

# Whiting Oil & Gas

Well Name: **Razor 11-0241H**

Surface Location: Razor 11-0241H Pad Sec.11-T10N-R58W

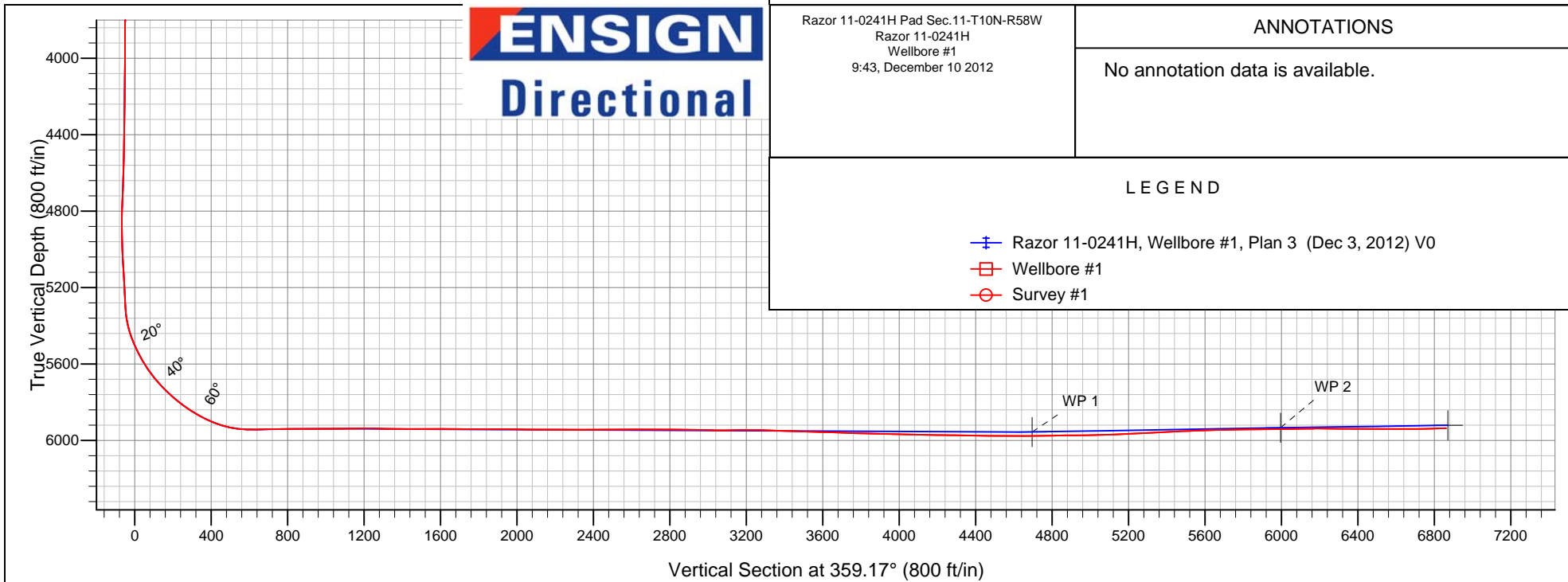
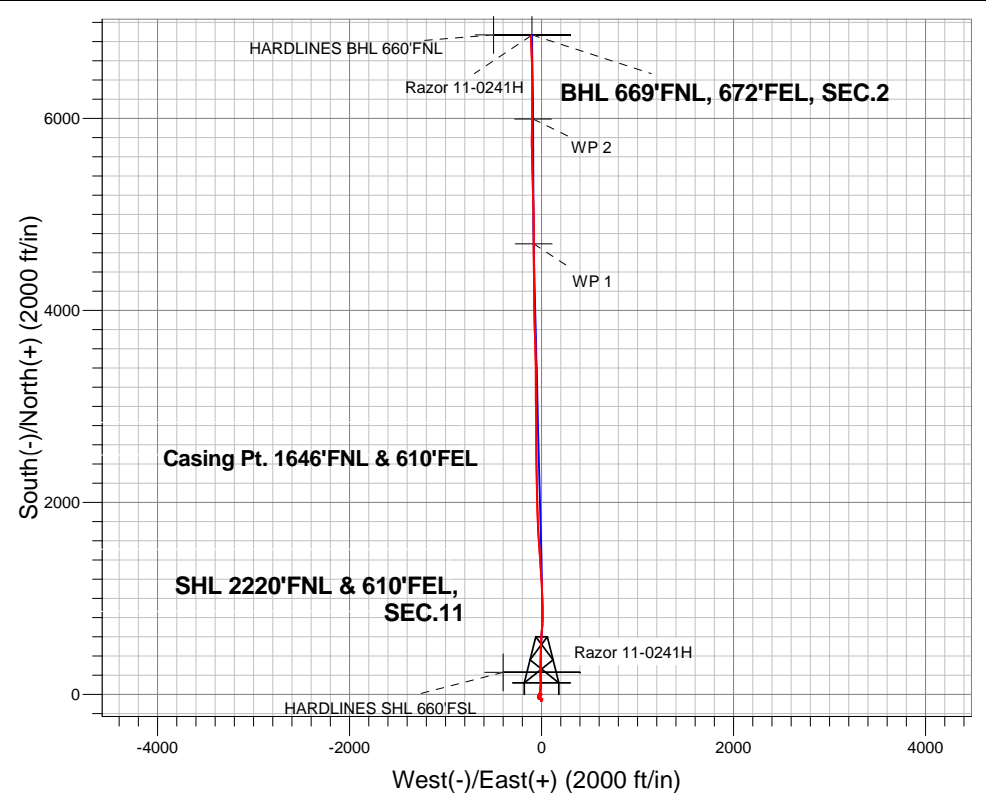
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4954.2

