

# Whiting Oil and Gas Corporation

Weld County, CO

Sec. 30-T10N-R58W

Razor Federal #30K-3106

Plan A

Plan: Rev A0

## Sperry Drilling Services

## Proposal Report

12 February, 2014

Well Coordinates: 1,541,249.18 N, 3,440,059.98 E (40° 48' 29.82" N, 103° 54' 37.05" W)

Ground Level: 4,828.00 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 Federal #30K-3106

KB 22' @ 4850.00usft (Frontier 26)

N

True

API - US Survey Feet - Custom

## HALLIBURTON

Whiting Oil and Gas Corporation

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	186.95	699.84	-6.93	-0.84	2.00	186.95	6.94	
4	5477.26	4.00	186.95	5465.46	-337.72	-41.17	0.00	0.00	338.42	
5	6259.08	90.00	186.95	5950.00	-853.51	-104.04	11.00	0.00	855.26	
6	6334.08	90.00	186.95	5950.00	-927.96	-113.12	0.00	0.00	929.86	
7	6565.85	90.00	180.00	5950.00	-1159.16	-127.15	3.00	-90.00	1161.29	
8	12363.31	90.00	180.00	5950.00	-6956.62	-126.82	0.00	0.00	6957.77	Razor Federal #30K-3106 BHL

Plan: Rev A0 (Razor Federal #30K-3106/Plan A)

Created By: Troy L. Stoute      Date: 18:39, February 12 2014

Checked: \_\_\_\_\_      Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_      Date: \_\_\_\_\_

