

# Whiting Oil and Gas Corporation

Weld County, CO

Sec. 11-T10N-R58W (Razor 11F Pad)

Razor 11F-0205C

Plan C

Plan: Rev C0

## Sperry Drilling Services

### Proposal Report

26 January, 2015

Well Coordinates: 1,558,361.82 N, 3,460,454.94 E (40° 51' 15.18" N, 103° 50' 07.70" W)

Ground Level: 4,988.60 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 11F-0205C

KB 22 (copy) @ 5010.60usft (Frontier 26)

N

True

API - US Survey Feet - Custom

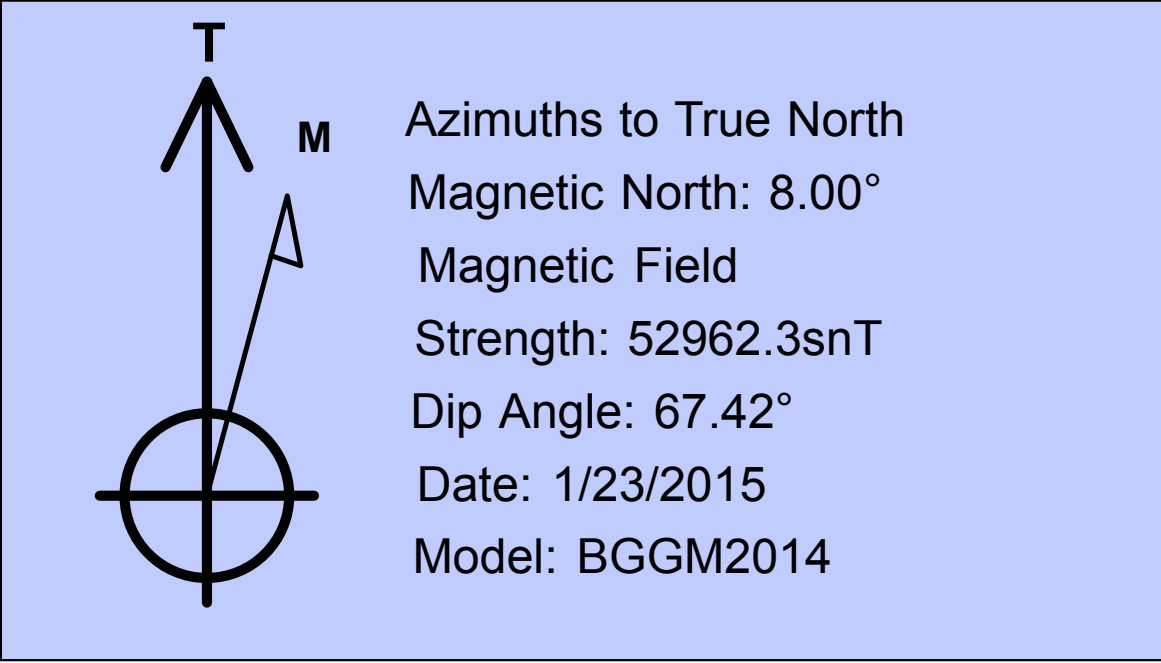
**HALLIBURTON**

Project: Weld County, CO  
Site: Sec. 11-T10N-R58W (Razor 11F Pad)  
Well: Razor 11F-0205C  
Wellbore: Plan C  
Plan: Rev C0

Whiting Oil and Gas Corporation



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1012.50	12.25	212.25	1007.84	-55.17	-34.81	2.00	212.25	-52.70	
4	4586.02	12.25	212.25	4500.00	-696.41	-439.40	0.00	0.00	-665.30	
5	5198.52	0.00	0.00	5107.84	-751.58	-474.21	2.00	180.00	-718.00	
6	5663.81	0.00	0.00	5573.13	-751.58	-474.21	0.00	0.00	-718.00	
7	6481.99	90.00	0.00	6094.00	-230.71	-474.20	11.00	0.00	-198.31	
8	13747.53	90.00	0.00	6094.00	7034.84	-474.00	0.00	0.00	7050.79	Razor 11F-0205C_Rev C0_BHL Tgt