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1558533.36	3463230.04	40.854544	-103.825431	
(RKB - 16.5') WELL @ 4970.7ft ((RKB - 16.5'))						

## FINAL SURVEY

Projected Bottom Hole Location  
12562'MD 5936'TVD 6861'N & 111'W of SHL  
91.8 degree Incl @ 357.2 degree AZM





## **Whiting Oil & Gas**

**SEC.11-T10N-R58W**

**Razor 11-0241H Pad Sec.11-T10N-R58W**

**Razor 11-0241H**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**10 December, 2012**



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 11-0241H
<b>Project:</b>	SEC.11-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Site:</b>	Razor 11-0241H Pad Sec.11-T10N-R58W	<b>MD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Well:</b>	Razor 11-0241H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,072.0	0.70	218.80	1,071.6	7.9	-26.1	8.3	0.66	0.00	-56.00	
1,168.0	0.70	213.70	1,167.6	7.0	-26.8	7.4	0.06	0.00	-5.31	
1,267.0	0.80	181.20	1,266.6	5.8	-27.2	6.2	0.43	0.10	-32.83	
1,354.0	1.10	184.90	1,353.6	4.4	-27.2	4.7	0.35	0.34	4.25	
1,453.0	1.50	188.50	1,452.5	2.1	-27.5	2.5	0.41	0.40	3.64	
1,536.0	1.60	190.70	1,535.5	-0.1	-27.9	0.3	0.14	0.12	2.65	
1,629.0	2.30	197.30	1,628.4	-3.1	-28.7	-2.7	0.79	0.75	7.10	
1,722.0	2.70	194.00	1,721.4	-7.0	-29.8	-6.6	0.46	0.43	-3.55	
1,815.0	2.60	203.10	1,814.3	-11.1	-31.1	-10.7	0.46	-0.11	9.78	
1,860.0	2.60	204.90	1,859.2	-13.0	-32.0	-12.5	0.18	0.00	4.00	
1,924.0	2.70	199.70	1,923.1	-15.7	-33.1	-15.2	0.41	0.16	-8.13	
2,015.0	1.20	181.00	2,014.1	-18.7	-33.8	-18.2	1.77	-1.65	-20.55	
2,106.0	1.80	180.20	2,105.1	-21.1	-33.8	-20.6	0.66	0.66	-0.88	
2,199.0	2.80	211.10	2,198.0	-24.5	-35.0	-24.0	1.68	1.08	33.23	
2,294.0	1.40	133.40	2,292.9	-27.3	-35.4	-26.7	3.00	-1.47	-81.79	
2,389.0	1.90	145.50	2,387.9	-29.4	-33.6	-28.9	0.64	0.53	12.74	
2,484.0	2.50	139.70	2,482.8	-32.2	-31.4	-31.8	0.67	0.63	-6.11	
2,579.0	2.50	189.50	2,577.7	-35.9	-30.4	-35.4	2.22	0.00	52.42	
2,674.0	1.80	174.20	2,672.7	-39.4	-30.6	-38.9	0.95	-0.74	-16.11	
2,769.0	2.50	171.60	2,767.6	-42.9	-30.1	-42.5	0.74	0.74	-2.74	
2,864.0	2.60	83.00	2,862.5	-44.7	-27.7	-44.3	3.75	0.11	-93.26	