Approved: \_\_\_\_\_      Date: \_\_\_\_\_

T

M

Azimuths to True North

Magnetic Field

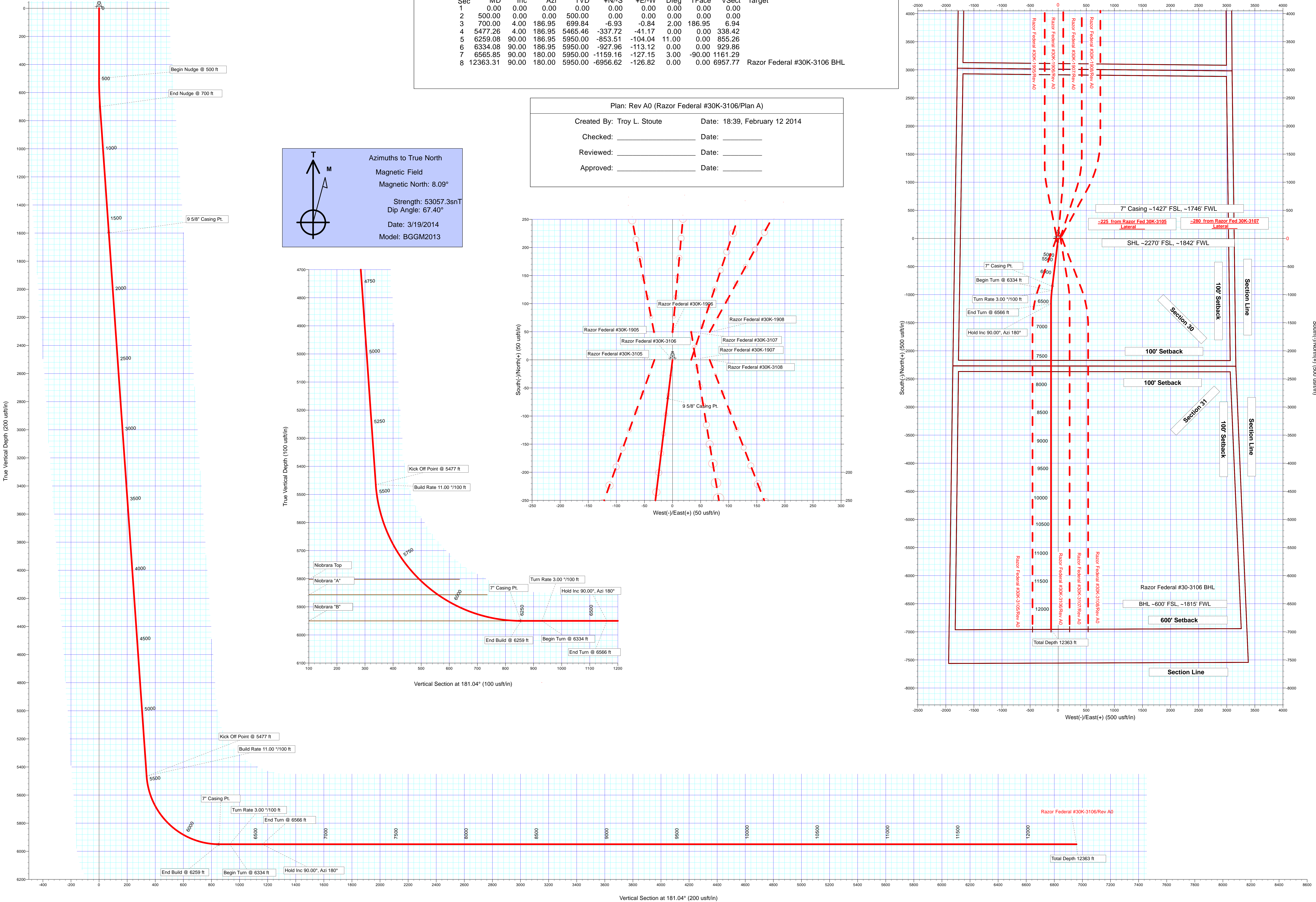
Magnetic North: 8.09°

Strength: 53057.3snT

Dip Angle: 67.40°

Date: 3/19/2014

Model: BGGM2013



**Plan Report for Razor Federal #30K-3106 - 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
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	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
<b>Begin Nudge @ 500 ft</b>										
600.00	2.00	186.95	599.98	-1.73	-0.21	1.74	2.00	2.00	0.00	186.95
700.00	4.00	186.95	699.84	-6.93	-0.84	6.94	2.00	2.00	0.00	0.00
<b>End Nudge @ 700 ft</b>										
800.00	4.00	186.95	799.59	-13.85	-1.69	13.88	0.00	0.00	0.00	0.00
900.00	4.00	186.95	899.35	-20.78	-2.53	20.82	0.00	0.00	0.00	0.00
1,000.00	4.00	186.95	999.11	-27.70	-3.38	27.76	0.00	0.00	0.00	0.00
1,100.00	4.00	186.95	1,098.86	-34.62	-4.22	34.70	0.00	0.00	0.00	0.00
1,200.00	4.00	186.95	1,198.62	-41.55	-5.06	41.63	0.00	0.00	0.00	0.00
1,300.00	4.00	186.95	1,298.38	-48.47	-5.91	48.57	0.00	0.00	0.00	0.00
1,400.00	4.00	186.95	1,398.13	-55.40	-6.75	55.51	0.00	0.00	0.00	0.00
1,485.07	4.00	186.95	1,483.00	-61.29	-7.47	61.41	0.00	0.00	0.00	0.00
<b>Pierre</b>										
1,500.00	4.00	186.95	1,497.89	-62.32	-7.60	62.45	0.00	0.00	0.00	0.00
1,600.00	4.00	186.95	1,597.65	-69.25	-8.44	69.39	0.00	0.00	0.00	0.00
1,602.36	4.00	186.95	1,600.00	-69.41	-8.46	69.55	0.00	0.00	0.00	0.00
<b>9 5/8" Casing Pt.</b>										
1,700.00	4.00	186.95	1,697.40	-76.17	-9.29	76.33	0.00	0.00	0.00	0.00
1,800.00	4.00	186.95	1,797.16	-83.10	-10.13	83.27	0.00	0.00	0.00	0.00
1,900.00	4.00	186.95	1,896.91	-90.02	-10.97	90.20	0.00	0.00	0.00	0.00
2,000.00	4.00	186.95	1,996.67	-96.94	-11.82	97.14	0.00	0.00	0.00	0.00
2,100.00	4.00	186.95	2,096.43	-103.87	-12.66	104.08	0.00	0.00	0.00	0.00
2,200.00	4.00	186.95	2,196.18	-110.79	-13.51	111.02	0.00	0.00	0.00	0.00
2,300.00	4.00	186.95	2,295.94	-117.72	-14.35	117.96	0.00	0.00	0.00	0.00
2,400.00	4.00	186.95	2,395.70	-124.64	-15.19	124.90	0.00	0.00	0.00	0.00
