



Project: Weld County, CO  
 Site: Sec 26-T10N-R58W  
 Well: Razor #26K-3538  
 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



FORMATION TOP DETAILS  
 Azimuths to True North  
 Magnetic North: 7.84°  
 Magnetic Field  
 Strength: 52809.7nT  
 Dip Angle: 67.35°  
 Date: 6/27/2016  
 Model: IGRF2015

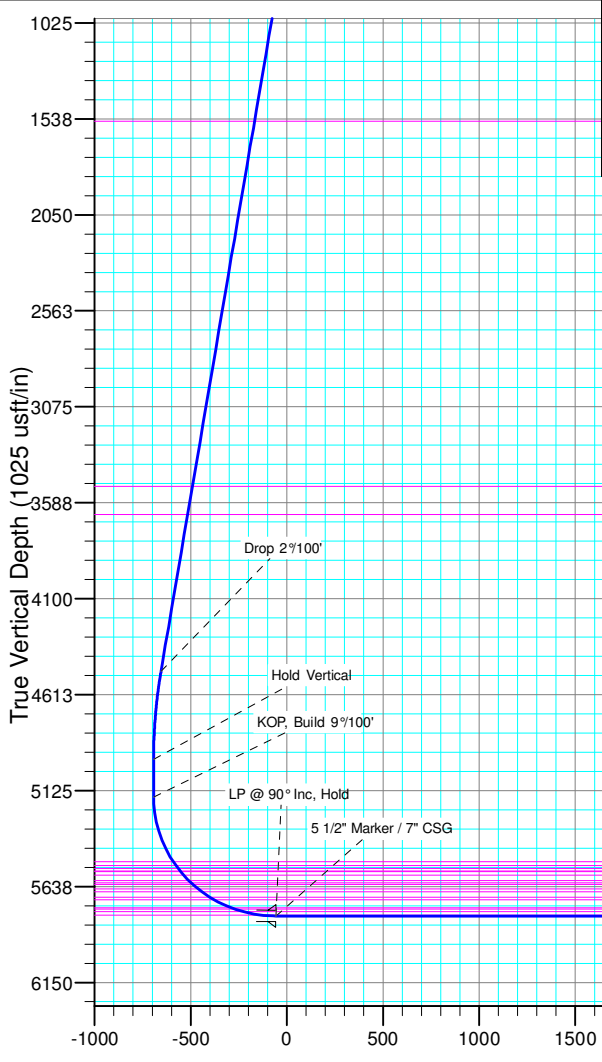
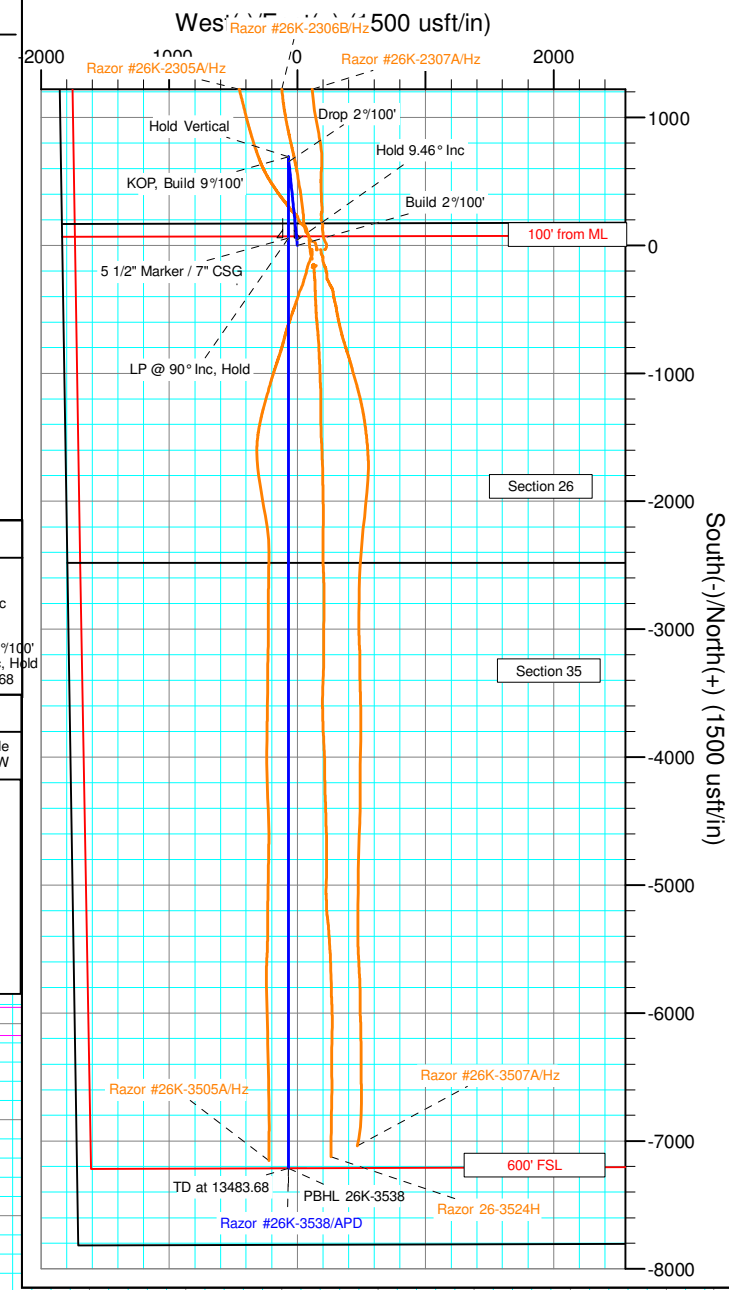
TVDPath	MDPath	Formation
1550.00	1562.88	Upper Pierre
3500.00	3539.75	Hygiene
3650.00	3691.81	Lower Pierre
5505.00	5580.41	P200 Marker
5525.00	5604.55	P300 Marker
5541.00	5624.34	P350 Marker
5555.00	5642.04	Sharon Springs
5559.00	5647.17	Niobrara
5576.00	5669.36	Top A Chalk
5606.00	5710.28	Top A Marl
5618.00	5727.98	A Marl
5626.00	5739.06	Top Upper B
5650.00	5775.57	Base Upper B
5666.00	5801.40	Top Lower B
5695.00	5852.18	Base Lower B
5708.00	5877.11	Top B Marl
5750.00	5973.04	Top C Chalk
5758.00	5995.72	Middle C Chalk
5772.00	6042.18	Middle C Marl
5790.00	6133.98	Lower C Chalk

