



Project: Weld County, CO
Site: Sec 25-T10N-R58W
Well: Razor #25N-2437
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: 53024.2nT
Dip Angle: 67.38°
Date: 5/13/2015
Model: IGRF2010

FORMATION TOP DETAILS

MDPath	Formation
1550.00	Upper Pierre
1566.54	Hygiene
3500.00	Lower Pierre
3553.03	P200 Marker
3650.00	P300 Marker
3705.84	Sharon Springs
5433.00	Niobrara
5453.00	Top A Chalk
5469.00	Top A Marl
5558.80	A Marl
5575.38	Top Upper B
5580.18	Top Upper B
5600.92	Base Upper B
5639.10	Top Lower B
5655.05	Base Lower B
5665.92	Top B Marl
5699.94	Top C Chalk
5724.00	Middle C Chalk
5771.37	Middle C Marl
5794.70	Lower C Chalk
5885.49	
5907.42	
5953.61	
6088.81	

WELL DETAILS: Razor #25N-2437

+N/-S	+E/-W	Northing	Ground Level:	4701.00	Longtitude	Slot
0.00	0.00	1539910.47	Easting	3466390.91	40° 48' 11.790 N	103° 48' 55.030 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	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	850.00	11.00	260.00	846.63	-9.14	-51.83	2.00	260.00	-5.02	
4	4600.00	11.00	260.00	4527.73	-133.39	-756.50	0.00	0.00	-73.27	
5	5150.00	0.00	0.00	5074.35	-142.53	-808.33	2.00	180.00	-78.29	
6	5272.78	0.00	0.00	5197.13	-142.53	-808.33	0.00	0.00	-78.29	
7	6090.96	90.00	0.00	5718.00	378.34	-808.31	11.00	0.00	440.95	PBHL 2437
8	15918.20	90.00	0.00	5718.00	10205.59	-807.92	0.00	0.00	10237.51	PBHL 2437

ANNOTATIONS

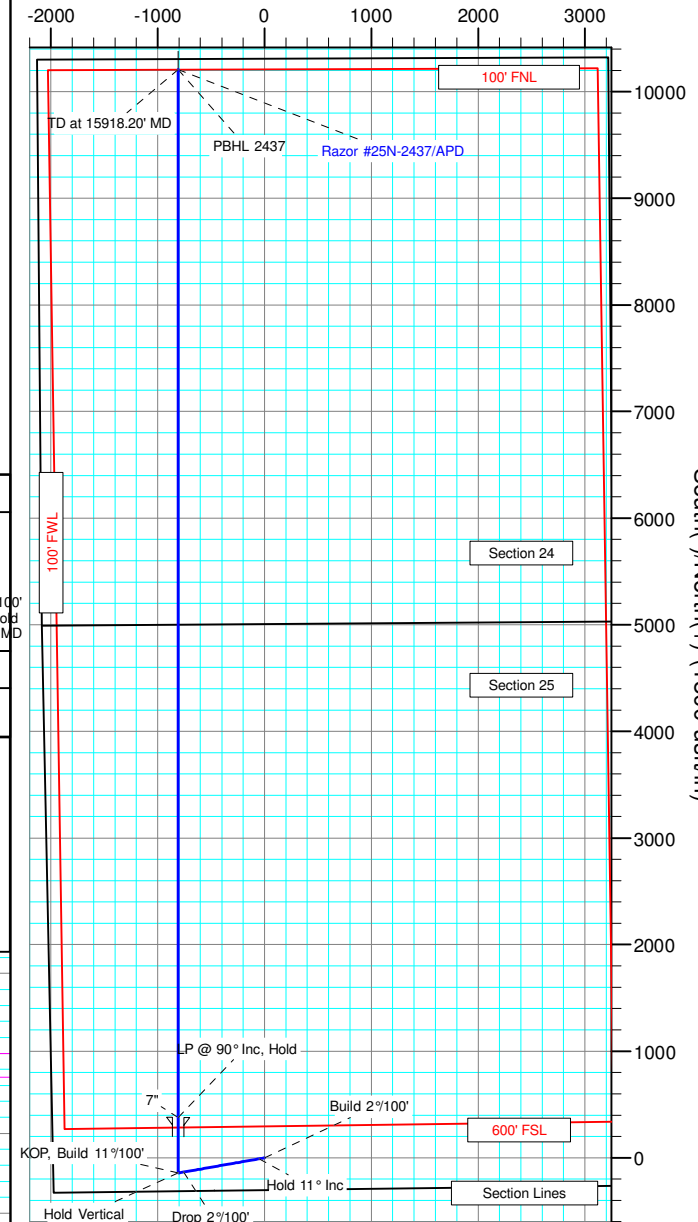
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
300.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
846.63	850.00	11.00	260.00	-9.14	-51.83	-5.02	52.63	Hold 11° Inc
4527.73	4600.00	11.00	260.00	-133.39	-756.50	-73.27	768.17	Drop 2°/100'
5074.35	5150.00	0.00	0.00	-142.53	-808.33	-78.29	820.80	Hold Vertical
5197.13	5272.78	0.00	0.00	-142.53	-808.33	-78.29	820.80	KOP, Build 11°/100'
5718.00	6090.96	90.00	0.00	378.34	-808.31	440.95	1341.67	LP @ 90° Inc, Hold
5718.00	15918.20	90.00	0.00	10205.59	-807.92	10237.51	11168.92	TD at 15918.20' MD

