



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #25N-2407  
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
1552.02	Hygiene
3500.00	Lower Pierre
3650.00	P200 Marker
3655.74	P300 Marker
5428.00	Sharon Springs
5444.84	Niobrara
5464.00	Top A Marl
5485.10	A Marl
5502.68	Top Upper B
5507.48	Base Upper B
5528.22	Top Lower B
5566.41	Base Lower B
5582.35	Top B Marl
5593.23	Top C Chalk
5627.25	Middle C Chalk
5651.31	Middle C Marl
5698.69	Lower C Chalk
5722.02	
5812.82	
5834.76	
5880.96	
6018.31	

#### WELL DETAILS: Razor #25N-2407

+N/-S	+E/-W	Northing	Ground Level:	4701.00	Longitude	Slot
0.00	0.00	1539962.19	Easting	3466449.16	40° 48' 12.290 N	103° 48' 54.260 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	470.53	3.41	189.19	470.43	-5.01	-0.81	2.00	189.19	-5.01	
4	4829.39	3.41	189.19	4821.57	-260.99	-42.24	0.00	0.00	-260.81	
5	4999.92	0.00	0.00	4992.00	-266.00	-43.05	2.00	180.00	-265.82	
6	5199.92	0.00	0.00	5192.00	-266.00	-43.05	0.00	0.00	-265.82	
7	6018.31	90.00	0.00	5713.00	255.00	-43.05	11.00	0.00	255.18	
8	15921.31	90.00	0.00	5713.00	10158.01	-43.05	0.00	0.00	10158.10	PBHL 2407

#### ANNOTATIONS

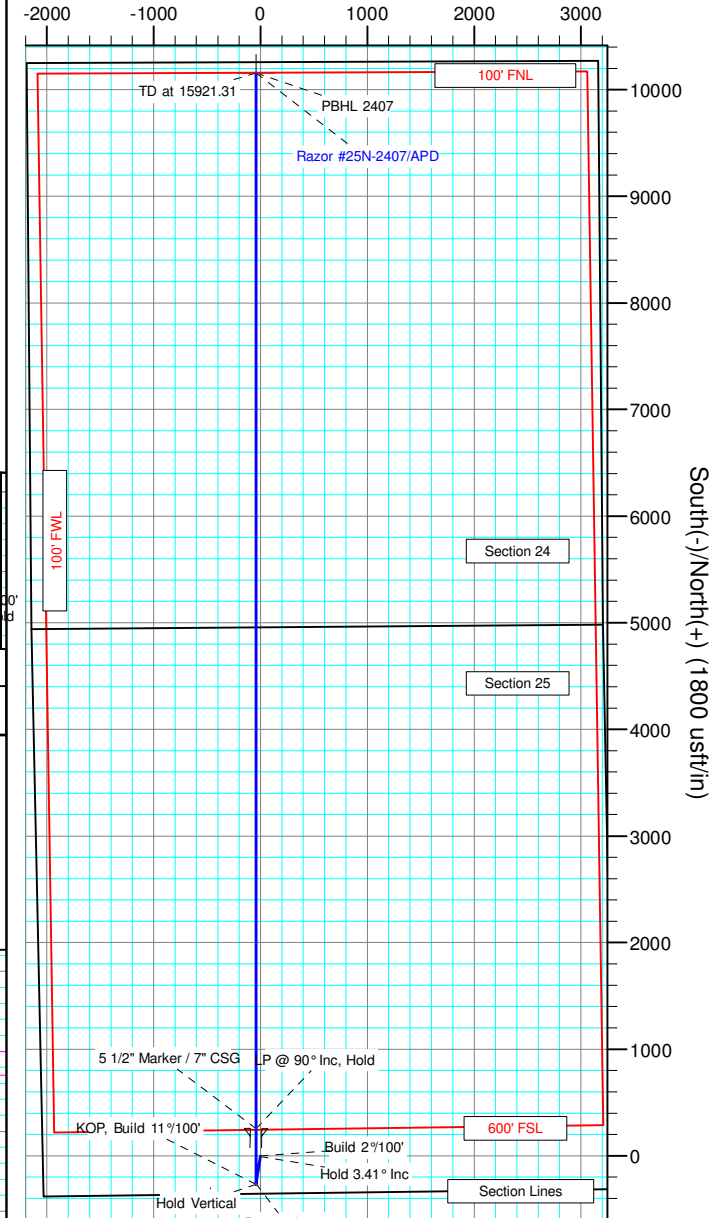
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
470.43	470.53	3.41	189.19	-5.01	-0.81	-5.01	5.07	Hold 3.41° Inc
4821.57	4829.39	3.41	189.19	-260.99	-42.24	-260.81	264.39	Drop 2°/100'
4992.00	4999.92	0.00	0.00	-266.00	-43.05	-265.82	269.46	Hold Vertical
5192.00	5199.92	0.00	0.00	-266.00	-43.05	-265.82	269.46	KOP, Build 11°/100'
5713.00	6018.31	90.00	0.00	255.00	-43.05	255.18	790.46	LP @ 90° Inc, Hold
5713.00	15921.31	90.00	0.00	10158.01	-43.05	10158.10	10693.47	TD at 15921.31