WELL DETAILS: Razor #26K-3538

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	1541959.35	4738.00	3460877.47	40° 48' 33.060 N	103° 50' 6.210 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	772.84	9.46	354.24	770.70	38.74	-3.91	2.00	354.24	-38.70	
4	4541.16	9.46	354.24	4487.80	654.76	-66.09	0.00	0.00	-654.09	
5	5014.00	0.00	0.00	4958.50	693.50	-70.00	2.00	180.00	-692.79	
6	5214.00	0.00	0.00	5158.50	693.50	-70.00	0.00	0.00	-692.79	
7	6213.81	90.00	180.00	5795.00	57.00	-70.00	9.00	180.00	-56.32	
8	13483.68	90.00	180.00	5795.00	-7212.87	-70.00	0.00	0.00	7213.21	PBHL 26K-3538



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'
770.70	772.84	9.46	354.24	38.74	-3.91	-38.70	38.93	Hold 9.46° Inc
4487.80	4541.16	9.46	354.24	654.76	-66.09	-654.09	658.09	Drop 2°/100'
4958.50	5014.00	0.00	0.00	693.50	-70.00	-692.79	697.02	Hold Vertical
5158.50	5214.00	0.00	0.00	693.50	-70.00	-692.79	697.02	KOP, Build 9°/100'
5795.00	6213.81	90.00	180.00	57.00	-70.00	-56.32	1333.52	LP @ 90° Inc, Hold
5795.00	13483.68	90.00	180.00	-7212.87	-70.00	7213.21	8603.39	TD at 13483.68

