



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #25O-2411  
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: 53022.3nT  
Dip Angle: 67.38°  
Date: 5/21/2015  
Model: IGRF2010

FORMATION TOP DETAILS		
	TVDPath	MDPath
Formation	1550.00	1554.14
Upper Pierre	3500.00	3508.24
Hygiene	3650.00	3658.24
Lower Pierre	5444.00	5531.96
P200 Marker	5464.00	5570.49
P300 Marker	5480.00	5605.46
P350 Marker	5494.00	5640.76
Sharon Springs	5498.00	5652.02
Niobrara	5515.00	5710.24
Top A Chalk		

#### WELL DETAILS: Razor #25O-2411

+N/-S	+E/-W	Northing	Ground Level:	4717.00	Easting	Latitude	Longitude	Slot
0.00	0.00	1540005.07		3467798.24	40° 48' 12.460 N	103° 48' 36.710 W		

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	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	550.00	5.00	181.00	549.68	-10.90	-0.19	2.00	181.00	-10.90	
4	2550.00	5.00	181.00	2542.07	-185.18	-3.23	0.00	0.00	-185.18	
5	2800.00	0.00	0.00	2791.75	-196.08	-3.42	2.00	180.00	-196.08	
6	5017.38	0.00	0.00	5009.13	-196.08	-3.42	0.00	0.00	-196.08	
7	5835.56	90.00	0.00	5530.00	324.79	-3.41	11.00	0.00	324.79	PBHL 2411
8	15657.65	90.00	0.00	5530.00	10146.87	-3.07	0.00	0.00	10146.87	PBHL 2411

#### ANNOTATIONS

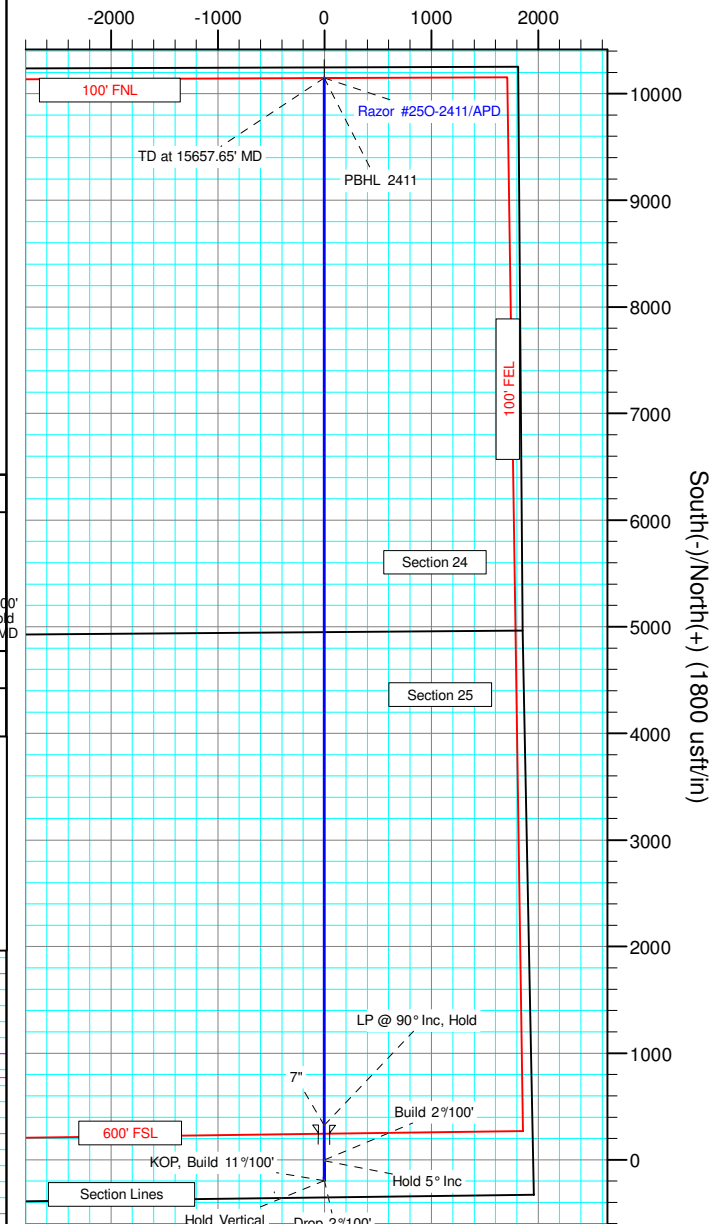
TVD	MD	Inc	Azi	+N/-S	+E/-W	VFace	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
549.68	550.00	5.00	181.00	-10.90	-0.19	-10.90	10.90	Hold 5° Inc
2542.07	2550.00	5.00	181.00	-185.18	-3.23	-185.18	185.21	Drop 2°/100'
2791.75	2800.00	0.00	0.00	-196.08	-3.42	-196.08	196.11	Hold Vertical
5009.13	5017.38	0.00	0.00	-196.08	-3.42	-196.08	196.11	KOP, Build 11°/100'
5530.00	5835.56	90.00	0.00	324.79	-3.41	324.79	716.98	LP @ 90° Inc, Hold
5530.00	15657.65	90.00	0.00	10146.87	-3.07	10146.87	10539.07	TD at 15657.65' MD