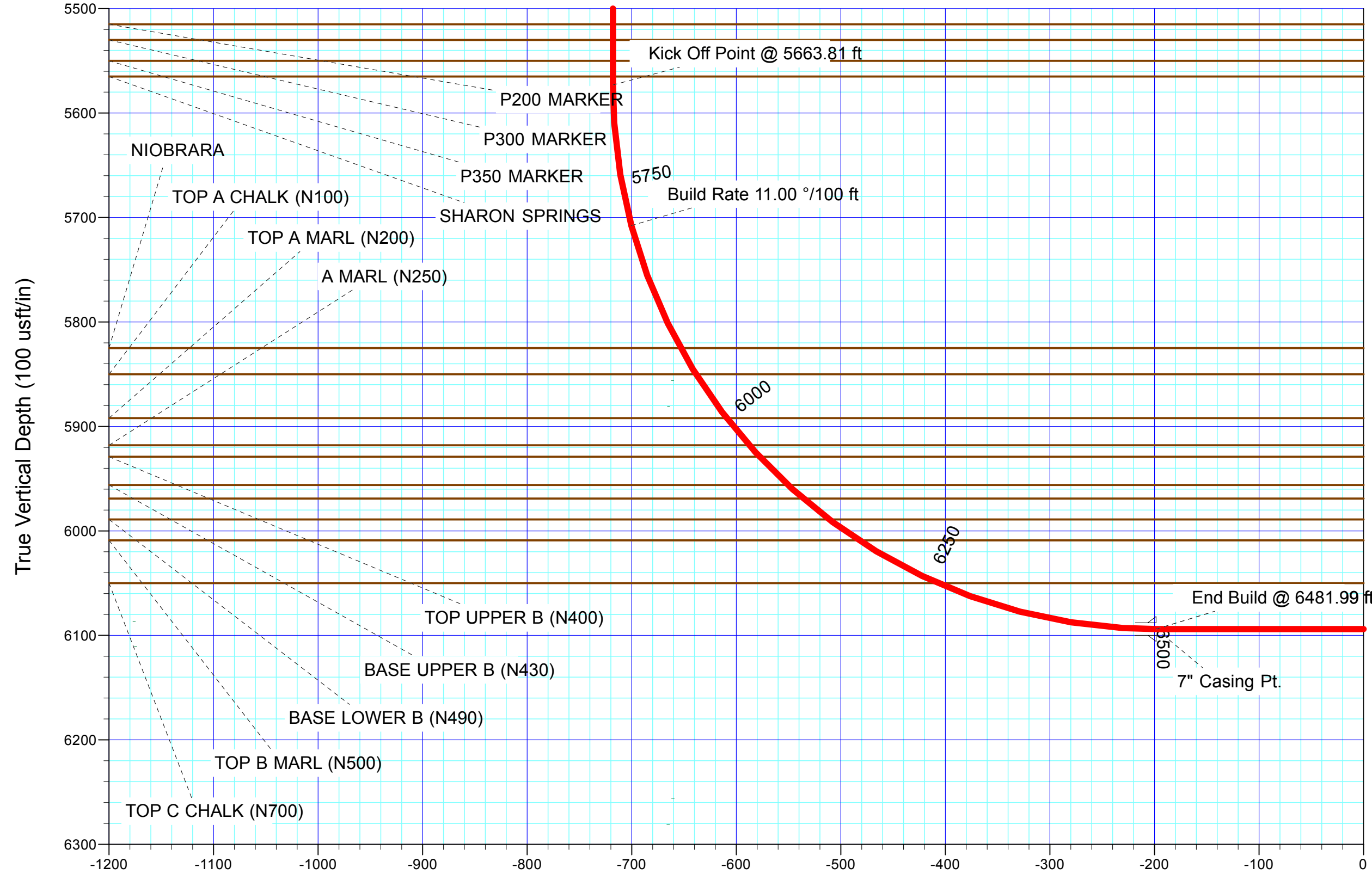
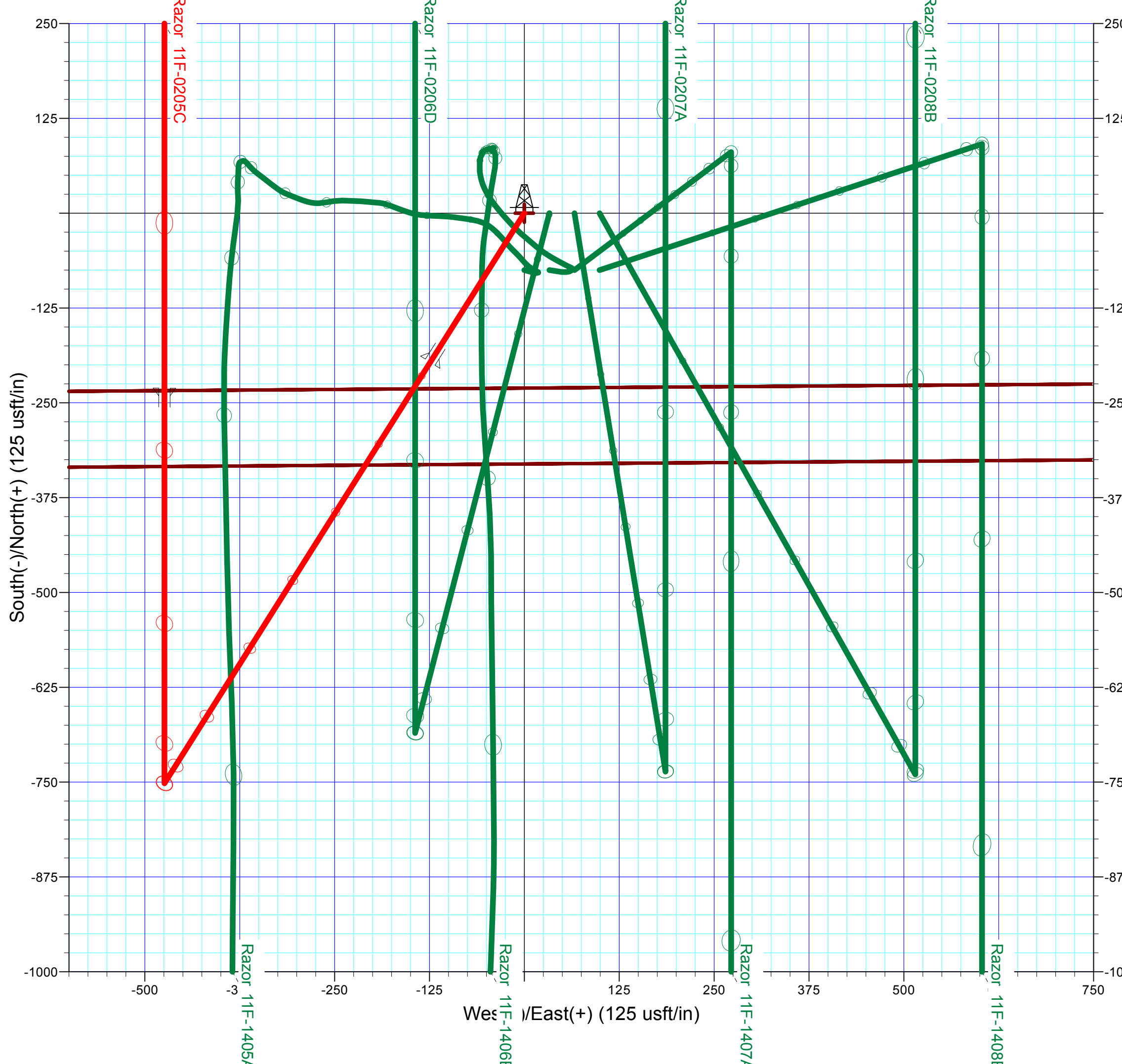