#### DESIGN TARGET DETAILS

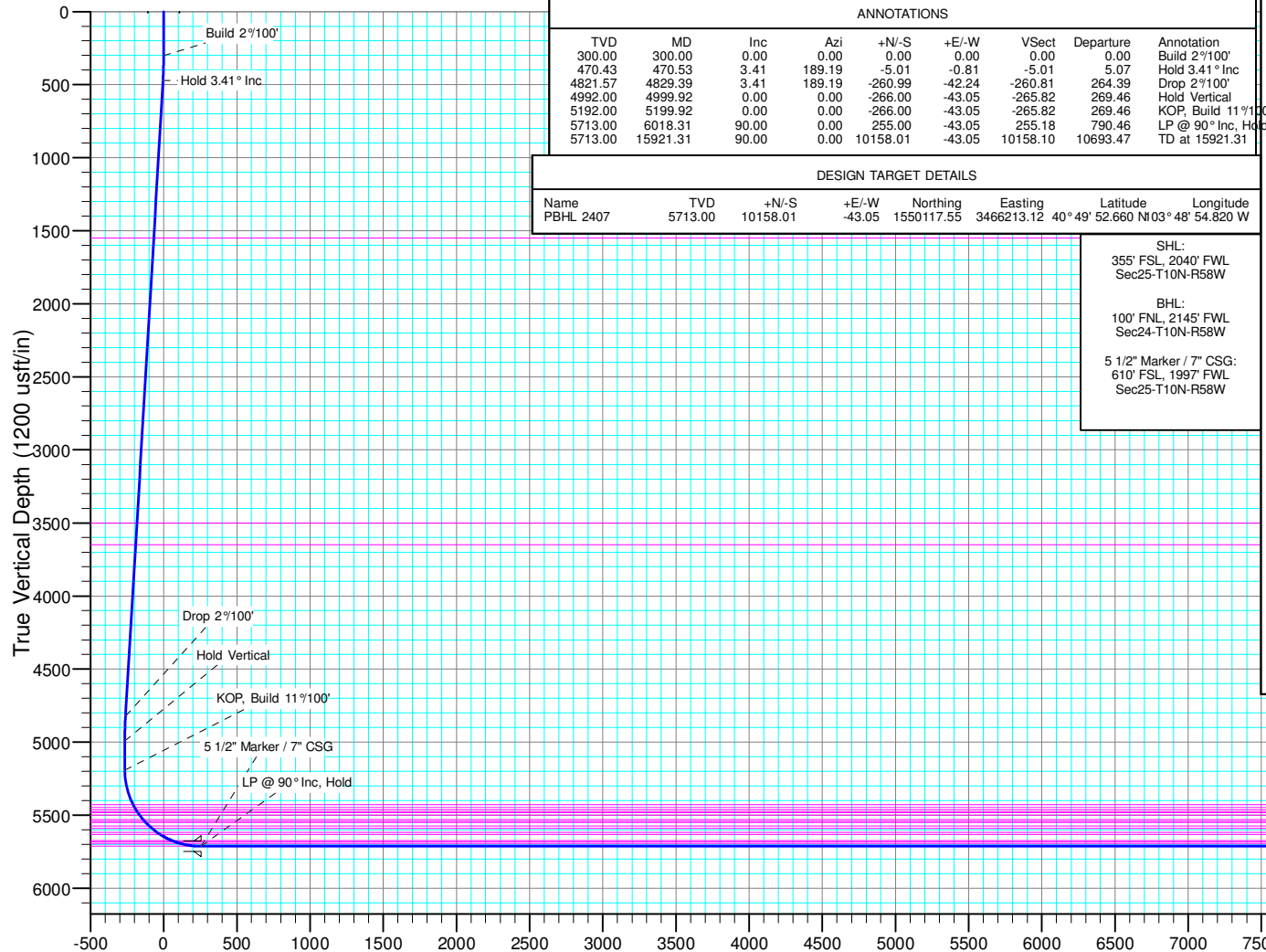
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2407	5713.00	10158.01	-43.05	1550117.55	3466213.12	40° 49' 52.660 N	103° 48' 54.820 W

