

Whiting Oil & Gas

Well Name: **Razor 27-3414H**

Surface Location: Razor 27-3414H Pad Sec.27-T10N-R58W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

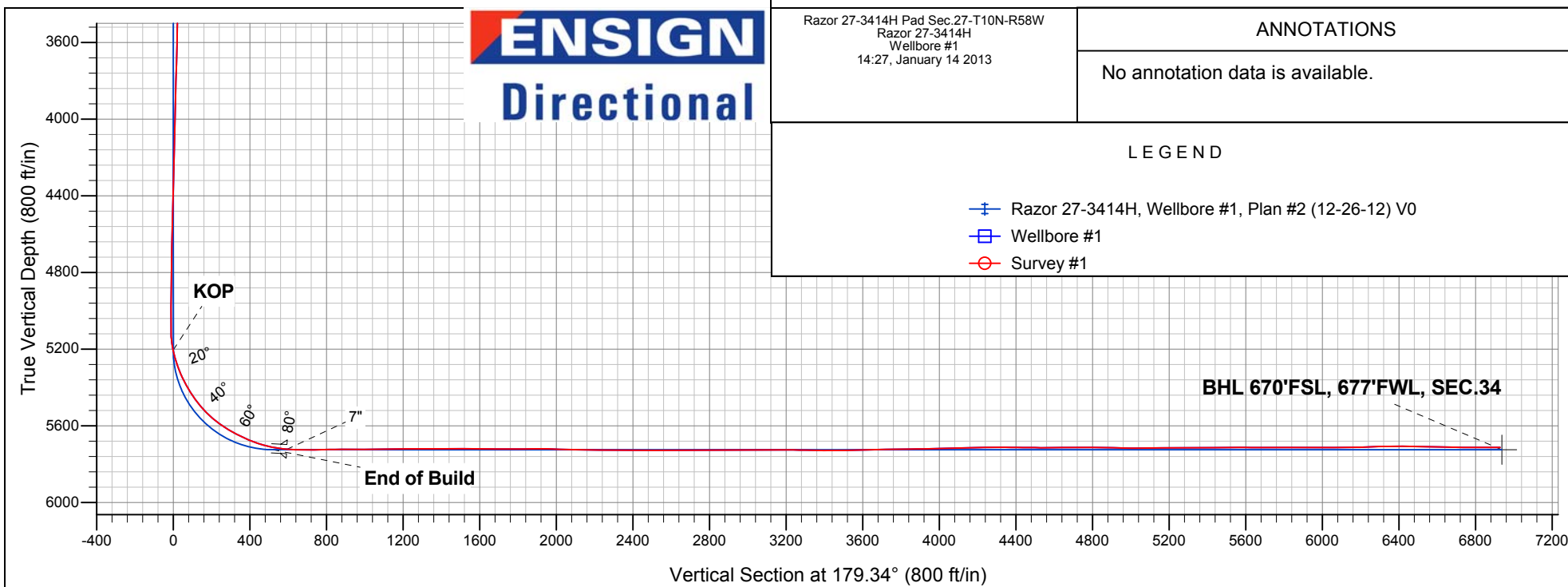
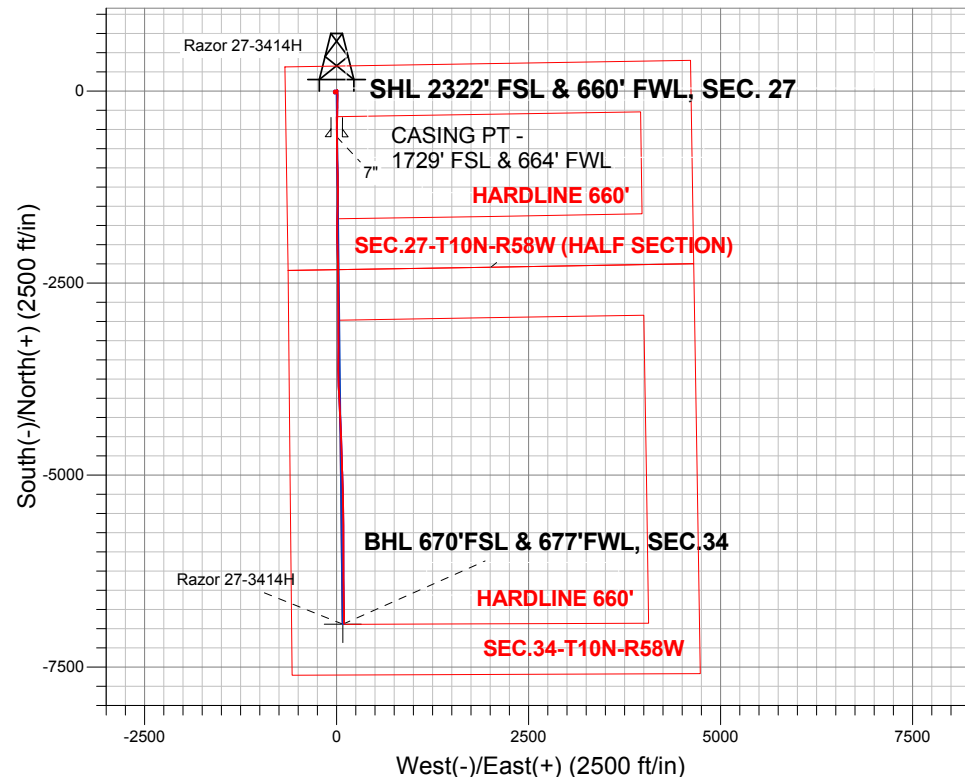
Ground Elevation: 4754.4

