

# **Whiting Petroleum Corp.**

**Weld County, CO**

**Sec 7-T10N-R57W**

**Horsetail #07E-1802C**

**Hz**

**Plan: Plan #1**

## **Standard Planning Report**

**29 January, 2015**





<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07E-1802C
<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 #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #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 #07E-1802C			
<b>Well Position</b>	<b>+N/-S</b>	-3.01 usft	<b>Northing:</b>	1,558,449.81 usft
	<b>+E/-W</b>	139.89 usft	<b>Easting:</b>	3,469,950.07 usft
<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	7.89	67.44	53,087

<b>Design</b>	Plan #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	181.48

<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	
600.00	6.00	309.00	599.45	9.88	-12.20	2.00	2.00	0.00	309.00	
2,738.00	6.00	309.00	2,725.74	150.52	-185.87	0.00	0.00	0.00	0.00	
3,038.00	0.00	0.00	3,025.19	160.39	-198.07	2.00	-2.00	0.00	180.00	
5,446.70	0.00	0.00	5,433.89	160.39	-198.07	0.00	0.00	0.00	0.00	
6,264.88	90.00	180.07	5,954.76	-360.48	-198.70	11.00	11.00	0.00	180.07	PBHL 1802C
6,265.71	90.00	180.07	5,954.76	-361.31	-198.70	0.21	-0.21	0.00	180.00	
13,951.32	90.00	180.07	5,955.00	-8,046.91	-208.00	0.00	0.00	0.00	0.00	PBHL 1802C



<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07E-1802C
<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 #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #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
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	309.00	399.98	1.10	-1.36	-1.06	2.00	2.00	0.00
500.00	4.00	309.00	499.84	4.39	-5.42	-4.25	2.00	2.00	0.00
600.00	6.00	309.00	599.45	9.88	-12.20	-9.56	2.00	2.00	0.00
<b>Hold 6° Inc</b>									
700.00	6.00	309.00	698.90	16.45	-20.32	-15.92	0.00	0.00	0.00
800.00	6.00	309.00	798.36	23.03	-28.44	-22.29	0.00	0.00	0.00
900.00	6.00	309.00	897.81	29.61	-36.57	-28.66	0.00	0.00	0.00
1,000.00	6.00	309.00	997.26	36.19	-44.69	-35.02	0.00	0.00	0.00
1,100.00	6.00	309.00	1,096.71	42.77	-52.81	-41.39	0.00	0.00	0.00
1,200.00	6.00	309.00	1,196.17	49.35	-60.94	-47.75	0.00	0.00	0.00
1,300.00	6.00	309.00	1,295.62	55.92	-69.06	-54.12	0.00	0.00	0.00
1,400.00	6.00	309.00	1,395.07	62.50	-77.18	-60.49	0.00	0.00	0.00
1,500.00	6.00	309.00	1,494.52	69.08	-85.31	-66.85	0.00	0.00	0.00
1,555.78	6.00	309.00	1,550.00	72.75	-89.84	-70.40	0.00	0.00	0.00
<b>Upper Pierre</b>									
1,600.00	6.00	309.00	1,593.97	75.66	-93.43	-73.22	0.00	0.00	0.00
1,700.00	6.00	309.00	1,693.43	82.24	-101.55	-79.58	0.00	0.00	0.00
1,800.00	6.00	309.00	1,792.88	88.81	-109.68	-85.95	0.00	0.00	0.00
1,900.00	6.00	309.00	1,892.33	95.39	-117.80	-92.32	0.00	0.00	0.00
2,000.00	6.00	309.00	1,991.78	101.97	-125.92	-98.68	0.00	0.00	0.00
2,100.00	6.00	309.00	2,091.23	108.55	-134.05	-105.05	0.00	0.00	0.00
2,200.00	6.00	309.00	2,190.69	115.13	-142.17	-111.42	0.00	0.00	0.00
2,300.00	6.00	309.00	2,290.14	121.71	-150.29	-117.78	0.00	0.00	0.00
2,400.00	6.00	309.00	2,389.59	128.28	-158.42	-124.15	0.00	0.00	0.00
2,500.00	6.00	309.00	2,489.04	134.86	-166.54	-130.51	0.00	0.00	0.00
2,600.00	6.00	309.00	2,588.50	141.44	-174.66	-136.88	0.00	0.00	0.00
2,700.00	6.00	309.00	2,687.95	148.02	-182.79	-143.25	0.00	0.00	0.00
2,738.00	6.00	309.00	2,725.74	150.52	-185.87	-145.66	0.00	0.00	0.00
<b>Drop 2°/100'</b>									
2,800.00	4.76	309.00	2,787.47	154.18	-190.39	-149.21	2.00	-2.00	0.00
2,900.00	2.76	309.00	2,887.25	158.30	-195.49	-153.20	2.00	-2.00	0.00
3,000.00	0.76	309.00	2,987.19	160.24	-197.87	-155.07	2.00	-2.00	0.00
3,038.00	0.00	0.00	3,025.19	160.39	-198.07	-155.22	2.00	-2.00	0.00
<b>Hold Vertical</b>									
3,100.00	0.00	0.00	3,087.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,200.00	0.00	0.00	3,187.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,300.00	0.00	0.00	3,287.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,400.00	0.00	0.00	3,387.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,500.00	0.00	0.00	3,487.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,512.81	0.00	0.00	3,500.00	160.39	-198.07	-155.22	0.00	0.00	0.00
<b>Hygiene</b>									
3,600.00	0.00	0.00	3,587.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,662.81	0.00	0.00	3,650.00	160.39	-198.07	-155.22	0.00	0.00	0.00
<b>Lower Pierre</b>									
3,700.00	0.00	0.00	3,687.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,800.00	0.00	0.00	3,787.19	160.39	-198.07	-155.22	0.00	0.00	0.00
3,900.00	0.00	0.00	3,887.19	160.39	-198.07	-155.22	0.00	0.00	0.00
4,000.00	0.00	0.00	3,987.19	160.39	-198.07	-155.22	0.00	0.00	0.00