2,500.00	4.00	186.95	2,495.45	-131.57	-16.04	131.84	0.00	0.00	0.00	0.00
2,600.00	4.00	186.95	2,595.21	-138.49	-16.88	138.78	0.00	0.00	0.00	0.00
2,700.00	4.00	186.95	2,694.97	-145.42	-17.73	145.71	0.00	0.00	0.00	0.00
2,800.00	4.00	186.95	2,794.72	-152.34	-18.57	152.65	0.00	0.00	0.00	0.00
2,900.00	4.00	186.95	2,894.48	-159.26	-19.41	159.59	0.00	0.00	0.00	0.00
3,000.00	4.00	186.95	2,994.23	-166.19	-20.26	166.53	0.00	0.00	0.00	0.00
3,100.00	4.00	186.95	3,093.99	-173.11	-21.10	173.47	0.00	0.00	0.00	0.00
3,200.00	4.00	186.95	3,193.75	-180.04	-21.95	180.41	0.00	0.00	0.00	0.00
3,300.00	4.00	186.95	3,293.50	-186.96	-22.79	187.35	0.00	0.00	0.00	0.00
3,400.00	4.00	186.95	3,393.26	-193.89	-23.63	194.28	0.00	0.00	0.00	0.00
3,500.00	4.00	186.95	3,493.02	-200.81	-24.48	201.22	0.00	0.00	0.00	0.00
3,600.00	4.00	186.95	3,592.77	-207.73	-25.32	208.16	0.00	0.00	0.00	0.00
3,700.00	4.00	186.95	3,692.53	-214.66	-26.17	215.10	0.00	0.00	0.00	0.00
3,800.00	4.00	186.95	3,792.29	-221.58	-27.01	222.04	0.00	0.00	0.00	0.00
3,900.00	4.00	186.95	3,892.04	-228.51	-27.85	228.98	0.00	0.00	0.00	0.00
4,000.00	4.00	186.95	3,991.80	-235.43	-28.70	235.92	0.00	0.00	0.00	0.00
4,100.00	4.00	186.95	4,091.56	-242.36	-29.54	242.85	0.00	0.00	0.00	0.00
4,200.00	4.00	186.95	4,191.31	-249.28	-30.39	249.79	0.00	0.00	0.00	0.00
4,300.00	4.00	186.95	4,291.07	-256.21	-31.23	256.73	0.00	0.00	0.00	0.00
4,400.00	4.00	186.95	4,390.82	-263.13	-32.08	263.67	0.00	0.00	0.00	0.00
4,500.00	4.00	186.95	4,490.58	-270.05	-32.92	270.61	0.00	0.00	0.00	0.00
4,600.00	4.00	186.95	4,590.34	-276.98	-33.76	277.55	0.00	0.00	0.00	0.00
4,700.00	4.00	186.95	4,690.09	-283.90	-34.61	284.49	0.00	0.00	0.00	0.00
4,800.00	4.00	186.95	4,789.85	-290.83	-35.45	291.43	0.00	0.00	0.00	0.00
4,900.00	4.00	186.95	4,889.61	-297.75	-36.30	298.36	0.00	0.00	0.00	0.00
5,000.00	4.00	186.95	4,989.36	-304.68	-37.14	305.30	0.00	0.00	0.00	0.00
5,100.00	4.00	186.95	5,089.12	-311.60	-37.98	312.24	0.00	0.00	0.00	0.00