+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0 0.0	1541603.25	3454431.26	40.808536	-103.858364	

RKB - 16.5' WELL @ 4770.9ft (RKB - 16.5')

FINAL SURVEY

Projected Bottom Hole Location
12390' MD 5713' TVD 6928' S & 97' E of SHL
90.1 degree Incl @ 179.8 degree AZM



Razor 27-3414H Pad Sec.27-T10N-R58W
Razor 27-3414H
Wellbore #1
14:27, January 14 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- Razor 27-3414H, Wellbore #1, Plan #2 (12-26-12) V0
- Wellbore #1
- Survey #1



Directional

Whiting Oil & Gas

SEC.27-T10N-R58W

Razor 27-3414H Pad Sec.27-T10N-R58W

Razor 27-3414H

Wellbore #1

Survey: Survey #1

Standard Survey Report

14 January, 2013

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 27-3414H
Project:	SEC.27-T10N-R58W	TVD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Site:	Razor 27-3414H Pad Sec.27-T10N-R58W	MD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Well:	Razor 27-3414H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)	
1,235.0	2.40	203.80	1,234.4	2.2	-30.8	-2.6	0.81	0.11	-19.68	
1,328.0	2.30	196.50	1,327.4	-1.4	-32.1	1.0	0.34	-0.11	-7.85	
1,419.0	1.40	191.50	1,418.3	-4.2	-32.8	3.8	1.00	-0.99	-5.49	
1,510.0	1.60	189.90	1,509.3	-6.5	-33.2	6.2	0.22	0.22	-1.76	
1,610.0	1.80	178.70	1,609.2	-9.5	-33.5	9.1	0.39	0.20	-11.20	
1,733.0	1.40	191.20	1,732.2	-12.9	-33.7	12.5	0.43	-0.33	10.16	
1,824.0	1.40	174.00	1,823.2	-15.1	-33.8	14.7	0.46	0.00	-18.90	
1,916.0	1.80	165.20	1,915.1	-17.6	-33.3	17.2	0.51	0.43	-9.57	
2,007.0	2.00	150.40	2,006.1	-20.4	-32.2	20.0	0.58	0.22	-16.26	
2,130.0	1.80	151.30	2,129.0	-23.9	-30.2	23.6	0.16	-0.16	0.73	
2,190.0	2.20	133.90	2,189.0	-25.6	-28.9	25.2	1.20	0.67	-29.00	
2,288.0	2.30	122.30	2,286.9	-27.9	-25.9	27.6	0.47	0.10	-11.84	
2,383.0	1.70	43.30	2,381.9	-27.9	-23.3	27.6	2.72	-0.63	-83.16	
2,478.0	1.80	78.50	2,476.8	-26.6	-20.9	26.3	1.12	0.11	37.05	
2,573.0	1.80	100.30	2,571.8	-26.6	-17.9	26.3	0.72	0.00	22.95	
2,668.0	0.80	118.80	2,666.8	-27.1	-15.9	27.0	1.13	-1.05	19.47	
2,763.0	1.30	74.10	2,761.7	-27.2	-14.3	27.0	0.97	0.53	-47.05	
2,858.0	1.10	76.20	2,856.7	-26.6	-12.4	26.5	0.22	-0.21	2.21	