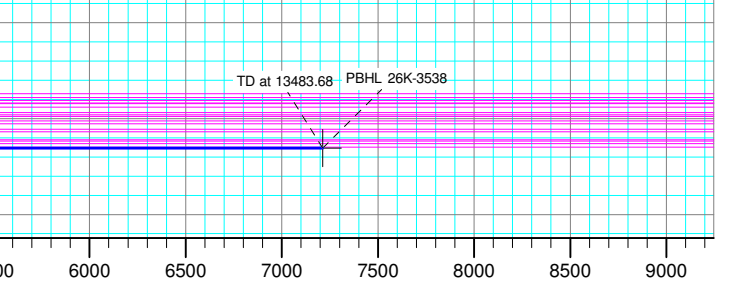
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL 26K-3538	5795.00	-7212.87	-70.00	1534746.44	3460942.90	40° 47' 21.790 N	103° 50' 7.120 W

SHL:  
 2481' FSL, 1835' FWL  
 Sec26-T10N-R58W

BHL:  
 600' FSL, 1650' FWL  
 Sec35-T10N-R58W

5 1/2" Marker / 7" CSG:  
 2539' FSL, 1765' FWL  
 Sec26-T10N-R58W





# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 26-T10N-R58W  
Razor #26K-3538**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**29 June, 2016**



# WOG

## Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #26K-3538
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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 26-T10N-R58W				
<b>Site Position:</b>		<b>Northing:</b>	1,541,803.23 usft	<b>Latitude:</b>	40° 48' 31.490 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,461,028.06 usft	<b>Longitude:</b>	103° 50' 4.290 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.08 °

<b>Well</b>	Razor #26K-3538					
<b>Well Position</b>	<b>+N/-S</b>	158.92 usft	<b>Northing:</b>	1,541,959.35 usft	<b>Latitude:</b>	40° 48' 33.060 N
	<b>+E/-W</b>	-147.64 usft	<b>Easting:</b>	3,460,877.46 usft	<b>Longitude:</b>	103° 50' 6.210 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	4,738.00 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>
	IGRF2015	6/27/2016	7.84	67.35	52,810

<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	180.56

<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	
772.84	9.46	354.24	770.70	38.74	-3.91	2.00	2.00	0.00	354.24	
4,541.16	9.46	354.24	4,487.80	654.76	-66.09	0.00	0.00	0.00	0.00	
5,014.00	0.00	0.00	4,958.50	693.50	-70.00	2.00	-2.00	0.00	180.00	
5,214.00	0.00	0.00	5,158.50	693.50	-70.00	0.00	0.00	0.00	0.00	
6,213.81	90.00	180.00	5,795.00	57.00	-70.00	9.00	9.00	0.00	180.00	
13,483.68	90.00	180.00	5,795.00	-7,212.87	-70.00	0.00	0.00	0.00	0.00	PBHL 26K-3538



