



Project: Weld County, CO
Site: Sec 25-T10N-R58W
Well: Razor #25P-2416
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: 7.83°
Magnetic Field
Strength: 53020.8nT
Dip Angle: 67.38°
Date: 5/27/2015
Model: IGRF2010

FORMATION TOP DETAILS

MDPath	Formation
1550.00	Upper Pierre
1554.08	Hygiene
3500.00	Lower Pierre
3511.41	P200 Marker
3650.00	P300 Marker
3661.98	P350 Marker
5454.00	Sharon Springs
5474.00	Niobrara
5535.90	Top A Chalk
5559.88	Top A Marl
5581.98	A Marl
5588.52	Top Upper B
5617.59	Base Upper B
5703.02	Top Lower B
5722.93	
5798.97	
5928.42	

WELL DETAILS: Razor #25P-2416

+N/-S	+E/-W	Northing	Ground Level:	4741.00	Longitude	Slot
0.00	0.00	1540048.60	Easting	3469177.31	40° 48' 12.630 N	103° 48' 18.770 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	548.07	4.96	134.84	547.76	-7.57	7.61	2.00	134.84	-7.36	
4	4661.97	4.96	134.84	4646.24	-258.43	259.90	0.00	0.00	-251.48	
5	4910.03	0.00	0.00	4894.00	-266.00	267.51	2.00	180.00	-258.85	
6	5110.03	0.00	0.00	5094.00	-266.00	267.51	0.00	0.00	-258.85	
7	5928.42	90.00	0.00	5615.00	255.00	267.51	11.00	0.00	261.97	
8	15809.16	90.00	0.00	5615.00	10135.74	267.51	0.00	0.00	10139.27	PBHL 2416

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'
547.76	548.07	4.96	134.84	-7.57	7.61	-7.36	10.73	Hold 4.96° Inc
4646.24	4661.97	4.96	134.84	-258.43	259.90	-251.48	366.52	Drop 2°100'
4894.00	4910.03	0.00	0.00	-266.00	267.51	-258.85	377.25	Hold Vertical
5094.00	5110.03	0.00	0.00	-266.00	267.51	-258.85	377.25	KOP, Build 11°100'
5615.00	5928.42	90.00	0.00	255.00	267.51	261.97	898.25	LP @ 90° Inc, Hold
5615.00	15809.16	90.00	0.00	10135.74	267.51	10139.27	10778.99	TD at 15809.16

DESIGN TARGET DETAILS

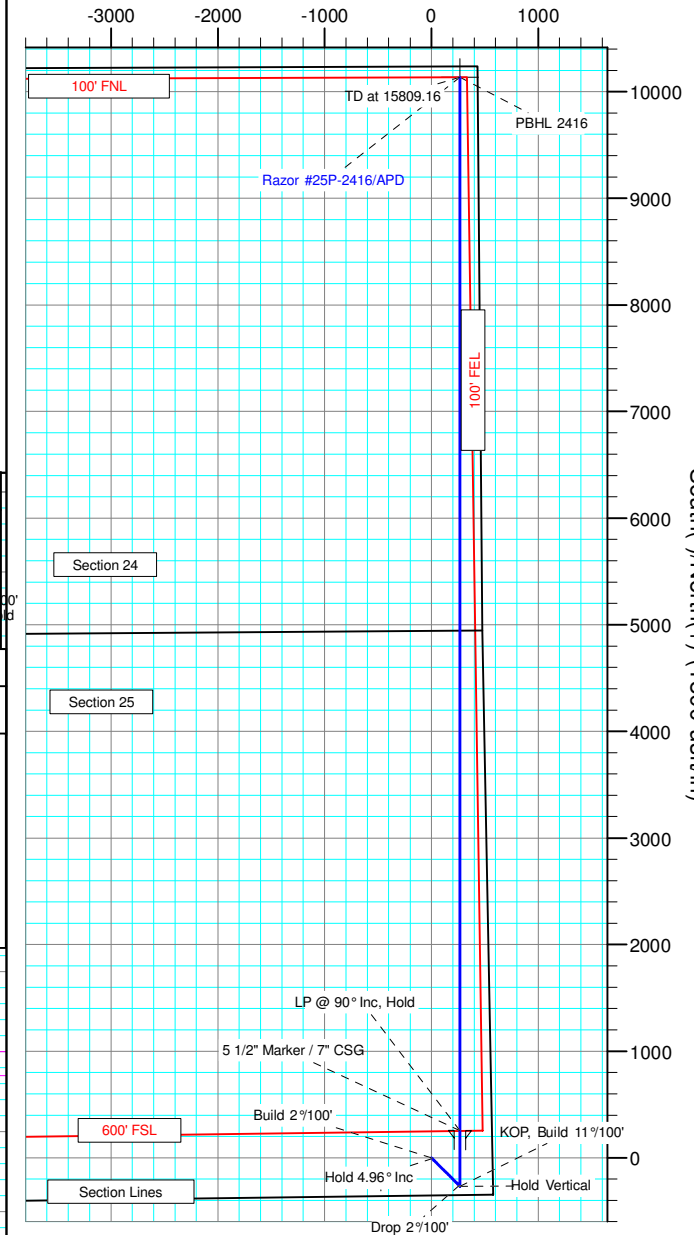
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2416	5615.00	10135.74	267.51	1550187.61	3469251.07	40° 49' 52.780 N	103° 48' 15.290 W