2,952.0	1.00	89.60	2,950.7	-26.4	-10.7	26.3	0.28	-0.11	14.26	
3,047.0	0.90	82.20	3,045.7	-26.3	-9.1	26.2	0.17	-0.11	-7.79	
3,142.0	1.00	74.50	3,140.7	-26.0	-7.5	25.9	0.17	0.11	-8.11	
3,237.0	1.20	67.40	3,235.7	-25.4	-5.8	25.3	0.25	0.21	-7.47	
3,332.0	1.30	54.90	3,330.6	-24.4	-4.0	24.3	0.30	0.11	-13.16	
3,427.0	1.50	52.50	3,425.6	-23.0	-2.2	23.0	0.22	0.21	-2.53	
3,522.0	1.80	50.20	3,520.6	-21.3	0.0	21.3	0.32	0.32	-2.42	
3,617.0	1.80	47.60	3,615.5	-19.3	2.2	19.4	0.09	0.00	-2.74	
3,712.0	1.80	24.70	3,710.5	-17.0	3.9	17.0	0.75	0.00	-24.11	
3,807.0	1.70	9.10	3,805.4	-14.2	4.8	14.3	0.51	-0.11	-16.42	
3,902.0	1.40	8.70	3,900.4	-11.7	5.2	11.8	0.32	-0.32	-0.42	
3,997.0	1.40	13.30	3,995.4	-9.4	5.6	9.5	0.12	0.00	4.84	
4,092.0	1.80	18.40	4,090.3	-6.9	6.4	6.9	0.45	0.42	5.37	
4,187.0	1.60	9.10	4,185.3	-4.1	7.0	4.2	0.36	-0.21	-9.79	
4,282.0	1.30	2.60	4,280.3	-1.8	7.3	1.8	0.36	-0.32	-6.84	
4,377.0	1.30	9.90	4,375.2	0.4	7.5	-0.3	0.17	0.00	7.68	
4,472.0	1.30	9.40	4,470.2	2.5	7.9	-2.4	0.01	0.00	-0.53	
4,566.0	1.40	9.80	4,564.2	4.7	8.3	-4.6	0.11	0.11	0.43	
4,661.0	1.00	15.00	4,659.2	6.6	8.7	-6.5	0.44	-0.42	5.47	
4,756.0	1.10	351.80	4,754.1	8.3	8.8	-8.2	0.46	0.11	-24.42	
4,850.0	1.10	353.40	4,848.1	10.1	8.5	-10.0	0.03	0.00	1.70	
4,945.0	1.10	346.60	4,943.1	11.9	8.2	-11.8	0.14	0.00	-7.16	
5,040.0	1.00	248.70	5,038.1	12.5	7.2	-12.4	1.67	-0.11	-103.05	
5,072.0	0.40	255.50	5,070.1	12.4	6.9	-12.3	1.89	-1.88	21.25	
5,104.0	1.10	159.00	5,102.1	12.1	6.9	-12.0	3.79	2.19	-301.56	
5,135.0	4.00	153.90	5,133.1	10.8	7.5	-10.7	9.37	9.35	-16.45	
5,167.0	7.60	162.20	5,164.9	7.8	8.6	-7.7	11.52	11.25	25.94	
5,199.0	11.30	168.70	5,196.5	2.7	9.9	-2.6	12.02	11.56	20.31	
5,230.0	14.20	171.30	5,226.7	-4.0	11.0	4.2	9.53	9.35	8.39	
5,262.0	16.80	175.90	5,257.5	-12.5	11.9	12.7	8.98	8.13	14.38	
5,294.0	19.80	178.50	5,287.9	-22.6	12.4	22.7	9.71	9.38	8.13	
5,325.0	23.00	177.80	5,316.8	-33.9	12.8	34.0	10.36	10.32	-2.26	
5,357.0	25.60	177.80	5,345.9	-47.0	13.3	47.2	8.13	8.13	0.00	
5,388.0	27.30	180.50	5,373.7	-60.8	13.5	61.0	6.72	5.48	8.71	
5,420.0	29.60	181.90	5,401.8	-76.1	13.2	76.2	7.48	7.19	4.38	
5,452.0	32.10	181.30	5,429.3	-92.5	12.7	92.6	7.87	7.81	-1.88	