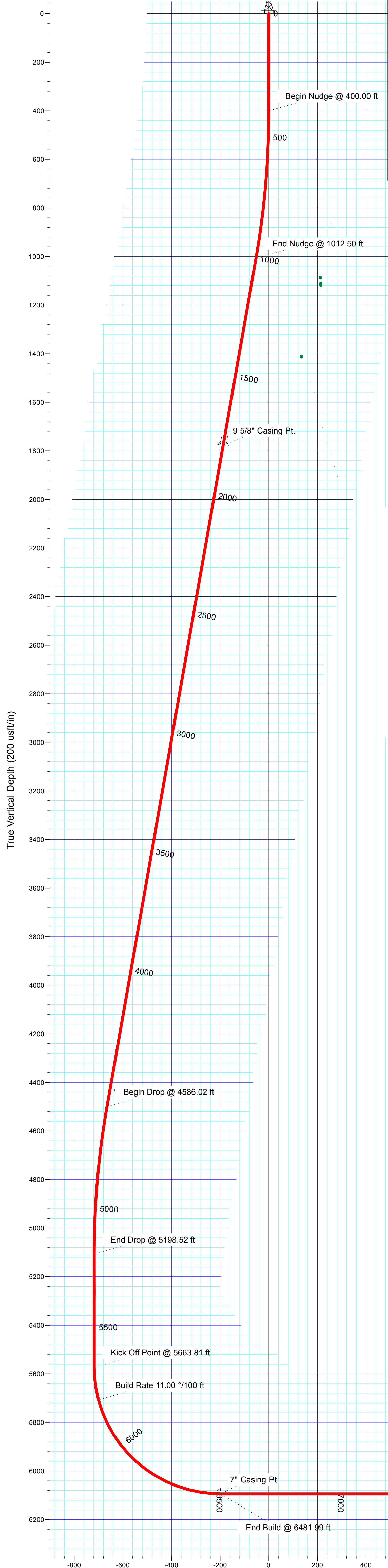
Plan: Rev C0 (Razor 11F-0205C/Plan C)

