



# **Whiting Petroleum Corp.**

**Weld County, CO**

**Sec 7-T10N-R57W**

**Horsetail #07F-0607A**

**Hz**

**Plan: Design #1**

## **Standard Planning Report**

**06 February, 2015**



# WOG Planning Report

<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07F-0607A
<b>Company:</b>	Whiting Petroleum Corp.	<b>TVD Reference:</b>	KBE @ 4942.70usft (Original Well Elev)
<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4942.70usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07F-0607A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

<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 7-T10N-R57W				
<b>Site Position:</b>		<b>Northing:</b>	1,558,450.14 usft	<b>Latitude:</b>	40° 51' 14.300 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,469,810.15 usft	<b>Longitude:</b>	103° 48' 5.960 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	1.10 °

<b>Well</b>	Horsetail #07F-0607A					
<b>Well Position</b>	<b>+N/-S</b>	-134.53 usft	<b>Northing:</b>	1,558,346.44 usft	<b>Latitude:</b>	40° 51' 12.970 N
	<b>+E/-W</b>	1,608.39 usft	<b>Easting:</b>	3,471,420.82 usft	<b>Longitude:</b>	103° 47' 45.030 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,925.70 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	1/5/2015	7.88	67.44	53,087

<b>Design</b>	Design #1			
<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	358.23

<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	
575.00	5.50	200.00	574.58	-12.39	-4.51	2.00	2.00	0.00	200.00	
4,975.23	5.50	200.00	4,954.55	-408.70	-148.76	0.00	0.00	0.00	0.00	
5,250.23	0.00	0.00	5,229.13	-421.10	-153.27	2.00	-2.00	0.00	180.00	
6,068.41	90.00	359.59	5,750.00	99.76	-156.97	11.00	11.00	0.00	359.59	PBHL 0607A
12,546.81	90.00	359.59	5,750.00	6,578.00	-203.00	0.00	0.00	0.00	0.00	PBHL 0607A



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<b>Project:</b>	Weld County, CO	<b>MD Reference:</b>	KBE @ 4942.70usft (Original Well Elev)
<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07F-0607A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

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	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build 2°/100'</b>										
575.00	5.50	200.00	574.58	-12.39	-4.51	-12.25	2.00	2.00	0.00	
<b>Hold 5.5° Inc</b>										
1,554.93	5.50	200.00	1,550.00	-100.65	-36.63	-99.47	0.00	0.00	0.00	
<b>Upper Pierre</b>										
3,513.95	5.50	200.00	3,500.00	-277.09	-100.85	-273.85	0.00	0.00	0.00	
<b>Hygiene</b>										
3,664.65	5.50	200.00	3,650.00	-290.66	-105.79	-287.26	0.00	0.00	0.00	
<b>Lower Pierre</b>										
4,975.23	5.50	200.00	4,954.55	-408.70	-148.76	-403.92	0.00	0.00	0.00	
<b>Drop 2°/100'</b>										
5,250.23	0.00	0.00	5,229.13	-421.10	-153.27	-416.17	2.00	-2.00	0.00	
<b>KOP, Build 11°/100'</b>										
5,552.84	33.29	359.59	5,515.00	-335.64	-153.87	-330.73	11.00	11.00	0.00	
<b>P200 Marker</b>										
5,571.00	35.28	359.59	5,530.00	-325.41	-153.95	-320.51	11.00	11.00	0.00	
<b>P300 Marker</b>										
5,595.93	38.03	359.59	5,550.00	-310.53	-154.05	-305.63	11.00	11.00	0.00	
<b>P350 Marker</b>										
5,843.05	65.21	359.59	5,702.00	-118.63	-155.42	-113.78	11.00	11.00	0.00	
<b>Sharon Springs</b>										
5,855.29	66.56	359.59	5,707.00	-107.46	-155.50	-102.61	11.00	11.00	0.00	
<b>Niobrara</b>										
5,913.06	72.91	359.59	5,727.00	-53.30	-155.88	-48.46	11.00	11.00	0.00	
<b>Top A Chalk</b>										
6,068.41	90.00	359.59	5,750.00	99.76	-156.97	104.56	11.00	11.00	0.00	
<b>LP @ 90° Inc, Hold - 7"</b>										
12,546.81	90.00	359.59	5,750.00	6,578.00	-203.00	6,581.13	0.00	0.00	0.00	
<b>TD at 12546.81' TD</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL 0607A	0.00	0.00	5,750.00	6,578.00	-203.00	1,564,919.32	3,471,091.45	40° 52' 17.965 N	103° 47' 47.672 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										
Beffie #1	0.00	0.00	6,735.70	3,235.89	-1,674.41	1,561,549.56	3,469,684.53	40° 51' 44.942 N	103° 48' 6.822 W	
- plan misses target center by 3620.72usft at 6068.41usft MD (5750.00 TVD, 99.76 N, -156.97 E)										
- Circle (radius 1,550.00)										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
6,068.41	5,750.00	7"	7.000	8.750		



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<b>Well:</b>	Horsetail #07F-0607A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,554.93	1,550.00	Upper Pierre				
3,513.95	3,500.00	Hygiene				
3,664.65	3,650.00	Lower Pierre				
5,552.84	5,515.00	P200 Marker				
5,571.00	5,530.00	P300 Marker				
5,595.93	5,550.00	P350 Marker				
5,843.05	5,702.00	Sharon Springs				
5,855.29	5,707.00	Niobrara				
5,913.06	5,727.00	Top A 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'	
575.00	574.58	-12.39	-4.51	Hold 5.5° Inc	
4,975.23	4,954.55	-408.70	-148.76	Drop 2°/100'	
5,250.23	5,229.13	-421.10	-153.27	KOP, Build 11°/100'	
6,068.41	5,750.00	99.76	-156.97	LP @ 90° Inc, Hold	
12,546.81	5,750.00	6,578.00	-203.00	TD at 12546.81' TD	