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Site:	Razor 27-3414H Pad Sec.27-T10N-R58W	MD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Well:	Razor 27-3414H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
5,483.0	34.60	181.00	5,455.2	-109.5	12.4	109.6	8.08	8.06	-0.97
5,515.0	37.80	180.60	5,481.0	-128.4	12.1	128.5	10.03	10.00	-1.25
5,547.0	41.50	179.60	5,505.6	-148.8	12.1	148.9	11.73	11.56	-3.13
5,578.0	45.40	180.30	5,528.1	-170.1	12.1	170.3	12.68	12.58	2.26
5,610.0	48.40	181.00	5,550.0	-193.5	11.8	193.6	9.51	9.38	2.19
5,641.0	50.90	182.70	5,570.1	-217.1	11.1	217.2	9.08	8.06	5.48
5,673.0	53.90	182.60	5,589.6	-242.4	9.9	242.5	9.38	9.38	-0.31
5,705.0	56.60	181.70	5,607.8	-268.7	8.9	268.8	8.75	8.44	-2.81
5,736.0	59.40	181.20	5,624.3	-295.0	8.2	295.1	9.14	9.03	-1.61
5,768.0	62.30	180.60	5,639.8	-322.9	7.8	323.0	9.21	9.06	-1.88
5,799.0	64.80	180.30	5,653.6	-350.7	7.6	350.7	8.11	8.06	-0.97
5,831.0	66.60	180.30	5,666.8	-379.8	7.4	379.9	5.63	5.63	0.00
5,863.0	67.90	180.30	5,679.2	-409.3	7.3	409.4	4.06	4.06	0.00
5,895.0	70.10	180.80	5,690.7	-439.2	7.0	439.3	7.03	6.88	1.56
5,926.0	73.20	181.50	5,700.4	-468.6	6.4	468.7	10.23	10.00	2.26
5,958.0	77.10	181.50	5,708.6	-499.5	5.6	499.6	12.19	12.19	0.00
5,990.0	79.90	181.00	5,715.0	-530.9	4.9	530.9	8.88	8.75	-1.56
6,021.0	82.80	180.80	5,719.7	-561.5	4.4	561.5	9.38	9.35	-0.65
6,053.0	86.60	180.10	5,722.6	-593.4	4.2	593.4	12.07	11.88	-2.19
7"									
6,115.0	89.50	179.60	5,724.7	-655.3	4.3	655.3	4.75	4.68	-0.81
6,147.0	89.60	178.70	5,725.0	-687.3	4.8	687.3	2.83	0.31	-2.81
6,178.0	90.30	179.20	5,725.0	-718.3	5.4	718.3	2.77	2.26	1.61
6,210.0	90.50	178.90	5,724.8	-750.3	5.9	750.3	1.13	0.63	-0.94
6,242.0	90.70	178.90	5,724.4	-782.3	6.5	782.3	0.63	0.63	0.00
6,274.0	91.50	179.20	5,723.8	-814.3	7.1	814.3	2.67	2.50	0.94
6,305.0	90.60	179.60	5,723.3	-845.3	7.4	845.3	3.18	-2.90	1.29
6,337.0	90.70	179.20	5,722.9	-877.3	7.7	877.3	1.29	0.31	-1.25
6,369.0	89.50	177.50	5,722.8	-909.3	8.6	909.3	6.50	-3.75	-5.31
6,401.0	90.00	177.50	5,723.0	-941.3	10.0	941.3	1.56	1.56	0.00
6,432.0	90.70	177.60	5,722.8	-972.2	11.4	972.3	2.28	2.26	0.32
6,464.0	89.60	177.50	5,722.7	-1,004.2	12.7	1,004.3	3.45	-3.44	-0.31
6,496.0	90.10	177.60	5,722.8	-1,036.2	14.1	1,036.3	1.59	1.56	0.31
6,527.0	90.30	179.20	5,722.7	-1,067.2	15.0	1,067.3	5.20	0.65	5.16
6,559.0	90.60	179.90	5,722.4	-1,099.1	15.2	1,099.3	2.38	0.94	2.19
6,591.0	91.00	179.40	5,722.0	-1,131.1	15.4	1,131.2	2.00	1.25	-1.56
6,622.0	91.10	178.00	5,721.4	-1,162.1	16.1	1,162.2	4.53	0.32	-4.52
6,654.0	90.70	177.50	5,720.9	-1,194.1	17.4	1,194.2	2.00	-1.25	-1.56
6,686.0	89.70	178.30	5,720.8	-1,226.1	18.5	1,226.2	4.00	-3.13	2.50
6,718.0	90.00	179.60	5,720.9	-1,258.1	19.1	1,258.2	4.17	0.94	4.06
6,749.0	90.60	179.90	5,720.7	-1,289.1	19.3	1,289.2	2.16	1.94	0.97
6,781.0	90.70	180.50	5,720.4	-1,321.1	19.1	1,321.2	1.90	0.31	1.88
6,812.0	89.80	181.70	5,720.2	-1,352.1	18.6	1,352.2	4.84	-2.90	3.87
6,844.0	90.30	182.40	5,720.2	-1,384.0	17.4	1,384.2	2.69	1.56	2.19
6,875.0	90.00	182.00	5,720.1	-1,415.0	16.2	1,415.1	1.61	-0.97	-1.29
6,907.0	90.70	182.40	5,719.9	-1,447.0	15.0	1,447.1	2.52	2.19	1.25
6,938.0	90.70	181.70	5,719.5	-1,478.0	13.9	1,478.0	2.26	0.00	-2.26
6,969.0	89.90	181.30	5,719.4	-1,509.0	13.1	1,509.0	2.89	-2.58	-1.29
7,001.0	88.70	181.00	5,719.8	-1,541.0	12.4	1,541.0	3.87	-3.75	-0.94
7,033.0	88.80	181.20	5,720.5	-1,572.9	11.8	1,573.0	0.70	0.31	0.63
7,064.0	89.10	181.20	5,721.0	-1,603.9	11.2	1,603.9	0.97	0.97	0.00
7,096.0	89.30	180.60	5,721.5	-1,635.9	10.7	1,635.9	1.98	0.63	-1.88
7,128.0	89.60	180.80	5,721.8	-1,667.9	10.3	1,667.9	1.13	0.94	0.63
7,160.0	90.60	181.30	5,721.7	-1,699.9	9.7	1,699.9	3.49	3.13	1.56