2,959.0	2.40	93.70	2,957.5	-44.6	-23.6	-44.2	0.53	-0.21	11.26	
3,054.0	2.50	89.10	3,052.4	-44.7	-19.5	-44.4	0.23	0.11	-4.84	
3,149.0	2.40	94.60	3,147.3	-44.8	-15.5	-44.6	0.27	-0.11	5.79	
3,248.0	1.90	98.20	3,246.2	-45.2	-11.8	-45.0	0.52	-0.51	3.64	
3,343.0	1.40	107.00	3,341.2	-45.8	-9.1	-45.6	0.59	-0.53	9.26	
3,438.0	1.20	118.50	3,436.1	-46.6	-7.1	-46.5	0.35	-0.21	12.11	
3,533.0	1.30	119.30	3,531.1	-47.6	-5.3	-47.5	0.11	0.11	0.84	
3,628.0	1.50	112.10	3,626.1	-48.6	-3.2	-48.5	0.28	0.21	-7.58	
3,722.0	1.80	101.20	3,720.1	-49.3	-0.6	-49.3	0.46	0.32	-11.60	
3,817.0	2.10	92.60	3,815.0	-49.7	2.6	-49.7	0.44	0.32	-9.05	
3,912.0	2.20	87.00	3,909.9	-49.7	6.1	-49.8	0.24	0.11	-5.89	
4,007.0	0.80	210.80	4,004.9	-50.1	7.6	-50.3	2.87	-1.47	130.32	
4,101.0	0.60	202.00	4,098.9	-51.2	7.1	-51.3	0.24	-0.21	-9.36	
4,196.0	0.60	192.80	4,193.9	-52.1	6.8	-52.2	0.10	0.00	-9.68	
4,291.0	0.70	199.00	4,288.9	-53.1	6.5	-53.2	0.13	0.11	6.53	
4,386.0	1.00	208.60	4,383.9	-54.4	5.9	-54.5	0.35	0.32	10.11	
4,482.0	1.10	219.00	4,479.9	-55.9	4.9	-55.9	0.22	0.10	10.83	
4,577.0	1.90	204.90	4,574.8	-58.0	3.7	-58.1	0.92	0.84	-14.84	
4,672.0	2.40	199.70	4,669.8	-61.3	2.4	-61.3	0.56	0.53	-5.47	
4,767.0	2.90	214.80	4,764.7	-65.2	0.3	-65.2	0.90	0.53	15.89	
4,862.0	1.10	282.60	4,859.6	-66.9	-1.9	-66.9	2.83	-1.89	71.37	
4,957.0	1.10	34.10	4,954.6	-66.0	-2.3	-65.9	1.91	0.00	117.37	
5,052.0	3.80	339.10	5,049.5	-62.3	-2.9	-62.2	3.47	2.84	-57.89	
5,147.0	3.50	341.40	5,144.3	-56.6	-5.0	-56.5	0.35	-0.32	2.42	
5,242.0	2.90	336.30	5,239.2	-51.6	-6.9	-51.5	0.70	-0.63	-5.37	
5,274.0	3.00	337.00	5,271.1	-50.1	-7.5	-50.0	0.33	0.31	2.19	
5,305.0	3.40	334.70	5,302.1	-48.6	-8.2	-48.4	1.35	1.29	-7.42	
5,337.0	6.00	338.90	5,334.0	-46.1	-9.2	-46.0	8.19	8.13	13.13	
5,369.0	9.90	344.50	5,365.7	-41.9	-10.6	-41.8	12.41	12.19	17.50	
5,401.0	12.90	351.00	5,397.0	-35.7	-11.9	-35.6	10.18	9.38	20.31	
5,433.0	16.70	354.20	5,428.0	-27.6	-12.9	-27.4	12.14	11.88	10.00	
5,464.0	19.80	358.20	5,457.4	-18.0	-13.5	-17.8	10.78	10.00	12.90	
5,496.0	22.20	358.90	5,487.3	-6.5	-13.8	-6.3	7.54	7.50	2.19	