Created By: Christopher Sorensen      Date: 14:55, January 26 2015

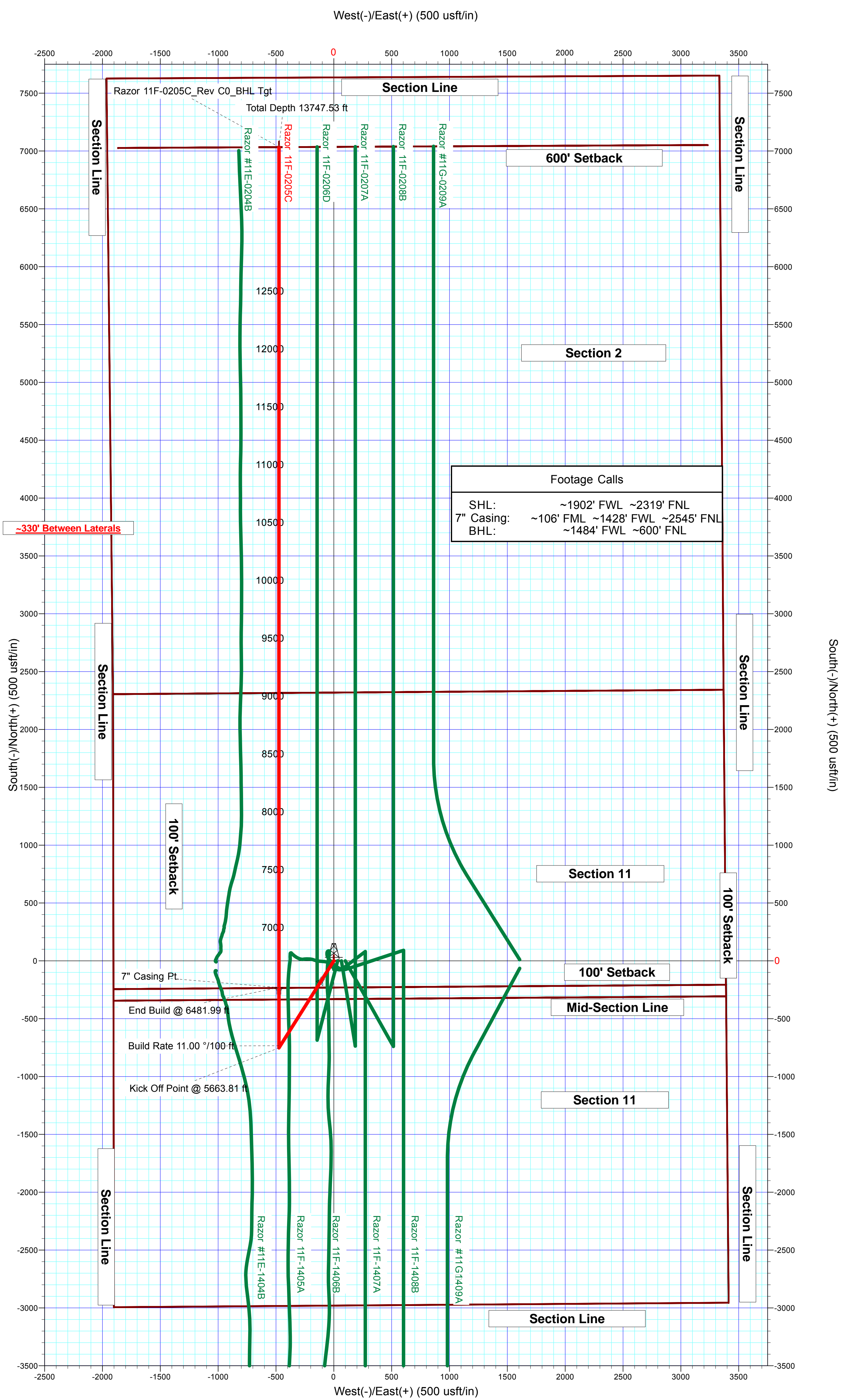
Checked: \_\_\_\_\_      Date: \_\_\_\_\_

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

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



Vertical Section at 356.15° (100 usf/in)



Footage Calls

SHL: ~1902' FWL ~2319' FNL

7\" Casing: ~106' FML ~1428' FWL ~2545' FNL

BHL: ~1484' FWL ~600' FNL

Vertical Section at 356.15° (200 usf/in)