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7,191.0	91.00	181.70	5,721.3	-1,730.9	8.9	1,730.9	1.82	1.29	1.29
7,223.0	90.20	180.80	5,721.0	-1,762.9	8.2	1,762.9	3.76	-2.50	-2.81
7,255.0	89.80	179.60	5,721.0	-1,794.9	8.1	1,794.9	3.95	-1.25	-3.75
7,286.0	90.30	179.60	5,720.9	-1,825.9	8.3	1,825.9	1.61	1.61	0.00
7,318.0	90.70	179.40	5,720.7	-1,857.9	8.6	1,857.9	1.40	1.25	-0.63
7,350.0	90.70	179.20	5,720.3	-1,889.9	8.9	1,889.9	0.62	0.00	-0.63
7,381.0	89.90	178.50	5,720.1	-1,920.9	9.6	1,920.9	3.43	-2.58	-2.26
7,413.0	88.40	178.00	5,720.6	-1,952.8	10.5	1,952.8	4.94	-4.69	-1.56
7,445.0	87.90	178.00	5,721.6	-1,984.8	11.7	1,984.8	1.56	-1.56	0.00
7,476.0	87.90	178.30	5,722.7	-2,015.8	12.7	2,015.8	0.97	0.00	0.97
7,507.0	88.30	178.00	5,723.8	-2,046.7	13.7	2,046.8	1.61	1.29	-0.97
7,539.0	88.80	178.20	5,724.6	-2,078.7	14.7	2,078.7	1.68	1.56	0.63
7,571.0	89.10	178.50	5,725.2	-2,110.7	15.6	2,110.7	1.33	0.94	0.94
7,602.0	89.10	178.30	5,725.7	-2,141.7	16.5	2,141.7	0.65	0.00	-0.65
7,634.0	89.20	178.20	5,726.1	-2,173.7	17.5	2,173.7	0.44	0.31	-0.31
7,666.0	89.20	179.20	5,726.6	-2,205.7	18.2	2,205.7	3.12	0.00	3.13
7,697.0	89.00	179.80	5,727.1	-2,236.6	18.5	2,236.7	2.04	-0.65	1.94
7,729.0	89.10	179.40	5,727.6	-2,268.6	18.7	2,268.7	1.29	0.31	-1.25
7,761.0	90.00	179.40	5,727.8	-2,300.6	19.0	2,300.7	2.81	2.81	0.00
7,792.0	90.10	179.20	5,727.8	-2,331.6	19.4	2,331.7	0.72	0.32	-0.65
7,824.0	89.80	178.90	5,727.8	-2,363.6	20.0	2,363.7	1.33	-0.94	-0.94
7,856.0	89.70	178.30	5,728.0	-2,395.6	20.7	2,395.7	1.90	-0.31	-1.88
7,887.0	89.40	178.30	5,728.2	-2,426.6	21.7	2,426.7	0.97	-0.97	0.00
7,919.0	89.50	179.90	5,728.5	-2,458.6	22.2	2,458.7	5.01	0.31	5.00
7,950.0	89.70	180.30	5,728.8	-2,489.6	22.1	2,489.7	1.44	0.65	1.29
7,982.0	90.70	180.30	5,728.6	-2,521.6	21.9	2,521.7	3.13	3.13	0.00
8,014.0	91.40	180.30	5,728.1	-2,553.6	21.8	2,553.7	2.19	2.19	0.00
8,045.0	91.50	180.50	5,727.3	-2,584.6	21.6	2,584.7	0.72	0.32	0.65
8,077.0	90.00	180.30	5,726.9	-2,616.6	21.3	2,616.6	4.73	-4.69	-0.63
8,109.0	89.30	180.10	5,727.0	-2,648.6	21.2	2,648.6	2.28	-2.19	-0.63
8,140.0	89.50	179.90	5,727.4	-2,679.6	21.2	2,679.6	0.91	0.65	-0.65
8,172.0	90.00	179.40	5,727.5	-2,711.6	21.4	2,711.6	2.21	1.56	-1.56
8,203.0	90.20	178.90	5,727.5	-2,742.6	21.9	2,742.6	1.74	0.65	-1.61
8,234.0	90.20	178.00	5,727.4	-2,773.6	22.7	2,773.6	2.90	0.00	-2.90
8,265.0	90.10	178.50	5,727.3	-2,804.5	23.7	2,804.6	1.64	-0.32	1.61
8,295.0	90.20	179.40	5,727.2	-2,834.5	24.2	2,834.6	3.02	0.33	3.00
8,326.0	90.30	180.10	5,727.1	-2,865.5	24.3	2,865.6	2.28	0.32	2.26
8,357.0	90.10	179.80	5,726.9	-2,896.5	24.4	2,896.6	1.16	-0.65	-0.97
8,388.0	90.00	179.80	5,726.9	-2,927.5	24.5	2,927.6	0.32	-0.32	0.00
8,419.0	90.00	179.80	5,726.9	-2,958.5	24.6	2,958.6	0.00	0.00	0.00
8,450.0	89.60	179.40	5,727.0	-2,989.5	24.8	2,989.6	1.82	-1.29	-1.29
8,481.0	89.90	180.30	5,727.2	-3,020.5	24.9	3,020.6	3.06	0.97	2.90
8,512.0	90.70	180.80	5,727.0	-3,051.5	24.6	3,051.6	3.04	2.58	1.61
8,543.0	90.90	180.10	5,726.6	-3,082.5	24.3	3,082.6	2.35	0.65	-2.26
8,573.0	91.10	180.30	5,726.0	-3,112.5	24.2	3,112.6	0.94	0.67	0.67
8,604.0	91.00	180.30	5,725.5	-3,143.5	24.1	3,143.6	0.32	-0.32	0.00
8,635.0	89.90	180.10	5,725.2	-3,174.5	24.0	3,174.6	3.61	-3.55	-0.65
8,666.0	89.00	180.50	5,725.5	-3,205.5	23.8	3,205.6	3.18	-2.90	1.29
8,698.0	89.00	179.90	5,726.1	-3,237.5	23.7	3,237.6	1.87	0.00	-1.88
8,729.0	89.20	179.90	5,726.6	-3,268.5	23.7	3,268.6	0.65	0.65	0.00
8,759.0	89.50	180.30	5,726.9	-3,298.5	23.7	3,298.6	1.67	1.00	1.33
8,790.0	89.10	179.80	5,727.3	-3,329.5	23.7	3,329.6	2.07	-1.29	-1.61
8,821.0	88.80	179.60	5,727.9	-3,360.5	23.8	3,360.5	1.16	-0.97	-0.65
8,851.0	89.60	179.60	5,728.3	-3,390.5	24.0	3,390.5	2.67	2.67	0.00