**WOG**  
Planning Report



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<b>Site:</b>	Sec 7-T10N-R57W	<b>North Reference:</b>	True
<b>Well:</b>	Horsetail #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	H2		
<b>Design:</b>	Plan #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)	
4,100.00	0.00	0.00	4,087.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,187.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,287.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,387.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,487.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,587.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,687.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,787.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,887.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,987.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,087.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,187.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,287.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,387.19	160.39	-198.07	-155.22	0.00	0.00	0.00	
5,446.70	0.00	0.00	5,433.89	160.39	-198.07	-155.22	0.00	0.00	0.00	
<b>KOP, Build 11°/100'</b>										
5,450.00	0.36	180.07	5,437.19	160.38	-198.07	-155.21	11.00	11.00	0.00	
5,500.00	5.86	180.07	5,487.10	157.67	-198.07	-152.50	11.00	11.00	0.00	
5,528.14	8.96	180.07	5,515.00	154.04	-198.08	-148.87	11.00	11.00	0.00	
<b>P200 Marker</b>										
5,543.36	10.63	180.07	5,530.00	151.45	-198.08	-146.28	11.00	11.00	0.00	
<b>P300 Marker</b>										
5,550.00	11.36	180.07	5,536.52	150.18	-198.08	-145.02	11.00	11.00	0.00	
5,563.79	12.88	180.07	5,550.00	147.29	-198.09	-142.12	11.00	11.00	0.00	
<b>P350 Marker</b>										
5,600.00	16.86	180.07	5,584.99	138.00	-198.10	-132.83	11.00	11.00	0.00	
5,650.00	22.36	180.07	5,632.07	121.22	-198.12	-116.06	11.00	11.00	0.00	
5,700.00	27.86	180.07	5,677.33	100.01	-198.14	-94.86	11.00	11.00	0.00	
5,728.33	30.98	180.07	5,702.00	86.09	-198.16	-80.94	11.00	11.00	0.00	
<b>Sharon Springs</b>										
5,734.18	31.62	180.07	5,707.00	83.05	-198.16	-77.90	11.00	11.00	0.00	
<b>Niobrara</b>										
5,750.00	33.36	180.07	5,720.34	74.56	-198.17	-69.41	11.00	11.00	0.00	
5,758.01	34.24	180.07	5,727.00	70.10	-198.18	-64.95	11.00	11.00	0.00	
<b>Top A Chalk</b>										
5,800.00	38.86	180.07	5,760.72	45.10	-198.21	-39.96	11.00	11.00	0.00	
5,804.23	39.33	180.07	5,764.00	42.43	-198.21	-37.30	11.00	11.00	0.00	
<b>Top A Marl</b>										
5,829.30	42.09	180.07	5,783.00	26.08	-198.23	-20.95	11.00	11.00	0.00	
<b>A Marl</b>										
5,841.55	43.43	180.07	5,792.00	17.76	-198.24	-12.63	11.00	11.00	0.00	
<b>Top Upper B</b>										
5,850.00	44.36	180.07	5,798.09	11.91	-198.25	-6.78	11.00	11.00	0.00	
5,881.61	47.84	180.07	5,820.00	-10.87	-198.28	15.99	11.00	11.00	0.00	
<b>Base Upper B</b>										
5,900.00	49.86	180.07	5,832.10	-24.71	-198.29	29.83	11.00	11.00	0.00	
5,907.67	50.71	180.07	5,837.00	-30.61	-198.30	35.73	11.00	11.00	0.00	
<b>Top Lower B</b>										
5,940.54	54.32	180.07	5,857.00	-56.69	-198.33	61.80	11.00	11.00	0.00	
<b>Base Lower B</b>										
5,950.00	55.36	180.07	5,862.45	-64.43	-198.34	69.53	11.00	11.00	0.00	
5,952.74	55.66	180.07	5,864.00	-66.69	-198.35	71.79	11.00	11.00	0.00	
<b>Top B Marl</b>										