DESIGN TARGET DETAILS

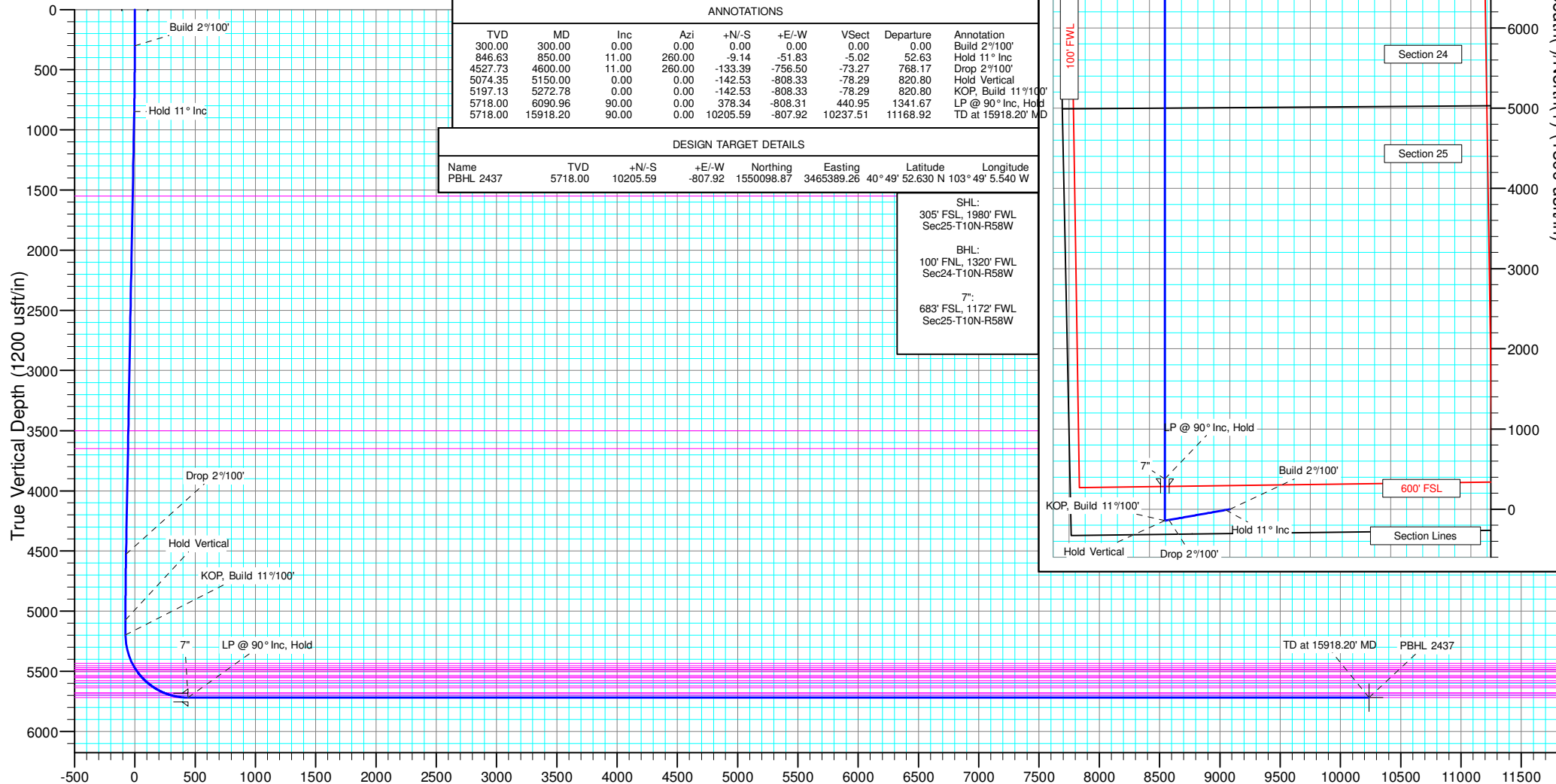
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 2437	5718.00	10205.59	-807.92	1550098.87	3465389.26	40° 49' 52.630 N	103° 49' 5.540 W

