



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #25B-2450  
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: 7.85°  
Magnetic Field  
Strength: 53038.4nT  
Dip Angle: 67.40°  
Date: 4/17/2015  
Model: IGRF2010

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1550.00	1555.78	Upper Pierre
3500.00	3516.53	Hygiene
3650.00	3667.35	Lower Pierre
5480.00	5575.74	P200 Marker
5500.00	5612.33	P300 Marker
5516.00	5645.00	P350 Marker
5530.00	5677.22	Sharon Springs
5534.00	5687.27	Niobrara
5551.00	5736.59	Top A Chalk

WELL DETAILS: Razor #25B-2450

+N/-S	+E/-W	Northing	Ground Level:	4757.00	Easting	Latitude	Longitude	Slot
0.00	0.00	1544669.00	3467508.64	40° 48' 58.590 N	103° 48' 39.320 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	600.00	6.00	252.00	599.45	-4.85	-14.93	2.00	252.00	-3.58	
4	4600.00	6.00	252.00	4577.54	-134.05	-412.58	0.00	0.00	-98.89	
5	4900.00	0.00	0.00	4876.99	-138.90	-427.50	2.00	180.00	-102.47	
6	5077.14	0.00	0.00	5054.13	-138.90	-427.50	0.00	0.00	-102.47	
7	5895.32	90.00	359.65	5575.00	381.96	-430.70	11.00	359.65	416.82	PBHL 2450
8	10988.70	90.00	359.65	5575.00	5475.24	-462.00	0.00	0.00	5494.70	PBHL 2450

#### 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'
599.45	600.00	6.00	252.00	-4.85	-14.93	-3.58	15.69	Hold 6° Inc
4577.54	4600.00	6.00	252.00	-134.05	-412.58	-98.89	433.81	Drop 2°/100'
4876.99	4900.00	0.00	0.00	-138.90	-427.50	-102.47	449.50	Hold Vertical
5054.13	5077.14	0.00	0.00	-138.90	-427.50	-102.47	449.50	KOP, Build 11°/100'
5575.00	5895.32	90.00	359.65	381.96	-430.70	416.82	970.37	LP @ 90° Inc, Hold
5575.00	10988.70	90.00	359.65	5475.24	-462.00	5494.70	6063.75	TD at 10988.70' MD