SHL:  
355' FSL, 2040' FWL  
Sec25-T10N-R58W  
BHL:  
100' FNL, 2145' FWL  
Sec24-T10N-R58W  
5 1/2" Marker / 7" CSG:  
610' FSL, 1997' FWL  
Sec25-T10N-R58W

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



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



Vertical Section at 359.76° (1200 usft/in)



# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25N-2407**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**19 February, 2016**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<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 #25N-2407			
<b>Well Position</b>	<b>+N/-S</b>	-4,631.08 usft	<b>Northing:</b>	1,539,962.20 usft
	<b>+E/-W</b>	1,478.09 usft	<b>Easting:</b>	3,466,449.16 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,701.00 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	5/13/2015	7.84	67.38	53,024

<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	359.76

<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	
470.53	3.41	189.19	470.43	-5.01	-0.81	2.00	2.00	0.00	189.19	
4,829.39	3.41	189.19	4,821.57	-260.99	-42.24	0.00	0.00	0.00	0.00	
4,999.92	0.00	0.00	4,992.00	-266.00	-43.05	2.00	-2.00	0.00	180.00	
5,199.92	0.00	0.00	5,192.00	-266.00	-43.05	0.00	0.00	0.00	0.00	
6,018.31	90.00	0.00	5,713.00	255.00	-43.05	11.00	11.00	0.00	0.00	
15,921.31	90.00	0.00	5,713.00	10,158.01	-43.05	0.00	0.00	0.00	0.00	PBHL 2407