SHL:
305' FSL, 1980' FWL
Sec25-T10N-R58W
BHL:
100' FNL, 1320' FWL
Sec24-T10N-R58W
7":
683' FSL, 1172' FWL
Sec25-T10N-R58W

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



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



Vertical Section at 355.47° (1200 usft/in)



Whiting Petroleum Corp.

**Weld County, CO
Sec 25-T10N-R58W
Razor #25N-2437**

Hz

Plan: APD

Standard Planning Report

15 May, 2015



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	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-2437				
Well Position	+N/-S	-4,681.69 usft	Northing:	1,539,910.48 usft	Latitude:	40° 48' 11.790 N
	+E/-W	1,418.87 usft	Easting:	3,466,390.91 usft	Longitude:	103° 48' 55.030 W
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	355.47

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	
850.00	11.00	260.00	846.63	-9.14	-51.83	2.00	2.00	0.00	260.00	
4,600.00	11.00	260.00	4,527.73	-133.39	-756.50	0.00	0.00	0.00	0.00	
5,150.00	0.00	0.00	5,074.35	-142.53	-808.33	2.00	-2.00	0.00	180.00	
5,272.78	0.00	0.00	5,197.13	-142.53	-808.33	0.00	0.00	0.00	0.00	
6,090.96	90.00	0.00	5,718.00	378.34	-808.31	11.00	11.00	0.00	0.00	PBHL 2437
15,918.20	90.00	0.00	5,718.00	10,205.59	-807.92	0.00	0.00	0.00	0.00	PBHL 2437