SHL:
355' FSL, 569' FEL
Sec25-T10N-R58W

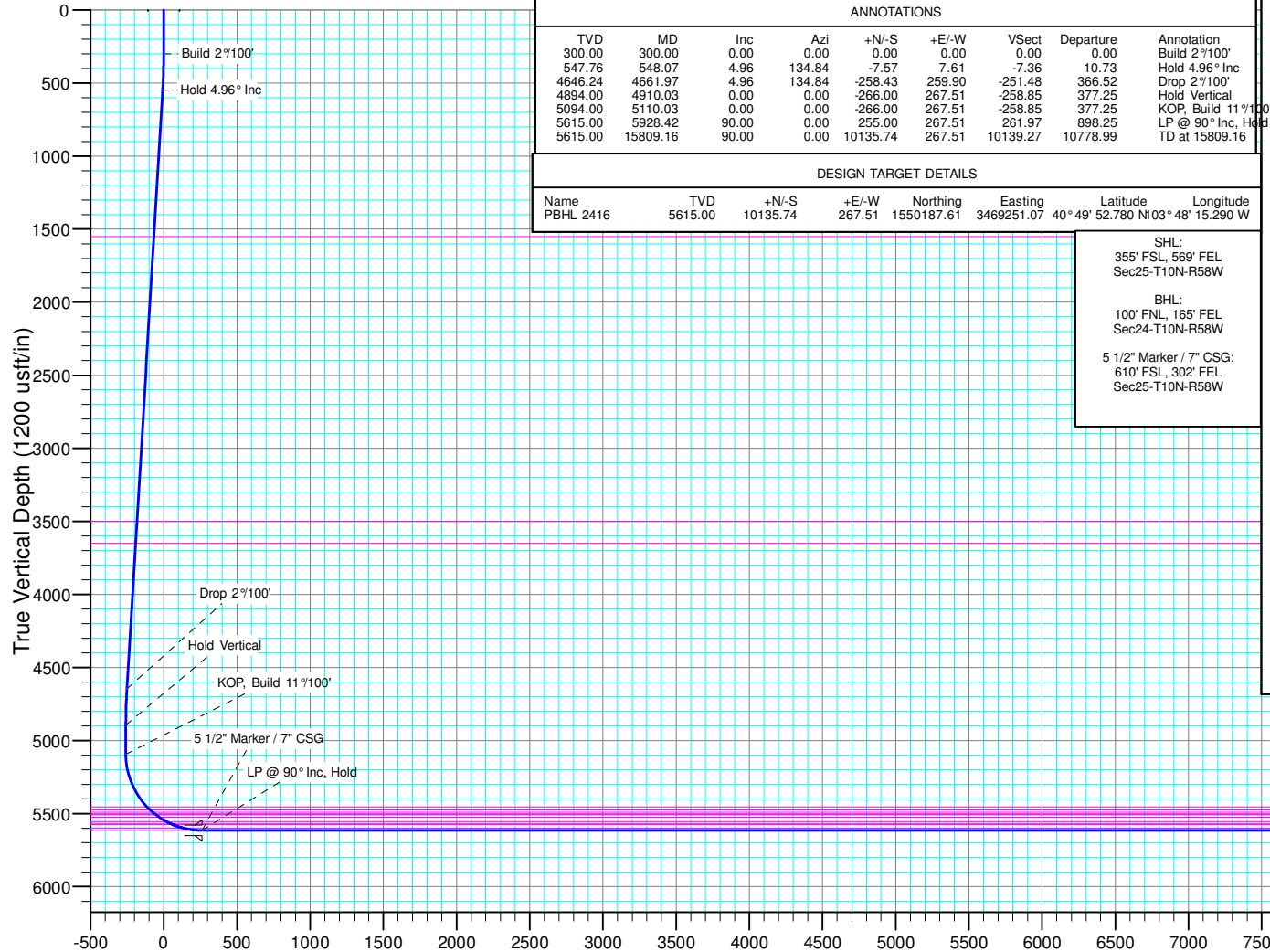
BHL:
100' FNL, 165' FEL
Sec24-T10N-R58W

5 1/2" Marker / 7" CSG:
610' FSL, 302' FEL
Sec25-T10N-R58W

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



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



Vertical Section at 1.51° (1200 usft/in)



Whiting Petroleum Corp.

**Weld County, CO
Sec 25-T10N-R58W
Razor #25P-2416**

Hz

Plan: APD

Standard Planning Report

22 February, 2016



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25P-2416
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	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 #25P-2416			
Well Position	+N/-S	-4,596.36 usft	Northing:	1,540,048.61 usft
	+E/-W	4,207.39 usft	Easting:	3,469,177.31 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level: 4,741.00 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/27/2015	7.83	67.38	53,021

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	1.51

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	
548.07	4.96	134.84	547.76	-7.57	7.61	2.00	2.00	0.00	134.84	
4,661.97	4.96	134.84	4,646.24	-258.43	259.90	0.00	0.00	0.00	0.00	
4,910.03	0.00	0.00	4,894.00	-266.00	267.51	2.00	-2.00	0.00	180.00	
5,110.03	0.00	0.00	5,094.00	-266.00	267.51	0.00	0.00	0.00	0.00	
5,928.42	90.00	0.00	5,615.00	255.00	267.51	11.00	11.00	0.00	0.00	
15,809.16	90.00	0.00	5,615.00	10,135.74	267.51	0.00	0.00	0.00	0.00	PBHL 2416