#### DESIGN TARGET DETAILS

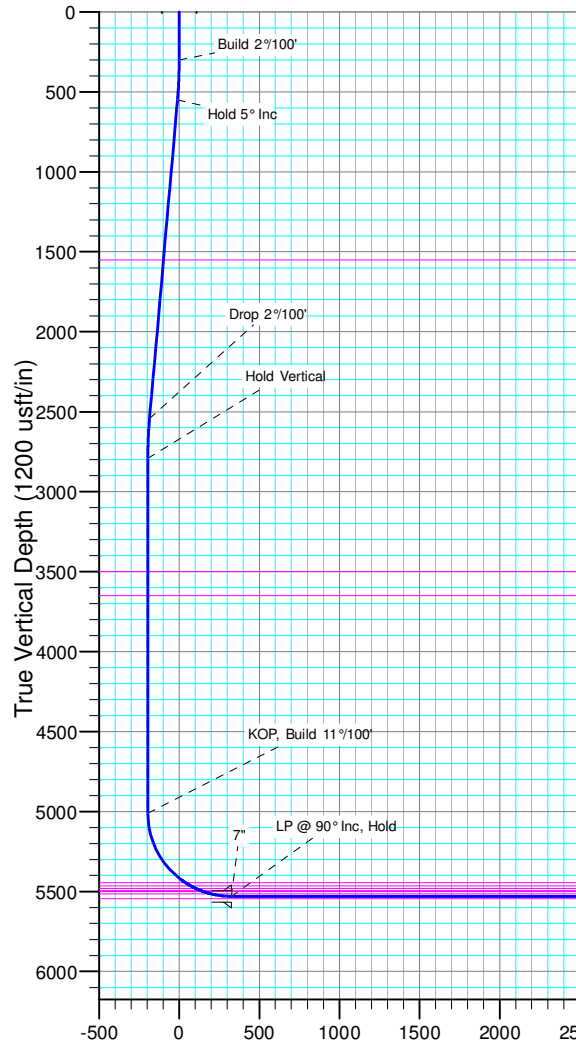
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2411	5530.00	10146.87	-3.07	1550150.05	3467601.82	40° 49' 52.720 N	103° 48' 36.750 W

SHL:  
355' FSL, 1950' FEL  
Sec25-T10N-R58W  
BHL:  
100' FNL, 1815' FEL  
Sec24-T10N-R58W  
7":  
680' FSL, 1818' FEL  
Sec25-T10N-R58W

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



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



Vertical Section at 359.98° (1200 usft/in)



# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25O-2411**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**22 May, 2015**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

<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		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 #25O-2411				
Well Position	+N/-S	-4,613.76 usft	Northing:	1,540,005.08 usft	Latitude:	40° 48' 12.460 N
	+E/-W	2,827.74 usft	Easting:	3,467,798.24 usft	Longitude:	103° 48' 36.710 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,717.00 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	5/21/2015	7.84	67.38	53,022