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 27-3414H
Project:	SEC.27-T10N-R58W	TVD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Site:	Razor 27-3414H Pad Sec.27-T10N-R58W	MD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Well:	Razor 27-3414H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
8,882.0	90.20	180.10	5,728.3	-3,421.5	24.1	3,421.5	2.52	1.94	1.61
8,913.0	90.00	180.60	5,728.3	-3,452.5	23.9	3,452.5	1.74	-0.65	1.61
8,944.0	89.90	180.60	5,728.3	-3,483.5	23.6	3,483.5	0.32	-0.32	0.00
8,975.0	90.00	180.60	5,728.3	-3,514.5	23.3	3,514.5	0.32	0.32	0.00
9,005.0	91.00	180.60	5,728.1	-3,544.5	23.0	3,544.5	3.33	3.33	0.00
9,036.0	91.50	180.30	5,727.4	-3,575.5	22.7	3,575.5	1.88	1.61	-0.97
9,066.0	91.40	180.10	5,726.6	-3,605.5	22.6	3,605.5	0.75	-0.33	-0.67
9,097.0	91.40	179.90	5,725.9	-3,636.5	22.6	3,636.5	0.64	0.00	-0.65
9,128.0	91.80	180.50	5,725.0	-3,667.4	22.5	3,667.5	2.33	1.29	1.94
9,159.0	92.20	179.90	5,723.9	-3,698.4	22.4	3,698.4	2.33	1.29	-1.94
9,190.0	91.60	179.60	5,722.9	-3,729.4	22.5	3,729.4	2.16	-1.94	-0.97
9,221.0	90.70	178.30	5,722.3	-3,760.4	23.1	3,760.4	5.10	-2.90	-4.19
9,251.0	90.00	177.50	5,722.1	-3,790.4	24.2	3,790.4	3.54	-2.33	-2.67
9,282.0	90.40	177.10	5,722.0	-3,821.3	25.7	3,821.4	1.82	1.29	-1.29
9,312.0	90.70	176.90	5,721.7	-3,851.3	27.2	3,851.4	1.20	1.00	-0.67
9,343.0	90.30	176.40	5,721.4	-3,882.2	29.0	3,882.3	2.07	-1.29	-1.61
9,374.0	90.30	176.20	5,721.3	-3,913.2	31.0	3,913.3	0.65	0.00	-0.65
9,405.0	90.70	176.60	5,721.0	-3,944.1	33.0	3,944.2	1.82	1.29	1.29
9,436.0	91.90	176.90	5,720.3	-3,975.1	34.8	3,975.2	3.99	3.87	0.97
9,467.0	92.90	177.30	5,719.0	-4,006.0	36.3	4,006.1	3.47	3.23	1.29
9,498.0	92.70	178.00	5,717.5	-4,036.9	37.6	4,037.1	2.35	-0.65	2.26
9,528.0	91.50	178.20	5,716.4	-4,066.9	38.6	4,067.1	4.06	-4.00	0.67
9,559.0	90.60	177.60	5,715.8	-4,097.9	39.7	4,098.0	3.49	-2.90	-1.94
9,590.0	90.70	177.30	5,715.5	-4,128.8	41.1	4,129.0	1.02	0.32	-0.97
9,620.0	91.10	177.30	5,715.0	-4,158.8	42.5	4,159.0	1.33	1.33	0.00
9,651.0	91.40	176.90	5,714.3	-4,189.7	44.1	4,190.0	1.61	0.97	-1.29
9,682.0	90.80	176.90	5,713.7	-4,220.7	45.8	4,220.9	1.94	-1.94	0.00
9,713.0	90.20	177.30	5,713.5	-4,251.6	47.3	4,251.9	2.33	-1.94	1.29
9,744.0	90.50	177.30	5,713.3	-4,282.6	48.8	4,282.9	0.97	0.97	0.00
9,775.0	91.00	177.60	5,712.9	-4,313.6	50.2	4,313.9	1.88	1.61	0.97
9,805.0	90.00	176.60	5,712.6	-4,343.5	51.7	4,343.8	4.71	-3.33	-3.33
9,836.0	89.20	176.40	5,712.8	-4,374.5	53.6	4,374.8	2.66	-2.58	-0.65
9,867.0	89.10	176.60	5,713.3	-4,405.4	55.5	4,405.8	0.72	-0.32	0.65
9,898.0	89.30	177.50	5,713.7	-4,436.4	57.1	4,436.7	2.97	0.65	2.90
9,929.0	89.50	178.00	5,714.0	-4,467.4	58.3	4,467.7	1.74	0.65	1.61
9,960.0	89.50	178.20	5,714.3	-4,498.3	59.3	4,498.7	0.65	0.00	0.65
9,991.0	89.60	178.70	5,714.5	-4,529.3	60.1	4,529.7	1.64	0.32	1.61
10,021.0	89.80	178.20	5,714.7	-4,559.3	61.0	4,559.7	1.80	0.67	-1.67
10,052.0	90.10	178.30	5,714.7	-4,590.3	61.9	4,590.7	1.02	0.97	0.32
10,083.0	90.50	178.50	5,714.6	-4,621.3	62.8	4,621.7	1.44	1.29	0.65
10,114.0	90.70	178.30	5,714.2	-4,652.3	63.6	4,652.7	0.91	0.65	-0.65
10,145.0	91.10	178.30	5,713.8	-4,683.3	64.6	4,683.7	1.29	1.29	0.00
10,176.0	91.70	178.20	5,713.0	-4,714.2	65.5	4,714.7	1.96	1.94	-0.32
10,207.0	90.50	177.80	5,712.4	-4,745.2	66.6	4,745.7	4.08	-3.87	-1.29
10,238.0	88.50	178.30	5,712.7	-4,776.2	67.6	4,776.6	6.65	-6.45	1.61
10,269.0	88.40	178.30	5,713.5	-4,807.2	68.6	4,807.6	0.32	-0.32	0.00
10,300.0	88.50	178.50	5,714.4	-4,838.1	69.4	4,838.6	0.72	0.32	0.65
10,331.0	88.90	178.30	5,715.1	-4,869.1	70.3	4,869.6	1.44	1.29	-0.65
10,362.0	88.90	178.00	5,715.6	-4,900.1	71.3	4,900.6	0.97	0.00	-0.97
10,392.0	89.30	178.00	5,716.1	-4,930.1	72.3	4,930.6	1.33	1.33	0.00
10,425.0	89.30	177.60	5,716.5	-4,963.0	73.6	4,963.6	1.21	0.00	-1.21
10,457.0	89.70	177.60	5,716.8	-4,995.0	74.9	4,995.5	1.25	1.25	0.00
10,488.0	90.20	177.60	5,716.8	-5,026.0	76.2	5,026.5	1.61	1.61	0.00
10,520.0	90.40	177.80	5,716.7	-5,058.0	77.5	5,058.5	0.88	0.63	0.63