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25P-2416
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	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	134.84	399.98	-1.23	1.24	-1.20	2.00	2.00	0.00
500.00	4.00	134.84	499.84	-4.92	4.95	-4.79	2.00	2.00	0.00
548.07	4.96	134.84	547.76	-7.57	7.61	-7.36	2.00	2.00	0.00
Hold 4.96° Inc									
600.00	4.96	134.84	599.50	-10.74	10.80	-10.45	0.00	0.00	0.00
700.00	4.96	134.84	699.12	-16.83	16.93	-16.38	0.00	0.00	0.00
800.00	4.96	134.84	798.75	-22.93	23.06	-22.31	0.00	0.00	0.00
900.00	4.96	134.84	898.37	-29.03	29.19	-28.25	0.00	0.00	0.00
1,000.00	4.96	134.84	998.00	-35.13	35.33	-34.18	0.00	0.00	0.00
1,100.00	4.96	134.84	1,097.62	-41.22	41.46	-40.12	0.00	0.00	0.00
1,200.00	4.96	134.84	1,197.25	-47.32	47.59	-46.05	0.00	0.00	0.00
1,300.00	4.96	134.84	1,296.87	-53.42	53.72	-51.98	0.00	0.00	0.00
1,400.00	4.96	134.84	1,396.50	-59.52	59.86	-57.92	0.00	0.00	0.00
1,500.00	4.96	134.84	1,496.12	-65.62	65.99	-63.85	0.00	0.00	0.00
1,554.08	4.96	134.84	1,550.00	-68.91	69.31	-67.06	0.00	0.00	0.00
Upper Pierre									
1,600.00	4.96	134.84	1,595.75	-71.71	72.12	-69.79	0.00	0.00	0.00
1,700.00	4.96	134.84	1,695.37	-77.81	78.26	-75.72	0.00	0.00	0.00
1,800.00	4.96	134.84	1,795.00	-83.91	84.39	-81.65	0.00	0.00	0.00
1,900.00	4.96	134.84	1,894.62	-90.01	90.52	-87.59	0.00	0.00	0.00
2,000.00	4.96	134.84	1,994.25	-96.11	96.65	-93.52	0.00	0.00	0.00
2,100.00	4.96	134.84	2,093.88	-102.20	102.79	-99.46	0.00	0.00	0.00
2,200.00	4.96	134.84	2,193.50	-108.30	108.92	-105.39	0.00	0.00	0.00
2,300.00	4.96	134.84	2,293.13	-114.40	115.05	-111.32	0.00	0.00	0.00
2,400.00	4.96	134.84	2,392.75	-120.50	121.18	-117.26	0.00	0.00	0.00
2,500.00	4.96	134.84	2,492.38	-126.60	127.32	-123.19	0.00	0.00	0.00
2,600.00	4.96	134.84	2,592.00	-132.69	133.45	-129.13	0.00	0.00	0.00
2,700.00	4.96	134.84	2,691.63	-138.79	139.58	-135.06	0.00	0.00	0.00
2,800.00	4.96	134.84	2,791.25	-144.89	145.71	-141.00	0.00	0.00	0.00
2,900.00	4.96	134.84	2,890.88	-150.99	151.85	-146.93	0.00	0.00	0.00
3,000.00	4.96	134.84	2,990.50	-157.09	157.98	-152.86	0.00	0.00	0.00
3,100.00	4.96	134.84	3,090.13	-163.18	164.11	-158.80	0.00	0.00	0.00
3,200.00	4.96	134.84	3,189.75	-169.28	170.25	-164.73	0.00	0.00	0.00
3,300.00	4.96	134.84	3,289.38	-175.38	176.38	-170.67	0.00	0.00	0.00
3,400.00	4.96	134.84	3,389.00	-181.48	182.51	-176.60	0.00	0.00	0.00
3,500.00	4.96	134.84	3,488.63	-187.58	188.64	-182.53	0.00	0.00	0.00
3,511.41	4.96	134.84	3,500.00	-188.27	189.34	-183.21	0.00	0.00	0.00
Hygiene									
3,600.00	4.96	134.84	3,588.26	-193.67	194.78	-188.47	0.00	0.00	0.00
3,661.98	4.96	134.84	3,650.00	-197.45	198.58	-192.14	0.00	0.00	0.00
Lower Pierre									
3,700.00	4.96	134.84	3,687.88	-199.77	200.91	-194.40	0.00	0.00	0.00
3,800.00	4.96	134.84	3,787.51	-205.87	207.04	-200.34	0.00	0.00	0.00
3,900.00	4.96	134.84	3,887.13	-211.97	213.17	-206.27	0.00	0.00	0.00
4,000.00	4.96	134.84	3,986.76	-218.07	219.31	-212.20	0.00	0.00	0.00
4,100.00	4.96	134.84	4,086.38	-224.16	225.44	-218.14	0.00	0.00	0.00
4,200.00	4.96	134.84	4,186.01	-230.26	231.57	-224.07	0.00	0.00	0.00
4,300.00	4.96	134.84	4,285.63	-236.36	237.70	-230.01	0.00	0.00	0.00
4,400.00	4.96	134.84	4,385.26	-242.46	243.84	-235.94	0.00	0.00	0.00