# WOG

## Planning Report

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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<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	189.19	399.98	-1.72	-0.28	-1.72	2.00	2.00	0.00
470.53	3.41	189.19	470.43	-5.01	-0.81	-5.01	2.00	2.00	0.00
<b>Hold 3.41° Inc</b>									
500.00	3.41	189.19	499.85	-6.74	-1.09	-6.73	0.00	0.00	0.00
600.00	3.41	189.19	599.67	-12.61	-2.04	-12.60	0.00	0.00	0.00
700.00	3.41	189.19	699.49	-18.48	-2.99	-18.47	0.00	0.00	0.00
800.00	3.41	189.19	799.32	-24.36	-3.94	-24.34	0.00	0.00	0.00
900.00	3.41	189.19	899.14	-30.23	-4.89	-30.21	0.00	0.00	0.00
1,000.00	3.41	189.19	998.96	-36.10	-5.84	-36.08	0.00	0.00	0.00
1,100.00	3.41	189.19	1,098.78	-41.98	-6.79	-41.95	0.00	0.00	0.00
1,200.00	3.41	189.19	1,198.61	-47.85	-7.74	-47.82	0.00	0.00	0.00
1,300.00	3.41	189.19	1,298.43	-53.72	-8.69	-53.68	0.00	0.00	0.00
1,400.00	3.41	189.19	1,398.25	-59.59	-9.64	-59.55	0.00	0.00	0.00
1,500.00	3.41	189.19	1,498.08	-65.47	-10.59	-65.42	0.00	0.00	0.00
1,552.02	3.41	189.19	1,550.00	-68.52	-11.09	-68.47	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	3.41	189.19	1,597.90	-71.34	-11.55	-71.29	0.00	0.00	0.00
1,700.00	3.41	189.19	1,697.72	-77.21	-12.50	-77.16	0.00	0.00	0.00
1,800.00	3.41	189.19	1,797.54	-83.08	-13.45	-83.03	0.00	0.00	0.00
1,900.00	3.41	189.19	1,897.37	-88.96	-14.40	-88.90	0.00	0.00	0.00
2,000.00	3.41	189.19	1,997.19	-94.83	-15.35	-94.76	0.00	0.00	0.00
2,100.00	3.41	189.19	2,097.01	-100.70	-16.30	-100.63	0.00	0.00	0.00
2,200.00	3.41	189.19	2,196.84	-106.58	-17.25	-106.50	0.00	0.00	0.00
2,300.00	3.41	189.19	2,296.66	-112.45	-18.20	-112.37	0.00	0.00	0.00
2,400.00	3.41	189.19	2,396.48	-118.32	-19.15	-118.24	0.00	0.00	0.00
2,500.00	3.41	189.19	2,496.30	-124.19	-20.10	-124.11	0.00	0.00	0.00
2,600.00	3.41	189.19	2,596.13	-130.07	-21.05	-129.98	0.00	0.00	0.00
2,700.00	3.41	189.19	2,695.95	-135.94	-22.00	-135.84	0.00	0.00	0.00
2,800.00	3.41	189.19	2,795.77	-141.81	-22.95	-141.71	0.00	0.00	0.00
2,900.00	3.41	189.19	2,895.60	-147.68	-23.90	-147.58	0.00	0.00	0.00
3,000.00	3.41	189.19	2,995.42	-153.56	-24.85	-153.45	0.00	0.00	0.00
3,100.00	3.41	189.19	3,095.24	-159.43	-25.80	-159.32	0.00	0.00	0.00
3,200.00	3.41	189.19	3,195.07	-165.30	-26.75	-165.19	0.00	0.00	0.00
3,300.00	3.41	189.19	3,294.89	-171.17	-27.70	-171.06	0.00	0.00	0.00
3,400.00	3.41	189.19	3,394.71	-177.05	-28.65	-176.92	0.00	0.00	0.00
3,500.00	3.41	189.19	3,494.53	-182.92	-29.60	-182.79	0.00	0.00	0.00
3,505.48	3.41	189.19	3,500.00	-183.24	-29.65	-183.11	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	3.41	189.19	3,594.36	-188.79	-30.55	-188.66	0.00	0.00	0.00
3,655.74	3.41	189.19	3,650.00	-192.07	-31.08	-191.93	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	3.41	189.19	3,694.18	-194.67	-31.50	-194.53	0.00	0.00	0.00
3,800.00	3.41	189.19	3,794.00	-200.54	-32.45	-200.40	0.00	0.00	0.00
3,900.00	3.41	189.19	3,893.83	-206.41	-33.40	-206.27	0.00	0.00	0.00
4,000.00	3.41	189.19	3,993.65	-212.28	-34.35	-212.14	0.00	0.00	0.00
4,100.00	3.41	189.19	4,093.47	-218.16	-35.31	-218.00	0.00	0.00	0.00
4,200.00	3.41	189.19	4,193.29	-224.03	-36.26	-223.87	0.00	0.00	0.00
4,300.00	3.41	189.19	4,293.12	-229.90	-37.21	-229.74	0.00	0.00	0.00
4,400.00	3.41	189.19	4,392.94	-235.77	-38.16	-235.61	0.00	0.00	0.00