**Plan Report for Razor Federal #30K-3106 - 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 (°)
5,200.00	4.00	186.95	5,188.88	-318.52	-38.83	319.18	0.00	0.00	0.00	0.00
5,300.00	4.00	186.95	5,288.63	-325.45	-39.67	326.12	0.00	0.00	0.00	0.00
5,400.00	4.00	186.95	5,388.39	-332.37	-40.52	333.06	0.00	0.00	0.00	0.00
5,477.00	4.00	186.95	5,465.20	-337.71	-41.17	338.40	0.00	0.00	0.00	0.00
<b>Kick Off Point @ 5477 ft - Build Rate 11.00 °/100 ft</b>										
5,477.26	4.00	186.95	5,465.46	-337.72	-41.17	338.42	0.00	0.00	0.00	0.00
5,500.00	6.50	186.95	5,488.10	-339.79	-41.42	340.49	11.00	11.00	0.00	0.00
5,600.00	17.50	186.95	5,585.77	-360.40	-43.93	361.14	11.00	11.00	0.00	0.00
5,700.00	28.50	186.95	5,677.68	-399.13	-48.65	399.95	11.00	11.00	0.00	0.00
5,800.00	39.50	186.95	5,760.45	-454.55	-55.41	455.49	11.00	11.00	0.00	0.00
5,856.48	45.71	186.95	5,802.00	-492.49	-60.03	493.50	11.00	11.00	0.00	0.00
<b>Niobrara Top</b>										
5,900.00	50.50	186.95	5,831.05	-524.64	-63.95	525.72	11.00	11.00	0.00	0.00
5,943.00	55.23	186.95	5,857.00	-558.65	-68.10	559.80	11.00	11.00	0.00	0.00
<b>Niobrara "A"</b>										
6,000.00	61.50	186.95	5,886.88	-606.81	-73.97	608.05	11.00	11.00	0.00	0.00
6,100.00	72.50	186.95	5,925.89	-698.04	-85.09	699.48	11.00	11.00	0.00	0.00
6,200.00	83.50	186.95	5,946.65	-794.99	-96.91	796.62	11.00	11.00	0.00	0.00
6,259.00	89.99	186.95	5,950.00	-853.43	-104.03	855.18	11.00	11.00	0.00	0.00
<b>End Build @ 6259 ft</b>										
6,259.08	90.00	186.95	5,950.00	-853.51	-104.04	855.26	10.75	10.75	0.00	0.00
<b>Niobrara "B" - 7" Casing Pt.</b>										
6,300.00	90.00	186.95	5,950.00	-894.13	-108.99	895.97	0.00	0.00	0.00	0.00
6,334.00	90.00	186.95	5,950.00	-927.88	-113.11	929.79	0.00	0.00	0.00	0.00
<b>Begin Turn @ 6334 ft - Turn Rate 3.00 °/100 ft</b>										
6,334.08	90.00	186.95	5,950.00	-927.96	-113.12	929.86	0.00	0.00	0.00	0.00
6,400.00	90.00	184.97	5,950.00	-993.52	-119.96	995.54	3.00	0.00	-3.00	-90.00
6,500.00	90.00	181.97	5,950.00	-1,093.32	-126.02	1,095.44	3.00	0.00	-3.00	-90.00
6,565.85	90.00	180.00	5,950.00	-1,159.16	-127.15	1,161.29	3.00	0.00	-3.00	-90.00
6,566.00	90.00	180.00	5,950.00	-1,159.31	-127.15	1,161.44	0.00	0.00	0.00	0.00