WOG Planning Report

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Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	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	4.96	134.84	4,484.88	-248.56	249.97	-241.87	0.00	0.00	0.00
4,600.00	4.96	134.84	4,584.51	-254.65	256.10	-247.81	0.00	0.00	0.00
4,661.97	4.96	134.84	4,646.24	-258.43	259.90	-251.48	0.00	0.00	0.00
Drop 2°/100'									
4,700.00	4.20	134.84	4,684.15	-260.57	262.06	-253.57	2.00	-2.00	0.00
4,800.00	2.20	134.84	4,783.99	-264.51	266.02	-257.40	2.00	-2.00	0.00
4,900.00	0.20	134.84	4,883.97	-265.99	267.50	-258.84	2.00	-2.00	0.00
4,910.03	0.00	0.00	4,894.00	-266.00	267.51	-258.85	2.00	-2.00	0.00
Hold Vertical									
5,000.00	0.00	0.00	4,983.97	-266.00	267.51	-258.85	0.00	0.00	0.00
5,100.00	0.00	0.00	5,083.97	-266.00	267.51	-258.85	0.00	0.00	0.00
5,110.03	0.00	0.00	5,094.00	-266.00	267.51	-258.85	0.00	0.00	0.00
KOP, Build 11°/100'									
5,200.00	9.89	0.00	5,183.52	-258.25	267.51	-251.10	11.00	11.00	0.00
5,300.00	20.89	0.00	5,279.79	-231.75	267.51	-224.61	11.00	11.00	0.00
5,400.00	31.89	0.00	5,369.23	-187.37	267.51	-180.25	11.00	11.00	0.00
5,500.00	42.89	0.00	5,448.56	-126.74	267.51	-119.64	11.00	11.00	0.00
5,507.47	43.71	0.00	5,454.00	-121.62	267.51	-114.52	11.00	11.00	0.00
P200 Marker									
5,535.90	46.83	0.00	5,474.00	-101.43	267.51	-94.33	11.00	11.00	0.00
P300 Marker									
5,559.88	49.47	0.00	5,490.00	-83.56	267.51	-76.48	11.00	11.00	0.00
P350 Marker									
5,581.98	51.90	0.00	5,504.00	-66.47	267.51	-59.39	11.00	11.00	0.00
Sharon Springs									
5,588.52	52.62	0.00	5,508.00	-61.30	267.51	-54.22	11.00	11.00	0.00
Niobrara									
5,600.00	53.88	0.00	5,514.87	-52.10	267.51	-45.02	11.00	11.00	0.00
5,617.59	55.82	0.00	5,525.00	-37.71	267.51	-30.64	11.00	11.00	0.00
Top A Chalk									
5,675.91	62.23	0.00	5,555.00	12.27	267.51	19.32	11.00	11.00	0.00
Top A Marl									
5,700.00	64.88	0.00	5,565.73	33.83	267.51	40.88	11.00	11.00	0.00
5,703.02	65.21	0.00	5,567.00	36.57	267.51	43.61	11.00	11.00	0.00
A Marl									
5,722.93	67.40	0.00	5,575.00	54.80	267.51	61.84	11.00	11.00	0.00
Top Upper B									
5,798.97	75.76	0.00	5,599.00	126.88	267.51	133.89	11.00	11.00	0.00
Base Upper B									
5,800.00	75.88	0.00	5,599.25	127.88	267.51	134.89	11.00	11.00	0.00
5,900.00	86.87	0.00	5,614.23	226.60	267.51	233.57	11.00	11.00	0.00
5,928.42	90.00	0.00	5,615.00	255.00	267.51	261.97	11.00	11.00	0.00
