

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 30-T10N-R58W

Razor #30I-1914

Plan A

Plan: Rev A0

Sperry Drilling Services

Proposal Report

27 May, 2014

Well Coordinates: 1,541,372.02 N, 3,442,554.37 E (40° 48' 30.59" N, 103° 54' 04.59" W)

Ground Level: 4,862.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Razor #30I-1914

KB 17' @ 4879.00usft (TBD)

N

True

API - US Survey Feet - Custom

HALLIBURTON

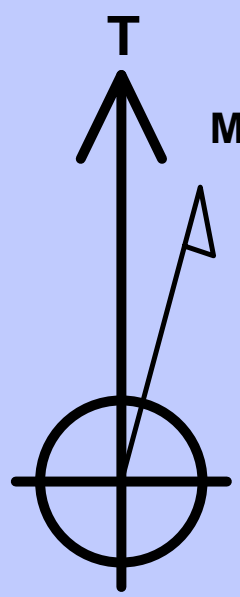
Project: Weld County, CO
Site: Sec. 30-T10N-R58W
Well: Razor #301-1914
Wellbore: Plan A
Plan: Rev A0

Whiting Oil and Gas Corporation

HALLIBURTON
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	700.00	4.00	351.00	699.84	6.89	-1.09	2.00	351.00	6.92	
4	5479.27	4.00	351.00	5467.47	336.17	-53.24	0.00	0.00	337.69	
5	6261.09	90.00	351.00	5952.00	849.38	-134.53	11.00	0.00	853.22	
6	6336.09	90.00	351.00	5952.00	923.45	-146.26	0.00	0.00	927.63	
7	6611.81	90.00	359.27	5952.00	1197.94	-169.62	3.00	90.00	1202.72	
8	13536.27	90.00	359.27	5952.00	8121.85	-257.64	0.00	0.00	8125.93	Razor 301-1914 BHL



Azimuths to True North
Magnetic Field
Magnetic North: 8.05°
Strength: 53021.1snT
Dip Angle: 67.39°
Date: 7/4/2014
Model: BGGM2013

Plan: Rev A0 (Razor #301-1914/Plan A)