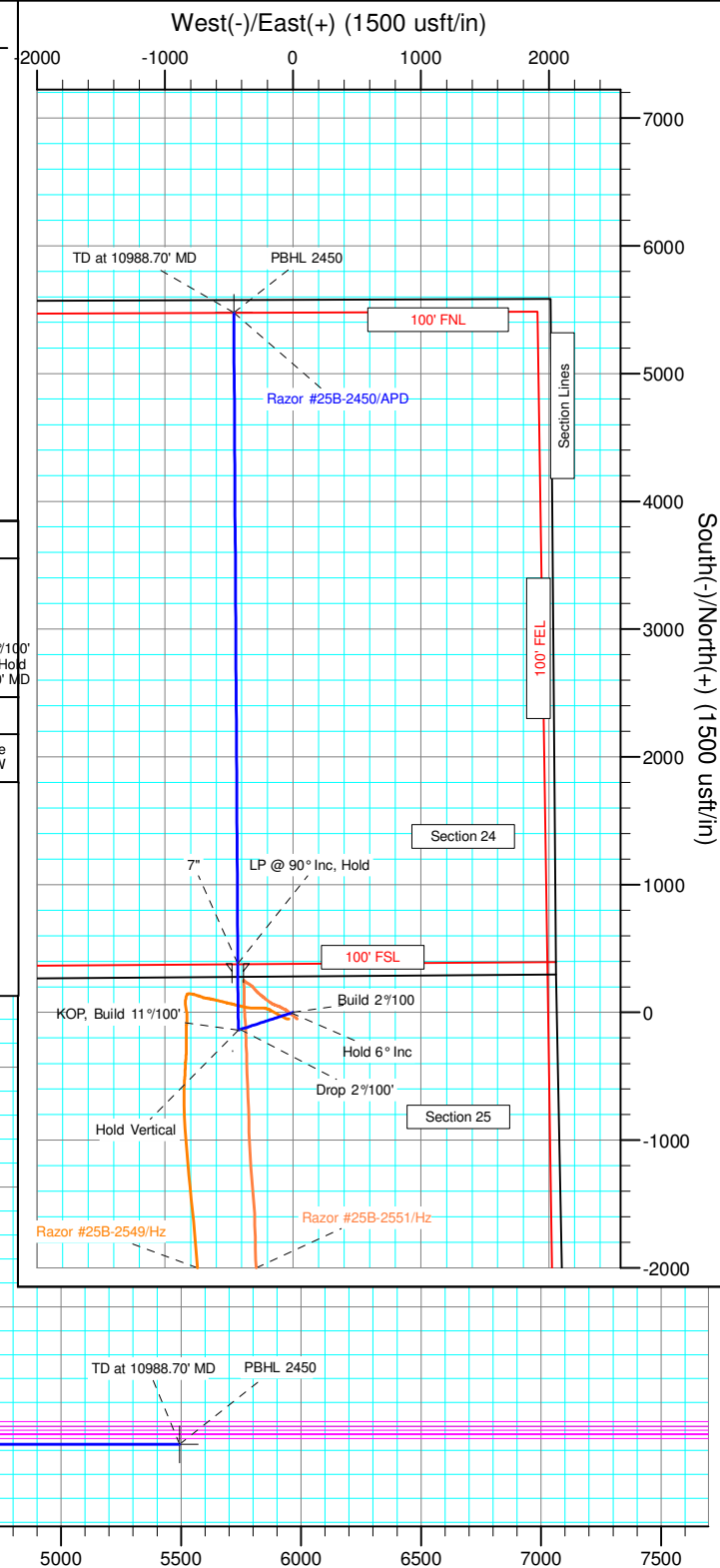
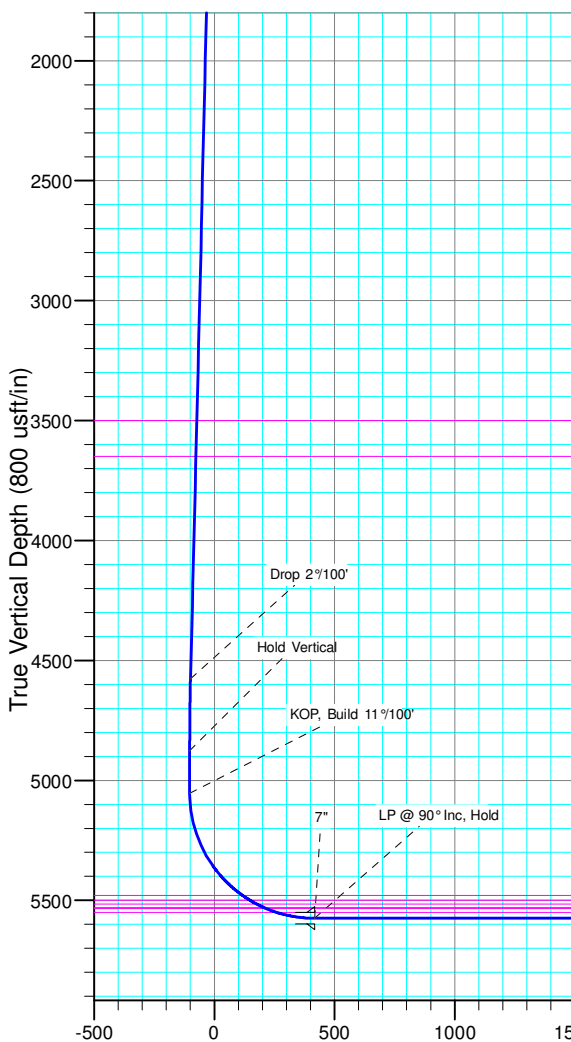
#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2450	5575.00	5475.24	-462.00	1550134.45	3466942.44	40° 49' 52.690 N	103° 48' 45.330 W

SHL:  
279' FNL, 2059' FEL  
Sec25-T10N-R58W

BHL:  
100' FNL, 2475' FEL  
Sec24-T10N-R58W

7":  
102' FSL, 2490' FEL  
Sec24-T10N-R58W





# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25B-2450**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**22 April, 2015**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2450
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2450	<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		

<b>Site</b>	Sec 25-T10N-R58W			
<b>Site Position:</b>		<b>Northing:</b>	1,544,564.45 usft	<b>Latitude:</b> 40° 48' 58.050 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,464,883.62 usft	<b>Longitude:</b> 103° 49' 13.480 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 1.09 °