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<b>Site:</b>	Razor 11-0241H Pad Sec.11-T10N-R58W	<b>MD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Well:</b>	Razor 11-0241H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

## Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,528.0	25.00	359.10	5,516.6	6.3	-14.0	6.5	8.75	8.75	0.63
5,559.0	27.50	0.30	5,544.4	20.0	-14.1	20.2	8.24	8.06	3.87
5,591.0	29.10	3.20	5,572.6	35.2	-13.6	35.4	6.59	5.00	9.06
5,623.0	31.50	4.60	5,600.2	51.3	-12.5	51.5	7.82	7.50	4.38
5,655.0	34.50	6.10	5,627.0	68.6	-10.9	68.8	9.72	9.38	4.69
5,687.0	37.10	4.20	5,653.0	87.3	-9.2	87.4	8.84	8.13	-5.94
5,718.0	39.30	2.80	5,677.3	106.4	-8.0	106.5	7.63	7.10	-4.52
5,750.0	41.20	0.50	5,701.8	127.1	-7.4	127.2	7.54	5.94	-7.19
5,782.0	44.40	0.30	5,725.2	148.8	-7.3	148.9	10.01	10.00	-0.63
5,813.0	46.80	359.10	5,746.9	171.0	-7.4	171.0	8.22	7.74	-3.87
5,845.0	48.80	358.80	5,768.4	194.7	-7.9	194.8	6.29	6.25	-0.94
5,876.0	50.70	358.40	5,788.5	218.3	-8.4	218.4	6.21	6.13	-1.29
5,908.0	52.40	358.20	5,808.4	243.4	-9.2	243.5	5.34	5.31	-0.63
5,940.0	54.80	358.40	5,827.3	269.1	-9.9	269.2	7.52	7.50	0.63
5,971.0	57.10	359.10	5,844.7	294.8	-10.5	294.9	7.65	7.42	2.26
6,003.0	59.60	0.20	5,861.5	322.0	-10.7	322.1	8.34	7.81	3.44
6,035.0	62.30	0.00	5,877.0	350.0	-10.6	350.1	8.46	8.44	-0.63
6,066.0	65.10	1.90	5,890.8	377.8	-10.1	377.9	10.57	9.03	6.13
6,098.0	67.70	2.40	5,903.6	407.1	-9.0	407.2	8.25	8.13	1.56
6,130.0	70.40	2.80	5,915.0	436.9	-7.7	437.0	8.52	8.44	1.25
6,162.0	73.90	2.80	5,924.8	467.3	-6.2	467.4	10.94	10.94	0.00
6,194.0	77.70	2.40	5,932.7	498.3	-4.8	498.3	11.94	11.88	-1.25
6,225.0	82.00	3.70	5,938.1	528.8	-3.2	528.8	14.47	13.87	4.19
6,270.0	87.80	3.50	5,942.1	573.5	-0.4	573.4	12.90	12.89	-0.44
6,351.0	90.90	3.40	5,943.0	654.3	4.5	654.2	3.83	3.83	-0.12
6,383.0	91.50	3.00	5,942.4	686.3	6.3	686.1	2.25	1.88	-1.25
6,415.0	91.70	2.00	5,941.5	718.2	7.7	718.1	3.19	0.63	-3.13
6,446.0	90.70	2.00	5,940.8	749.2	8.8	749.0	3.23	-3.23	0.00
6,478.0	91.20	1.20	5,940.3	781.2	9.7	781.0	2.95	1.56	-2.50
6,510.0	90.90	1.20	5,939.7	813.2	10.3	813.0	0.94	-0.94	0.00
6,542.0	90.30	0.20	5,939.4	845.2	10.7	844.9	3.64	-1.88	-3.13
6,573.0	90.00	359.10	5,939.3	876.2	10.5	875.9	3.68	-0.97	-3.55
6,605.0	89.20	0.00	5,939.5	908.2	10.3	907.9	3.76	-2.50	2.81
6,637.0	89.70	358.80	5,939.8	940.2	10.0	939.9	4.06	1.56	-3.75
6,668.0	90.30	359.10	5,939.8	971.2	9.4	970.9	2.16	1.94	0.97
6,700.0	90.80	359.30	5,939.5	1,003.2	8.9	1,002.9	1.68	1.56	0.63
6,732.0	90.30	357.90	5,939.2	1,035.2	8.2	1,034.9	4.65	-1.56	-4.38
6,763.0	90.70	357.40	5,938.9	1,066.1	6.9	1,065.9	2.07	1.29	-1.61
6,795.0	91.20	357.60	5,938.4	1,098.1	5.5	1,097.9	1.68	1.56	0.63
6,827.0	90.70	356.50	5,937.9	1,130.0	3.8	1,129.9	3.78	-1.56	-3.44
6,858.0	90.40	355.80	5,937.6	1,161.0	1.8	1,160.8	2.46	-0.97	-2.26
6,890.0	90.70	356.70	5,937.3	1,192.9	-0.3	1,192.8	2.96	0.94	2.81
6,922.0	89.10	355.80	5,937.3	1,224.8	-2.4	1,224.7	5.74	-5.00	-2.81
6,953.0	88.00	356.70	5,938.1	1,255.8	-4.4	1,255.7	4.58	-3.55	2.90
6,985.0	88.50	356.30	5,939.1	1,287.7	-6.4	1,287.6	2.00	1.56	-1.25
7,017.0	88.60	355.80	5,939.9	1,319.6	-8.6	1,319.6	1.59	0.31	-1.56
7,049.0	89.90	356.00	5,940.3	1,351.5	-10.9	1,351.5	4.11	4.06	0.63
7,080.0	90.80	356.00	5,940.1	1,382.4	-13.1	1,382.5	2.90	2.90	0.00
7,112.0	89.80	356.00	5,940.0	1,414.4	-15.3	1,414.4	3.13	-3.13	0.00
7,144.0	89.00	356.90	5,940.3	1,446.3	-17.3	1,446.4	3.76	-2.50	2.81
7,176.0	89.80	356.70	5,940.6	1,478.2	-19.1	1,478.4	2.58	2.50	-0.63
7,207.0	90.80	357.20	5,940.5	1,509.2	-20.7	1,509.3	3.61	3.23	1.61
7,239.0	89.60	357.00	5,940.4	1,541.1	-22.3	1,541.3	3.80	-3.75	-0.63
7,271.0	89.80	356.30	5,940.5	1,573.1	-24.2	1,573.3	2.28	0.63	-2.19