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #26K-3538
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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	354.24	399.98	1.74	-0.18	-1.73	2.00	2.00	0.00	
500.00	4.00	354.24	499.84	6.94	-0.70	-6.94	2.00	2.00	0.00	
600.00	6.00	354.24	599.45	15.61	-1.58	-15.60	2.00	2.00	0.00	
700.00	8.00	354.24	698.70	27.74	-2.80	-27.71	2.00	2.00	0.00	
772.84	9.46	354.24	770.70	38.74	-3.91	-38.70	2.00	2.00	0.00	
<b>Hold 9.46° Inc</b>										
800.00	9.46	354.24	797.49	43.18	-4.36	-43.13	0.00	0.00	0.00	
900.00	9.46	354.24	896.13	59.52	-6.01	-59.46	0.00	0.00	0.00	
1,000.00	9.46	354.24	994.77	75.87	-7.66	-75.79	0.00	0.00	0.00	
1,100.00	9.46	354.24	1,093.41	92.22	-9.31	-92.12	0.00	0.00	0.00	
1,200.00	9.46	354.24	1,192.05	108.57	-10.96	-108.46	0.00	0.00	0.00	
1,300.00	9.46	354.24	1,290.69	124.91	-12.61	-124.79	0.00	0.00	0.00	
1,400.00	9.46	354.24	1,389.33	141.26	-14.26	-141.12	0.00	0.00	0.00	
1,500.00	9.46	354.24	1,487.97	157.61	-15.91	-157.45	0.00	0.00	0.00	
1,562.88	9.46	354.24	1,550.00	167.89	-16.95	-167.72	0.00	0.00	0.00	
<b>Upper Pierre</b>										
1,600.00	9.46	354.24	1,586.61	173.96	-17.56	-173.78	0.00	0.00	0.00	
1,700.00	9.46	354.24	1,685.26	190.30	-19.21	-190.11	0.00	0.00	0.00	
1,800.00	9.46	354.24	1,783.90	206.65	-20.86	-206.44	0.00	0.00	0.00	
1,900.00	9.46	354.24	1,882.54	223.00	-22.51	-222.77	0.00	0.00	0.00	
2,000.00	9.46	354.24	1,981.18	239.35	-24.16	-239.10	0.00	0.00	0.00	
2,100.00	9.46	354.24	2,079.82	255.69	-25.81	-255.43	0.00	0.00	0.00	
2,200.00	9.46	354.24	2,178.46	272.04	-27.46	-271.76	0.00	0.00	0.00	
2,300.00	9.46	354.24	2,277.10	288.39	-29.11	-288.09	0.00	0.00	0.00	
2,400.00	9.46	354.24	2,375.74	304.74	-30.76	-304.42	0.00	0.00	0.00	
2,500.00	9.46	354.24	2,474.38	321.08	-32.41	-320.75	0.00	0.00	0.00	
2,600.00	9.46	354.24	2,573.02	337.43	-34.06	-337.09	0.00	0.00	0.00	
2,700.00	9.46	354.24	2,671.66	353.78	-35.71	-353.42	0.00	0.00	0.00	
2,800.00	9.46	354.24	2,770.31	370.13	-37.36	-369.75	0.00	0.00	0.00	
2,900.00	9.46	354.24	2,868.95	386.47	-39.01	-386.08	0.00	0.00	0.00	
3,000.00	9.46	354.24	2,967.59	402.82	-40.66	-402.41	0.00	0.00	0.00	
3,100.00	9.46	354.24	3,066.23	419.17	-42.31	-418.74	0.00	0.00	0.00	
3,200.00	9.46	354.24	3,164.87	435.52	-43.96	-435.07	0.00	0.00	0.00	
3,300.00	9.46	354.24	3,263.51	451.86	-45.61	-451.40	0.00	0.00	0.00	
3,400.00	9.46	354.24	3,362.15	468.21	-47.26	-467.73	0.00	0.00	0.00	
3,500.00	9.46	354.24	3,460.79	484.56	-48.91	-484.06	0.00	0.00	0.00	
3,539.75	9.46	354.24	3,500.00	491.06	-49.56	-490.55	0.00	0.00	0.00	
<b>Hygiene</b>										
3,600.00	9.46	354.24	3,559.43	500.91	-50.56	-500.39	0.00	0.00	0.00	
3,691.81	9.46	354.24	3,650.00	515.92	-52.07	-515.39	0.00	0.00	0.00	
<b>Lower Pierre</b>										
3,700.00	9.46	354.24	3,658.07	517.25	-52.21	-516.72	0.00	0.00	0.00	
3,800.00	9.46	354.24	3,756.72	533.60	-53.86	-533.05	0.00	0.00	0.00	
3,900.00	9.46	354.24	3,855.36	549.95	-55.51	-549.39	0.00	0.00	0.00	
4,000.00	9.46	354.24	3,954.00	566.30	-57.16	-565.72	0.00	0.00	0.00	
4,100.00	9.46	354.24	4,052.64	582.64	-58.81	-582.05	0.00	0.00	0.00	
4,200.00	9.46	354.24	4,151.28	598.99	-60.46	-598.38	0.00	0.00	0.00	
4,300.00	9.46	354.24	4,249.92	615.34	-62.11	-614.71	0.00	0.00	0.00	
4,400.00	9.46	354.24	4,348.56	631.69	-63.76	-631.04	0.00	0.00	0.00	