# WOG

## Planning Report

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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<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)
4,500.00	3.41	189.19	4,492.76	-241.65	-39.11	-241.48	0.00	0.00	0.00
4,600.00	3.41	189.19	4,592.59	-247.52	-40.06	-247.35	0.00	0.00	0.00
4,700.00	3.41	189.19	4,692.41	-253.39	-41.01	-253.22	0.00	0.00	0.00
4,800.00	3.41	189.19	4,792.23	-259.27	-41.96	-259.08	0.00	0.00	0.00
4,829.39	3.41	189.19	4,821.57	-260.99	-42.24	-260.81	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
4,900.00	2.00	189.19	4,892.10	-264.28	-42.77	-264.10	2.00	-2.00	0.00
4,999.92	0.00	0.00	4,992.00	-266.00	-43.05	-265.82	2.00	-2.00	0.00
<b>Hold Vertical</b>									
5,000.00	0.00	0.00	4,992.08	-266.00	-43.05	-265.82	0.00	0.00	0.00
5,100.00	0.00	0.00	5,092.08	-266.00	-43.05	-265.82	0.00	0.00	0.00
5,199.92	0.00	0.00	5,192.00	-266.00	-43.05	-265.82	0.00	0.00	0.00
<b>KOP, Build 11°/100'</b>									
5,200.00	0.00	0.00	5,192.08	-266.00	-43.05	-265.82	0.00	0.00	0.00
5,300.00	11.01	0.00	5,291.46	-256.42	-43.05	-256.23	11.01	11.01	0.00
5,400.00	22.00	0.00	5,387.20	-228.05	-43.05	-227.87	11.00	11.00	0.00
5,444.84	26.93	0.00	5,428.00	-209.48	-43.05	-209.30	11.00	11.00	0.00
<b>P200 Marker</b>									
5,467.54	29.43	0.00	5,448.00	-198.77	-43.05	-198.58	11.00	11.00	0.00
<b>P300 Marker</b>									
5,486.10	31.47	0.00	5,464.00	-189.36	-43.05	-189.18	11.00	11.00	0.00
<b>P350 Marker</b>									
5,500.00	33.00	0.00	5,475.76	-181.95	-43.05	-181.76	11.00	11.00	0.00
5,502.68	33.29	0.00	5,478.00	-180.48	-43.05	-180.30	11.00	11.00	0.00
<b>Sharon Springs</b>									
5,507.48	33.82	0.00	5,482.00	-177.83	-43.05	-177.65	11.00	11.00	0.00
<b>Niobrara</b>									
5,528.22	36.10	0.00	5,499.00	-165.94	-43.05	-165.76	11.00	11.00	0.00
<b>Top A Chalk</b>									
5,566.41	40.30	0.00	5,529.00	-142.33	-43.05	-142.15	11.00	11.00	0.00
<b>Top A Marl</b>									
5,582.35	42.06	0.00	5,541.00	-131.83	-43.05	-131.65	11.00	11.00	0.00
<b>A Marl</b>									
5,593.23	43.25	0.00	5,549.00	-124.46	-43.05	-124.28	11.00	11.00	0.00
<b>Top Upper B</b>									
5,600.00	44.00	0.00	5,553.90	-119.79	-43.05	-119.61	11.00	11.00	0.00
5,627.25	46.99	0.00	5,573.00	-100.36	-43.05	-100.18	11.00	11.00	0.00
<b>Base Upper B</b>									
5,651.31	49.64	0.00	5,589.00	-82.39	-43.05	-82.21	11.00	11.00	0.00
<b>Top Lower B</b>									
5,698.69	54.85	0.00	5,618.00	-44.94	-43.05	-44.76	11.00	11.00	0.00
<b>Base Lower B</b>									
5,700.00	54.99	0.00	5,618.75	-43.87	-43.05	-43.69	11.00	11.00	0.00
5,722.02	57.42	0.00	5,631.00	-25.57	-43.05	-25.39	11.00	11.00	0.00
<b>Top B Marl</b>									
5,800.00	65.99	0.00	5,667.93	43.03	-43.05	43.21	11.00	11.00	0.00
5,812.82	67.40	0.00	5,673.00	54.80	-43.05	54.98	11.00	11.00	0.00
<b>Top C Chalk</b>									
5,834.76	69.81	0.00	5,681.00	75.22	-43.05	75.40	11.00	11.00	0.00
<b>Middle C Chalk</b>									
5,880.96	74.90	0.00	5,695.00	119.24	-43.05	119.42	11.00	11.00	0.00