**Plan Report for Razor 11F-0205C - Rev C0**

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
<b>Begin Nudge @ 400.00 ft</b>										
500.00	2.00	212.25	499.98	-1.48	-0.93	-1.41	2.00	2.00	0.00	212.25
600.00	4.00	212.25	599.84	-5.90	-3.72	-5.64	2.00	2.00	0.00	0.00
700.00	6.00	212.25	699.45	-13.27	-8.37	-12.68	2.00	2.00	0.00	0.00
800.00	8.00	212.25	798.70	-23.58	-14.88	-22.53	2.00	2.00	0.00	0.00
900.00	10.00	212.25	897.47	-36.81	-23.22	-35.16	2.00	2.00	0.00	0.00
1,000.00	12.00	212.25	995.62	-52.94	-33.41	-50.58	2.00	2.00	0.00	0.00
1,012.50	12.25	212.25	1,007.84	-55.17	-34.81	-52.70	2.00	2.00	0.00	0.00
<b>End Nudge @ 1012.50 ft</b>										
1,100.00	12.25	212.25	1,093.35	-70.87	-44.71	-67.70	0.00	0.00	0.00	0.00
1,200.00	12.25	212.25	1,191.08	-88.81	-56.04	-84.84	0.00	0.00	0.00	0.00
1,300.00	12.25	212.25	1,288.80	-106.76	-67.36	-101.99	0.00	0.00	0.00	0.00
1,400.00	12.25	212.25	1,386.52	-124.70	-78.68	-119.13	0.00	0.00	0.00	0.00
1,500.00	12.25	212.25	1,484.24	-142.64	-90.00	-136.27	0.00	0.00	0.00	0.00
1,567.29	12.25	212.25	1,550.00	-154.72	-97.62	-147.81	0.00	0.00	0.00	0.00
<b>UPPER PIERRE</b>										
1,600.00	12.25	212.25	1,581.97	-160.59	-101.32	-153.41	0.00	0.00	0.00	0.00
1,700.00	12.25	212.25	1,679.69	-178.53	-112.65	-170.56	0.00	0.00	0.00	0.00
1,800.00	12.25	212.25	1,777.41	-196.48	-123.97	-187.70	0.00	0.00	0.00	0.00
<b>9 5/8" Casing Pt.</b>										
1,900.00	12.25	212.25	1,875.14	-214.42	-135.29	-204.84	0.00	0.00	0.00	0.00
2,000.00	12.25	212.25	1,972.86	-232.37	-146.61	-221.98	0.00	0.00	0.00	0.00
2,100.00	12.25	212.25	2,070.58	-250.31	-157.93	-239.13	0.00	0.00	0.00	0.00
2,200.00	12.25	212.25	2,168.31	-268.26	-169.26	-256.27	0.00	0.00	0.00	0.00
2,300.00	12.25	212.25	2,266.03	-286.20	-180.58	-273.41	0.00	0.00	0.00	0.00
2,400.00	12.25	212.25	2,363.75	-304.14	-191.90	-290.56	0.00	0.00	0.00	0.00