**WOG**  
Planning Report

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<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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	9.46	354.24	4,447.20	648.03	-65.41	-647.37	0.00	0.00	0.00	
4,541.16	9.46	354.24	4,487.80	654.76	-66.09	-654.09	0.00	0.00	0.00	
<b>Drop 2°/100'</b>										
4,600.00	8.28	354.24	4,545.94	663.79	-67.00	-663.11	2.00	-2.00	0.00	
4,700.00	6.28	354.24	4,645.13	676.40	-68.27	-675.70	2.00	-2.00	0.00	
4,800.00	4.28	354.24	4,744.70	685.55	-69.19	-684.85	2.00	-2.00	0.00	
4,900.00	2.28	354.24	4,844.53	691.24	-69.77	-690.53	2.00	-2.00	0.00	
5,000.00	0.28	354.24	4,944.50	693.47	-69.99	-692.75	2.00	-2.00	0.00	
5,014.00	0.00	0.00	4,958.50	693.50	-70.00	-692.79	2.00	-2.00	0.00	
<b>Hold Vertical</b>										
5,100.00	0.00	0.00	5,044.50	693.50	-70.00	-692.79	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,144.50	693.50	-70.00	-692.79	0.00	0.00	0.00	
5,214.00	0.00	0.00	5,158.50	693.50	-70.00	-692.79	0.00	0.00	0.00	
<b>KOP, Build 9°/100'</b>										
5,300.00	7.74	180.00	5,244.24	687.70	-70.00	-686.99	9.00	9.00	0.00	
5,400.00	16.74	180.00	5,341.86	666.52	-70.00	-665.81	9.00	9.00	0.00	
5,500.00	25.74	180.00	5,434.97	630.32	-70.00	-629.61	9.00	9.00	0.00	
5,580.41	32.98	180.00	5,505.00	590.92	-70.00	-590.21	9.00	9.00	0.00	
<b>P200 Marker</b>										
5,600.00	34.75	180.00	5,521.27	580.00	-70.00	-579.29	9.00	9.00	0.00	
5,604.55	35.16	180.00	5,525.00	577.39	-70.00	-576.69	9.00	9.00	0.00	
<b>P300 Marker</b>										
5,624.34	36.94	180.00	5,541.00	565.75	-70.00	-565.04	9.00	9.00	0.00	
<b>P350 Marker</b>										
5,642.04	38.53	180.00	5,555.00	554.92	-70.00	-554.21	9.00	9.00	0.00	
<b>Sharon Springs</b>										
5,647.17	38.99	180.00	5,559.00	551.70	-70.00	-551.00	9.00	9.00	0.00	
<b>Niobrara</b>										
5,669.36	40.99	180.00	5,576.00	537.44	-70.00	-536.74	9.00	9.00	0.00	
<b>Top A Chalk</b>										
5,700.00	43.75	180.00	5,598.63	516.80	-70.00	-516.10	9.00	9.00	0.00	
5,710.28	44.67	180.00	5,606.00	509.63	-70.00	-508.93	9.00	9.00	0.00	
<b>Top A Marl</b>										
5,727.38	46.21	180.00	5,618.00	497.45	-70.00	-496.74	9.00	9.00	0.00	
<b>A Marl</b>										
5,739.06	47.26	180.00	5,626.00	488.94	-70.00	-488.24	9.00	9.00	0.00	
<b>Top Upper B</b>										
5,775.57	50.55	180.00	5,650.00	461.43	-70.00	-460.72	9.00	9.00	0.00	
<b>Base Upper B</b>										
5,800.00	52.75	180.00	5,665.15	442.27	-70.00	-441.57	9.00	9.00	0.00	
5,801.40	52.88	180.00	5,666.00	441.16	-70.00	-440.46	9.00	9.00	0.00	
<b>Top Lower B</b>										
5,852.18	57.45	180.00	5,695.00	399.49	-70.00	-398.79	9.00	9.00	0.00	
<b>Base Lower B</b>										
5,877.11	59.69	180.00	5,708.00	378.22	-70.00	-377.52	9.00	9.00	0.00	
<b>Top B Marl</b>										
5,900.00	61.75	180.00	5,719.19	358.25	-70.00	-357.56	9.00	9.00	0.00	
5,973.04	68.33	180.00	5,750.00	292.07	-70.00	-291.38	9.00	9.00	0.00	
<b>Top C Chalk</b>										
5,995.72	70.37	180.00	5,758.00	270.85	-70.00	-270.16	9.00	9.00	0.00	
<b>Middle C Chalk</b>										
6,000.00	70.75	180.00	5,759.42	266.81	-70.00	-266.12	9.00	9.00	0.00	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #26K-3538