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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 #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	H2		
<b>Design:</b>	Plan #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)
6,000.00	60.86	180.07	5,888.85	-106.86	-198.39	111.96	11.00	11.00	0.00
6,050.00	66.36	180.07	5,911.06	-151.64	-198.45	156.72	11.00	11.00	0.00
6,057.45	67.18	180.07	5,914.00	-158.48	-198.46	163.56	11.00	11.00	0.00
<b>Top C Chalk</b>									
6,079.16	69.57	180.07	5,922.00	-178.66	-198.48	183.73	11.00	11.00	0.00
<b>Middle C Chalk</b>									
6,100.00	71.86	180.07	5,928.88	-198.33	-198.50	203.40	11.00	11.00	0.00
6,124.66	74.58	180.07	5,936.00	-221.94	-198.53	226.99	11.00	11.00	0.00
<b>Middle C Marl</b>									
6,150.00	77.36	180.07	5,942.14	-246.52	-198.56	251.57	11.00	11.00	0.00
6,200.00	82.86	180.07	5,950.73	-295.76	-198.62	300.80	11.00	11.00	0.00
6,250.00	88.36	180.07	5,954.55	-345.60	-198.68	350.62	11.00	11.00	0.00
6,264.88	90.00	180.07	5,954.76	-360.47	-198.70	365.49	11.00	11.00	0.00
<b>LP @ 90° Inc, Hold - 7"</b>									
6,265.71	90.00	180.07	5,954.76	-361.31	-198.70	366.32	0.21	-0.21	0.00
6,300.00	90.00	180.07	5,954.76	-395.59	-198.74	400.60	0.00	0.00	0.00
6,400.00	90.00	180.07	5,954.77	-495.59	-198.86	500.57	0.00	0.00	0.00
6,500.00	90.00	180.07	5,954.77	-595.59	-198.99	600.54	0.00	0.00	0.00
6,600.00	90.00	180.07	5,954.77	-695.59	-199.11	700.51	0.00	0.00	0.00
6,700.00	90.00	180.07	5,954.78	-795.59	-199.23	800.48	0.00	0.00	0.00
6,800.00	90.00	180.07	5,954.78	-895.59	-199.35	900.45	0.00	0.00	0.00
6,900.00	90.00	180.07	5,954.78	-995.59	-199.47	1,000.42	0.00	0.00	0.00
7,000.00	90.00	180.07	5,954.78	-1,095.59	-199.59	1,100.39	0.00	0.00	0.00
7,100.00	90.00	180.07	5,954.79	-1,195.59	-199.71	1,200.36	0.00	0.00	0.00
7,200.00	90.00	180.07	5,954.79	-1,295.59	-199.83	1,300.33	0.00	0.00	0.00
7,300.00	90.00	180.07	5,954.79	-1,395.59	-199.95	1,400.29	0.00	0.00	0.00
