4,716.04 | -212.29 | 89.90 | Drop 2°/100' | |
| 4,874.15 | 4,868.00 | -216.00 | 91.48 | Hold Vertical | |
| 5,074.15 | 5,068.00 | -216.00 | 91.48 | KOP, Build 11°/100' | |
| 5,892.54 | 5,589.00 | 305.00 | 91.48 | LP @ 90° Inc, Hold | |
| 15,796.15 | 5,589.00 | 10,208.61 | 91.48 | TD at 15796.15 | |