<b>Well</b>	Razor #25B-2450			
<b>Well Position</b>	<b>+N/-S</b>	54.82 usft	<b>Northing:</b>	1,544,669.01 usft
	<b>+E/-W</b>	2,626.53 usft	<b>Easting:</b>	3,467,508.64 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	4,757.00 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	4/17/2015	7.85	67.40	53,038

<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	355.18

<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	
600.00	6.00	252.00	599.45	-4.85	-14.93	2.00	2.00	0.00	252.00	
4,600.00	6.00	252.00	4,577.54	-134.05	-412.58	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,876.99	-138.90	-427.50	2.00	-2.00	0.00	180.00	
5,077.14	0.00	0.00	5,054.13	-138.90	-427.50	0.00	0.00	0.00	0.00	
5,895.32	90.00	359.65	5,575.00	381.96	-430.70	11.00	11.00	0.00	359.65	PBHL 2450
10,988.70	90.00	359.65	5,575.00	5,475.24	-462.00	0.00	0.00	0.00	0.00	PBHL 2450



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2450
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2450	<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	252.00	399.98	-0.54	-1.66	-0.40	2.00	2.00	0.00
500.00	4.00	252.00	499.84	-2.16	-6.64	-1.59	2.00	2.00	0.00
600.00	6.00	252.00	599.45	-4.85	-14.93	-3.58	2.00	2.00	0.00
<b>Hold 6° Inc</b>									
700.00	6.00	252.00	698.90	-8.08	-24.87	-5.96	0.00	0.00	0.00
800.00	6.00	252.00	798.36	-11.31	-34.81	-8.34	0.00	0.00	0.00
900.00	6.00	252.00	897.81	-14.54	-44.75	-10.73	0.00	0.00	0.00
1,000.00	6.00	252.00	997.26	-17.77	-54.69	-13.11	0.00	0.00	0.00
1,100.00	6.00	252.00	1,096.71	-21.00	-64.63	-15.49	0.00	0.00	0.00
1,200.00	6.00	252.00	1,196.17	-24.23	-74.57	-17.87	0.00	0.00	0.00
1,300.00	6.00	252.00	1,295.62	-27.46	-84.51	-20.26	0.00	0.00	0.00
1,400.00	6.00	252.00	1,395.07	-30.69	-94.46	-22.64	0.00	0.00	0.00
1,500.00	6.00	252.00	1,494.52	-33.92	-104.40	-25.02	0.00	0.00	0.00
1,555.78	6.00	252.00	1,550.00	-35.72	-109.94	-26.35	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	6.00	252.00	1,593.97	-37.15	-114.34	-27.41	0.00	0.00	0.00
1,700.00	6.00	252.00	1,693.43	-40.38	-124.28	-29.79	0.00	0.00	0.00
1,800.00	6.00	252.00	1,792.88	-43.61	-134.22	-32.17	0.00	0.00	0.00
1,900.00	6.00	252.00	1,892.33	-46.84	-144.16	-34.55	0.00	0.00	0.00
2,000.00	6.00	252.00	1,991.78	-50.07	-154.10	-36.94	0.00	0.00	0.00
2,100.00	6.00	252.00	2,091.23	-53.30	-164.04	-39.32	0.00	0.00	0.00
2,200.00	6.00	252.00	2,190.69	-56.53	-173.99	-41.70	0.00	0.00	0.00
2,300.00	6.00	252.00	2,290.14	-59.76	-183.93	-44.09	0.00	0.00	0.00
2,400.00	6.00	252.00	2,389.59	-62.99	-193.87	-46.47	0.00	0.00	0.00
2,500.00	6.00	252.00	2,489.04	-66.22	-203.81	-48.85	0.00	0.00	0.00
2,600.00	6.00	252.00	2,588.50	-69.45	-213.75	-51.23	0.00	0.00	0.00
2,700.00	6.00	252.00	2,687.95	-72.68	-223.69	-53.62	0.00	0.00	0.00
2,800.00	6.00	252.00	2,787.40	-75.91	-233.63	-56.00	0.00	0.00	0.00
2,900.00	6.00	252.00	2,886.85	-79.14	-243.57	-58.38	0.00	0.00	0.00
3,000.00	6.00	252.00	2,986.30	-82.37	-253.52	-60.76	0.00	0.00	0.00
3,100.00	6.00	252.00	3,085.76	-85.60	-263.46	-63.15	0.00	0.00	0.00