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 27-3414H
Project:	SEC.27-T10N-R58W	TVD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Site:	Razor 27-3414H Pad Sec.27-T10N-R58W	MD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Well:	Razor 27-3414H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
10,552.0	90.70	178.30	5,716.4	-5,089.9	78.6	5,090.5	1.82	0.94	1.56
10,583.0	90.90	178.20	5,715.9	-5,120.9	79.6	5,121.5	0.72	0.65	-0.32
10,615.0	90.70	177.60	5,715.5	-5,152.9	80.7	5,153.5	1.98	-0.63	-1.88
10,646.0	90.70	177.50	5,715.1	-5,183.9	82.1	5,184.5	0.32	0.00	-0.32
10,678.0	90.00	178.70	5,714.9	-5,215.8	83.1	5,216.5	4.34	-2.19	3.75
10,709.0	89.80	179.00	5,715.0	-5,246.8	83.7	5,247.5	1.16	-0.65	0.97
10,741.0	89.70	179.00	5,715.1	-5,278.8	84.3	5,279.5	0.31	-0.31	0.00
10,773.0	90.00	179.20	5,715.2	-5,310.8	84.8	5,311.5	1.13	0.94	0.63
10,804.0	90.00	178.70	5,715.2	-5,341.8	85.4	5,342.5	1.61	0.00	-1.61
10,836.0	90.70	178.90	5,715.0	-5,373.8	86.0	5,374.5	2.28	2.19	0.63
10,868.0	91.10	179.20	5,714.5	-5,405.8	86.6	5,406.4	1.56	1.25	0.94
10,899.0	91.00	178.90	5,713.9	-5,436.8	87.1	5,437.4	1.02	-0.32	-0.97
10,931.0	90.00	179.00	5,713.6	-5,468.8	87.7	5,469.4	3.14	-3.13	0.31
10,963.0	90.50	178.90	5,713.5	-5,500.8	88.3	5,501.4	1.59	1.56	-0.31
10,995.0	90.00	179.80	5,713.4	-5,532.8	88.6	5,533.4	3.22	-1.56	2.81
11,026.0	90.00	179.80	5,713.4	-5,563.8	88.7	5,564.4	0.00	0.00	0.00
11,058.0	89.30	180.50	5,713.5	-5,595.8	88.6	5,596.4	3.09	-2.19	2.19
11,089.0	89.50	180.30	5,713.9	-5,626.8	88.4	5,627.4	0.91	0.65	-0.65
11,121.0	89.70	180.30	5,714.1	-5,658.8	88.3	5,659.4	0.63	0.63	0.00
11,153.0	90.00	179.90	5,714.2	-5,690.8	88.2	5,691.4	1.56	0.94	-1.25
11,184.0	89.90	179.90	5,714.2	-5,721.8	88.3	5,722.4	0.32	-0.32	0.00
11,216.0	90.60	179.40	5,714.1	-5,753.8	88.4	5,754.4	2.69	2.19	-1.56
11,248.0	90.50	180.50	5,713.8	-5,785.8	88.5	5,786.4	3.45	-0.31	3.44
11,280.0	90.50	179.90	5,713.5	-5,817.8	88.4	5,818.4	1.87	0.00	-1.88
11,312.0	89.70	180.60	5,713.4	-5,849.8	88.2	5,850.4	3.32	-2.50	2.19
11,343.0	89.30	180.30	5,713.7	-5,880.8	88.0	5,881.4	1.61	-1.29	-0.97
11,375.0	89.60	180.30	5,714.0	-5,912.8	87.8	5,913.4	0.94	0.94	0.00
11,406.0	90.10	180.60	5,714.1	-5,943.8	87.6	5,944.4	1.88	1.61	0.97
11,438.0	90.10	180.50	5,714.0	-5,975.8	87.3	5,976.4	0.31	0.00	-0.31
11,470.0	90.20	180.50	5,713.9	-6,007.8	87.0	6,008.4	0.31	0.31	0.00
11,502.0	90.60	179.80	5,713.7	-6,039.8	86.9	6,040.4	2.52	1.25	-2.19
11,533.0	90.30	179.60	5,713.5	-6,070.8	87.1	6,071.4	1.16	-0.97	-0.65