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7,302.0	89.70	356.50	5,940.7	1,604.0	-26.1	1,604.2	0.72	-0.32	0.65
7,334.0	90.00	356.20	5,940.8	1,636.0	-28.2	1,636.2	1.33	0.94	-0.94
7,366.0	90.00	355.80	5,940.8	1,667.9	-30.4	1,668.2	1.25	0.00	-1.25
7,398.0	89.60	355.80	5,940.9	1,699.8	-32.7	1,700.1	1.25	-1.25	0.00
7,429.0	89.60	355.80	5,941.1	1,730.7	-35.0	1,731.0	0.00	0.00	0.00
7,461.0	89.40	357.20	5,941.4	1,762.7	-37.0	1,763.0	4.42	-0.63	4.38
7,492.0	90.30	357.60	5,941.4	1,793.6	-38.4	1,794.0	3.18	2.90	1.29
7,524.0	90.10	358.60	5,941.3	1,825.6	-39.4	1,826.0	3.19	-0.63	3.13
7,555.0	90.00	358.10	5,941.3	1,856.6	-40.3	1,857.0	1.64	-0.32	-1.61
7,586.0	89.70	358.30	5,941.4	1,887.6	-41.3	1,888.0	1.16	-0.97	0.65
7,617.0	90.00	358.30	5,941.5	1,918.6	-42.2	1,919.0	0.97	0.97	0.00
7,648.0	88.90	358.40	5,941.8	1,949.5	-43.1	1,950.0	3.56	-3.55	0.32
7,678.0	88.90	357.60	5,942.3	1,979.5	-44.2	1,980.0	2.67	0.00	-2.67
7,709.0	88.20	357.90	5,943.1	2,010.5	-45.4	2,010.9	2.46	-2.26	0.97
7,740.0	89.20	359.70	5,943.8	2,041.5	-46.0	2,041.9	6.64	3.23	5.81
7,771.0	89.50	359.70	5,944.2	2,072.5	-46.2	2,072.9	0.97	0.97	0.00
7,802.0	89.40	358.60	5,944.5	2,103.5	-46.7	2,103.9	3.56	-0.32	-3.55
7,833.0	90.40	358.80	5,944.5	2,134.5	-47.4	2,134.9	3.29	3.23	0.65
7,864.0	90.70	358.40	5,944.2	2,165.4	-48.1	2,165.9	1.61	0.97	-1.29
7,895.0	90.40	359.00	5,943.9	2,196.4	-48.8	2,196.9	2.16	-0.97	1.94
7,926.0	90.20	358.60	5,943.8	2,227.4	-49.5	2,227.9	1.44	-0.65	-1.29
7,956.0	90.40	358.10	5,943.6	2,257.4	-50.3	2,257.9	1.80	0.67	-1.67
7,987.0	89.60	359.10	5,943.6	2,288.4	-51.1	2,288.9	4.13	-2.58	3.23
8,017.0	90.20	358.80	5,943.7	2,318.4	-51.6	2,318.9	2.24	2.00	-1.00
8,047.0	90.30	359.30	5,943.5	2,348.4	-52.1	2,348.9	1.70	0.33	1.67
8,078.0	90.50	359.50	5,943.3	2,379.4	-52.5	2,379.9	0.91	0.65	0.65
8,109.0	90.40	0.40	5,943.1	2,410.4	-52.5	2,410.9	2.92	-0.32	2.90
8,140.0	90.00	359.50	5,943.0	2,441.4	-52.5	2,441.9	3.18	-1.29	-2.90
8,171.0	90.50	359.70	5,942.8	2,472.4	-52.7	2,472.9	1.74	1.61	0.65
8,202.0	90.00	0.00	5,942.7	2,503.4	-52.8	2,503.9	1.88	-1.61	0.97
8,233.0	90.10	0.40	5,942.7	2,534.4	-52.7	2,534.9	1.33	0.32	1.29
8,264.0	90.40	359.30	5,942.5	2,565.4	-52.8	2,565.9	3.68	0.97	-3.55
8,295.0	89.90	359.80	5,942.5	2,596.4	-53.0	2,596.9	2.28	-1.61	1.61
8,326.0	90.10	359.50	5,942.5	2,627.4	-53.2	2,627.9	1.16	0.65	-0.97
8,356.0	89.50	0.00	5,942.6	2,657.4	-53.3	2,657.9	2.60	-2.00	1.67
8,387.0	89.80	0.20	5,942.8	2,688.4	-53.3	2,688.9	1.16	0.97	0.65
8,418.0	89.90	0.50	5,942.8	2,719.4	-53.1	2,719.9	1.02	0.32	0.97
8,449.0	90.00	0.70	5,942.9	2,750.4	-52.8	2,750.9	0.72	0.32	0.65
8,480.0	88.90	0.00	5,943.2	2,781.4	-52.6	2,781.9	4.21	-3.55	-2.26
8,510.0	89.00	0.00	5,943.7	2,811.4	-52.6	2,811.8	0.33	0.33	0.00
8,540.0	89.20	359.50	5,944.2	2,841.4	-52.7	2,841.8	1.79	0.67	-1.67
8,572.0	89.40	359.00	5,944.6	2,873.4	-53.1	2,873.8	1.68	0.63	-1.56
8,603.0	89.50	359.00	5,944.9	2,904.4	-53.7	2,904.8	0.32	0.32	0.00
8,634.0	89.30	358.80	5,945.2	2,935.4	-54.3	2,935.8	0.91	-0.65	-0.65
8,665.0	88.80	359.30	5,945.7	2,966.3	-54.8	2,966.8	2.28	-1.61	1.61
8,695.0	88.70	357.90	5,946.4	2,996.3	-55.5	2,996.8	4.68	-0.33	-4.67
8,726.0	88.50	358.30	5,947.1	3,027.3	-56.6	3,027.8	1.44	-0.65	1.29
8,757.0	89.90	357.60	5,947.5	3,058.3	-57.7	3,058.8	5.05	4.52	-2.26
8,788.0	90.50	358.30	5,947.4	3,089.3	-58.8	3,089.8	2.97	1.94	2.26
8,819.0	90.90	359.70	5,947.1	3,120.3	-59.3	3,120.8	4.70	1.29	4.52
8,850.0	90.40	0.90	5,946.7	3,151.2	-59.1	3,151.8	4.19	-1.61	3.87
8,881.0	90.90	359.80	5,946.4	3,182.2	-59.0	3,182.8	3.90	1.61	-3.55
8,912.0	90.60	359.80	5,946.0	3,213.2	-59.1	3,213.8	0.97	-0.97	0.00
8,943.0	89.30	0.00	5,946.0	3,244.2	-59.1	3,244.8	4.24	-4.19	0.65