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	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	260.00	399.98	-0.30	-1.72	-0.17	2.00	2.00	0.00
500.00	4.00	260.00	499.84	-1.21	-6.87	-0.67	2.00	2.00	0.00
600.00	6.00	260.00	599.45	-2.73	-15.46	-1.50	2.00	2.00	0.00
700.00	8.00	260.00	698.70	-4.84	-27.46	-2.66	2.00	2.00	0.00
800.00	10.00	260.00	797.47	-7.56	-42.86	-4.15	2.00	2.00	0.00
850.00	11.00	260.00	846.63	-9.14	-51.83	-5.02	2.00	2.00	0.00
Hold 11° Inc									
900.00	11.00	260.00	895.71	-10.80	-61.23	-5.93	0.00	0.00	0.00
1,000.00	11.00	260.00	993.87	-14.11	-80.02	-7.75	0.00	0.00	0.00
1,100.00	11.00	260.00	1,092.03	-17.42	-98.81	-9.57	0.00	0.00	0.00
1,200.00	11.00	260.00	1,190.20	-20.74	-117.60	-11.39	0.00	0.00	0.00
1,300.00	11.00	260.00	1,288.36	-24.05	-136.39	-13.21	0.00	0.00	0.00
1,400.00	11.00	260.00	1,386.52	-27.36	-155.19	-15.03	0.00	0.00	0.00
1,500.00	11.00	260.00	1,484.69	-30.68	-173.98	-16.85	0.00	0.00	0.00
1,566.54	11.00	260.00	1,550.00	-32.88	-186.48	-18.06	0.00	0.00	0.00
Upper Pierre									
1,600.00	11.00	260.00	1,582.85	-33.99	-192.77	-18.67	0.00	0.00	0.00
1,700.00	11.00	260.00	1,681.01	-37.30	-211.56	-20.49	0.00	0.00	0.00
1,800.00	11.00	260.00	1,779.17	-40.62	-230.35	-22.31	0.00	0.00	0.00
1,900.00	11.00	260.00	1,877.34	-43.93	-249.14	-24.13	0.00	0.00	0.00
2,000.00	11.00	260.00	1,975.50	-47.24	-267.93	-25.95	0.00	0.00	0.00
2,100.00	11.00	260.00	2,073.66	-50.56	-286.72	-27.77	0.00	0.00	0.00
2,200.00	11.00	260.00	2,171.82	-53.87	-305.51	-29.59	0.00	0.00	0.00
2,300.00	11.00	260.00	2,269.99	-57.18	-324.30	-31.41	0.00	0.00	0.00
2,400.00	11.00	260.00	2,368.15	-60.50	-343.10	-33.23	0.00	0.00	0.00
2,500.00	11.00	260.00	2,466.31	-63.81	-361.89	-35.05	0.00	0.00	0.00
2,600.00	11.00	260.00	2,564.48	-67.12	-380.68	-36.87	0.00	0.00	0.00
2,700.00	11.00	260.00	2,662.64	-70.44	-399.47	-38.69	0.00	0.00	0.00
2,800.00	11.00	260.00	2,760.80	-73.75	-418.26	-40.51	0.00	0.00	0.00
2,900.00	11.00	260.00	2,858.96	-77.06	-437.05	-42.33	0.00	0.00	0.00
3,000.00	11.00	260.00	2,957.13	-80.38	-455.84	-44.15	0.00	0.00	0.00
3,100.00	11.00	260.00	3,055.29	-83.69	-474.63	-45.97	0.00	0.00	0.00
3,200.00	11.00	260.00	3,153.45	-87.00	-493.42	-47.79	0.00	0.00	0.00
3,300.00	11.00	260.00	3,251.61	-90.32	-512.21	-49.61	0.00	0.00	0.00
3,400.00	11.00	260.00	3,349.78	-93.63	-531.01	-51.43	0.00	0.00	0.00
3,500.00	11.00	260.00	3,447.94	-96.94	-549.80	-53.25	0.00	0.00	0.00
3,553.03	11.00	260.00	3,500.00	-98.70	-559.76	-54.22	0.00	0.00	0.00
Hygiene									
3,600.00	11.00	260.00	3,546.10	-100.26	-568.59	-55.07	0.00	0.00	0.00
3,700.00	11.00	260.00	3,644.27	-103.57	-587.38	-56.89	0.00	0.00	0.00
3,705.84	11.00	260.00	3,650.00	-103.76	-588.48	-57.00	0.00	0.00	0.00
Lower Pierre									
3,800.00	11.00	260.00	3,742.43	-106.88	-606.17	-58.71	0.00	0.00	0.00
3,900.00	11.00	260.00	3,840.59	-110.20	-624.96	-60.53	0.00	0.00	0.00
4,000.00	11.00	260.00	3,938.75	-113.51	-643.75	-62.35	0.00	0.00	0.00
4,100.00	11.00	260.00	4,036.92	-116.82	-662.54	-64.17	0.00	0.00	0.00
4,200.00	11.00	260.00	4,135.08	-120.14	-681.33	-65.99	0.00	0.00	0.00