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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)	
6,042.18	74.55	180.00	5,772.00	226.56	-70.00	-225.87	9.00	9.00	0.00	
<b>Middle C Marl</b>										
6,100.00	79.75	180.00	5,784.85	170.21	-70.00	-169.52	9.00	9.00	0.00	
6,133.98	82.81	180.00	5,790.00	136.62	-70.00	-135.94	9.00	9.00	0.00	
<b>Lower C Chalk</b>										
6,200.00	88.76	180.00	5,794.85	70.81	-70.00	-70.13	9.00	9.00	0.00	
6,213.81	90.00	180.00	5,795.00	57.00	-70.00	-56.32	9.00	9.00	0.00	
<b>LP @ 90° Inc, Hold - 5 1/2" Marker / 7" CSG</b>										
6,300.00	90.00	180.00	5,795.00	-29.19	-70.00	29.86	0.00	0.00	0.00	
6,400.00	90.00	180.00	5,795.00	-129.19	-70.00	129.86	0.00	0.00	0.00	
6,500.00	90.00	180.00	5,795.00	-229.19	-70.00	229.86	0.00	0.00	0.00	
6,600.00	90.00	180.00	5,795.00	-329.19	-70.00	329.85	0.00	0.00	0.00	
6,700.00	90.00	180.00	5,795.00	-429.19	-70.00	429.85	0.00	0.00	0.00	
6,800.00	90.00	180.00	5,795.00	-529.19	-70.00	529.84	0.00	0.00	0.00	
6,900.00	90.00	180.00	5,795.00	-629.19	-70.00	629.84	0.00	0.00	0.00	
7,000.00	90.00	180.00	5,795.00	-729.19	-70.00	729.83	0.00	0.00	0.00	
7,100.00	90.00	180.00	5,795.00	-829.19	-70.00	829.83	0.00	0.00	0.00	
7,200.00	90.00	180.00	5,795.00	-929.19	-70.00	929.82	0.00	0.00	0.00	
7,300.00	90.00	180.00	5,795.00	-1,029.19	-70.00	1,029.82	0.00	0.00	0.00	
7,400.00	90.00	180.00	5,795.00	-1,129.19	-70.00	1,129.81	0.00	0.00	0.00	
7,500.00	90.00	180.00	5,795.00	-1,229.19	-70.00	1,229.81	0.00	0.00	0.00	
7,600.00	90.00	180.00	5,795.00	-1,329.19	-70.00	1,329.80	0.00	0.00	0.00	
7,700.00	90.00	180.00	5,795.00	-1,429.19	-70.00	1,429.80	0.00	0.00	0.00	
7,800.00	90.00	180.00	5,795.00	-1,529.19	-70.00	1,529.79	0.00	0.00	0.00	
7,900.00	90.00	180.00	5,795.00	-1,629.19	-70.00	1,629.79	0.00	0.00	0.00	
8,000.00	90.00	180.00	5,795.00	-1,729.19	-70.00	1,729.78	0.00	0.00	0.00	
8,100.00	90.00	180.00	5,795.00	-1,829.19	-70.00	1,829.78	0.00	0.00	0.00	
8,200.00	90.00	180.00	5,795.00	-1,929.19	-70.00	1,929.78	0.00	0.00	0.00	
8,300.00	90.00	180.00	5,795.00	-2,029.19	-70.00	2,029.77	0.00	0.00	0.00	
8,400.00	90.00	180.00	5,795.00	-2,129.19	-70.00	2,129.77	0.00	0.00	0.00	
8,500.00	90.00	180.00	5,795.00	-2,229.19	-70.00	2,229.76	0.00	0.00	0.00	
8,600.00	90.00	180.00	5,795.00	-2,329.19	-70.00	2,329.76	0.00	0.00	0.00	
8,700.00	90.00	180.00	5,795.00	-2,429.19	-70.00	2,429.75	0.00	0.00	0.00	
8,800.00	90.00	180.00	5,795.00	-2,529.19	-70.00	2,529.75	0.00	0.00	0.00	
8,900.00	90.00	180.00	5,795.00	-2,629.19	-70.00	2,629.74	0.00	0.00	0.00	
9,000.00	90.00	180.00	5,795.00	-2,729.19	-70.00	2,729.74	0.00	0.00	0.00	
9,100.00	90.00	180.00	5,795.00	-2,829.19	-70.00	2,829.73	0.00	0.00	0.00	
9,200.00	90.00	180.00	5,795.00	-2,929.19	-70.00	2,929.73	0.00	0.00	0.00	
9,300.00	90.00	180.00	5,795.00	-3,029.19	-70.00	3,029.72	0.00	0.00	0.00	
9,400.00	90.00	180.00	5,795.00	-3,129.19	-70.00	3,129.72	0.00	0.00	0.00	
9,500.00	90.00	180.00	5,795.00	-3,229.19	-70.00	3,229.71	0.00	0.00	0.00	
9,600.00	90.00	180.00	5,795.00	-3,329.19	-70.00	3,329.71	0.00	0.00	0.00	
9,700.00	90.00	180.00	5,795.00	-3,429.19	-70.00	3,429.70	0.00	0.00	0.00	
9,800.00	90.00	180.00	5,795.00	-3,529.19	-70.00	3,529.70	0.00	0.00	0.00	