Created By: Troy L. Stoute

Date: 13:35, May 27 2014

Checked: _____

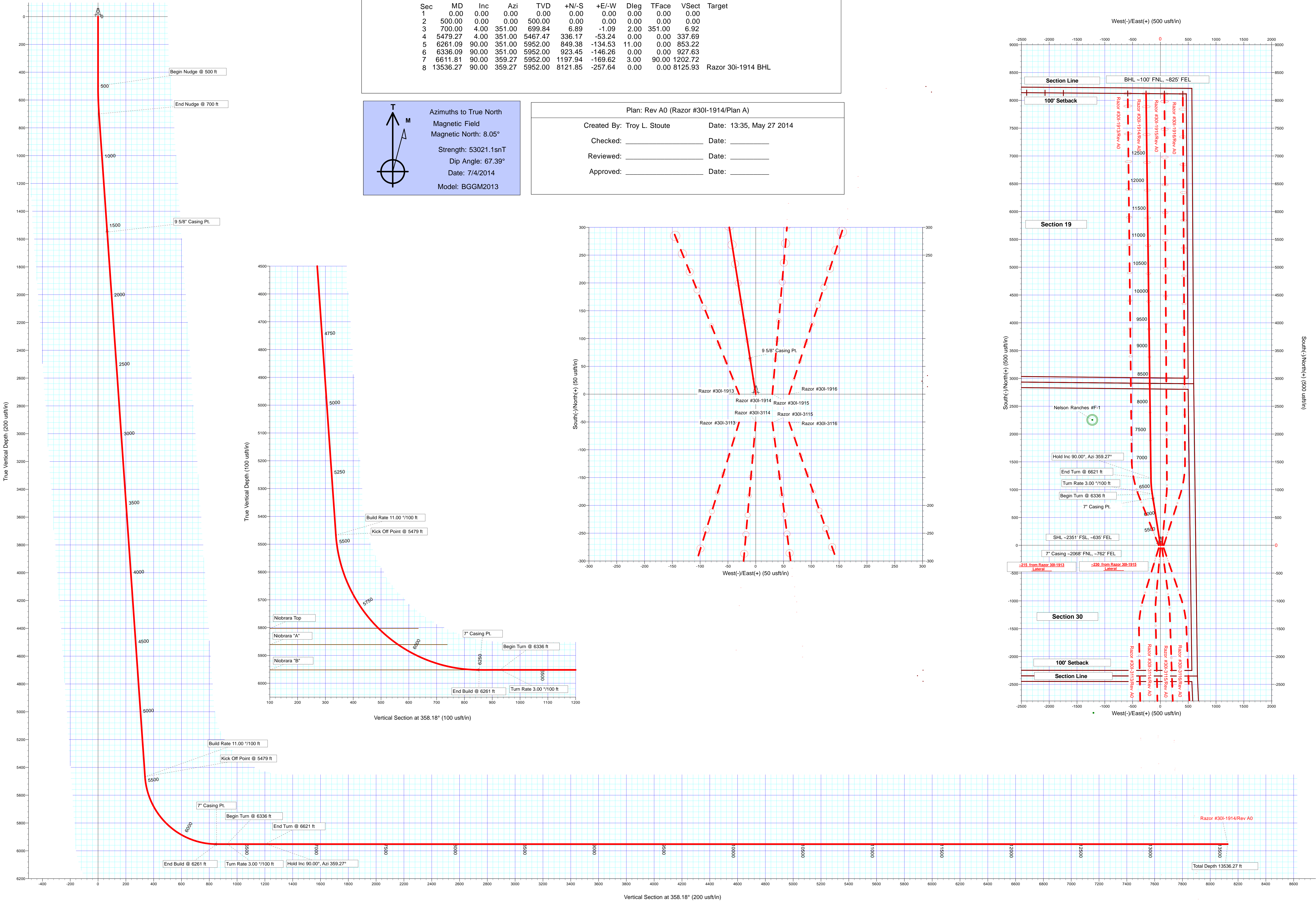
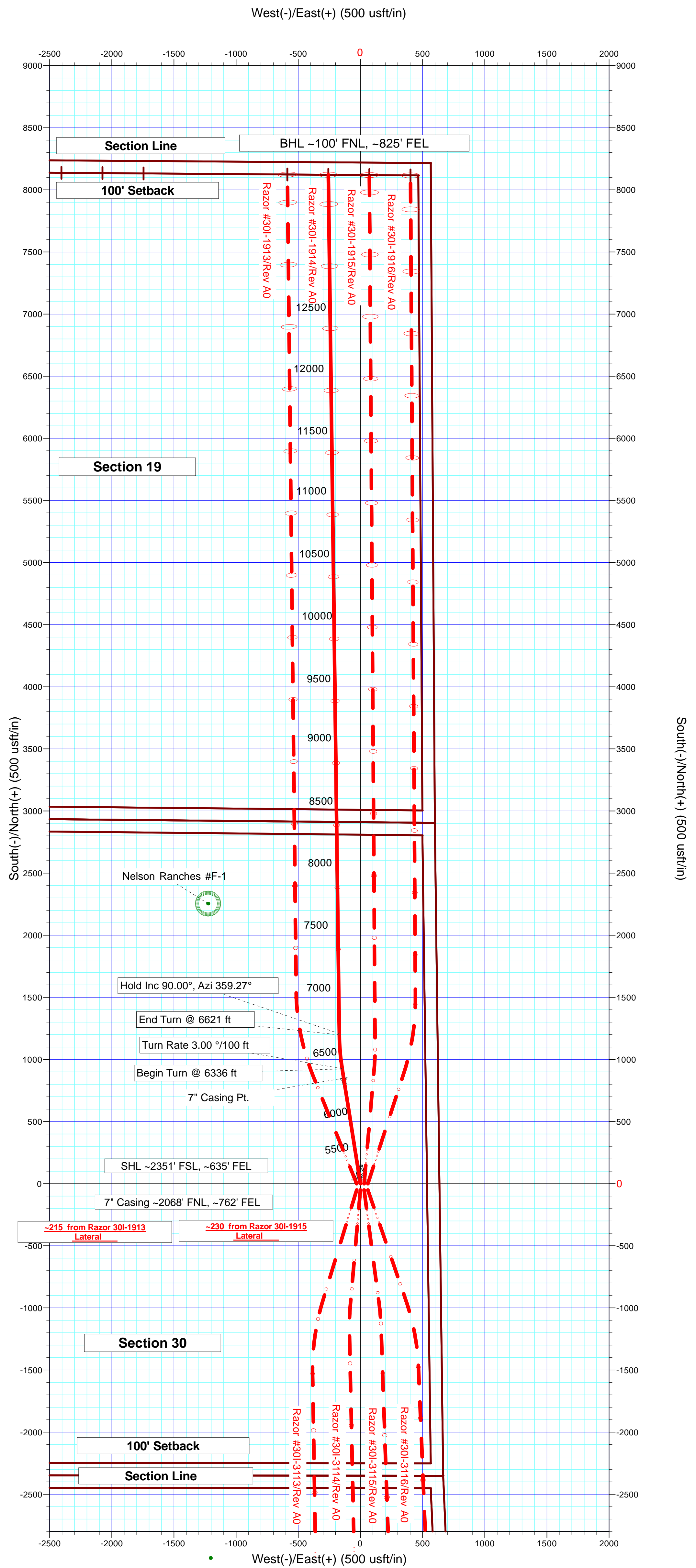