2,500.00	12.25	212.25	2,461.48	-322.09	-203.22	-307.70	0.00	0.00	0.00	0.00
2,600.00	12.25	212.25	2,559.20	-340.03	-214.55	-324.84	0.00	0.00	0.00	0.00
2,700.00	12.25	212.25	2,656.92	-357.98	-225.87	-341.98	0.00	0.00	0.00	0.00
2,800.00	12.25	212.25	2,754.64	-375.92	-237.19	-359.13	0.00	0.00	0.00	0.00
2,900.00	12.25	212.25	2,852.37	-393.87	-248.51	-376.27	0.00	0.00	0.00	0.00
3,000.00	12.25	212.25	2,950.09	-411.81	-259.83	-393.41	0.00	0.00	0.00	0.00
3,100.00	12.25	212.25	3,047.81	-429.76	-271.16	-410.55	0.00	0.00	0.00	0.00
3,200.00	12.25	212.25	3,145.54	-447.70	-282.48	-427.70	0.00	0.00	0.00	0.00
3,300.00	12.25	212.25	3,243.26	-465.64	-293.80	-444.84	0.00	0.00	0.00	0.00
3,400.00	12.25	212.25	3,340.98	-483.59	-305.12	-461.98	0.00	0.00	0.00	0.00
3,500.00	12.25	212.25	3,438.71	-501.53	-316.44	-479.13	0.00	0.00	0.00	0.00
3,562.72	12.25	212.25	3,500.00	-512.79	-323.55	-489.88	0.00	0.00	0.00	0.00
<b>HYGIENE</b>										
3,600.00	12.25	212.25	3,536.43	-519.48	-327.77	-496.27	0.00	0.00	0.00	0.00
3,700.00	12.25	212.25	3,634.15	-537.42	-339.09	-513.41	0.00	0.00	0.00	0.00
3,716.22	12.25	212.25	3,650.00	-540.33	-340.92	-516.19	0.00	0.00	0.00	0.00
<b>LOWER PIERRE</b>										
3,800.00	12.25	212.25	3,731.88	-555.37	-350.41	-530.55	0.00	0.00	0.00	0.00
3,900.00	12.25	212.25	3,829.60	-573.31	-361.73	-547.70	0.00	0.00	0.00	0.00
4,000.00	12.25	212.25	3,927.32	-591.26	-373.05	-564.84	0.00	0.00	0.00	0.00
4,100.00	12.25	212.25	4,025.05	-609.20	-384.38	-581.98	0.00	0.00	0.00	0.00
4,200.00	12.25	212.25	4,122.77	-627.14	-395.70	-599.12	0.00	0.00	0.00	0.00
4,300.00	12.25	212.25	4,220.49	-645.09	-407.02	-616.27	0.00	0.00	0.00	0.00
4,400.00	12.25	212.25	4,318.21	-663.03	-418.34	-633.41	0.00	0.00	0.00	0.00
4,500.00	12.25	212.25	4,415.94	-680.98	-429.67	-650.55	0.00	0.00	0.00	0.00
4,586.02	12.25	212.25	4,500.00	-696.41	-439.40	-665.30	0.00	0.00	0.00	0.00