<b>End Turn @ 6566 ft - Hold Inc 90.00°, Azi 180°</b>										
6,600.00	90.00	180.00	5,950.00	-1,193.31	-127.15	1,195.43	0.00	0.00	0.00	0.00
6,700.00	90.00	180.00	5,950.00	-1,293.31	-127.14	1,295.41	0.00	0.00	0.00	0.00
6,800.00	90.00	180.00	5,950.00	-1,393.31	-127.14	1,395.40	0.00	0.00	0.00	0.00
6,900.00	90.00	180.00	5,950.00	-1,493.31	-127.13	1,495.38	0.00	0.00	0.00	0.00
7,000.00	90.00	180.00	5,950.00	-1,593.31	-127.13	1,595.36	0.00	0.00	0.00	0.00
7,100.00	90.00	180.00	5,950.00	-1,693.31	-127.12	1,695.35	0.00	0.00	0.00	0.00
7,200.00	90.00	180.00	5,950.00	-1,793.31	-127.11	1,795.33	0.00	0.00	0.00	0.00
7,300.00	90.00	180.00	5,950.00	-1,893.31	-127.11	1,895.31	0.00	0.00	0.00	0.00
7,400.00	90.00	180.00	5,950.00	-1,993.31	-127.10	1,995.30	0.00	0.00	0.00	0.00
7,500.00	90.00	180.00	5,950.00	-2,093.31	-127.10	2,095.28	0.00	0.00	0.00	0.00
7,600.00	90.00	180.00	5,950.00	-2,193.31	-127.09	2,195.26	0.00	0.00	0.00	0.00
7,700.00	90.00	180.00	5,950.00	-2,293.31	-127.09	2,295.25	0.00	0.00	0.00	0.00
7,800.00	90.00	180.00	5,950.00	-2,393.31	-127.08	2,395.23	0.00	0.00	0.00	0.00
7,900.00	90.00	180.00	5,950.00	-2,493.31	-127.08	2,495.21	0.00	0.00	0.00	0.00
8,000.00	90.00	180.00	5,950.00	-2,593.31	-127.07	2,595.20	0.00	0.00	0.00	0.00
8,100.00	90.00	180.00	5,950.00	-2,693.31	-127.06	2,695.18	0.00	0.00	0.00	0.00
8,200.00	90.00	180.00	5,950.00	-2,793.31	-127.06	2,795.16	0.00	0.00	0.00	0.00
8,300.00	90.00	180.00	5,950.00	-2,893.31	-127.05	2,895.15	0.00	0.00	0.00	0.00
8,400.00	90.00	180.00	5,950.00	-2,993.31	-127.05	2,995.13	0.00	0.00	0.00	0.00
8,500.00	90.00	180.00	5,950.00	-3,093.31	-127.04	3,095.11	0.00	0.00	0.00	0.00
8,600.00	90.00	180.00	5,950.00	-3,193.31	-127.04	3,195.10	0.00	0.00	0.00	0.00
8,700.00	90.00	180.00	5,950.00	-3,293.31	-127.03	3,295.08	0.00	0.00	0.00	0.00
8,800.00	90.00	180.00	5,950.00	-3,393.31	-127.02	3,395.06	0.00	0.00	0.00	0.00
8,900.00	90.00	180.00	5,950.00	-3,493.31	-127.02	3,495.05	0.00	0.00	0.00	0.00
9,000.00	90.00	180.00	5,950.00	-3,593.31	-127.01	3,595.03	0.00	0.00	0.00	0.00
9,100.00	90.00	180.00	5,950.00	-3,693.31	-127.01	3,695.01	0.00	0.00	0.00	0.00
9,200.00	90.00	180.00	5,950.00	-3,793.31	-127.00	3,795.00	0.00	0.00	0.00	0.00