<b>Design</b>	APD			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	359.98

<b>Plan Sections</b>										
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	
550.00	5.00	181.00	549.68	-10.90	-0.19	2.00	2.00	0.00	181.00	
2,550.00	5.00	181.00	2,542.07	-185.18	-3.23	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,791.75	-196.08	-3.42	2.00	-2.00	0.00	180.00	
5,017.38	0.00	0.00	5,009.13	-196.08	-3.42	0.00	0.00	0.00	0.00	
5,835.56	90.00	0.00	5,530.00	324.79	-3.41	11.00	11.00	0.00	0.00	PBHL 2411
15,657.65	90.00	0.00	5,530.00	10,146.87	-3.07	0.00	0.00	0.00	0.00	PBHL 2411



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	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
<b>Build 2°/100'</b>									
400.00	2.00	181.00	399.98	-1.74	-0.03	-1.74	2.00	2.00	0.00
500.00	4.00	181.00	499.84	-6.98	-0.12	-6.98	2.00	2.00	0.00
550.00	5.00	181.00	549.68	-10.90	-0.19	-10.90	2.00	2.00	0.00
<b>Hold 5° Inc</b>									
600.00	5.00	181.00	599.49	-15.26	-0.27	-15.26	0.00	0.00	0.00
700.00	5.00	181.00	699.11	-23.97	-0.42	-23.97	0.00	0.00	0.00
800.00	5.00	181.00	798.73	-32.69	-0.57	-32.69	0.00	0.00	0.00
900.00	5.00	181.00	898.35	-41.40	-0.72	-41.40	0.00	0.00	0.00
1,000.00	5.00	181.00	997.97	-50.11	-0.87	-50.11	0.00	0.00	0.00
1,100.00	5.00	181.00	1,097.59	-58.83	-1.03	-58.83	0.00	0.00	0.00
1,200.00	5.00	181.00	1,197.21	-67.54	-1.18	-67.54	0.00	0.00	0.00
1,300.00	5.00	181.00	1,296.83	-76.26	-1.33	-76.26	0.00	0.00	0.00
1,400.00	5.00	181.00	1,396.45	-84.97	-1.48	-84.97	0.00	0.00	0.00
1,500.00	5.00	181.00	1,496.07	-93.69	-1.64	-93.68	0.00	0.00	0.00
1,554.14	5.00	181.00	1,550.00	-98.40	-1.72	-98.40	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	5.00	181.00	1,595.69	-102.40	-1.79	-102.40	0.00	0.00	0.00
1,700.00	5.00	181.00	1,695.31	-111.11	-1.94	-111.11	0.00	0.00	0.00
1,800.00	5.00	181.00	1,794.93	-119.83	-2.09	-119.83	0.00	0.00	0.00
1,900.00	5.00	181.00	1,894.55	-128.54	-2.24	-128.54	0.00	0.00	0.00
2,000.00	5.00	181.00	1,994.17	-137.26	-2.40	-137.26	0.00	0.00	0.00
2,100.00	5.00	181.00	2,093.78	-145.97	-2.55	-145.97	0.00	0.00	0.00
2,200.00	5.00	181.00	2,193.40	-154.68	-2.70	-154.68	0.00	0.00	0.00
2,300.00	5.00	181.00	2,293.02	-163.40	-2.85	-163.40	0.00	0.00	0.00
2,400.00	5.00	181.00	2,392.64	-172.11	-3.00	-172.11	0.00	0.00	0.00
2,500.00	5.00	181.00	2,492.26	-180.83	-3.16	-180.83	0.00	0.00	0.00
2,550.00	5.00	181.00	2,542.07	-185.18	-3.23	-185.18	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
2,600.00	4.00	181.00	2,591.92	-189.11	-3.30	-189.11	2.00	-2.00	0.00
2,700.00	2.00	181.00	2,691.78	-194.34	-3.39	-194.34	2.00	-2.00	0.00
2,800.00	0.00	0.00	2,791.75	-196.08	-3.42	-196.08	2.00	-2.00	0.00
<b>Hold Vertical</b>									
2,900.00	0.00	0.00	2,891.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,000.00	0.00	0.00	2,991.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,100.00	0.00	0.00	3,091.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,200.00	0.00	0.00	3,191.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,300.00	0.00	0.00	3,291.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,400.00	0.00	0.00	3,391.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,500.00	0.00	0.00	3,491.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,508.25	0.00	0.00	3,500.00	-196.08	-3.42	-196.08	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	0.00	0.00	3,591.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,658.25	0.00	0.00	3,650.00	-196.08	-3.42	-196.08	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	0.00	0.00	3,691.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,800.00	0.00	0.00	3,791.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
3,900.00	0.00	0.00	3,891.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,000.00	0.00	0.00	3,991.76	-196.08	-3.42	-196.08	0.00	0.00	0.00