4,300.00	11.00	260.00	4,233.24	-123.45	-700.12	-67.81	0.00	0.00	0.00
4,400.00	11.00	260.00	4,331.40	-126.76	-718.92	-69.63	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	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	11.00	260.00	4,429.57	-130.08	-737.71	-71.45	0.00	0.00	0.00
4,600.00	11.00	260.00	4,527.73	-133.39	-756.50	-73.27	0.00	0.00	0.00
Drop 2°/100'									
4,700.00	9.00	260.00	4,626.21	-136.41	-773.60	-74.93	2.00	-2.00	0.00
4,800.00	7.00	260.00	4,725.23	-138.82	-787.30	-76.26	2.00	-2.00	0.00
4,900.00	5.00	260.00	4,824.67	-140.64	-797.60	-77.25	2.00	-2.00	0.00
5,000.00	3.00	260.00	4,924.43	-141.85	-804.47	-77.92	2.00	-2.00	0.00
5,100.00	1.00	260.00	5,024.36	-142.46	-807.90	-78.25	2.00	-2.00	0.00
5,150.00	0.00	0.00	5,074.35	-142.53	-808.33	-78.29	2.00	-2.00	0.00
Hold Vertical									
5,200.00	0.00	0.00	5,124.36	-142.53	-808.33	-78.29	0.00	0.00	0.00
5,272.78	0.00	0.00	5,197.13	-142.53	-808.33	-78.29	0.00	0.00	0.00
KOP, Build 11°/100'									
5,300.00	2.99	0.00	5,224.34	-141.82	-808.33	-77.59	11.00	11.00	0.00
5,350.00	8.49	0.00	5,274.07	-136.82	-808.33	-72.60	11.00	11.00	0.00
5,400.00	13.99	0.00	5,323.10	-127.07	-808.33	-62.88	11.00	11.00	0.00
5,450.00	19.49	0.00	5,370.96	-112.67	-808.33	-48.53	11.00	11.00	0.00
5,500.00	24.99	0.00	5,417.22	-93.75	-808.33	-29.67	11.00	11.00	0.00
5,517.55	26.93	0.00	5,433.00	-86.07	-808.33	-22.01	11.00	11.00	0.00
P200 Marker									
5,540.24	29.42	0.00	5,453.00	-75.36	-808.33	-11.33	11.00	11.00	0.00
P300 Marker									
5,550.00	30.49	0.00	5,461.45	-70.48	-808.33	-6.47	11.00	11.00	0.00
5,558.80	31.46	0.00	5,469.00	-65.95	-808.33	-1.95	11.00	11.00	0.00
P350 Marker									
5,575.38	33.29	0.00	5,483.00	-57.08	-808.33	6.89	11.00	11.00	0.00
Sharon Springs									
5,580.18	33.81	0.00	5,487.00	-54.42	-808.33	9.54	11.00	11.00	0.00
Niobrara									
5,600.00	35.99	0.00	5,503.25	-43.08	-808.33	20.84	11.00	11.00	0.00
5,600.92	36.10	0.00	5,504.00	-42.54	-808.33	21.38	11.00	11.00	0.00
Top A Chalk									
5,639.10	40.30	0.00	5,534.00	-18.94	-808.33	44.91	11.00	11.00	0.00
Top A Marl									
5,650.00	41.49	0.00	5,542.24	-11.80	-808.33	52.03	11.00	11.00	0.00
5,655.05	42.05	0.00	5,546.00	-8.44	-808.33	55.38	11.00	11.00	0.00
A Marl									
5,665.92	43.25	0.00	5,554.00	-1.07	-808.33	62.72	11.00	11.00	0.00
Top Upper B									
5,699.94	46.99	0.00	5,578.00	23.03	-808.33	86.75	11.00	11.00	0.00
Base Upper B									
5,700.00	46.99	0.00	5,578.04	23.07	-808.33	86.79	11.00	11.00	0.00
5,724.00	49.63	0.00	5,594.00	40.99	-808.32	104.65	11.00	11.00	0.00
Top Lower B									
5,750.00	52.49	0.00	5,610.34	61.21	-808.32	124.81	11.00	11.00	0.00
5,771.37	54.85	0.00	5,623.00	78.43	-808.32	141.98	11.00	11.00	0.00
Base Lower B									
5,794.70	57.41	0.00	5,636.00	97.80	-808.32	161.29	11.00	11.00	0.00
Top B Marl									
5,800.00	57.99	0.00	5,638.83	102.28	-808.32	165.75	11.00	11.00	0.00
5,850.00	63.49	0.00	5,663.26	145.88	-808.32	209.22	11.00	11.00	0.00
5,885.49	67.40	0.00	5,678.00	178.15	-808.32	241.39	11.00	11.00	0.00