LP @ 90° Inc, Hold - Top Lower B - 5 1/2" Marker / 7" CSG									
6,000.00	90.00	0.00	5,615.00	326.58	267.51	333.53	0.00	0.00	0.00
6,100.00	90.00	0.00	5,615.00	426.58	267.51	433.49	0.00	0.00	0.00
6,200.00	90.00	0.00	5,615.00	526.58	267.51	533.46	0.00	0.00	0.00
6,300.00	90.00	0.00	5,615.00	626.58	267.51	633.42	0.00	0.00	0.00
6,400.00	90.00	0.00	5,615.00	726.58	267.51	733.39	0.00	0.00	0.00
6,500.00	90.00	0.00	5,615.00	826.58	267.51	833.35	0.00	0.00	0.00
6,600.00	90.00	0.00	5,615.00	926.58	267.51	933.32	0.00	0.00	0.00
6,700.00	90.00	0.00	5,615.00	1,026.58	267.51	1,033.28	0.00	0.00	0.00
6,800.00	90.00	0.00	5,615.00	1,126.58	267.51	1,133.25	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25P-2416
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	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	0.00	5,615.00	1,226.58	267.51	1,233.21	0.00	0.00	0.00
7,000.00	90.00	0.00	5,615.00	1,326.58	267.51	1,333.18	0.00	0.00	0.00
7,100.00	90.00	0.00	5,615.00	1,426.58	267.51	1,433.14	0.00	0.00	0.00
7,200.00	90.00	0.00	5,615.00	1,526.58	267.51	1,533.11	0.00	0.00	0.00
7,300.00	90.00	0.00	5,615.00	1,626.58	267.51	1,633.07	0.00	0.00	0.00
7,400.00	90.00	0.00	5,615.00	1,726.58	267.51	1,733.04	0.00	0.00	0.00
7,500.00	90.00	0.00	5,615.00	1,826.58	267.51	1,833.00	0.00	0.00	0.00
7,600.00	90.00	0.00	5,615.00	1,926.58	267.51	1,932.97	0.00	0.00	0.00
7,700.00	90.00	0.00	5,615.00	2,026.58	267.51	2,032.93	0.00	0.00	0.00
7,800.00	90.00	0.00	5,615.00	2,126.58	267.51	2,132.90	0.00	0.00	0.00
7,900.00	90.00	0.00	5,615.00	2,226.58	267.51	2,232.86	0.00	0.00	0.00
8,000.00	90.00	0.00	5,615.00	2,326.58	267.51	2,332.83	0.00	0.00	0.00
8,100.00	90.00	0.00	5,615.00	2,426.58	267.51	2,432.80	0.00	0.00	0.00
8,200.00	90.00	0.00	5,615.00	2,526.58	267.51	2,532.76	0.00	0.00	0.00
8,300.00	90.00	0.00	5,615.00	2,626.58	267.51	2,632.73	0.00	0.00	0.00
8,400.00	90.00	0.00	5,615.00	2,726.58	267.51	2,732.69	0.00	0.00	0.00
8,500.00	90.00	0.00	5,615.00	2,826.58	267.51	2,832.66	0.00	0.00	0.00
8,600.00	90.00	0.00	5,615.00	2,926.58	267.51	2,932.62	0.00	0.00	0.00
8,700.00	90.00	0.00	5,615.00	3,026.58	267.51	3,032.59	0.00	0.00	0.00
8,800.00	90.00	0.00	5,615.00	3,126.58	267.51	3,132.55	0.00	0.00	0.00
8,900.00	90.00	0.00	5,615.00	3,226.58	267.51	3,232.52	0.00	0.00	0.00
9,000.00	90.00	0.00	5,615.00	3,326.58	267.51	3,332.48	0.00	0.00	0.00
9,100.00	90.00	0.00	5,615.00	3,426.58	267.51	3,432.45	0.00	0.00	0.00
9,200.00	90.00	0.00	5,615.00	3,526.58	267.51	3,532.41	0.00	0.00	0.00