# WOG Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	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)
4,100.00	0.00	0.00	4,091.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,200.00	0.00	0.00	4,191.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,300.00	0.00	0.00	4,291.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,400.00	0.00	0.00	4,391.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,500.00	0.00	0.00	4,491.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,600.00	0.00	0.00	4,591.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,700.00	0.00	0.00	4,691.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,800.00	0.00	0.00	4,791.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
4,900.00	0.00	0.00	4,891.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
5,000.00	0.00	0.00	4,991.76	-196.08	-3.42	-196.08	0.00	0.00	0.00
5,017.38	0.00	0.00	5,009.13	-196.08	-3.42	-196.08	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,050.00	3.59	0.00	5,041.73	-195.06	-3.42	-195.06	11.00	11.00	0.00
5,100.00	9.09	0.00	5,091.41	-189.55	-3.42	-189.54	11.00	11.00	0.00
5,150.00	14.59	0.00	5,140.33	-179.29	-3.42	-179.29	11.00	11.00	0.00
5,200.00	20.09	0.00	5,188.04	-164.40	-3.42	-164.40	11.00	11.00	0.00
5,250.00	25.59	0.00	5,234.10	-145.00	-3.42	-145.00	11.00	11.00	0.00
5,300.00	31.09	0.00	5,278.09	-121.27	-3.42	-121.27	11.00	11.00	0.00
5,350.00	36.59	0.00	5,319.60	-93.44	-3.42	-93.44	11.00	11.00	0.00
5,400.00	42.09	0.00	5,358.26	-61.76	-3.42	-61.76	11.00	11.00	0.00
5,450.00	47.59	0.00	5,393.70	-26.52	-3.42	-26.52	11.00	11.00	0.00
5,500.00	53.09	0.00	5,425.60	11.96	-3.42	11.96	11.00	11.00	0.00
5,531.96	56.60	0.00	5,444.00	38.09	-3.41	38.09	11.00	11.00	0.00
<b>P200 Marker</b>									
5,550.00	58.59	0.00	5,453.67	53.32	-3.41	53.32	11.00	11.00	0.00
5,570.49	60.84	0.00	5,464.00	71.01	-3.41	71.01	11.00	11.00	0.00
<b>P300 Marker</b>									
5,600.00	64.09	0.00	5,477.64	97.17	-3.41	97.18	11.00	11.00	0.00
5,605.46	64.69	0.00	5,480.00	102.10	-3.41	102.10	11.00	11.00	0.00
<b>P350 Marker</b>									
5,640.76	68.57	0.00	5,494.00	134.50	-3.41	134.50	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,650.00	69.59	0.00	5,497.30	143.13	-3.41	143.13	11.00	11.00	0.00
5,652.02	69.81	0.00	5,498.00	145.02	-3.41	145.02	11.00	11.00	0.00
<b>Niobrara</b>									
5,700.00	75.09	0.00	5,512.46	190.75	-3.41	190.75	11.00	11.00	0.00
5,710.24	76.21	0.00	5,515.00	200.67	-3.41	200.67	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,750.00	80.59	0.00	5,522.99	239.61	-3.41	239.61	11.00	11.00	0.00
5,800.00	86.09	0.00	5,528.79	289.25	-3.41	289.25	11.00	11.00	0.00
5,835.56	90.00	0.00	5,530.00	324.79	-3.41	324.79	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - 7"</b>									