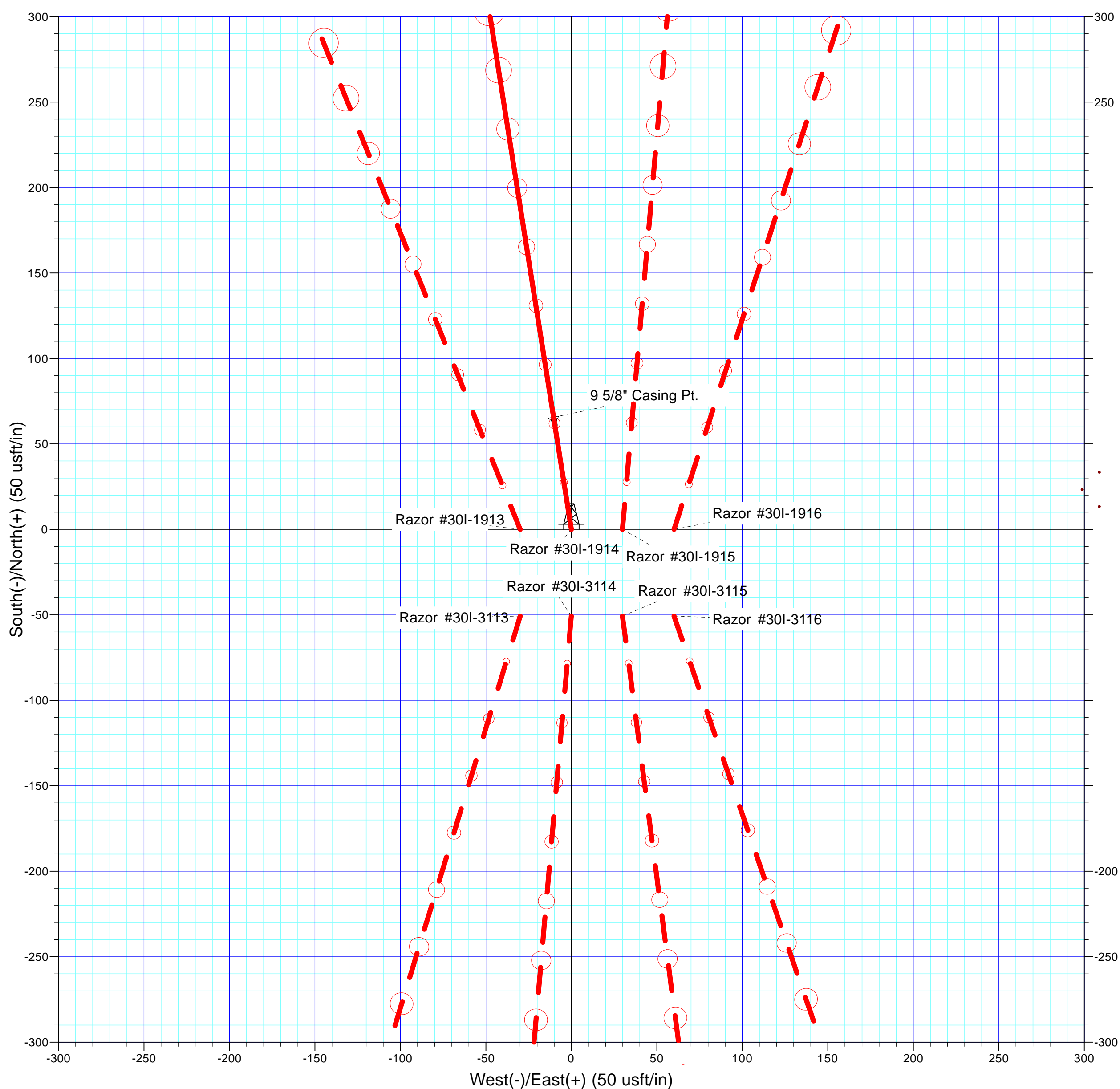
Date: _____