3,200.00	6.00	252.00	3,185.21	-88.83	-273.40	-65.53	0.00	0.00	0.00
3,300.00	6.00	252.00	3,284.66	-92.06	-283.34	-67.91	0.00	0.00	0.00
3,400.00	6.00	252.00	3,384.11	-95.29	-293.28	-70.30	0.00	0.00	0.00
3,500.00	6.00	252.00	3,483.57	-98.52	-303.22	-72.68	0.00	0.00	0.00
3,516.53	6.00	252.00	3,500.00	-99.06	-304.86	-73.07	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	6.00	252.00	3,583.02	-101.75	-313.16	-75.06	0.00	0.00	0.00
3,667.35	6.00	252.00	3,650.00	-103.93	-319.86	-76.67	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	6.00	252.00	3,682.47	-104.98	-323.10	-77.44	0.00	0.00	0.00
3,800.00	6.00	252.00	3,781.92	-108.21	-333.05	-79.83	0.00	0.00	0.00
3,900.00	6.00	252.00	3,881.37	-111.44	-342.99	-82.21	0.00	0.00	0.00
4,000.00	6.00	252.00	3,980.83	-114.67	-352.93	-84.59	0.00	0.00	0.00
4,100.00	6.00	252.00	4,080.28	-117.90	-362.87	-86.98	0.00	0.00	0.00
4,200.00	6.00	252.00	4,179.73	-121.13	-372.81	-89.36	0.00	0.00	0.00
4,300.00	6.00	252.00	4,279.18	-124.36	-382.75	-91.74	0.00	0.00	0.00
4,400.00	6.00	252.00	4,378.64	-127.59	-392.69	-94.12	0.00	0.00	0.00
4,500.00	6.00	252.00	4,478.09	-130.82	-402.63	-96.51	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2450
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2450	<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)
4,600.00	6.00	252.00	4,577.54	-134.05	-412.58	-98.89	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,700.00	4.00	252.00	4,677.15	-136.75	-420.86	-100.88	2.00	-2.00	0.00
4,800.00	2.00	252.00	4,777.01	-138.36	-425.84	-102.07	2.00	-2.00	0.00
4,900.00	0.00	0.00	4,876.99	-138.90	-427.50	-102.47	2.00	-2.00	0.00
<b>Hold Vertical</b>									
5,000.00	0.00	0.00	4,976.99	-138.90	-427.50	-102.47	0.00	0.00	0.00
5,077.14	0.00	0.00	5,054.13	-138.90	-427.50	-102.47	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,100.00	2.51	359.65	5,076.98	-138.40	-427.50	-101.97	11.00	11.00	0.00
5,150.00	8.01	359.65	5,126.75	-133.82	-427.53	-97.39	11.00	11.00	0.00
5,200.00	13.51	359.65	5,175.86	-124.48	-427.59	-88.09	11.00	11.00	0.00
5,250.00	19.01	359.65	5,223.84	-110.48	-427.68	-74.13	11.00	11.00	0.00
5,300.00	24.51	359.65	5,270.25	-91.95	-427.79	-55.66	11.00	11.00	0.00
5,350.00	30.01	359.65	5,314.68	-69.05	-427.93	-32.83	11.00	11.00	0.00
5,400.00	35.51	359.65	5,356.71	-42.01	-428.10	-5.86	11.00	11.00	0.00
5,450.00	41.01	359.65	5,395.95	-11.05	-428.29	25.00	11.00	11.00	0.00
5,500.00	46.51	359.65	5,432.05	23.52	-428.50	59.46	11.00	11.00	0.00
5,550.00	52.01	359.65	5,464.66	61.39	-428.73	97.22	11.00	11.00	0.00
5,575.74	54.85	359.65	5,480.00	82.06	-428.86	117.83	11.00	11.00	0.00
<b>P200 Marker</b>									
5,600.00	57.51	359.65	5,493.50	102.21	-428.98	137.92	11.00	11.00	0.00
5,612.33	58.87	359.65	5,500.00	112.69	-429.05	148.37	11.00	11.00	0.00
<b>P300 Marker</b>									
5,645.00	62.46	359.65	5,516.00	141.17	-429.22	176.76	11.00	11.00	0.00
<b>P350 Marker</b>									
5,650.00	63.01	359.65	5,518.29	145.61	-429.25	181.19	11.00	11.00	0.00