# WOG

## Planning Report

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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<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)
<b>Middle C Marl</b>									
5,900.00	76.99	0.00	5,699.63	137.71	-43.05	137.89	11.00	11.00	0.00
6,000.00	87.99	0.00	5,712.68	236.70	-43.05	236.88	11.00	11.00	0.00
6,018.31	90.00	0.00	5,713.00	255.00	-43.05	255.18	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - Lower C Chalk - 5 1/2" Marker / 7" CSG</b>									
6,100.00	90.00	0.00	5,713.00	336.69	-43.05	336.87	0.00	0.00	0.00
6,200.00	90.00	0.00	5,713.00	436.69	-43.05	436.87	0.00	0.00	0.00
6,300.00	90.00	0.00	5,713.00	536.69	-43.05	536.87	0.00	0.00	0.00
6,400.00	90.00	0.00	5,713.00	636.69	-43.05	636.87	0.00	0.00	0.00
6,500.00	90.00	0.00	5,713.00	736.69	-43.05	736.87	0.00	0.00	0.00
6,600.00	90.00	0.00	5,713.00	836.69	-43.05	836.87	0.00	0.00	0.00
6,700.00	90.00	0.00	5,713.00	936.69	-43.05	936.87	0.00	0.00	0.00
6,800.00	90.00	0.00	5,713.00	1,036.69	-43.05	1,036.87	0.00	0.00	0.00
6,900.00	90.00	0.00	5,713.00	1,136.69	-43.05	1,136.87	0.00	0.00	0.00
7,000.00	90.00	0.00	5,713.00	1,236.69	-43.05	1,236.86	0.00	0.00	0.00
7,100.00	90.00	0.00	5,713.00	1,336.69	-43.05	1,336.86	0.00	0.00	0.00
7,200.00	90.00	0.00	5,713.00	1,436.69	-43.05	1,436.86	0.00	0.00	0.00
7,300.00	90.00	0.00	5,713.00	1,536.69	-43.05	1,536.86	0.00	0.00	0.00
7,400.00	90.00	0.00	5,713.00	1,636.69	-43.05	1,636.86	0.00	0.00	0.00
7,500.00	90.00	0.00	5,713.00	1,736.69	-43.05	1,736.86	0.00	0.00	0.00
7,600.00	90.00	0.00	5,713.00	1,836.69	-43.05	1,836.86	0.00	0.00	0.00
7,700.00	90.00	0.00	5,713.00	1,936.69	-43.05	1,936.86	0.00	0.00	0.00
7,800.00	90.00	0.00	5,713.00	2,036.69	-43.05	2,036.86	0.00	0.00	0.00
7,900.00	90.00	0.00	5,713.00	2,136.69	-43.05	2,136.86	0.00	0.00	0.00
8,000.00	90.00	0.00	5,713.00	2,236.69	-43.05	2,236.86	0.00	0.00	0.00
8,100.00	90.00	0.00	5,713.00	2,336.69	-43.05	2,336.86	0.00	0.00	0.00
8,200.00	90.00	0.00	5,713.00	2,436.69	-43.05	2,436.85	0.00	0.00	0.00
8,300.00	90.00	0.00	5,713.00	2,536.69	-43.05	2,536.85	0.00	0.00	0.00
8,400.00	90.00	0.00	5,713.00	2,636.69	-43.05	2,636.85	0.00	0.00	0.00
8,500.00	90.00	0.00	5,713.00	2,736.69	-43.05	2,736.85	0.00	0.00	0.00
8,600.00	90.00	0.00	5,713.00	2,836.69	-43.05	2,836.85	0.00	0.00	0.00
8,700.00	90.00	0.00	5,713.00	2,936.69	-43.05	2,936.85	0.00	0.00	0.00
8,800.00	90.00	0.00	5,713.00	3,036.69	-43.05	3,036.85	0.00	0.00	0.00
8,900.00	90.00	0.00	5,713.00	3,136.69	-43.05	3,136.85	0.00	0.00	0.00
9,000.00	90.00	0.00	5,713.00	3,236.69	-43.05	3,236.85	0.00	0.00	0.00
9,100.00	90.00	0.00	5,713.00	3,336.69	-43.05	3,336.85	0.00	0.00	0.00
9,200.00	90.00	0.00	5,713.00	3,436.69	-43.05	3,436.85	0.00	0.00	0.00
9,300.00	90.00	0.00	5,713.00	3,536.69	-43.05	3,536.84	0.00	0.00	0.00
9,400.00	90.00	0.00	5,713.00	3,636.69	-43.05	3,636.84	0.00	0.00	0.00
9,500.00	90.00	0.00	5,713.00	3,736.69	-43.05	3,736.84	0.00	0.00	0.00
9,600.00	90.00	0.00	5,713.00	3,836.69	-43.05	3,836.84	0.00	0.00	0.00
9,700.00	90.00	0.00	5,713.00	3,936.69	-43.05	3,936.84	0.00	0.00	0.00
9,800.00	90.00	0.00	5,713.00	4,036.69	-43.05	4,036.84	0.00	0.00	0.00
9,900.00	90.00	0.00	5,713.00	4,136.69	-43.05	4,136.84	0.00	0.00	0.00
10,000.00	90.00	0.00	5,713.00	4,236.69	-43.05	4,236.84	0.00	0.00	0.00
10,100.00	90.00	0.00	5,713.00	4,336.69	-43.05	4,336.84	0.00	0.00	0.00
10,200.00	90.00	0.00	5,713.00	4,436.69	-43.05	4,436.84	0.00	0.00	0.00
10,300.00	90.00	0.00	5,713.00	4,536.69	-43.05	4,536.84	0.00	0.00	0.00
10,400.00	90.00	0.00	5,713.00	4,636.69	-43.05	4,636.83	0.00	0.00	0.00
10,500.00	90.00	0.00	5,713.00	4,736.69	-43.05	4,736.83	0.00	0.00	0.00
10,600.00	90.00	0.00	5,713.00	4,836.69	-43.05	4,836.83	0.00	0.00	0.00
10,700.00	90.00	0.00	5,713.00	4,936.69	-43.05	4,936.83	0.00	0.00	0.00
10,800.00	90.00	0.00	5,713.00	5,036.69	-43.05	5,036.83	0.00	0.00	0.00
10,900.00	90.00	0.00	5,713.00	5,136.69	-43.05	5,136.83	0.00	0.00	0.00