7,400.00	90.00	180.07	5,954.80	-1,495.59	-200.07	1,500.26	0.00	0.00	0.00
7,500.00	90.00	180.07	5,954.80	-1,595.59	-200.19	1,600.23	0.00	0.00	0.00
7,600.00	90.00	180.07	5,954.80	-1,695.59	-200.32	1,700.20	0.00	0.00	0.00
7,700.00	90.00	180.07	5,954.81	-1,795.59	-200.44	1,800.17	0.00	0.00	0.00
7,800.00	90.00	180.07	5,954.81	-1,895.59	-200.56	1,900.14	0.00	0.00	0.00
7,900.00	90.00	180.07	5,954.81	-1,995.59	-200.68	2,000.11	0.00	0.00	0.00
8,000.00	90.00	180.07	5,954.82	-2,095.59	-200.80	2,100.08	0.00	0.00	0.00
8,100.00	90.00	180.07	5,954.82	-2,195.59	-200.92	2,200.05	0.00	0.00	0.00
8,200.00	90.00	180.07	5,954.82	-2,295.59	-201.04	2,300.02	0.00	0.00	0.00
8,300.00	90.00	180.07	5,954.82	-2,395.59	-201.16	2,399.99	0.00	0.00	0.00
8,400.00	90.00	180.07	5,954.83	-2,495.59	-201.28	2,499.96	0.00	0.00	0.00
8,500.00	90.00	180.07	5,954.83	-2,595.59	-201.40	2,599.93	0.00	0.00	0.00
8,600.00	90.00	180.07	5,954.83	-2,695.59	-201.53	2,699.90	0.00	0.00	0.00
8,700.00	90.00	180.07	5,954.84	-2,795.59	-201.65	2,799.87	0.00	0.00	0.00
8,800.00	90.00	180.07	5,954.84	-2,895.59	-201.77	2,899.84	0.00	0.00	0.00
8,900.00	90.00	180.07	5,954.84	-2,995.59	-201.89	2,999.81	0.00	0.00	0.00
9,000.00	90.00	180.07	5,954.85	-3,095.59	-202.01	3,099.78	0.00	0.00	0.00
9,100.00	90.00	180.07	5,954.85	-3,195.59	-202.13	3,199.75	0.00	0.00	0.00
9,200.00	90.00	180.07	5,954.85	-3,295.59	-202.25	3,299.72	0.00	0.00	0.00
9,300.00	90.00	180.07	5,954.86	-3,395.59	-202.37	3,399.69	0.00	0.00	0.00
9,400.00	90.00	180.07	5,954.86	-3,495.59	-202.49	3,499.66	0.00	0.00	0.00
9,500.00	90.00	180.07	5,954.86	-3,595.59	-202.61	3,599.63	0.00	0.00	0.00
9,600.00	90.00	180.07	5,954.87	-3,695.59	-202.74	3,699.60	0.00	0.00	0.00
9,700.00	90.00	180.07	5,954.87	-3,795.59	-202.86	3,799.57	0.00	0.00	0.00
9,800.00	90.00	180.07	5,954.87	-3,895.59	-202.98	3,899.54	0.00	0.00	0.00
9,900.00	90.00	180.07	5,954.87	-3,995.59	-203.10	3,999.51	0.00	0.00	0.00
10,000.00	90.00	180.07	5,954.88	-4,095.59	-203.22	4,099.48	0.00	0.00	0.00