**Plan Report for Razor Federal #30K-3106 - 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 (°)
9,300.00	90.00	180.00	5,950.00	-3,893.31	-127.00	3,894.98	0.00	0.00	0.00	0.00
9,400.00	90.00	180.00	5,950.00	-3,993.31	-126.99	3,994.96	0.00	0.00	0.00	0.00
9,500.00	90.00	180.00	5,950.00	-4,093.31	-126.99	4,094.94	0.00	0.00	0.00	0.00
9,600.00	90.00	180.00	5,950.00	-4,193.31	-126.98	4,194.93	0.00	0.00	0.00	0.00
9,700.00	90.00	180.00	5,950.00	-4,293.31	-126.97	4,294.91	0.00	0.00	0.00	0.00
9,800.00	90.00	180.00	5,950.00	-4,393.31	-126.97	4,394.89	0.00	0.00	0.00	0.00
9,900.00	90.00	180.00	5,950.00	-4,493.31	-126.96	4,494.88	0.00	0.00	0.00	0.00
10,000.00	90.00	180.00	5,950.00	-4,593.31	-126.96	4,594.86	0.00	0.00	0.00	0.00
10,100.00	90.00	180.00	5,950.00	-4,693.31	-126.95	4,694.84	0.00	0.00	0.00	0.00
10,200.00	90.00	180.00	5,950.00	-4,793.31	-126.95	4,794.83	0.00	0.00	0.00	0.00
10,300.00	90.00	180.00	5,950.00	-4,893.31	-126.94	4,894.81	0.00	0.00	0.00	0.00
10,400.00	90.00	180.00	5,950.00	-4,993.31	-126.94	4,994.79	0.00	0.00	0.00	0.00
10,500.00	90.00	180.00	5,950.00	-5,093.31	-126.93	5,094.78	0.00	0.00	0.00	0.00
10,600.00	90.00	180.00	5,950.00	-5,193.31	-126.92	5,194.76	0.00	0.00	0.00	0.00
10,700.00	90.00	180.00	5,950.00	-5,293.31	-126.92	5,294.74	0.00	0.00	0.00	0.00
10,800.00	90.00	180.00	5,950.00	-5,393.31	-126.91	5,394.73	0.00	0.00	0.00	0.00
10,900.00	90.00	180.00	5,950.00	-5,493.31	-126.91	5,494.71	0.00	0.00	0.00	0.00
11,000.00	90.00	180.00	5,950.00	-5,593.31	-126.90	5,594.69	0.00	0.00	0.00	0.00
11,100.00	90.00	180.00	5,950.00	-5,693.31	-126.90	5,694.68	0.00	0.00	0.00	0.00
11,200.00	90.00	180.00	5,950.00	-5,793.31	-126.89	5,794.66	0.00	0.00	0.00	0.00
11,300.00	90.00	180.00	5,950.00	-5,893.31	-126.88	5,894.64	0.00	0.00	0.00	0.00
11,400.00	90.00	180.00	5,950.00	-5,993.31	-126.88	5,994.63	0.00	0.00	0.00	0.00
11,500.00	90.00	180.00	5,950.00	-6,093.31	-126.87	6,094.61	0.00	0.00	0.00	0.00
11,600.00	90.00	180.00	5,950.00	-6,193.31	-126.87	6,194.59	0.00	0.00	0.00	0.00
11,700.00	90.00	180.00	5,950.00	-6,293.31	-126.86	6,294.58	0.00	0.00	0.00	0.00
11,800.00	90.00	180.00	5,950.00	-6,393.31	-126.86	6,394.56	0.00	0.00	0.00	0.00
11,900.00	90.00	180.00	5,950.00	-6,493.31	-126.85	6,494.54	0.00	0.00	0.00	0.00
12,000.00	90.00	180.00	5,950.00	-6,593.31	-126.85	6,594.53	0.00	0.00	0.00	0.00
12,100.00	90.00	180.00	5,950.00	-6,693.31	-126.84	6,694.51	0.00	0.00	0.00	0.00
12,200.00	90.00	180.00	5,950.00	-6,793.31	-126.83	6,794.49	0.00	0.00	0.00	0.00
12,300.00	90.00	180.00	5,950.00	-6,893.31	-126.83	6,894.48	0.00	0.00	0.00	0.00
12,363.00	90.00	180.00	5,950.00	-6,956.31	-126.82	6,957.47	0.00	0.00	0.00	0.00
<b>Total Depth 12363 ft</b>										
12,363.31	90.00	180.00	5,950.00	-6,956.62	-126.82	6,957.77	0.00	0.00	0.00	0.00