9,300.00	90.00	0.00	5,615.00	3,626.58	267.51	3,632.38	0.00	0.00	0.00
9,400.00	90.00	0.00	5,615.00	3,726.58	267.51	3,732.34	0.00	0.00	0.00
9,500.00	90.00	0.00	5,615.00	3,826.58	267.51	3,832.31	0.00	0.00	0.00
9,600.00	90.00	0.00	5,615.00	3,926.58	267.51	3,932.27	0.00	0.00	0.00
9,700.00	90.00	0.00	5,615.00	4,026.58	267.51	4,032.24	0.00	0.00	0.00
9,800.00	90.00	0.00	5,615.00	4,126.58	267.51	4,132.20	0.00	0.00	0.00
9,900.00	90.00	0.00	5,615.00	4,226.58	267.51	4,232.17	0.00	0.00	0.00
10,000.00	90.00	0.00	5,615.00	4,326.58	267.51	4,332.13	0.00	0.00	0.00
10,100.00	90.00	0.00	5,615.00	4,426.58	267.51	4,432.10	0.00	0.00	0.00
10,200.00	90.00	0.00	5,615.00	4,526.58	267.51	4,532.06	0.00	0.00	0.00
10,300.00	90.00	0.00	5,615.00	4,626.58	267.51	4,632.03	0.00	0.00	0.00
10,400.00	90.00	0.00	5,615.00	4,726.58	267.51	4,731.99	0.00	0.00	0.00
10,500.00	90.00	0.00	5,615.00	4,826.58	267.51	4,831.96	0.00	0.00	0.00
10,600.00	90.00	0.00	5,615.00	4,926.58	267.51	4,931.92	0.00	0.00	0.00
10,700.00	90.00	0.00	5,615.00	5,026.58	267.51	5,031.89	0.00	0.00	0.00
10,800.00	90.00	0.00	5,615.00	5,126.58	267.51	5,131.86	0.00	0.00	0.00
10,900.00	90.00	0.00	5,615.00	5,226.58	267.51	5,231.82	0.00	0.00	0.00
11,000.00	90.00	0.00	5,615.00	5,326.58	267.51	5,331.79	0.00	0.00	0.00
11,100.00	90.00	0.00	5,615.00	5,426.58	267.51	5,431.75	0.00	0.00	0.00
11,200.00	90.00	0.00	5,615.00	5,526.58	267.51	5,531.72	0.00	0.00	0.00
11,300.00	90.00	0.00	5,615.00	5,626.58	267.51	5,631.68	0.00	0.00	0.00
11,400.00	90.00	0.00	5,615.00	5,726.58	267.51	5,731.65	0.00	0.00	0.00
11,500.00	90.00	0.00	5,615.00	5,826.58	267.51	5,831.61	0.00	0.00	0.00
11,600.00	90.00	0.00	5,615.00	5,926.58	267.51	5,931.58	0.00	0.00	0.00
11,700.00	90.00	0.00	5,615.00	6,026.58	267.51	6,031.54	0.00	0.00	0.00
11,800.00	90.00	0.00	5,615.00	6,126.58	267.51	6,131.51	0.00	0.00	0.00
11,900.00	90.00	0.00	5,615.00	6,226.58	267.51	6,231.47	0.00	0.00	0.00
12,000.00	90.00	0.00	5,615.00	6,326.58	267.51	6,331.44	0.00	0.00	0.00
12,100.00	90.00	0.00	5,615.00	6,426.58	267.51	6,431.40	0.00	0.00	0.00
12,200.00	90.00	0.00	5,615.00	6,526.58	267.51	6,531.37	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25P-2416
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	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	0.00	5,615.00	6,626.58	267.51	6,631.33	0.00	0.00	0.00
12,400.00	90.00	0.00	5,615.00	6,726.58	267.51	6,731.30	0.00	0.00	0.00
12,500.00	90.00	0.00	5,615.00	6,826.58	267.51	6,831.26	0.00	0.00	0.00