<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 11-0241H
<b>Project:</b>	SEC.11-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Site:</b>	Razor 11-0241H Pad Sec.11-T10N-R58W	<b>MD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Well:</b>	Razor 11-0241H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,974.0	88.20	0.00	5,946.7	3,275.2	-59.1	3,275.7	3.55	-3.55	0.00
9,005.0	88.00	0.20	5,947.7	3,306.2	-59.1	3,306.7	0.91	-0.65	0.65
9,035.0	88.50	0.00	5,948.6	3,336.2	-59.0	3,336.7	1.79	1.67	-0.67
9,066.0	88.70	0.70	5,949.4	3,367.2	-58.8	3,367.7	2.35	0.65	2.26
9,097.0	88.10	359.50	5,950.2	3,398.2	-58.8	3,398.7	4.33	-1.94	-3.87
9,128.0	87.80	359.50	5,951.3	3,429.2	-59.0	3,429.7	0.97	-0.97	0.00
9,158.0	87.80	359.00	5,952.5	3,459.1	-59.4	3,459.6	1.67	0.00	-1.67
9,189.0	88.30	358.80	5,953.5	3,490.1	-60.0	3,490.6	1.74	1.61	-0.65
9,220.0	88.40	358.60	5,954.4	3,521.1	-60.7	3,521.6	0.72	0.32	-0.65
9,251.0	88.70	359.80	5,955.2	3,552.1	-61.2	3,552.6	3.99	0.97	3.87
9,281.0	88.10	358.30	5,956.1	3,582.1	-61.7	3,582.6	5.38	-2.00	-5.00
9,312.0	88.30	357.90	5,957.0	3,613.0	-62.7	3,613.6	1.44	0.65	-1.29
9,343.0	88.20	358.60	5,958.0	3,644.0	-63.6	3,644.5	2.28	-0.32	2.26
9,374.0	87.20	356.90	5,959.2	3,674.9	-64.8	3,675.5	6.36	-3.23	-5.48
9,405.0	87.50	357.40	5,960.7	3,705.9	-66.4	3,706.4	1.88	0.97	1.61
9,435.0	89.00	357.60	5,961.6	3,735.8	-67.7	3,736.4	5.04	5.00	0.67
9,466.0	88.80	357.20	5,962.2	3,766.8	-69.1	3,767.4	1.44	-0.65	-1.29
9,497.0	88.00	357.20	5,963.0	3,797.7	-70.6	3,798.4	2.58	-2.58	0.00
9,528.0	88.20	359.00	5,964.1	3,828.7	-71.6	3,829.3	5.84	0.65	5.81
9,559.0	88.50	359.70	5,964.9	3,859.7	-72.0	3,860.3	2.46	0.97	2.26
9,589.0	88.60	359.00	5,965.7	3,889.7	-72.3	3,890.3	2.36	0.33	-2.33
9,620.0	89.00	359.00	5,966.4	3,920.7	-72.9	3,921.3	1.29	1.29	0.00
9,651.0	89.10	359.50	5,966.9	3,951.7	-73.3	3,952.3	1.64	0.32	1.61
9,682.0	88.40	358.10	5,967.5	3,982.6	-73.9	3,983.3	5.05	-2.26	-4.52
9,712.0	88.70	358.60	5,968.3	4,012.6	-74.8	4,013.3	1.94	1.00	1.67
9,743.0	88.60	359.10	5,969.0	4,043.6	-75.4	4,044.3	1.64	-0.32	1.61
9,774.0	88.60	359.70	5,969.8	4,074.6	-75.7	4,075.3	1.93	0.00	1.94
9,805.0	88.70	359.50	5,970.5	4,105.6	-76.0	4,106.3	0.72	0.32	-0.65
9,836.0	88.90	359.10	5,971.2	4,136.6	-76.3	4,137.3	1.44	0.65	-1.29
9,867.0	89.30	359.80	5,971.7	4,167.6	-76.6	4,168.2	2.60	1.29	2.26
9,898.0	89.30	359.70	5,972.0	4,198.6	-76.8	4,199.2	0.32	0.00	-0.32
9,929.0	89.30	359.00	5,972.4	4,229.6	-77.1	4,230.2	2.26	0.00	-2.26
9,960.0	89.20	358.80	5,972.8	4,260.6	-77.7	4,261.2	0.72	-0.32	-0.65
9,991.0	89.10	359.00	5,973.3	4,291.6	-78.3	4,292.2	0.72	-0.32	0.65
10,021.0	88.70	359.50	5,973.9	4,321.5	-78.7	4,322.2	2.13	-1.33	1.67
10,052.0	88.60	359.30	5,974.6	4,352.5	-79.0	4,353.2	0.72	-0.32	-0.65
10,083.0	88.70	359.50	5,975.3	4,383.5	-79.4	4,384.2	0.72	0.32	0.65
10,113.0	89.30	359.80	5,975.8	4,413.5	-79.5	4,414.2	2.24	2.00	1.00
10,144.0	89.50	359.80	5,976.2	4,444.5	-79.6	4,445.2	0.65	0.65	0.00
10,175.0	89.80	0.00	5,976.4	4,475.5	-79.7	4,476.2	1.16	0.97	0.65
10,206.0	89.90	359.80	5,976.4	4,506.5	-79.8	4,507.2	0.72	0.32	-0.65
10,237.0	89.80	359.50	5,976.5	4,537.5	-79.9	4,538.2	1.02	-0.32	-0.97
10,268.0	89.90	359.70	5,976.6	4,568.5	-80.2	4,569.2	0.72	0.32	0.65
10,299.0	89.80	359.30	5,976.7	4,599.5	-80.4	4,600.2	1.33	-0.32	-1.29
10,330.0	89.80	359.50	5,976.8	4,630.5	-80.8	4,631.2	0.65	0.00	0.65
10,361.0	89.90	0.00	5,976.9	4,661.5	-80.9	4,662.2	1.64	0.32	1.61
10,392.0	90.10	0.50	5,976.9	4,692.5	-80.8	4,693.2	1.74	0.65	1.61
10,394.8	90.12	0.46	5,976.9	4,695.4	-80.7	4,696.0	1.68	0.63	-1.56
WP 1									
10,424.0	90.30	0.00	5,976.8	4,724.5	-80.6	4,725.2	1.68	0.62	-1.56
10,455.0	90.30	0.00	5,976.6	4,755.5	-80.6	4,756.2	0.00	0.00	0.00
10,487.0	90.70	359.80	5,976.3	4,787.5	-80.7	4,788.2	1.40	1.25	-0.63
10,519.0	91.50	358.80	5,975.7	4,819.5	-81.1	4,820.2	4.00	2.50	-3.13
10,551.0	91.90	359.10	5,974.8	4,851.5	-81.6	4,852.2	1.56	1.25	0.94