<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07E-1802C
<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 #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #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)	
10,100.00	90.00	180.07	5,954.88	-4,195.59	-203.34	4,199.45	0.00	0.00	0.00	
10,200.00	90.00	180.07	5,954.88	-4,295.59	-203.46	4,299.42	0.00	0.00	0.00	
10,300.00	90.00	180.07	5,954.89	-4,395.59	-203.58	4,399.38	0.00	0.00	0.00	
10,400.00	90.00	180.07	5,954.89	-4,495.59	-203.70	4,499.35	0.00	0.00	0.00	
10,500.00	90.00	180.07	5,954.89	-4,595.59	-203.82	4,599.32	0.00	0.00	0.00	
10,600.00	90.00	180.07	5,954.90	-4,695.59	-203.95	4,699.29	0.00	0.00	0.00	
10,700.00	90.00	180.07	5,954.90	-4,795.59	-204.07	4,799.26	0.00	0.00	0.00	
10,800.00	90.00	180.07	5,954.90	-4,895.59	-204.19	4,899.23	0.00	0.00	0.00	
10,900.00	90.00	180.07	5,954.91	-4,995.59	-204.31	4,999.20	0.00	0.00	0.00	
11,000.00	90.00	180.07	5,954.91	-5,095.59	-204.43	5,099.17	0.00	0.00	0.00	
11,100.00	90.00	180.07	5,954.91	-5,195.59	-204.55	5,199.14	0.00	0.00	0.00	
11,200.00	90.00	180.07	5,954.91	-5,295.59	-204.67	5,299.11	0.00	0.00	0.00	
11,300.00	90.00	180.07	5,954.92	-5,395.59	-204.79	5,399.08	0.00	0.00	0.00	
11,400.00	90.00	180.07	5,954.92	-5,495.59	-204.91	5,499.05	0.00	0.00	0.00	
11,500.00	90.00	180.07	5,954.92	-5,595.59	-205.03	5,599.02	0.00	0.00	0.00	
11,600.00	90.00	180.07	5,954.93	-5,695.59	-205.16	5,698.99	0.00	0.00	0.00	
11,700.00	90.00	180.07	5,954.93	-5,795.59	-205.28	5,798.96	0.00	0.00	0.00	
11,800.00	90.00	180.07	5,954.93	-5,895.59	-205.40	5,898.93	0.00	0.00	0.00	
11,900.00	90.00	180.07	5,954.94	-5,995.59	-205.52	5,998.90	0.00	0.00	0.00	
12,000.00	90.00	180.07	5,954.94	-6,095.59	-205.64	6,098.87	0.00	0.00	0.00	
12,100.00	90.00	180.07	5,954.94	-6,195.59	-205.76	6,198.84	0.00	0.00	0.00	
12,200.00	90.00	180.07	5,954.95	-6,295.59	-205.88	6,298.81	0.00	0.00	0.00	
12,300.00	90.00	180.07	5,954.95	-6,395.59	-206.00	6,398.78	0.00	0.00	0.00	
12,400.00	90.00	180.07	5,954.95	-6,495.59	-206.12	6,498.75	0.00	0.00	0.00	
12,500.00	90.00	180.07	5,954.96	-6,595.59	-206.24	6,598.72	0.00	0.00	0.00	
12,600.00	90.00	180.07	5,954.96	-6,695.59	-206.37	6,698.69	0.00	0.00	0.00	
12,700.00	90.00	180.07	5,954.96	-6,795.59	-206.49	6,798.66	0.00	0.00	0.00	
12,800.00	90.00	180.07	5,954.96	-6,895.59	-206.61	6,898.63	0.00	0.00	0.00	
12,900.00	90.00	180.07	5,954.97	-6,995.59	-206.73	6,998.60	0.00	0.00	0.00	
13,000.00	90.00	180.07	5,954.97	-7,095.59	-206.85	7,098.57	0.00	0.00	0.00	
13,100.00	90.00	180.07	5,954.97	-7,195.59	-206.97	7,198.54	0.00	0.00	0.00	
13,200.00	90.00	180.07	5,954.98	-7,295.59	-207.09	7,298.51	0.00	0.00	0.00	
13,300.00	90.00	180.07	5,954.98	-7,395.59	-207.21	7,398.47	0.00	0.00	0.00	
13,400.00	90.00	180.07	5,954.98	-7,495.59	-207.33	7,498.44	0.00	0.00	0.00	
13,500.00	90.00	180.07	5,954.99	-7,595.59	-207.45	7,598.41	0.00	0.00	0.00	
13,600.00	90.00	180.07	5,954.99	-7,695.59	-207.57	7,698.38	0.00	0.00	0.00	
13,700.00	90.00	180.07	5,954.99	-7,795.59	-207.70	7,798.35	0.00	0.00	0.00	
13,800.00	90.00	180.07	5,955.00	-7,895.59	-207.82	7,898.32	0.00	0.00	0.00	
13,900.00	90.00	180.07	5,955.00	-7,995.59	-207.94	7,998.29	0.00	0.00	0.00	
13,951.32	90.00	180.07	5,955.00	-8,046.91	-208.00	8,049.59	0.00	0.00	0.00	
TD at 13951.32' MD										
13,951.32	90.00	180.07	5,955.00	-8,046.91	-208.00	8,049.60	0.00	0.00	0.00	
PBHL 1802C										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		
- hit/miss target										
- Shape										
PBHL 1802C	0.00	0.00	5,955.00	-8,046.91	-208.00	1,550,400.39	3,469,896.26	40° 49' 54.760 N		
- plan hits target center										
- Point								103° 48' 6.845 W		