12,600.00	90.00	0.00	5,615.00	6,926.58	267.51	6,931.23	0.00	0.00	0.00
12,700.00	90.00	0.00	5,615.00	7,026.58	267.51	7,031.19	0.00	0.00	0.00
12,800.00	90.00	0.00	5,615.00	7,126.58	267.51	7,131.16	0.00	0.00	0.00
12,900.00	90.00	0.00	5,615.00	7,226.58	267.51	7,231.12	0.00	0.00	0.00
13,000.00	90.00	0.00	5,615.00	7,326.58	267.51	7,331.09	0.00	0.00	0.00
13,100.00	90.00	0.00	5,615.00	7,426.58	267.51	7,431.05	0.00	0.00	0.00
13,200.00	90.00	0.00	5,615.00	7,526.58	267.51	7,531.02	0.00	0.00	0.00
13,300.00	90.00	0.00	5,615.00	7,626.58	267.51	7,630.98	0.00	0.00	0.00
13,400.00	90.00	0.00	5,615.00	7,726.58	267.51	7,730.95	0.00	0.00	0.00
13,500.00	90.00	0.00	5,615.00	7,826.58	267.51	7,830.92	0.00	0.00	0.00
13,600.00	90.00	0.00	5,615.00	7,926.58	267.51	7,930.88	0.00	0.00	0.00
13,700.00	90.00	0.00	5,615.00	8,026.58	267.51	8,030.85	0.00	0.00	0.00
13,800.00	90.00	0.00	5,615.00	8,126.58	267.51	8,130.81	0.00	0.00	0.00
13,900.00	90.00	0.00	5,615.00	8,226.58	267.51	8,230.78	0.00	0.00	0.00
14,000.00	90.00	0.00	5,615.00	8,326.58	267.51	8,330.74	0.00	0.00	0.00
14,100.00	90.00	0.00	5,615.00	8,426.58	267.51	8,430.71	0.00	0.00	0.00
14,200.00	90.00	0.00	5,615.00	8,526.58	267.51	8,530.67	0.00	0.00	0.00
14,300.00	90.00	0.00	5,615.00	8,626.58	267.51	8,630.64	0.00	0.00	0.00
14,400.00	90.00	0.00	5,615.00	8,726.58	267.51	8,730.60	0.00	0.00	0.00
14,500.00	90.00	0.00	5,615.00	8,826.58	267.51	8,830.57	0.00	0.00	0.00
14,600.00	90.00	0.00	5,615.00	8,926.58	267.51	8,930.53	0.00	0.00	0.00
14,700.00	90.00	0.00	5,615.00	9,026.58	267.51	9,030.50	0.00	0.00	0.00
14,800.00	90.00	0.00	5,615.00	9,126.58	267.51	9,130.46	0.00	0.00	0.00
14,900.00	90.00	0.00	5,615.00	9,226.58	267.51	9,230.43	0.00	0.00	0.00
15,000.00	90.00	0.00	5,615.00	9,326.58	267.51	9,330.39	0.00	0.00	0.00
15,100.00	90.00	0.00	5,615.00	9,426.58	267.51	9,430.36	0.00	0.00	0.00
15,200.00	90.00	0.00	5,615.00	9,526.58	267.51	9,530.32	0.00	0.00	0.00
15,300.00	90.00	0.00	5,615.00	9,626.58	267.51	9,630.29	0.00	0.00	0.00
15,400.00	90.00	0.00	5,615.00	9,726.58	267.51	9,730.25	0.00	0.00	0.00
15,500.00	90.00	0.00	5,615.00	9,826.58	267.51	9,830.22	0.00	0.00	0.00
15,600.00	90.00	0.00	5,615.00	9,926.58	267.51	9,930.18	0.00	0.00	0.00
15,700.00	90.00	0.00	5,615.00	10,026.58	267.51	10,030.15	0.00	0.00	0.00
15,800.00	90.00	0.00	5,615.00	10,126.58	267.51	10,130.11	0.00	0.00	0.00
15,809.16	90.00	0.00	5,615.00	10,135.74	267.51	10,139.27	0.00	0.00	0.00
TD at 15809.16									