11,565.0	90.10	179.40	5,713.4	-6,102.8	87.3	6,103.4	0.88	-0.63	-0.63
11,596.0	90.10	179.20	5,713.3	-6,133.8	87.7	6,134.4	0.65	0.00	-0.65
11,628.0	91.10	178.70	5,713.0	-6,165.8	88.3	6,166.4	3.49	3.13	-1.56
11,659.0	92.30	178.70	5,712.1	-6,196.7	89.0	6,197.3	3.87	3.87	0.00
11,691.0	92.10	178.90	5,710.8	-6,228.7	89.7	6,229.3	0.88	-0.63	0.63
11,723.0	92.00	178.50	5,709.7	-6,260.7	90.4	6,261.3	1.29	-0.31	-1.25
11,755.0	92.00	178.50	5,708.6	-6,292.6	91.2	6,293.3	0.00	0.00	0.00
11,786.0	92.00	178.50	5,707.5	-6,323.6	92.1	6,324.3	0.00	0.00	0.00
11,818.0	90.20	179.60	5,706.9	-6,355.6	92.6	6,356.2	6.59	-5.63	3.44
11,849.0	89.30	179.80	5,707.0	-6,386.6	92.7	6,387.2	2.97	-2.90	0.65
11,881.0	89.10	179.60	5,707.5	-6,418.6	92.9	6,419.2	0.88	-0.63	-0.63
11,912.0	89.20	179.40	5,707.9	-6,449.6	93.2	6,450.2	0.72	0.32	-0.65
11,944.0	89.30	179.20	5,708.3	-6,481.6	93.6	6,482.2	0.70	0.31	-0.63
11,976.0	89.20	179.00	5,708.8	-6,513.6	94.1	6,514.2	0.70	-0.31	-0.63
12,007.0	89.10	178.70	5,709.2	-6,544.6	94.7	6,545.2	1.02	-0.32	-0.97
12,039.0	88.90	179.40	5,709.8	-6,576.6	95.2	6,577.2	2.27	-0.63	2.19
12,070.0	88.80	179.60	5,710.4	-6,607.5	95.5	6,608.2	0.72	-0.32	0.65
12,102.0	88.70	179.60	5,711.1	-6,639.5	95.7	6,640.2	0.31	-0.31	0.00
12,134.0	88.50	179.40	5,711.9	-6,671.5	96.0	6,672.2	0.88	-0.63	-0.63
12,166.0	89.30	179.40	5,712.5	-6,703.5	96.3	6,704.2	2.50	2.50	0.00
12,197.0	89.10	179.60	5,712.9	-6,734.5	96.6	6,735.2	0.91	-0.65	0.65
12,229.0	89.90	179.80	5,713.2	-6,766.5	96.8	6,767.2	2.58	2.50	0.63

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well Razor 27-3414H
Project:	SEC.27-T10N-R58W	TVD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Site:	Razor 27-3414H Pad Sec.27-T10N-R58W	MD Reference:	WELL @ 4770.9ft (RKB - 16.5')
Well:	Razor 27-3414H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
12,260.0	89.80	179.80	5,713.3	-6,797.5	96.9	6,798.2	0.32	-0.32	0.00
12,292.0	89.90	180.10	5,713.4	-6,829.5	96.9	6,830.2	0.99	0.31	0.94
12,340.0	90.10	179.80	5,713.4	-6,877.5	97.0	6,878.2	0.75	0.42	-0.63
12,390.0	90.10	179.80	5,713.3	-6,927.5	97.1	6,928.2	0.00	0.00	0.00
BHL 660'FSL, 660'FWL, SEC.34									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 660'FSL, 660'FW	0.00	0.00	5,725.0	-6,937.7	80.0	1,534,668.22	3,454,639.71	40.789494	-103.858075
- survey misses target center by 23.1ft at 12390.0ft MD (5713.3 TVD, -6927.5 N, 97.1 E)									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,053.0	5,722.6	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____