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 11-0241H
<b>Project:</b>	SEC.11-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Site:</b>	Razor 11-0241H Pad Sec.11-T10N-R58W	<b>MD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Well:</b>	Razor 11-0241H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,582.0	90.70	359.70	5,974.1	4,882.5	-82.0	4,883.1	4.33	-3.87	1.94
10,614.0	90.50	359.30	5,973.7	4,914.5	-82.3	4,915.1	1.40	-0.63	-1.25
10,645.0	90.70	359.80	5,973.4	4,945.5	-82.5	4,946.1	1.74	0.65	1.61
10,677.0	91.10	359.50	5,972.9	4,977.5	-82.7	4,978.1	1.56	1.25	-0.94
10,709.0	90.50	359.50	5,972.4	5,009.5	-83.0	5,010.1	1.88	-1.88	0.00
10,740.0	91.20	359.30	5,972.0	5,040.4	-83.3	5,041.1	2.35	2.26	-0.65
10,772.0	91.90	359.50	5,971.1	5,072.4	-83.6	5,073.1	2.27	2.19	0.63
10,804.0	91.60	358.80	5,970.1	5,104.4	-84.1	5,105.1	2.38	-0.94	-2.19
10,835.0	92.10	359.10	5,969.1	5,135.4	-84.7	5,136.1	1.88	1.61	0.97
10,867.0	92.30	358.10	5,967.9	5,167.4	-85.5	5,168.1	3.18	0.63	-3.13
10,899.0	92.70	358.10	5,966.5	5,199.3	-86.5	5,200.0	1.25	1.25	0.00
10,930.0	93.40	358.60	5,964.9	5,230.3	-87.4	5,231.0	2.77	2.26	1.61
10,962.0	93.60	357.90	5,962.9	5,262.2	-88.4	5,262.9	2.27	0.63	-2.19
10,994.0	93.00	358.10	5,961.1	5,294.1	-89.5	5,294.8	1.98	-1.88	0.63
11,025.0	93.00	357.70	5,959.4	5,325.0	-90.6	5,325.8	1.29	0.00	-1.29
11,057.0	92.60	358.40	5,957.9	5,357.0	-91.7	5,357.8	2.52	-1.25	2.19
11,089.0	92.90	358.80	5,956.3	5,388.9	-92.5	5,389.7	1.56	0.94	1.25
11,120.0	92.80	358.30	5,954.8	5,419.9	-93.3	5,420.7	1.64	-0.32	-1.61
11,152.0	92.90	358.10	5,953.2	5,451.8	-94.3	5,452.6	0.70	0.31	-0.63
11,184.0	91.80	358.80	5,951.9	5,483.8	-95.1	5,484.6	4.07	-3.44	2.19
11,215.0	92.20	358.80	5,950.8	5,514.8	-95.8	5,515.6	1.29	1.29	0.00
11,247.0	92.70	358.10	5,949.5	5,546.7	-96.7	5,547.5	2.69	1.56	-2.19
11,279.0	91.80	357.90	5,948.2	5,578.7	-97.8	5,579.5	2.88	-2.81	-0.63
11,310.0	91.20	359.10	5,947.4	5,609.7	-98.6	5,610.5	4.33	-1.94	3.87
11,342.0	91.30	358.40	5,946.7	5,641.6	-99.3	5,642.5	2.21	0.31	-2.19
11,374.0	91.50	358.30	5,945.9	5,673.6	-100.2	5,674.5	0.70	0.63	-0.31
11,405.0	91.90	358.40	5,945.0	5,704.6	-101.1	5,705.5	1.33	1.29	0.32
11,437.0	91.50	359.50	5,944.0	5,736.6	-101.7	5,737.4	3.66	-1.25	3.44
11,468.0	91.10	0.90	5,943.3	5,767.6	-101.6	5,768.4	4.70	-1.29	4.52
11,500.0	91.00	0.40	5,942.7	5,799.6	-101.2	5,800.4	1.59	-0.31	-1.56
11,532.0	90.40	1.60	5,942.4	5,831.6	-100.7	5,832.4	4.19	-1.88	3.75
11,564.0	90.20	0.90	5,942.2	5,863.5	-100.0	5,864.4	2.28	-0.63	-2.19
11,595.0	90.40	1.40	5,942.0	5,894.5	-99.3	5,895.4	1.74	0.65	1.61
11,627.0	90.10	0.50	5,941.9	5,926.5	-98.8	5,927.3	2.96	-0.94	-2.81
11,658.0	90.50	1.40	5,941.7	5,957.5	-98.3	5,958.3	3.18	1.29	2.90
11,690.0	90.60	0.00	5,941.4	5,989.5	-97.9	5,990.3	4.39	0.31	-4.38
11,696.0	90.64	0.09	5,941.4	5,995.5	-97.9	5,996.3	1.68	0.63	1.56
<b>WP 2</b>									
11,722.0	90.80	0.50	5,941.0	6,021.5	-97.8	6,022.3	1.68	0.62	1.56
11,753.0	90.90	359.80	5,940.6	6,052.5	-97.7	6,053.3	2.28	0.32	-2.26
11,785.0	90.70	0.40	5,940.1	6,084.5	-97.6	6,085.3	1.98	-0.63	1.88
11,817.0	91.10	0.90	5,939.6	6,116.5	-97.3	6,117.3	2.00	1.25	1.56
11,848.0	91.50	1.10	5,938.9	6,147.5	-96.7	6,148.3	1.44	1.29	0.65
11,880.0	90.50	0.90	5,938.4	6,179.5	-96.2	6,180.2	3.19	-3.13	-0.63
11,911.0	90.30	359.70	5,938.1	6,210.5	-96.0	6,211.2	3.92	-0.65	-3.87
11,943.0	89.00	0.20	5,938.3	6,242.5	-96.0	6,243.2	4.35	-4.06	1.56
11,975.0	88.60	0.00	5,939.0	6,274.5	-96.0	6,275.2	1.40	-1.25	-0.63
12,006.0	89.00	0.00	5,939.7	6,305.5	-96.0	6,306.2	1.29	1.29	0.00
12,038.0	89.10	359.50	5,940.2	6,337.5	-96.1	6,338.2	1.59	0.31	-1.56
12,069.0	89.60	359.50	5,940.5	6,368.5	-96.4	6,369.2	1.61	1.61	0.00
12,101.0	89.90	359.30	5,940.7	6,400.5	-96.7	6,401.2	1.13	0.94	-0.63
12,132.0	89.80	359.00	5,940.8	6,431.5	-97.2	6,432.2	1.02	-0.32	-0.97
12,164.0	90.20	359.30	5,940.8	6,463.5	-97.7	6,464.2	1.56	1.25	0.94
12,195.0	90.70	359.80	5,940.5	6,494.4	-97.9	6,495.2	2.28	1.61	1.61