5,900.00	90.00	0.00	5,530.00	389.23	-3.40	389.23	0.00	0.00	0.00
6,000.00	90.00	0.00	5,530.00	489.23	-3.40	489.23	0.00	0.00	0.00
6,100.00	90.00	0.00	5,530.00	589.23	-3.40	589.23	0.00	0.00	0.00
6,200.00	90.00	0.00	5,530.00	689.23	-3.39	689.23	0.00	0.00	0.00
6,300.00	90.00	0.00	5,530.00	789.23	-3.39	789.23	0.00	0.00	0.00
6,400.00	90.00	0.00	5,530.00	889.23	-3.39	889.23	0.00	0.00	0.00
6,500.00	90.00	0.00	5,530.00	989.23	-3.38	989.23	0.00	0.00	0.00
6,600.00	90.00	0.00	5,530.00	1,089.23	-3.38	1,089.23	0.00	0.00	0.00
6,700.00	90.00	0.00	5,530.00	1,189.23	-3.38	1,189.23	0.00	0.00	0.00
6,800.00	90.00	0.00	5,530.00	1,289.23	-3.37	1,289.23	0.00	0.00	0.00
6,900.00	90.00	0.00	5,530.00	1,389.23	-3.37	1,389.23	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	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)	
7,000.00	90.00	0.00	5,530.00	1,489.23	-3.37	1,489.23	0.00	0.00	0.00	
7,100.00	90.00	0.00	5,530.00	1,589.23	-3.36	1,589.23	0.00	0.00	0.00	
7,200.00	90.00	0.00	5,530.00	1,689.23	-3.36	1,689.23	0.00	0.00	0.00	
7,300.00	90.00	0.00	5,530.00	1,789.23	-3.36	1,789.23	0.00	0.00	0.00	
7,400.00	90.00	0.00	5,530.00	1,889.23	-3.35	1,889.23	0.00	0.00	0.00	
7,500.00	90.00	0.00	5,530.00	1,989.23	-3.35	1,989.23	0.00	0.00	0.00	
7,600.00	90.00	0.00	5,530.00	2,089.23	-3.35	2,089.23	0.00	0.00	0.00	
7,700.00	90.00	0.00	5,530.00	2,189.23	-3.34	2,189.23	0.00	0.00	0.00	
7,800.00	90.00	0.00	5,530.00	2,289.23	-3.34	2,289.23	0.00	0.00	0.00	
7,900.00	90.00	0.00	5,530.00	2,389.23	-3.34	2,389.23	0.00	0.00	0.00	
8,000.00	90.00	0.00	5,530.00	2,489.23	-3.33	2,489.23	0.00	0.00	0.00	
8,100.00	90.00	0.00	5,530.00	2,589.23	-3.33	2,589.23	0.00	0.00	0.00	
8,200.00	90.00	0.00	5,530.00	2,689.23	-3.33	2,689.23	0.00	0.00	0.00	
8,300.00	90.00	0.00	5,530.00	2,789.23	-3.32	2,789.23	0.00	0.00	0.00	
8,400.00	90.00	0.00	5,530.00	2,889.23	-3.32	2,889.23	0.00	0.00	0.00	
8,500.00	90.00	0.00	5,530.00	2,989.23	-3.32	2,989.23	0.00	0.00	0.00	
8,600.00	90.00	0.00	5,530.00	3,089.23	-3.31	3,089.23	0.00	0.00	0.00	
8,700.00	90.00	0.00	5,530.00	3,189.23	-3.31	3,189.23	0.00	0.00	0.00	
8,800.00	90.00	0.00	5,530.00	3,289.23	-3.31	3,289.23	0.00	0.00	0.00	
8,900.00	90.00	0.00	5,530.00	3,389.23	-3.30	3,389.23	0.00	0.00	0.00	
9,000.00	90.00	0.00	5,530.00	3,489.23	-3.30	3,489.23	0.00	0.00	0.00	
9,100.00	90.00	0.00	5,530.00	3,589.23	-3.30	3,589.23	0.00	0.00	0.00	
9,200.00	90.00	0.00	5,530.00	3,689.23	-3.29	3,689.23	0.00	0.00	0.00	
9,300.00	90.00	0.00	5,530.00	3,789.23	-3.29	3,789.23	0.00	0.00	0.00	
9,400.00	90.00	0.00	5,530.00	3,889.23	-3.29	3,889.23	0.00	0.00	0.00	
9,500.00	90.00	0.00	5,530.00	3,989.23	-3.28	3,989.23	0.00	0.00	0.00	
9,600.00	90.00	0.00	5,530.00	4,089.23	-3.28	4,089.23	0.00	0.00	0.00	
9,700.00	90.00	0.00	5,530.00	4,189.23	-3.28	4,189.23	0.00	0.00	0.00	