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<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)
11,000.00	90.00	0.00	5,713.00	5,236.69	-43.05	5,236.83	0.00	0.00	0.00
11,100.00	90.00	0.00	5,713.00	5,336.69	-43.05	5,336.83	0.00	0.00	0.00
11,200.00	90.00	0.00	5,713.00	5,436.69	-43.05	5,436.83	0.00	0.00	0.00
11,300.00	90.00	0.00	5,713.00	5,536.69	-43.05	5,536.83	0.00	0.00	0.00
11,400.00	90.00	0.00	5,713.00	5,636.69	-43.05	5,636.83	0.00	0.00	0.00
11,500.00	90.00	0.00	5,713.00	5,736.69	-43.05	5,736.82	0.00	0.00	0.00
11,600.00	90.00	0.00	5,713.00	5,836.69	-43.05	5,836.82	0.00	0.00	0.00
11,700.00	90.00	0.00	5,713.00	5,936.69	-43.05	5,936.82	0.00	0.00	0.00
11,800.00	90.00	0.00	5,713.00	6,036.69	-43.05	6,036.82	0.00	0.00	0.00
11,900.00	90.00	0.00	5,713.00	6,136.69	-43.05	6,136.82	0.00	0.00	0.00
12,000.00	90.00	0.00	5,713.00	6,236.69	-43.05	6,236.82	0.00	0.00	0.00
12,100.00	90.00	0.00	5,713.00	6,336.69	-43.05	6,336.82	0.00	0.00	0.00
12,200.00	90.00	0.00	5,713.00	6,436.69	-43.05	6,436.82	0.00	0.00	0.00
12,300.00	90.00	0.00	5,713.00	6,536.69	-43.05	6,536.82	0.00	0.00	0.00
12,400.00	90.00	0.00	5,713.00	6,636.69	-43.05	6,636.82	0.00	0.00	0.00
12,500.00	90.00	0.00	5,713.00	6,736.69	-43.05	6,736.82	0.00	0.00	0.00
12,600.00	90.00	0.00	5,713.00	6,836.69	-43.05	6,836.81	0.00	0.00	0.00
12,700.00	90.00	0.00	5,713.00	6,936.69	-43.05	6,936.81	0.00	0.00	0.00
12,800.00	90.00	0.00	5,713.00	7,036.69	-43.05	7,036.81	0.00	0.00	0.00
12,900.00	90.00	0.00	5,713.00	7,136.69	-43.05	7,136.81	0.00	0.00	0.00
13,000.00	90.00	0.00	5,713.00	7,236.69	-43.05	7,236.81	0.00	0.00	0.00
13,100.00	90.00	0.00	5,713.00	7,336.69	-43.05	7,336.81	0.00	0.00	0.00
13,200.00	90.00	0.00	5,713.00	7,436.69	-43.05	7,436.81	0.00	0.00	0.00
13,300.00	90.00	0.00	5,713.00	7,536.69	-43.05	7,536.81	0.00	0.00	0.00
13,400.00	90.00	0.00	5,713.00	7,636.69	-43.05	7,636.81	0.00	0.00	0.00
13,500.00	90.00	0.00	5,713.00	7,736.69	-43.05	7,736.81	0.00	0.00	0.00
13,600.00	90.00	0.00	5,713.00	7,836.69	-43.05	7,836.81	0.00	0.00	0.00
13,700.00	90.00	0.00	5,713.00	7,936.69	-43.05	7,936.80	0.00	0.00	0.00
13,800.00	90.00	0.00	5,713.00	8,036.69	-43.05	8,036.80	0.00	0.00	0.00
13,900.00	90.00	0.00	5,713.00	8,136.69	-43.05	8,136.80	0.00	0.00	0.00
14,000.00	90.00	0.00	5,713.00	8,236.69	-43.05	8,236.80	0.00	0.00	0.00
14,100.00	90.00	0.00	5,713.00	8,336.69	-43.05	8,336.80	0.00	0.00	0.00
14,200.00	90.00	0.00	5,713.00	8,436.69	-43.05	8,436.80	0.00	0.00	0.00
14,300.00	90.00	0.00	5,713.00	8,536.69	-43.05	8,536.80	0.00	0.00	0.00
14,400.00	90.00	0.00	5,713.00	8,636.69	-43.05	8,636.80	0.00	0.00	0.00
14,500.00	90.00	0.00	5,713.00	8,736.69	-43.05	8,736.80	0.00	0.00	0.00
14,600.00	90.00	0.00	5,713.00	8,836.69	-43.05	8,836.80	0.00	0.00	0.00
14,700.00	90.00	0.00	5,713.00	8,936.69	-43.05	8,936.80	0.00	0.00	0.00
14,800.00	90.00	0.00	5,713.00	9,036.69	-43.05	9,036.79	0.00	0.00	0.00
14,900.00	90.00	0.00	5,713.00	9,136.69	-43.05	9,136.79	0.00	0.00	0.00
15,000.00	90.00	0.00	5,713.00	9,236.69	-43.05	9,236.79	0.00	0.00	0.00
15,100.00	90.00	0.00	5,713.00	9,336.69	-43.05	9,336.79	0.00	0.00	0.00
15,200.00	90.00	0.00	5,713.00	9,436.69	-43.05	9,436.79	0.00	0.00	0.00
15,300.00	90.00	0.00	5,713.00	9,536.69	-43.05	9,536.79	0.00	0.00	0.00
15,400.00	90.00	0.00	5,713.00	9,636.69	-43.05	9,636.79	0.00	0.00	0.00
15,500.00	90.00	0.00	5,713.00	9,736.69	-43.05	9,736.79	0.00	0.00	0.00
15,600.00	90.00	0.00	5,713.00	9,836.69	-43.05	9,836.79	0.00	0.00	0.00
15,700.00	90.00	0.00	5,713.00	9,936.69	-43.05	9,936.79	0.00	0.00	0.00
15,800.00	90.00	0.00	5,713.00	10,036.69	-43.05	10,036.79	0.00	0.00	0.00
15,900.00	90.00	0.00	5,713.00	10,136.69	-43.05	10,136.79	0.00	0.00	0.00
15,921.31	90.00	0.00	5,713.00	10,158.01	-43.05	10,158.10	0.00	0.00	0.00
TD at 15921.31									