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 11-0241H
<b>Project:</b>	SEC.11-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Site:</b>	Razor 11-0241H Pad Sec.11-T10N-R58W	<b>MD Reference:</b>	WELL @ 4970.7ft ((RKB - 16.5'))
<b>Well:</b>	Razor 11-0241H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,227.0	90.70	358.80	5,940.1	6,526.4	-98.3	6,527.2	3.12	0.00	-3.13	
12,259.0	89.70	359.00	5,940.0	6,558.4	-98.9	6,559.2	3.19	-3.13	0.63	
12,290.0	89.40	358.30	5,940.3	6,589.4	-99.6	6,590.2	2.46	-0.97	-2.26	
12,322.0	89.80	358.10	5,940.5	6,621.4	-100.6	6,622.2	1.40	1.25	-0.63	
12,354.0	89.90	357.60	5,940.6	6,653.4	-101.8	6,654.2	1.59	0.31	-1.56	
12,385.0	90.20	358.30	5,940.5	6,684.4	-102.9	6,685.2	2.46	0.97	2.26	
12,417.0	90.90	357.90	5,940.2	6,716.3	-104.0	6,717.2	2.52	2.19	-1.25	
12,449.0	91.20	357.70	5,939.6	6,748.3	-105.2	6,749.1	1.13	0.94	-0.63	
12,480.0	91.60	357.00	5,938.9	6,779.3	-106.7	6,780.1	2.60	1.29	-2.26	
12,512.0	91.80	357.20	5,937.9	6,811.2	-108.3	6,812.1	0.88	0.63	0.63	
12,562.0	91.80	357.20	5,936.4	6,861.1	-110.7	6,862.0	0.00	0.00	0.00	
HARDLINES BHL 660'FNL - BHL 660'FNL, 660'FEL, SEC.2										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude		Longitude
HARDLINES BHL 660'	0.00	0.00	1.0	6,870.0	-499.0	1,565,392.79	3,462,601.40	40.873400		-103.827235
- survey misses target center by 5948.1ft at 12562.0ft MD (5936.4 TVD, 6861.1 N, -110.7 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,565,392.79	3,462,601.40			
Point 2			1.0	0.0	800.0	1,565,407.90	3,463,401.26			
HARDLINES SHL 660'	0.00	0.00	1.0	230.0	-400.0	1,558,755.77	3,462,825.77	40.855175		-103.826877
- survey misses target center by 461.4ft at 1.3ft MD (1.3 TVD, 0.0 N, 0.0 E)										
- Polygon										
Point 1			1.0	0.0	0.0	1,558,755.77	3,462,825.77			
Point 2			1.0	0.0	800.0	1,558,770.88	3,463,625.63			
BHL 660'FNL, 660'FE	0.00	0.00	5,921.0	6,870.0	-99.0	1,565,400.38	3,463,001.32	40.873400		-103.825789
- survey misses target center by 21.3ft at 12562.0ft MD (5936.4 TVD, 6861.1 N, -110.7 E)										
- Point										
WP 2	0.00	0.00	5,934.0	5,995.4	-86.9	1,564,526.09	3,463,029.99	40.870999		-103.825745
- survey misses target center by 13.3ft at 11695.9ft MD (5941.4 TVD, 5995.5 N, -97.9 E)										
- Point										
WP 1	0.00	0.00	5,956.0	4,695.3	-82.0	1,563,226.31	3,463,059.44	40.867431		-103.825727
- survey misses target center by 20.9ft at 10394.8ft MD (5976.9 TVD, 4695.3 N, -80.7 E)										
- Point										

Checked By: _____	Approved By: _____	Date: _____
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