9,800.00	90.00	0.00	5,530.00	4,289.23	-3.27	4,289.23	0.00	0.00	0.00	
9,900.00	90.00	0.00	5,530.00	4,389.23	-3.27	4,389.23	0.00	0.00	0.00	
10,000.00	90.00	0.00	5,530.00	4,489.23	-3.27	4,489.23	0.00	0.00	0.00	
10,100.00	90.00	0.00	5,530.00	4,589.23	-3.26	4,589.23	0.00	0.00	0.00	
10,200.00	90.00	0.00	5,530.00	4,689.23	-3.26	4,689.23	0.00	0.00	0.00	
10,300.00	90.00	0.00	5,530.00	4,789.23	-3.26	4,789.23	0.00	0.00	0.00	
10,400.00	90.00	0.00	5,530.00	4,889.23	-3.25	4,889.23	0.00	0.00	0.00	
10,500.00	90.00	0.00	5,530.00	4,989.23	-3.25	4,989.23	0.00	0.00	0.00	
10,600.00	90.00	0.00	5,530.00	5,089.23	-3.24	5,089.23	0.00	0.00	0.00	
10,700.00	90.00	0.00	5,530.00	5,189.23	-3.24	5,189.23	0.00	0.00	0.00	
10,800.00	90.00	0.00	5,530.00	5,289.23	-3.24	5,289.23	0.00	0.00	0.00	
10,900.00	90.00	0.00	5,530.00	5,389.23	-3.23	5,389.23	0.00	0.00	0.00	
11,000.00	90.00	0.00	5,530.00	5,489.23	-3.23	5,489.23	0.00	0.00	0.00	
11,100.00	90.00	0.00	5,530.00	5,589.23	-3.23	5,589.23	0.00	0.00	0.00	
11,200.00	90.00	0.00	5,530.00	5,689.23	-3.22	5,689.23	0.00	0.00	0.00	
11,300.00	90.00	0.00	5,530.00	5,789.23	-3.22	5,789.23	0.00	0.00	0.00	
11,400.00	90.00	0.00	5,530.00	5,889.23	-3.22	5,889.23	0.00	0.00	0.00	
11,500.00	90.00	0.00	5,530.00	5,989.23	-3.21	5,989.23	0.00	0.00	0.00	
11,600.00	90.00	0.00	5,530.00	6,089.23	-3.21	6,089.23	0.00	0.00	0.00	
11,700.00	90.00	0.00	5,530.00	6,189.23	-3.21	6,189.23	0.00	0.00	0.00	
11,800.00	90.00	0.00	5,530.00	6,289.23	-3.20	6,289.23	0.00	0.00	0.00	
11,900.00	90.00	0.00	5,530.00	6,389.23	-3.20	6,389.23	0.00	0.00	0.00	
12,000.00	90.00	0.00	5,530.00	6,489.23	-3.20	6,489.23	0.00	0.00	0.00	
12,100.00	90.00	0.00	5,530.00	6,589.23	-3.19	6,589.23	0.00	0.00	0.00	
12,200.00	90.00	0.00	5,530.00	6,689.23	-3.19	6,689.23	0.00	0.00	0.00	
12,300.00	90.00	0.00	5,530.00	6,789.23	-3.19	6,789.23	0.00	0.00	0.00	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	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)
12,400.00	90.00	0.00	5,530.00	6,889.23	-3.18	6,889.23	0.00	0.00	0.00
12,500.00	90.00	0.00	5,530.00	6,989.23	-3.18	6,989.23	0.00	0.00	0.00
12,600.00	90.00	0.00	5,530.00	7,089.23	-3.18	7,089.23	0.00	0.00	0.00
12,700.00	90.00	0.00	5,530.00	7,189.23	-3.17	7,189.23	0.00	0.00	0.00
12,800.00	90.00	0.00	5,530.00	7,289.23	-3.17	7,289.23	0.00	0.00	0.00
12,900.00	90.00	0.00	5,530.00	7,389.23	-3.17	7,389.23	0.00	0.00	0.00
13,000.00	90.00	0.00	5,530.00	7,489.23	-3.16	7,489.23	0.00	0.00	0.00
13,100.00	90.00	0.00	5,530.00	7,589.23	-3.16	7,589.23	0.00	0.00	0.00
13,200.00	90.00	0.00	5,530.00	7,689.23	-3.16	7,689.23	0.00	0.00	0.00
13,300.00	90.00	0.00	5,530.00	7,789.23	-3.15	7,789.23	0.00	0.00	0.00
13,400.00	90.00	0.00	5,530.00	7,889.23	-3.15	7,889.23	0.00	0.00	0.00
13,500.00	90.00	0.00	5,530.00	7,989.23	-3.15	7,989.23	0.00	0.00	0.00