<b>Database:</b>	LandmarkEDM	<b>Local Co-ordinate Reference:</b>	Well Horsetail #07E-1802C
<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 #07E-1802C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,264.88	5,954.76	7"	7.000	7.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,555.78	1,550.00	Upper Pierre				
3,512.81	3,500.00	Hygiene				
3,662.81	3,650.00	Lower Pierre				
5,528.14	5,515.00	P200 Marker				
5,543.36	5,530.00	P300 Marker				
5,563.79	5,550.00	P350 Marker				
5,728.33	5,702.00	Sharon Springs				
5,734.18	5,707.00	Niobrara				
5,758.01	5,727.00	Top A Chalk				
5,804.23	5,764.00	Top A Marl				
5,829.30	5,783.00	A Marl				
5,841.55	5,792.00	Top Upper B				
5,881.61	5,820.00	Base Upper B				
5,907.67	5,837.00	Top Lower B				
5,940.54	5,857.00	Base Lower B				
5,952.74	5,864.00	Top B Marl				
6,057.45	5,914.00	Top C Chalk				
6,079.16	5,922.00	Middle C Chalk				
6,124.66	5,936.00	Middle C Marl				

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'
600.00	599.45	9.88	-12.20	Hold 6° Inc
2,738.00	2,725.74	150.52	-185.87	Drop 2°/100'
3,038.00	3,025.19	160.39	-198.07	Hold Vertical
5,446.70	5,433.89	160.39	-198.07	KOP, Build 11°/100'
6,264.88	5,954.76	-360.48	-198.07	LP @ 90° Inc, Hold
13,951.32	5,955.00	-8,046.91	-198.00	TD at 13951.32' MD