5,677.22	66.01	359.65	5,530.00	170.17	-429.40	205.68	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,687.27	67.11	359.65	5,534.00	179.40	-429.46	214.87	11.00	11.00	0.00
<b>Niobrara</b>									
5,700.00	68.51	359.65	5,538.81	191.19	-429.53	226.62	11.00	11.00	0.00
5,736.59	72.54	359.65	5,551.00	225.67	-429.74	261.01	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,750.00	74.01	359.65	5,554.86	238.52	-429.82	273.81	11.00	11.00	0.00
5,800.00	79.51	359.65	5,566.30	287.17	-430.12	322.32	11.00	11.00	0.00
5,850.00	85.01	359.65	5,573.03	336.70	-430.42	371.69	11.00	11.00	0.00
5,895.32	90.00	359.65	5,575.00	381.96	-430.70	416.82	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - 7"</b>									
5,900.00	90.00	359.65	5,575.00	386.64	-430.73	421.48	0.00	0.00	0.00
6,000.00	90.00	359.65	5,575.00	486.64	-431.34	521.18	0.00	0.00	0.00
6,100.00	90.00	359.65	5,575.00	586.63	-431.96	620.88	0.00	0.00	0.00
6,200.00	90.00	359.65	5,575.00	686.63	-432.57	720.57	0.00	0.00	0.00
6,300.00	90.00	359.65	5,575.00	786.63	-433.19	820.27	0.00	0.00	0.00
6,400.00	90.00	359.65	5,575.00	886.63	-433.80	919.96	0.00	0.00	0.00
6,500.00	90.00	359.65	5,575.00	986.63	-434.42	1,019.66	0.00	0.00	0.00
6,600.00	90.00	359.65	5,575.00	1,086.62	-435.03	1,119.35	0.00	0.00	0.00
6,700.00	90.00	359.65	5,575.00	1,186.62	-435.65	1,219.05	0.00	0.00	0.00
6,800.00	90.00	359.65	5,575.00	1,286.62	-436.26	1,318.75	0.00	0.00	0.00
6,900.00	90.00	359.65	5,575.00	1,386.62	-436.88	1,418.44	0.00	0.00	0.00
7,000.00	90.00	359.65	5,575.00	1,486.62	-437.49	1,518.14	0.00	0.00	0.00
7,100.00	90.00	359.65	5,575.00	1,586.61	-438.10	1,617.83	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2450
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2450	<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)	
7,200.00	90.00	359.65	5,575.00	1,686.61	-438.72	1,717.53	0.00	0.00	0.00	
7,300.00	90.00	359.65	5,575.00	1,786.61	-439.33	1,817.22	0.00	0.00	0.00	
7,400.00	90.00	359.65	5,575.00	1,886.61	-439.95	1,916.92	0.00	0.00	0.00	
7,500.00	90.00	359.65	5,575.00	1,986.61	-440.56	2,016.62	0.00	0.00	0.00	
7,600.00	90.00	359.65	5,575.00	2,086.61	-441.18	2,116.31	0.00	0.00	0.00	
7,700.00	90.00	359.65	5,575.00	2,186.60	-441.79	2,216.01	0.00	0.00	0.00	
7,800.00	90.00	359.65	5,575.00	2,286.60	-442.41	2,315.70	0.00	0.00	0.00	
7,900.00	90.00	359.65	5,575.00	2,386.60	-443.02	2,415.40	0.00	0.00	0.00	
8,000.00	90.00	359.65	5,575.00	2,486.60	-443.63	2,515.09	0.00	0.00	0.00	
8,100.00	90.00	359.65	5,575.00	2,586.60	-444.25	2,614.79	0.00	0.00	0.00	
8,200.00	90.00	359.65	5,575.00	2,686.59	-444.86	2,714.49	0.00	0.00	0.00	
8,300.00	90.00	359.65	5,575.00	2,786.59	-445.48	2,814.18	0.00	0.00	0.00	
8,400.00	90.00	359.65	5,575.00	2,886.59	-446.09	2,913.88	0.00	0.00	0.00	
8,500.00	90.00	359.65	5,575.00	2,986.59	-446.71	3,013.57	0.00	0.00	0.00	
8,600.00	90.00	359.65	5,575.00	3,086.59	-447.32	3,113.27	0.00	0.00	0.00	
8,700.00	90.00	359.65	5,575.00	3,186.58	-447.94	3,212.96	0.00	0.00	0.00	