13,600.00	90.00	0.00	5,530.00	8,089.23	-3.14	8,089.23	0.00	0.00	0.00
13,700.00	90.00	0.00	5,530.00	8,189.23	-3.14	8,189.23	0.00	0.00	0.00
13,800.00	90.00	0.00	5,530.00	8,289.23	-3.14	8,289.23	0.00	0.00	0.00
13,900.00	90.00	0.00	5,530.00	8,389.23	-3.13	8,389.23	0.00	0.00	0.00
14,000.00	90.00	0.00	5,530.00	8,489.23	-3.13	8,489.23	0.00	0.00	0.00
14,100.00	90.00	0.00	5,530.00	8,589.23	-3.13	8,589.23	0.00	0.00	0.00
14,200.00	90.00	0.00	5,530.00	8,689.23	-3.12	8,689.23	0.00	0.00	0.00
14,300.00	90.00	0.00	5,530.00	8,789.23	-3.12	8,789.23	0.00	0.00	0.00
14,400.00	90.00	0.00	5,530.00	8,889.23	-3.12	8,889.23	0.00	0.00	0.00
14,500.00	90.00	0.00	5,530.00	8,989.23	-3.11	8,989.23	0.00	0.00	0.00
14,600.00	90.00	0.00	5,530.00	9,089.23	-3.11	9,089.23	0.00	0.00	0.00
14,700.00	90.00	0.00	5,530.00	9,189.23	-3.11	9,189.23	0.00	0.00	0.00
14,800.00	90.00	0.00	5,530.00	9,289.23	-3.10	9,289.23	0.00	0.00	0.00
14,900.00	90.00	0.00	5,530.00	9,389.23	-3.10	9,389.23	0.00	0.00	0.00
15,000.00	90.00	0.00	5,530.00	9,489.23	-3.10	9,489.23	0.00	0.00	0.00
15,100.00	90.00	0.00	5,530.00	9,589.23	-3.09	9,589.23	0.00	0.00	0.00
15,200.00	90.00	0.00	5,530.00	9,689.23	-3.09	9,689.23	0.00	0.00	0.00
15,300.00	90.00	0.00	5,530.00	9,789.23	-3.09	9,789.23	0.00	0.00	0.00
15,400.00	90.00	0.00	5,530.00	9,889.23	-3.08	9,889.23	0.00	0.00	0.00
15,500.00	90.00	0.00	5,530.00	9,989.23	-3.08	9,989.23	0.00	0.00	0.00
15,600.00	90.00	0.00	5,530.00	10,089.23	-3.08	10,089.23	0.00	0.00	0.00
15,657.65	90.00	0.00	5,530.00	10,146.87	-3.07	10,146.87	0.00	0.00	0.00
TD at 15657.65' MD									

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 2411	0.00	0.00	5,530.00	10,146.87	-3.07	1,550,150.05	3,467,601.82	40° 49' 52.720 N	103° 48' 36.750 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,835.56	5,530.00	7"	7.000	8.750	



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25O-2411
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4738.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25O-2411	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.14	1,550.00	Upper Pierre				
3,508.25	3,500.00	Hygiene				
3,658.25	3,650.00	Lower Pierre				
5,531.96	5,444.00	P200 Marker				
5,570.49	5,464.00	P300 Marker				
5,605.46	5,480.00	P350 Marker				
5,640.76	5,494.00	Sharon Springs				
5,652.02	5,498.00	Niobrara				
5,710.24	5,515.00	Top A Chalk				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.00	300.00	0.00	0.00	Build 2°/100'
550.00	549.68	-10.90	-0.19	Hold 5° Inc
2,550.00	2,542.07	-185.18	-3.23	Drop 2°/100'
2,800.00	2,791.75	-196.08	-3.42	Hold Vertical
5,017.38	5,009.13	-196.08	-3.42	KOP, Build 11°/100'
5,835.56	5,530.00	324.79	-3.41	LP @ 90° Inc, Hold
15,657.65	5,530.00	10,146.87	-3.07	TD at 15657.65' MD