**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	-6.93	-0.84	End Nudge @ 700 ft
5,477.00	5,465.20	-337.71	-41.17	Kick Off Point @ 5477 ft
5,477.00	5,465.20	-337.71	-41.17	Build Rate 11.00 °/100 ft
6,259.00	5,950.00	-853.43	-104.03	End Build @ 6259 ft
6,334.00	5,950.00	-927.88	-113.11	Begin Turn @ 6334 ft
6,334.00	5,950.00	-927.88	-113.11	Turn Rate 3.00 °/100 ft
6,566.00	5,950.00	-1,159.31	-127.15	End Turn @ 6566 ft
6,566.00	5,950.00	-1,159.31	-127.15	Hold Inc 90.00°, Azi 180°
12,363.00	5,950.00	-6,956.31	-126.82	Total Depth 12363 ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/-S (usft)	+E/-W (usft)	
Target	Razor Federal #30K-3106 BHL	181.04	Slot	0.00	0.00	0.00

**Plan Report for Razor Federal #30K-3106 - Rev A0****Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,600.00	Rev A0	MWD+IFR1+MS+sag
1,600.00	6,259.00	Rev A0	MWD+IFR1+MS+sag
6,259.00	12,362.96	Rev A0	MWD+IFR1+MS+sag

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,602.36	1,600.00	9 5/8" Casing Pt.	9-5/8	13-1/2
6,259.08	5,950.00	7" Casing Pt.	7	8-3/4

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,485.07	1,483.00	Pierre		0.00	
5,856.48	5,802.00	Niobrara Top		0.00	
5,943.00	5,857.00	Niobrara "A"		0.00	
6,259.08	5,950.00	Niobrara "B"		0.00	

**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Razor Fed Section 30 100' Setback	0.00	0.00	-32.11	Polygon
Razor Fed Section 31 100' Setback	0.00	0.00	-32.11	Polygon
Razor Fed Section 19	0.00	0.00	-32.11	Polygon
Razor Fed Section 30	0.00	0.00	-32.11	Polygon
Razor Fed Section 31	0.00	0.00	-32.11	Polygon
Razor Fed Section 19 100' Setback	0.00	0.00	-32.11	Polygon
Razor Federal #30K-3106 BHL	5,950.00	-6,956.62	-126.82	Point

**Directional Difficulty Index**

Average Dogleg over Survey:	0.78 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 6,259.08 usft
Net Tortousity applicable to Plans:	0.78 °/100usft	Directional Difficulty Index:	6.344

**Audit Info**

**North Reference Sheet for Sec. 30-T10N-R58W - Razor Federal #30K-3106 - 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 22' @ 4850.00usft (Frontier 26). Northing and Easting are relative to Razor Federal #30K-3106

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: 1.00000414

Grid Coordinates of Well: 1,541,249.18 usft N, 3,440,059.98 usft E

Geographical Coordinates of Well: 40° 48' 29.82" N, 103° 54' 37.05" W

Grid Convergence at Surface is: 1.03°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,363.31usft  
the Bottom Hole Displacement is 6,957.77usft in the Direction of 181.04° (True).

Magnetic Convergence at surface is: -7.06° (19 March 2014, , BGGM2013)