9,900.00	90.00	180.00	5,795.00	-3,629.19	-70.00	3,629.70	0.00	0.00	0.00	
10,000.00	90.00	180.00	5,795.00	-3,729.19	-70.00	3,729.69	0.00	0.00	0.00	
10,100.00	90.00	180.00	5,795.00	-3,829.19	-70.00	3,829.69	0.00	0.00	0.00	
10,200.00	90.00	180.00	5,795.00	-3,929.19	-70.00	3,929.68	0.00	0.00	0.00	
10,300.00	90.00	180.00	5,795.00	-4,029.19	-70.00	4,029.68	0.00	0.00	0.00	
10,400.00	90.00	180.00	5,795.00	-4,129.19	-70.00	4,129.67	0.00	0.00	0.00	
10,500.00	90.00	180.00	5,795.00	-4,229.19	-70.00	4,229.67	0.00	0.00	0.00	
10,600.00	90.00	180.00	5,795.00	-4,329.19	-70.00	4,329.66	0.00	0.00	0.00	
10,700.00	90.00	180.00	5,795.00	-4,429.19	-70.00	4,429.66	0.00	0.00	0.00	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #26K-3538
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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)	
10,800.00	90.00	180.00	5,795.00	-4,529.19	-70.00	4,529.65	0.00	0.00	0.00	
10,900.00	90.00	180.00	5,795.00	-4,629.19	-70.00	4,629.65	0.00	0.00	0.00	
11,000.00	90.00	180.00	5,795.00	-4,729.19	-70.00	4,729.64	0.00	0.00	0.00	
11,100.00	90.00	180.00	5,795.00	-4,829.19	-70.00	4,829.64	0.00	0.00	0.00	
11,200.00	90.00	180.00	5,795.00	-4,929.19	-70.00	4,929.63	0.00	0.00	0.00	
11,300.00	90.00	180.00	5,795.00	-5,029.19	-70.00	5,029.63	0.00	0.00	0.00	
11,400.00	90.00	180.00	5,795.00	-5,129.19	-70.00	5,129.62	0.00	0.00	0.00	
11,500.00	90.00	180.00	5,795.00	-5,229.19	-70.00	5,229.62	0.00	0.00	0.00	
11,600.00	90.00	180.00	5,795.00	-5,329.19	-70.00	5,329.62	0.00	0.00	0.00	
11,700.00	90.00	180.00	5,795.00	-5,429.19	-70.00	5,429.61	0.00	0.00	0.00	
11,800.00	90.00	180.00	5,795.00	-5,529.19	-70.00	5,529.61	0.00	0.00	0.00	
11,900.00	90.00	180.00	5,795.00	-5,629.19	-70.00	5,629.60	0.00	0.00	0.00	
12,000.00	90.00	180.00	5,795.00	-5,729.19	-70.00	5,729.60	0.00	0.00	0.00	
12,100.00	90.00	180.00	5,795.00	-5,829.19	-70.00	5,829.59	0.00	0.00	0.00	
12,200.00	90.00	180.00	5,795.00	-5,929.19	-70.00	5,929.59	0.00	0.00	0.00	
12,300.00	90.00	180.00	5,795.00	-6,029.19	-70.00	6,029.58	0.00	0.00	0.00	
12,400.00	90.00	180.00	5,795.00	-6,129.19	-70.00	6,129.58	0.00	0.00	0.00	
12,500.00	90.00	180.00	5,795.00	-6,229.19	-70.00	6,229.57	0.00	0.00	0.00	
12,600.00	90.00	180.00	5,795.00	-6,329.19	-70.00	6,329.57	0.00	0.00	0.00	
12,700.00	90.00	180.00	5,795.00	-6,429.19	-70.00	6,429.56	0.00	0.00	0.00	
12,800.00	90.00	180.00	5,795.00	-6,529.19	-70.00	6,529.56	0.00	0.00	0.00	
12,900.00	90.00	180.00	5,795.00	-6,629.19	-70.00	6,629.55	0.00	0.00	0.00	
13,000.00	90.00	180.00	5,795.00	-6,729.19	-70.00	6,729.55	0.00	0.00	0.00	
13,100.00	90.00	180.00	5,795.00	-6,829.19	-70.00	6,829.54	0.00	0.00	0.00	
13,200.00	90.00	180.00	5,795.00	-6,929.19	-70.00	6,929.54	0.00	0.00	0.00	
13,300.00	90.00	180.00	5,795.00	-7,029.19	-70.00	7,029.54	0.00	0.00	0.00	
13,400.00	90.00	180.00	5,795.00	-7,129.19	-70.00	7,129.53	0.00	0.00	0.00	
13,483.68	90.00	180.00	5,795.00	-7,212.87	-70.00	7,213.21	0.00	0.00	0.00	
<b>TD at 13483.68</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL 26K-3538	0.00	0.00	5,795.00	-7,212.87	-70.00	1,534,746.44	3,460,942.90	40° 47' 21.790 N	103° 50' 7.120 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,213.81	5,795.00	5 1/2" Marker / 7" CSG	7.000	8.750	