Reviewed: _____

Date: _____

Approved: _____

Date: _____



Plan Report for Razor #30I-1914 - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 500 ft										
600.00	2.00	351.00	599.98	1.72	-0.27	1.73	2.00	2.00	0.00	351.00
700.00	4.00	351.00	699.84	6.89	-1.09	6.92	2.00	2.00	0.00	0.00
End Nudge @ 700 ft										
800.00	4.00	351.00	799.59	13.78	-2.18	13.84	0.00	0.00	0.00	0.00
900.00	4.00	351.00	899.35	20.67	-3.27	20.77	0.00	0.00	0.00	0.00
1,000.00	4.00	351.00	999.11	27.56	-4.37	27.69	0.00	0.00	0.00	0.00
1,100.00	4.00	351.00	1,098.86	34.45	-5.46	34.61	0.00	0.00	0.00	0.00
1,200.00	4.00	351.00	1,198.62	41.34	-6.55	41.53	0.00	0.00	0.00	0.00
1,300.00	4.00	351.00	1,298.38	48.23	-7.64	48.45	0.00	0.00	0.00	0.00
1,400.00	4.00	351.00	1,398.13	55.12	-8.73	55.37	0.00	0.00	0.00	0.00
1,484.07	4.00	351.00	1,482.00	60.91	-9.65	61.19	0.00	0.00	0.00	0.00
Pierre										
1,500.00	4.00	351.00	1,497.89	62.01	-9.82	62.29	0.00	0.00	0.00	0.00
1,552.24	4.00	351.00	1,550.00	65.61	-10.39	65.91	0.00	0.00	0.00	0.00
9 5/8" Casing Pt.										
1,600.00	4.00	351.00	1,597.65	68.90	-10.91	69.21	0.00	0.00	0.00	0.00
1,700.00	4.00	351.00	1,697.40	75.79	-12.00	76.13	0.00	0.00	0.00	0.00
1,800.00	4.00	351.00	1,797.16	82.68	-13.10	83.05	0.00	0.00	0.00	0.00
1,900.00	4.00	351.00	1,896.91	89.57	-14.19	89.97	0.00	0.00	0.00	0.00
2,000.00	4.00	351.00	1,996.67	96.46	-15.28	96.90	0.00	0.00	0.00	0.00
2,100.00	4.00	351.00	2,096.43	103.35	-16.37	103.82	0.00	0.00	0.00	0.00
2,200.00	4.00	351.00	2,196.18	110.24	-17.46	110.74	0.00	0.00	0.00	0.00
2,300.00	4.00	351.00	2,295.94	117.13	-18.55	117.66	0.00	0.00	0.00	0.00
2,400.00	4.00	351.00	2,395.70	124.02	-19.64	124.58	0.00	0.00	0.00	0.00
2,500.00	4.00	351.00	2,495.45	130.91	-20.73	131.50	0.00	0.00	0.00	0.00
2,600.00	4.00	351.00	2,595.21	137.80	-21.83	138.42	0.00	0.00	0.00	0.00
2,700.00	4.00	351.00	2,694.97	144.69	-22.92	145.34	0.00	0.00	0.00	0.00
2,800.00	4.00	351.00	2,794.72	151.58	-24.01	152.26	0.00	0.00	0.00	0.00
2,900.00	4.00	351.00	2,894.48	158.47	-25.10	159.18	0.00	0.00	0.00	0.00
3,000.00	4.00	351.00	2,994.23	165.36	-26.19	166.10	0.00	0.00	0.00	0.00
3,100.00	4.00	351.00	3,093.99	172.25	-27.28	173.03	0.00	0.00	0.00	0.00
3,200.00	4.00	351.00	3,193.75	179.14	-28.37	179.95	0.00	0.00	0.00	0.00
3,300.00	4.00	351.00	3,293.50	186.03	-29.46	186.87	0.00	0.00	0.00	0.00
3,400.00	4.00	351.00	3,393.26	192.92	-30.55	193.79	0.00	0.00	0.00	0.00
3,500.00	4.00	351.00	3,493.02	199.81	-31.65	200.71	0.00	0.00	0.00	0.00
3,600.00	4.00	351.00	3,592.77	206.70	-32.74	207.63	0.00	0.00	0.00	0.00
3,700.00	4.00	351.00	3,692.53	213.59	-33.83	214.55	0.00	0.00	0.00	0.00
3,800.00	4.00	351.00	3,792.29	220.48	-34.92	221.47	0.00	0.00	0.00	0.00
3,900.00	4.00	351.00	3,892.04	227.37	-36.01	228.39	0.00	0.00	0.00	0.00
4,000.00	4.00	351.00	3,991.80	234.25	-37.10	235.31	0.00	0.00	0.00	0.00
4,100.00	4.00	351.00	4,091.56	241.14	-38.19	242.23	0.00	0.00	0.00	0.00
4,200.00	4.00	351.00	4,191.31	248.03	-39.28	249.16	0.00	0.00	0.00	0.00
4,300.00	4.00	351.00	4,291.07	254.92	-40.38	256.08	0.00	0.00	0.00	0.00
4,400.00	4.00	351.00	4,390.82	261.81	-41.47	263.00	0.00	0.00	0.00	0.00
4,500.00	4.00	351.00	4,490.58	268.70	-42.56	269.92	0.00	0.00	0.00	0.00
4,600.00	4.00	351.00	4,590.34	275.59	-43.65	276.84	0.00	0.00	0.00	0.00
4,700.00	4.00	351.00	4,690.09	282.48	-44.74	283.76	0.00	0.00	0.00	0.00
4,800.00	4.00	351.00	4,789.85	289.37	-45.83	290.68	0.00	0.00	0.00	0.00
4,900.00	4.00	351.00	4,889.61	296.26	-46.92	297.60	0.00	0.00	0.00	0.00
5,000.00	4.00	351.00	4,989.36	303.15	-48.01	304.52	0.00	0.00	0.00	0.00
5,100.00	4.00	351.00	5,089.12	310.04	-49.11	311.44	0.00	0.00	0.00	0.00
5,200.00	4.00	351.00	5,188.88	316.93	-50.20	318.36	0.00	0.00	0.00	0.00
5,300.00	4.00	351.00	5,288.63	323.82	-51.29	325.29	0.00	0.00	0.00	0.00
5,400.00	4.00	351.00	5,388.39	330.71	-52.38	332.21	0.00	0.00	0.00	0.00
5,479.00	4.00	351.00	5,467.20	336.15	-53.24	337.67	0.00	0.00	0.00	0.00