**Plan Report for Razor 11F-0205C - Rev C0**

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 (°)
<b>Begin Drop @ 4586.02 ft</b>										
4,600.00	11.97	212.25	4,513.67	-698.89	-440.97	-667.67	2.00	-2.00	0.00	180.00
4,700.00	9.97	212.25	4,611.84	-714.99	-451.12	-683.04	2.00	-2.00	0.00	180.00
4,800.00	7.97	212.25	4,710.61	-728.17	-459.44	-695.64	2.00	-2.00	0.00	180.00
4,900.00	5.97	212.25	4,809.86	-738.44	-465.92	-705.44	2.00	-2.00	0.00	180.00
5,000.00	3.97	212.25	4,909.48	-745.76	-470.54	-712.44	2.00	-2.00	0.00	180.00
5,100.00	1.97	212.25	5,009.34	-750.15	-473.31	-716.63	2.00	-2.00	0.00	180.00
5,198.52	0.00	0.00	5,107.84	-751.58	-474.21	-718.00	2.00	-2.00	0.00	180.00
<b>End Drop @ 5198.52 ft</b>										
5,200.00	0.00	0.00	5,109.32	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,209.32	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,309.32	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,409.32	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,509.32	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
5,605.68	0.00	0.00	5,515.00	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
<b>P200 MARKER</b>										
5,620.68	0.00	0.00	5,530.00	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
<b>P300 MARKER</b>										
5,640.68	0.00	0.00	5,550.00	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
<b>P350 MARKER</b>										
5,655.68	0.00	0.00	5,565.00	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
<b>SHARON SPRINGS</b>										
5,663.81	0.00	0.00	5,573.13	-751.58	-474.21	-718.00	0.00	0.00	0.00	0.00
<b>Kick Off Point @ 5663.81 ft</b>										
5,700.00	3.98	0.00	5,609.29	-750.32	-474.21	-716.75	11.00	11.00	0.00	0.00
5,800.00	14.98	0.00	5,707.78	-733.88	-474.21	-700.34	11.00	11.00	0.00	0.00
<b>Build Rate 11.00 °/100 ft</b>										
5,900.00	25.98	0.00	5,801.31	-698.94	-474.21	-665.48	11.00	11.00	0.00	0.00
5,926.70	28.92	0.00	5,825.00	-686.63	-474.21	-653.20	11.00	11.00	0.00	0.00
<b>NIOBRARA</b>										
5,955.72	32.11	0.00	5,850.00	-671.90	-474.21	-638.50	11.00	11.00	0.00	0.00
<b>TOP A CHALK (N100)</b>										
6,000.00	36.98	0.00	5,886.46	-646.80	-474.21	-613.45	11.00	11.00	0.00	0.00
6,006.97	37.75	0.00	5,892.00	-642.57	-474.21	-609.24	11.00	11.00	0.00	0.00
<b>TOP A MARL (N200)</b>										
6,040.72	41.46	0.00	5,918.00	-621.06	-474.21	-587.77	11.00	11.00	0.00	0.00
<b>A MARL (N250)</b>										
6,055.59	43.10	0.00	5,929.00	-611.05	-474.21	-577.79	11.00	11.00	0.00	0.00
<b>TOP UPPER B (N400)</b>										
6,093.92	47.31	0.00	5,956.00	-583.86	-474.21	-550.66	11.00	11.00	0.00	0.00
<b>BASE UPPER B (N430)</b>										
6,100.00	47.98	0.00	5,960.10	-579.37	-474.21	-546.18	11.00	11.00	0.00	0.00
6,113.49	49.47	0.00	5,969.00	-569.22	-474.21	-536.06	11.00	11.00	0.00	0.00
<b>TOP LOWER B (N460)</b>										
6,145.43	52.98	0.00	5,989.00	-544.33	-474.21	-511.22	11.00	11.00	0.00	0.00
<b>BASE LOWER B (N490)</b>										
6,180.21	56.80	0.00	6,009.00	-515.88	-474.20	-482.84	11.00	11.00	0.00	0.00
<b>TOP B MARL (N500)</b>										
6,200.00	58.98	0.00	6,019.52	-499.12	-474.20	-466.11	11.00	11.00	0.00	0.00
6,266.36	66.28	0.00	6,050.00	-440.23	-474.20	-407.36	11.00	11.00	0.00	0.00
<b>TOP C CHALK (N700)</b>										
6,300.00	69.98	0.00	6,062.53	-409.02	-474.20	-376.21	11.00	11.00	0.00	0.00
6,400.00	80.98	0.00	6,087.56	-312.36	-474.20	-279.77	11.00	11.00	0.00	0.00
6,481.99	90.00	0.00	6,094.00	-230.71	-474.20	-198.31	11.00	11.00	0.00	0.00
<b>End Build @ 6481.99 ft - 7" Casing Pt.</b>										
6,500.00	90.00	0.00	6,094.00	-212.70	-474.20	-180.34	0.00	0.00	0.00	0.00
6,600.00	90.00	0.00	6,094.00	-112.70	-474.19	-80.56	0.00	0.00	0.00	0.00
6,700.00	90.00	0.00	6,094.00	-12.70	-474.19	19.21	0.00	0.00	0.00	0.00