# WOG Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #25N-2407	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	APD		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PBHL 2407	0.00	0.00	5,713.00	10,158.01	-43.05	1,550,117.55	3,466,213.11	40° 49' 52.660 N	103° 48' 54.820 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(in)	(in)
6,018.31	5,713.00	5 1/2" Marker / 7" CSG		7.000	8.750

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,552.02	1,550.00	Upper Pierre				
3,505.48	3,500.00	Hygiene				
3,655.74	3,650.00	Lower Pierre				
5,444.84	5,428.00	P200 Marker				
5,467.54	5,448.00	P300 Marker				
5,486.10	5,464.00	P350 Marker				
5,502.68	5,478.00	Sharon Springs				
5,507.48	5,482.00	Niobrara				
5,528.22	5,499.00	Top A Chalk				
5,566.41	5,529.00	Top A Marl				
5,582.35	5,541.00	A Marl				
5,593.23	5,549.00	Top Upper B				
5,627.25	5,573.00	Base Upper B				
5,651.31	5,589.00	Top Lower B				
5,698.69	5,618.00	Base Lower B				
5,722.02	5,631.00	Top B Marl				
5,812.82	5,673.00	Top C Chalk				
5,834.76	5,681.00	Middle C Chalk				
5,880.96	5,695.00	Middle C Marl				
6,018.31	5,713.00	Lower C Chalk				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
(usft)	(usft)	(usft)	(usft)		
300.00	300.00	0.00	0.00	Build 2°/100'	
470.53	470.43	-5.01	-0.81	Hold 3.41° Inc	
4,829.39	4,821.57	-260.99	-42.24	Drop 2°/100'	
4,999.92	4,992.00	-266.00	-43.05	Hold Vertical	
5,199.92	5,192.00	-266.00	-43.05	KOP, Build 11°/100'	
6,018.31	5,713.00	255.00	-43.05	LP @ 90° Inc, Hold	
15,921.31	5,713.00	10,158.01	-43.05	TD at 15921.31	