Plan Report for Razor #30I-1914 - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
Build Rate 11.00 °/100 ft - Kick Off Point @ 5479 ft										
5,479.27	4.00	351.00	5,467.47	336.17	-53.24	337.69	0.00	0.00	0.00	0.00
5,500.00	6.28	351.00	5,488.11	338.01	-53.54	339.53	11.00	11.00	0.00	0.00
5,600.00	17.28	351.00	5,585.85	358.14	-56.72	359.76	11.00	11.00	0.00	0.00
5,700.00	28.28	351.00	5,677.91	396.33	-62.77	398.12	11.00	11.00	0.00	0.00
5,800.00	39.28	351.00	5,760.90	451.16	-71.46	453.20	11.00	11.00	0.00	0.00
5,857.05	45.56	351.00	5,803.00	489.15	-77.47	491.36	11.00	11.00	0.00	0.00
Niobrara Top										
5,900.00	50.28	351.00	5,831.77	520.62	-82.46	522.98	11.00	11.00	0.00	0.00
5,948.52	55.62	351.00	5,861.00	558.86	-88.51	561.38	11.00	11.00	0.00	0.00
Niobrara "A"										
6,000.00	61.28	351.00	5,887.93	602.17	-95.37	604.89	11.00	11.00	0.00	0.00
6,100.00	72.28	351.00	5,927.29	692.80	-109.73	695.93	11.00	11.00	0.00	0.00
6,200.00	83.28	351.00	5,948.42	789.18	-124.99	792.75	11.00	11.00	0.00	0.00
6,259.60	89.84	351.00	5,952.00	847.91	-134.30	851.74	11.00	11.00	0.00	0.00
Niobrara "B"										
6,261.00	89.99	351.00	5,952.00	849.29	-134.51	853.13	11.00	11.00	0.00	0.00
End Build @ 6261 ft - 7" Casing Pt.										
6,261.09	90.00	351.00	5,952.00	849.38	-134.53	853.22	11.00	11.00	0.00	0.00
6,300.00	90.00	351.00	5,952.00	887.81	-140.62	891.82	0.00	0.00	0.00	0.00
6,336.00	90.00	351.00	5,952.00	923.37	-146.25	927.54	0.00	0.00	0.00	0.00
Begin Turn @ 6336 ft										
6,336.09	90.00	351.00	5,952.00	923.45	-146.26	927.63	0.00	0.00	0.00	0.00
6,339.00	90.00	351.09	5,952.00	926.33	-146.71	930.52	3.00	0.00	3.00	90.00
Turn Rate 3.00 °/100 ft										
6,400.00	90.00	352.92	5,952.00	986.73	-155.20	991.16	3.00	0.00	3.00	90.00
6,500.00	90.00	355.92	5,952.00	1,086.25	-164.93	1,090.93	3.00	0.00	3.00	90.00
6,600.00	90.00	358.92	5,952.00	1,186.14	-169.43	1,190.91	3.00	0.00	3.00	90.00
6,611.81	90.00	359.27	5,952.00	1,197.94	-169.62	1,202.72	3.00	0.00	3.00	90.00
6,612.00	90.00	359.27	5,952.00	1,198.13	-169.62	1,202.91	0.00	0.00	0.00	0.00
End Turn @ 6621 ft										
6,622.00	90.00	359.27	5,952.00	1,208.13	-169.75	1,212.91	0.00	0.00	0.00	0.00
Hold Inc 90.00°, Azi 359.27°										
6,700.00	90.00	359.27	5,952.00	1,286.13	-170.74	1,290.89	0.00	0.00	0.00	0.00
6,800.00	90.00	359.27	5,952.00	1,386.12	-172.01	1,390.88	0.00	0.00	0.00	0.00
6,900.00	90.00	359.27	5,952.00	1,486.11	-173.28	1,490.86	0.00	0.00	0.00	0.00
7,000.00	90.00	359.27	5,952.00	1,586.10	-174.55	1,590.84	0.00	0.00	0.00	0.00
7,100.00	90.00	359.27	5,952.00	1,686.10	-175.83	1,690.82	0.00	0.00	0.00	0.00
7,200.00	90.00	359.27	5,952.00	1,786.09	-177.10	1,790.80	0.00	0.00	0.00	0.00
7,300.00	90.00	359.27	5,952.00	1,886.08	-178.37	1,890.79	0.00	0.00	0.00	0.00
7,400.00	90.00	359.27	5,952.00	1,986.07	-179.64	1,990.77	0.00	0.00	0.00	0.00
7,500.00	90.00	359.27	5,952.00	2,086.06	-180.91	2,090.75	0.00	0.00	0.00	0.00
7,600.00	90.00	359.27	5,952.00	2,186.05	-182.18	2,190.73	0.00	0.00	0.00	0.00
7,700.00	90.00	359.27	5,952.00	2,286.05	-183.45	2,290.71	0.00	0.00	0.00	0.00
7,800.00	90.00	359.27	5,952.00	2,386.04	-184.72	2,390.70	0.00	0.00	0.00	0.00
7,900.00	90.00	359.27	5,952.00	2,486.03	-186.00	2,490.68	0.00	0.00	0.00	0.00
8,000.00	90.00	359.27	5,952.00	2,586.02	-187.27	2,590.66	0.00	0.00	0.00	0.00
8,100.00	90.00	359.27	5,952.00	2,686.01	-188.54	2,690.64	0.00	0.00	0.00	0.00
8,200.00	90.00	359.27	5,952.00	2,786.01	-189.81	2,790.62	0.00	0.00	0.00	0.00
8,300.00	90.00	359.27	5,952.00	2,886.00	-191.08	2,890.61	0.00	0.00	0.00	0.00
8,400.00	90.00	359.27	5,952.00	2,985.99	-192.35	2,990.59	0.00	0.00	0.00	0.00
8,500.00	90.00	359.27	5,952.00	3,085.98	-193.62	3,090.57	0.00	0.00	0.00	0.00
8,600.00	90.00	359.27	5,952.00	3,185.97	-194.89	3,190.55	0.00	0.00	0.00	0.00
8,700.00	90.00	359.27	5,952.00	3,285.97	-196.17	3,290.53	0.00	0.00	0.00	0.00
8,800.00	90.00	359.27	5,952.00	3,385.96	-197.44	3,390.52	0.00	0.00	0.00	0.00
8,900.00	90.00	359.27	5,952.00	3,485.95	-198.71	3,490.50	0.00	0.00	0.00	0.00
9,000.00	90.00	359.27	5,952.00	3,585.94	-199.98	3,590.48	0.00	0.00	0.00	0.00
9,100.00	90.00	359.27	5,952.00	3,685.93	-201.25	3,690.46	0.00	0.00	0.00	0.00