WOG Planning Report

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Project:	Weld County, CO	MD Reference:	KBE @ 4722.00usft (Original Well Elev)
Site:	Sec 25-T10N-R58W	North Reference:	True
Well:	Razor #25N-2437	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)	
Top C Chalk										
5,900.00	68.99	0.00	5,683.39	191.63	-808.32	254.82	11.00	11.00	0.00	
5,907.42	69.81	0.00	5,686.00	198.57	-808.32	261.74	11.00	11.00	0.00	
Middle C Chalk										
5,950.00	74.49	0.00	5,699.05	239.10	-808.32	302.14	11.00	11.00	0.00	
5,953.61	74.89	0.00	5,700.00	242.58	-808.32	305.61	11.00	11.00	0.00	
Middle C Marl										
6,000.00	79.99	0.00	5,710.08	287.84	-808.32	350.74	11.00	11.00	0.00	
6,050.00	85.49	0.00	5,716.40	337.42	-808.31	400.16	11.00	11.00	0.00	
6,088.81	89.76	0.00	5,718.00	376.19	-808.31	438.80	11.00	11.00	0.00	
Lower C Chalk										
6,090.96	90.00	0.00	5,718.00	378.34	-808.31	440.95	10.99	10.99	0.00	
LP @ 90° Inc, Hold - 7"										
6,100.00	90.00	0.00	5,718.00	387.38	-808.31	449.96	0.00	0.00	0.00	
6,200.00	90.00	0.00	5,718.00	487.38	-808.31	549.65	0.00	0.00	0.00	
6,300.00	90.00	0.00	5,718.00	587.38	-808.30	649.34	0.00	0.00	0.00	
6,400.00	90.00	0.00	5,718.00	687.38	-808.30	749.03	0.00	0.00	0.00	
6,500.00	90.00	0.00	5,718.00	787.38	-808.30	848.71	0.00	0.00	0.00	
6,600.00	90.00	0.00	5,718.00	887.38	-808.29	948.40	0.00	0.00	0.00	
6,700.00	90.00	0.00	5,718.00	987.38	-808.29	1,048.09	0.00	0.00	0.00	
6,800.00	90.00	0.00	5,718.00	1,087.38	-808.28	1,147.78	0.00	0.00	0.00	
6,900.00	90.00	0.00	5,718.00	1,187.38	-808.28	1,247.47	0.00	0.00	0.00	
7,000.00	90.00	0.00	5,718.00	1,287.38	-808.28	1,347.15	0.00	0.00	0.00	
7,100.00	90.00	0.00	5,718.00	1,387.38	-808.27	1,446.84	0.00	0.00	0.00	
7,200.00	90.00	0.00	5,718.00	1,487.38	-808.27	1,546.53	0.00	0.00	0.00	
7,300.00	90.00	0.00	5,718.00	1,587.38	-808.26	1,646.22	0.00	0.00	0.00	
7,400.00	90.00	0.00	5,718.00	1,687.38	-808.26	1,745.90	0.00	0.00	0.00	
7,500.00	90.00	0.00	5,718.00	1,787.38	-808.26	1,845.59	0.00	0.00	0.00	
7,600.00	90.00	0.00	5,718.00	1,887.38	-808.25	1,945.28	0.00	0.00	0.00	
7,700.00	90.00	0.00	5,718.00	1,987.38	-808.25	2,044.97	0.00	0.00	0.00	
7,800.00	90.00	0.00	5,718.00	2,087.38	-808.24	2,144.66	0.00	0.00	0.00	
7,900.00	90.00	0.00	5,718.00	2,187.38	-808.24	2,244.34	0.00	0.00	0.00	
8,000.00	90.00	0.00	5,718.00	2,287.38	-808.24	2,344.03	0.00	0.00	0.00	
8,100.00	90.00	0.00	5,718.00	2,387.38	-808.23	2,443.72	0.00	0.00	0.00	
8,200.00	90.00	0.00	5,718.00	2,487.38	-808.23	2,543.41	0.00	0.00	0.00	
8,300.00	90.00	0.00	5,718.00	2,587.38	-808.22	2,643.09	0.00	0.00	0.00	
8,400.00	90.00	0.00	5,718.00	2,687.38	-808.22	2,742.78	0.00	0.00	0.00	
8,500.00	90.00	0.00	5,718.00	2,787.38	-808.22	2,842.47	0.00	0.00	0.00	
8,600.00	90.00	0.00	5,718.00	2,887.38	-808.21	2,942.16	0.00	0.00	0.00	
8,700.00	90.00	0.00	5,718.00	2,987.38	-808.21	3,041.85	0.00	0.00	0.00	
8,800.00	90.00	0.00	5,718.00	3,087.38	-808.20	3,141.53	0.00	0.00	0.00	
8,900.00	90.00	0.00	5,718.00	3,187.38	-808.20	3,241.22	0.00	0.00	0.00	
9,000.00	90.00	0.00	5,718.00	3,287.38	-808.20	3,340.91	0.00	0.00	0.00	
9,100.00	90.00	0.00	5,718.00	3,387.38	-808.19	3,440.60	0.00	0.00	0.00	
9,200.00	90.00	0.00	5,718.00	3,487.38	-808.19	3,540.28	0.00	0.00	0.00	
9,300.00	90.00	0.00	5,718.00	3,587.38	-808.18	3,639.97	0.00	0.00	0.00	
9,400.00	90.00	0.00	5,718.00	3,687.38	-808.18	3,739.66	0.00	0.00	0.00	
9,500.00	90.00	0.00	5,718.00	3,787.38	-808.18	3,839.35	0.00	0.00	0.00	
9,600.00	90.00	0.00	5,718.00	3,887.38	-808.17	3,939.04	0.00	0.00	0.00	
9,700.00	90.00	0.00	5,718.00	3,987.38	-808.17	4,038.72	0.00	0.00	0.00	
9,800.00	90.00	0.00	5,718.00	4,087.38	-808.16	4,138.41	0.00	0.00	0.00	
9,900.00	90.00	0.00	5,718.00	4,187.38	-808.16	4,238.10	0.00	0.00	0.00	
10,000.00	90.00	0.00	5,718.00	4,287.38	-808.16	4,337.79	0.00	0.00	0.00	