**WOG**  
Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Razor #26K-3538
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4759.00usft
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4759.00usft
<b>Site:</b>	Sec 26-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor #26K-3538	<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 (°)	
1,562.88	1,550.00	Upper Pierre				
3,539.75	3,500.00	Hygiene				
3,691.81	3,650.00	Lower Pierre				
5,580.41	5,505.00	P200 Marker				
5,604.55	5,525.00	P300 Marker				
5,624.34	5,541.00	P350 Marker				
5,642.04	5,555.00	Sharon Springs				
5,647.17	5,559.00	Niobrara				
5,669.36	5,576.00	Top A Chalk				
5,710.28	5,606.00	Top A Marl				
5,727.38	5,618.00	A Marl				
5,739.06	5,626.00	Top Upper B				
5,775.57	5,650.00	Base Upper B				
5,801.40	5,666.00	Top Lower B				
5,852.18	5,695.00	Base Lower B				
5,877.11	5,708.00	Top B Marl				
5,973.04	5,750.00	Top C Chalk				
5,995.72	5,758.00	Middle C Chalk				
6,042.18	5,772.00	Middle C Marl				
6,133.98	5,790.00	Lower C 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'	
772.84	770.70	38.74	-3.91	Hold 9.46° Inc	
4,541.16	4,487.80	654.76	-66.09	Drop 2°/100'	
5,014.00	4,958.50	693.50	-70.00	Hold Vertical	
5,214.00	5,158.50	693.50	-70.00	KOP, Build 9°/100'	
6,213.81	5,795.00	57.00	-70.00	LP @ 90° Inc, Hold	
13,483.68	5,795.00	-7,212.87	-70.00	TD at 13483.68	