Plan Report for Razor #30I-1914 - Rev A0

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
9,200.00	90.00	359.27	5,952.00	3,785.93	-202.52	3,790.44	0.00	0.00	0.00	0.00
9,300.00	90.00	359.27	5,952.00	3,885.92	-203.79	3,890.43	0.00	0.00	0.00	0.00
9,400.00	90.00	359.27	5,952.00	3,985.91	-205.06	3,990.41	0.00	0.00	0.00	0.00
9,500.00	90.00	359.27	5,952.00	4,085.90	-206.33	4,090.39	0.00	0.00	0.00	0.00
9,600.00	90.00	359.27	5,952.00	4,185.89	-207.61	4,190.37	0.00	0.00	0.00	0.00
9,700.00	90.00	359.27	5,952.00	4,285.89	-208.88	4,290.35	0.00	0.00	0.00	0.00
9,800.00	90.00	359.27	5,952.00	4,385.88	-210.15	4,390.34	0.00	0.00	0.00	0.00
9,900.00	90.00	359.27	5,952.00	4,485.87	-211.42	4,490.32	0.00	0.00	0.00	0.00
10,000.00	90.00	359.27	5,952.00	4,585.86	-212.69	4,590.30	0.00	0.00	0.00	0.00
10,100.00	90.00	359.27	5,952.00	4,685.85	-213.96	4,690.28	0.00	0.00	0.00	0.00
10,200.00	90.00	359.27	5,952.00	4,785.84	-215.23	4,790.26	0.00	0.00	0.00	0.00
10,300.00	90.00	359.27	5,952.00	4,885.84	-216.50	4,890.24	0.00	0.00	0.00	0.00
10,400.00	90.00	359.27	5,952.00	4,985.83	-217.78	4,990.23	0.00	0.00	0.00	0.00
10,500.00	90.00	359.27	5,952.00	5,085.82	-219.05	5,090.21	0.00	0.00	0.00	0.00
10,600.00	90.00	359.27	5,952.00	5,185.81	-220.32	5,190.19	0.00	0.00	0.00	0.00
10,700.00	90.00	359.27	5,952.00	5,285.80	-221.59	5,290.17	0.00	0.00	0.00	0.00
10,800.00	90.00	359.27	5,952.00	5,385.80	-222.86	5,390.15	0.00	0.00	0.00	0.00
10,900.00	90.00	359.27	5,952.00	5,485.79	-224.13	5,490.14	0.00	0.00	0.00	0.00
11,000.00	90.00	359.27	5,952.00	5,585.78	-225.40	5,590.12	0.00	0.00	0.00	0.00
11,100.00	90.00	359.27	5,952.00	5,685.77	-226.67	5,690.10	0.00	0.00	0.00	0.00
11,200.00	90.00	359.27	5,952.00	5,785.76	-227.95	5,790.08	0.00	0.00	0.00	0.00
11,300.00	90.00	359.27	5,952.00	5,885.76	-229.22	5,890.06	0.00	0.00	0.00	0.00
11,400.00	90.00	359.27	5,952.00	5,985.75	-230.49	5,990.05	0.00	0.00	0.00	0.00
11,500.00	90.00	359.27	5,952.00	6,085.74	-231.76	6,090.03	0.00	0.00	0.00	0.00
11,600.00	90.00	359.27	5,952.00	6,185.73	-233.03	6,190.01	0.00	0.00	0.00	0.00
11,700.00	90.00	359.27	5,952.00	6,285.72	-234.30	6,289.99	0.00	0.00	0.00	0.00
11,800.00	90.00	359.27	5,952.00	6,385.72	-235.57	6,389.97	0.00	0.00	0.00	0.00
11,900.00	90.00	359.27	5,952.00	6,485.71	-236.84	6,489.96	0.00	0.00	0.00	0.00
12,000.00	90.00	359.27	5,952.00	6,585.70	-238.12	6,589.94	0.00	0.00	0.00	0.00
12,100.00	90.00	359.27	5,952.00	6,685.69	-239.39	6,689.92	0.00	0.00	0.00	0.00
12,200.00	90.00	359.27	5,952.00	6,785.68	-240.66	6,789.90	0.00	0.00	0.00	0.00
12,300.00	90.00	359.27	5,952.00	6,885.68	-241.93	6,889.88	0.00	0.00	0.00	0.00
12,400.00	90.00	359.27	5,952.00	6,985.67	-243.20	6,989.87	0.00	0.00	0.00	0.00
12,500.00	90.00	359.27	5,952.00	7,085.66	-244.47	7,089.85	0.00	0.00	0.00	0.00
12,600.00	90.00	359.27	5,952.00	7,185.65	-245.74	7,189.83	0.00	0.00	0.00	0.00
12,700.00	90.00	359.27	5,952.00	7,285.64	-247.01	7,289.81	0.00	0.00	0.00	0.00
12,800.00	90.00	359.27	5,952.00	7,385.63	-248.28	7,389.79	0.00	0.00	0.00	0.00
12,900.00	90.00	359.27	5,952.00	7,485.63	-249.56	7,489.78	0.00	0.00	0.00	0.00
13,000.00	90.00	359.27	5,952.00	7,585.62	-250.83	7,589.76	0.00	0.00	0.00	0.00
13,100.00	90.00	359.27	5,952.00	7,685.61	-252.10	7,689.74	0.00	0.00	0.00	0.00
13,200.00	90.00	359.27	5,952.00	7,785.60	-253.37	7,789.72	0.00	0.00	0.00	0.00
13,300.00	90.00	359.27	5,952.00	7,885.59	-254.64	7,889.70	0.00	0.00	0.00	0.00
13,400.00	90.00	359.27	5,952.00	7,985.59	-255.91	7,989.69	0.00	0.00	0.00	0.00
13,500.00	90.00	359.27	5,952.00	8,085.58	-257.18	8,089.67	0.00	0.00	0.00	0.00
13,536.00	90.00	359.27	5,952.00	8,121.58	-257.64	8,125.66	0.00	0.00	0.00	0.00
Total Depth 13536.27 ft										
13,536.27	90.00	359.27	5,952.00	8,121.85	-257.64	8,125.93	0.00	0.00	0.00	0.00