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	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)
10,100.00	90.00	0.00	5,718.00	4,387.38	-808.15	4,437.47	0.00	0.00	0.00
10,200.00	90.00	0.00	5,718.00	4,487.38	-808.15	4,537.16	0.00	0.00	0.00
10,300.00	90.00	0.00	5,718.00	4,587.38	-808.14	4,636.85	0.00	0.00	0.00
10,400.00	90.00	0.00	5,718.00	4,687.38	-808.14	4,736.54	0.00	0.00	0.00
10,500.00	90.00	0.00	5,718.00	4,787.38	-808.14	4,836.23	0.00	0.00	0.00
10,600.00	90.00	0.00	5,718.00	4,887.38	-808.13	4,935.91	0.00	0.00	0.00
10,700.00	90.00	0.00	5,718.00	4,987.38	-808.13	5,035.60	0.00	0.00	0.00
10,800.00	90.00	0.00	5,718.00	5,087.38	-808.13	5,135.29	0.00	0.00	0.00
10,900.00	90.00	0.00	5,718.00	5,187.38	-808.12	5,234.98	0.00	0.00	0.00
11,000.00	90.00	0.00	5,718.00	5,287.38	-808.12	5,334.67	0.00	0.00	0.00
11,100.00	90.00	0.00	5,718.00	5,387.38	-808.11	5,434.35	0.00	0.00	0.00
11,200.00	90.00	0.00	5,718.00	5,487.38	-808.11	5,534.04	0.00	0.00	0.00
11,300.00	90.00	0.00	5,718.00	5,587.38	-808.11	5,633.73	0.00	0.00	0.00
11,400.00	90.00	0.00	5,718.00	5,687.38	-808.10	5,733.42	0.00	0.00	0.00
11,500.00	90.00	0.00	5,718.00	5,787.38	-808.10	5,833.10	0.00	0.00	0.00
11,600.00	90.00	0.00	5,718.00	5,887.38	-808.09	5,932.79	0.00	0.00	0.00
11,700.00	90.00	0.00	5,718.00	5,987.38	-808.09	6,032.48	0.00	0.00	0.00
11,800.00	90.00	0.00	5,718.00	6,087.38	-808.09	6,132.17	0.00	0.00	0.00
11,900.00	90.00	0.00	5,718.00	6,187.38	-808.08	6,231.86	0.00	0.00	0.00
12,000.00	90.00	0.00	5,718.00	6,287.38	-808.08	6,331.54	0.00	0.00	0.00
12,100.00	90.00	0.00	5,718.00	6,387.38	-808.07	6,431.23	0.00	0.00	0.00
12,200.00	90.00	0.00	5,718.00	6,487.38	-808.07	6,530.92	0.00	0.00	0.00
12,300.00	90.00	0.00	5,718.00	6,587.38	-808.07	6,630.61	0.00	0.00	0.00
12,400.00	90.00	0.00	5,718.00	6,687.38	-808.06	6,730.29	0.00	0.00	0.00
12,500.00	90.00	0.00	5,718.00	6,787.38	-808.06	6,829.98	0.00	0.00	0.00
12,600.00	90.00	0.00	5,718.00	6,887.38	-808.05	6,929.67	0.00	0.00	0.00
12,700.00	90.00	0.00	5,718.00	6,987.38	-808.05	7,029.36	0.00	0.00	0.00
12,800.00	90.00	0.00	5,718.00	7,087.38	-808.05	7,129.05	0.00	0.00	0.00
12,900.00	90.00	0.00	5,718.00	7,187.38	-808.04	7,228.73	0.00	0.00	0.00
13,000.00	90.00	0.00	5,718.00	7,287.38	-808.04	7,328.42	0.00	0.00	0.00
13,100.00	90.00	0.00	5,718.00	7,387.38	-808.03	7,428.11	0.00	0.00	0.00
13,200.00	90.00	0.00	5,718.00	7,487.38	-808.03	7,527.80	0.00	0.00	0.00
13,300.00	90.00	0.00	5,718.00	7,587.38	-808.03	7,627.48	0.00	0.00	0.00
13,400.00	90.00	0.00	5,718.00	7,687.38	-808.02	7,727.17	0.00	0.00	0.00
13,500.00	90.00	0.00	5,718.00	7,787.38	-808.02	7,826.86	0.00	0.00	0.00
13,600.00	90.00	0.00	5,718.00	7,887.38	-808.01	7,926.55	0.00	0.00	0.00
13,700.00	90.00	0.00	5,718.00	7,987.38	-808.01	8,026.24	0.00	0.00	0.00
13,800.00	90.00	0.00	5,718.00	8,087.38	-808.01	8,125.92	0.00	0.00	0.00
13,900.00	90.00	0.00	5,718.00	8,187.38	-808.00	8,225.61	0.00	0.00	0.00
14,000.00	90.00	0.00	5,718.00	8,287.38	-808.00	8,325.30	0.00	0.00	0.00
14,100.00	90.00	0.00	5,718.00	8,387.38	-807.99	8,424.99	0.00	0.00	0.00
14,200.00	90.00	0.00	5,718.00	8,487.38	-807.99	8,524.67	0.00	0.00	0.00
14,300.00	90.00	0.00	5,718.00	8,587.38	-807.99	8,624.36	0.00	0.00	0.00
14,400.00	90.00	0.00	5,718.00	8,687.38	-807.98	8,724.05	0.00	0.00	0.00
14,500.00	90.00	0.00	5,718.00	8,787.38	-807.98	8,823.74	0.00	0.00	0.00
14,600.00	90.00	0.00	5,718.00	8,887.38	-807.97	8,923.43	0.00	0.00	0.00
14,700.00	90.00	0.00	5,718.00	8,987.38	-807.97	9,023.11	0.00	0.00	0.00
14,800.00	90.00	0.00	5,718.00	9,087.38	-807.97	9,122.80	0.00	0.00	0.00
14,900.00	90.00	0.00	5,718.00	9,187.38	-807.96	9,222.49	0.00	0.00	0.00
15,000.00	90.00	0.00	5,718.00	9,287.38	-807.96	9,322.18	0.00	0.00	0.00
15,100.00	90.00	0.00	5,718.00	9,387.38	-807.95	9,421.87	0.00	0.00	0.00
15,200.00	90.00	0.00	5,718.00	9,487.38	-807.95	9,521.55	0.00	0.00	0.00
15,300.00	90.00	0.00	5,718.00	9,587.38	-807.95	9,621.24	0.00	0.00	0.00
15,400.00	90.00	0.00	5,718.00	9,687.38	-807.94	9,720.93	0.00	0.00	0.00