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 2416	0.00	0.00	5,615.00	10,135.74	267.51	1,550,187.61	3,469,251.07	40° 49' 52.780 N	103° 48' 15.290 W
- plan hits target center									
- Point									



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25P-2416
Company:	Whiting Petroleum Corp.	TVD Reference:	KBE @ 4762.00usft (Original Well Elev)
Project:	Weld County, CO	MD Reference:	KBE @ 4762.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25P-2416	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
5,928.42	5,615.00	5 1/2" Marker / 7" CSG	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.08	1,550.00	Upper Pierre				
3,511.41	3,500.00	Hygiene				
3,661.98	3,650.00	Lower Pierre				
5,507.47	5,454.00	P200 Marker				
5,535.90	5,474.00	P300 Marker				
5,559.88	5,490.00	P350 Marker				
5,581.98	5,504.00	Sharon Springs				
5,588.52	5,508.00	Niobrara				
5,617.59	5,525.00	Top A Chalk				
5,675.91	5,555.00	Top A Marl				
5,703.02	5,567.00	A Marl				
5,722.93	5,575.00	Top Upper B				
5,798.97	5,599.00	Base Upper B				
5,928.42	5,615.00	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'	
548.07	547.76	-7.57	7.61	Hold 4.96° Inc	
4,661.97	4,646.24	-258.43	259.90	Drop 2°/100'	
4,910.03	4,894.00	-266.00	267.51	Hold Vertical	
5,110.03	5,094.00	-266.00	267.51	KOP, Build 11°/100'	
5,928.42	5,615.00	255.00	267.51	LP @ 90° Inc, Hold	
15,809.16	5,615.00	10,135.74	267.51	TD at 15809.16	