8,800.00	90.00	359.65	5,575.00	3,286.58	-448.55	3,312.66	0.00	0.00	0.00	
8,900.00	90.00	359.65	5,575.00	3,386.58	-449.16	3,412.35	0.00	0.00	0.00	
9,000.00	90.00	359.65	5,575.00	3,486.58	-449.78	3,512.05	0.00	0.00	0.00	
9,100.00	90.00	359.65	5,575.00	3,586.58	-450.39	3,611.75	0.00	0.00	0.00	
9,200.00	90.00	359.65	5,575.00	3,686.58	-451.01	3,711.44	0.00	0.00	0.00	
9,300.00	90.00	359.65	5,575.00	3,786.57	-451.62	3,811.14	0.00	0.00	0.00	
9,400.00	90.00	359.65	5,575.00	3,886.57	-452.24	3,910.83	0.00	0.00	0.00	
9,500.00	90.00	359.65	5,575.00	3,986.57	-452.85	4,010.53	0.00	0.00	0.00	
9,600.00	90.00	359.65	5,575.00	4,086.57	-453.47	4,110.22	0.00	0.00	0.00	
9,700.00	90.00	359.65	5,575.00	4,186.57	-454.08	4,209.92	0.00	0.00	0.00	
9,800.00	90.00	359.65	5,575.00	4,286.56	-454.70	4,309.62	0.00	0.00	0.00	
9,900.00	90.00	359.65	5,575.00	4,386.56	-455.31	4,409.31	0.00	0.00	0.00	
10,000.00	90.00	359.65	5,575.00	4,486.56	-455.92	4,509.01	0.00	0.00	0.00	
10,100.00	90.00	359.65	5,575.00	4,586.56	-456.54	4,608.70	0.00	0.00	0.00	
10,200.00	90.00	359.65	5,575.00	4,686.56	-457.15	4,708.40	0.00	0.00	0.00	
10,300.00	90.00	359.65	5,575.00	4,786.55	-457.77	4,808.09	0.00	0.00	0.00	
10,400.00	90.00	359.65	5,575.00	4,886.55	-458.38	4,907.79	0.00	0.00	0.00	
10,500.00	90.00	359.65	5,575.00	4,986.55	-459.00	5,007.49	0.00	0.00	0.00	
10,600.00	90.00	359.65	5,575.00	5,086.55	-459.61	5,107.18	0.00	0.00	0.00	
10,700.00	90.00	359.65	5,575.00	5,186.55	-460.23	5,206.88	0.00	0.00	0.00	
10,800.00	90.00	359.65	5,575.00	5,286.54	-460.84	5,306.57	0.00	0.00	0.00	
10,900.00	90.00	359.65	5,575.00	5,386.54	-461.45	5,406.27	0.00	0.00	0.00	
10,988.70	90.00	359.65	5,575.00	5,475.24	-462.00	5,494.70	0.00	0.00	0.00	
TD at 10988.70' 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 2450	0.00	0.00	5,575.00	5,475.24	-462.00	1,550,134.46	3,466,942.44	40° 49' 52.690 N	103° 48' 45.330 W
- plan hits target center									
- Point									



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25B-2450
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4778.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25B-2450	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	APD		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,895.32	5,575.00	7"	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,555.78	1,550.00	Upper Pierre				
3,516.53	3,500.00	Hygiene				
3,667.35	3,650.00	Lower Pierre				
5,575.74	5,480.00	P200 Marker				
5,612.33	5,500.00	P300 Marker				
5,645.00	5,516.00	P350 Marker				
5,677.22	5,530.00	Sharon Springs				
5,687.27	5,534.00	Niobrara				
5,736.59	5,551.00	Top A Chalk				

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	
600.00	599.45	-4.85	-14.93	Hold 6° Inc	
4,600.00	4,577.54	-134.05	-412.58	Drop 2°/100'	
4,900.00	4,876.99	-138.90	-427.50	Hold Vertical	
5,077.14	5,054.13	-138.90	-427.50	KOP, Build 11°/100'	
5,895.32	5,575.00	381.96	-430.70	LP @ 90° Inc, Hold	
10,988.70	5,575.00	5,475.24	-462.00	TD at 10988.70' MD	