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	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)
15,500.00	90.00	0.00	5,718.00	9,787.38	-807.94	9,820.62	0.00	0.00	0.00
15,600.00	90.00	0.00	5,718.00	9,887.38	-807.94	9,920.30	0.00	0.00	0.00
15,700.00	90.00	0.00	5,718.00	9,987.38	-807.93	10,019.99	0.00	0.00	0.00
15,800.00	90.00	0.00	5,718.00	10,087.38	-807.93	10,119.68	0.00	0.00	0.00
15,900.00	90.00	0.00	5,718.00	10,187.38	-807.92	10,219.37	0.00	0.00	0.00
15,918.20	90.00	0.00	5,718.00	10,205.59	-807.92	10,237.52	0.00	0.00	0.00
TD at 15918.20' 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 2437	0.00	0.00	5,718.00	10,205.59	-807.92	1,550,098.87	3,465,389.25	40° 49' 52.630 N	103° 49' 5.540 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,090.96	5,718.00	7"	7.000	8.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,566.54	1,550.00	Upper Pierre				
3,553.03	3,500.00	Hygiene				
3,705.84	3,650.00	Lower Pierre				
5,517.55	5,433.00	P200 Marker				
5,540.24	5,453.00	P300 Marker				
5,558.80	5,469.00	P350 Marker				
5,575.38	5,483.00	Sharon Springs				
5,580.18	5,487.00	Niobrara				
5,600.92	5,504.00	Top A Chalk				
5,639.10	5,534.00	Top A Marl				
5,655.05	5,546.00	A Marl				
5,665.92	5,554.00	Top Upper B				
5,699.94	5,578.00	Base Upper B				
5,724.00	5,594.00	Top Lower B				
5,771.37	5,623.00	Base Lower B				
5,794.70	5,636.00	Top B Marl				
5,885.49	5,678.00	Top C Chalk				
5,907.42	5,686.00	Middle C Chalk				
5,953.61	5,700.00	Middle C Marl				
6,088.81	5,718.00	Lower C Chalk				



WOG

Planning Report

Database:	LandmarkEDM	Local Co-ordinate Reference:	Well Razor #25N-2437
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-2437	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	APD		

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'
850.00	846.63	-9.14	-51.83	Hold 11° Inc
4,600.00	4,527.73	-133.39	-756.50	Drop 2°/100'
5,150.00	5,074.35	-142.53	-808.33	Hold Vertical
5,272.78	5,197.13	-142.53	-808.33	KOP, Build 11°/100'
6,090.96	5,718.00	378.34	-808.31	LP @ 90° Inc, Hold
15,918.20	5,718.00	10,205.59	-807.92	TD at 15918.20' MD