Plan Report for Razor #30I-1914 - Rev A0**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Begin Nudge @ 500 ft
700.00	699.84	6.89	-1.09	End Nudge @ 700 ft
5,479.00	5,467.20	336.15	-53.24	Build Rate 11.00 °/100 ft
5,479.00	5,467.20	336.15	-53.24	Kick Off Point @ 5479 ft
6,261.00	5,952.00	849.29	-134.51	End Build @ 6261 ft
6,336.00	5,952.00	923.37	-146.25	Begin Turn @ 6336 ft
6,339.00	5,952.00	926.33	-146.71	Turn Rate 3.00 °/100 ft
6,612.00	5,952.00	1,198.13	-169.62	End Turn @ 6621 ft
6,622.00	5,952.00	1,208.13	-169.75	Hold Inc 90.00°, Azi 359.27°
13,536.00	5,952.00	8,121.58	-257.64	Total Depth 13536.27 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Razor 30i-1914 BHL	358.18	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,550.00	Rev A0	MWD+IFR1+MS+sag
1,550.00	6,261.00	Rev A0	MWD+IFR1+MS+sag
6,261.00	13,536.27	Rev A0	MWD+IFR1+MS+sag

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,552.24	1,550.00	9 5/8" Casing Pt.	9-5/8	13-1/2
6,261.00	5,952.00	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,484.07	1,482.00	Pierre		0.00	
5,857.05	5,803.00	Niobrara Top		0.00	
5,948.52	5,861.00	Niobrara "A"		0.00	
6,259.60	5,952.00	Niobrara "B"		0.00	

Plan Report for Razor #30I-1914 - Rev A0

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Razor Fed Section 30 100' Setback	29.00	-77.84	-2,528.30	Polygon
Razor Fed Section 31 100' Setback	29.00	-77.84	-2,528.30	Polygon
Razor Fed Section 19	29.00	-77.84	-2,528.30	Polygon
Razor Fed Section 30	29.00	-77.84	-2,528.30	Polygon
Razor Fed Section 31	29.00	-77.84	-2,528.30	Polygon
Razor Fed Section 19 100' Setback	29.00	-77.84	-2,528.30	Polygon
Razor 30i-1914 BHL	5,952.00	8,121.85	-257.64	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.73 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 6,261.09 usft
Net Tortousity applicable to Plans:	0.73 °/100usft	Directional Difficulty Index:	6.470

Audit Info

North Reference Sheet for Sec. 30-T10N-R58W - Razor #30I-1914 - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to KB 17' @ 4879.00usft (TBD). Northing and Easting are relative to Razor #30I-1914

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 1.00000418

Grid Coordinates of Well: 1,541,372.02 usft N, 3,442,554.37 usft E

Geographical Coordinates of Well: 40° 48' 30.59" N, 103° 54' 04.59" W

Grid Convergence at Surface is: 1.03°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,536.27usft
the Bottom Hole Displacement is 8,125.93usft in the Direction of 358.18° (True).

Magnetic Convergence at surface is: -7.02° (4 July 2014, , BGGM2013)