**Plan Report for Razor 11F-0205C - Rev C0**

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 (°)
6,800.00	90.00	0.00	6,094.00	87.30	-474.19	118.98	0.00	0.00	0.00	0.00
6,900.00	90.00	0.00	6,094.00	187.30	-474.19	218.76	0.00	0.00	0.00	0.00
7,000.00	90.00	0.00	6,094.00	287.30	-474.18	318.53	0.00	0.00	0.00	0.00
7,100.00	90.00	0.00	6,094.00	387.30	-474.18	418.30	0.00	0.00	0.00	0.00
7,200.00	90.00	0.00	6,094.00	487.30	-474.18	518.08	0.00	0.00	0.00	0.00
7,300.00	90.00	0.00	6,094.00	587.30	-474.17	617.85	0.00	0.00	0.00	0.00
7,400.00	90.00	0.00	6,094.00	687.30	-474.17	717.62	0.00	0.00	0.00	0.00
7,500.00	90.00	0.00	6,094.00	787.30	-474.17	817.40	0.00	0.00	0.00	0.00
7,600.00	90.00	0.00	6,094.00	887.30	-474.17	917.17	0.00	0.00	0.00	0.00
7,700.00	90.00	0.00	6,094.00	987.30	-474.16	1,016.95	0.00	0.00	0.00	0.00
7,800.00	90.00	0.00	6,094.00	1,087.30	-474.16	1,116.72	0.00	0.00	0.00	0.00
7,900.00	90.00	0.00	6,094.00	1,187.30	-474.16	1,216.49	0.00	0.00	0.00	0.00
8,000.00	90.00	0.00	6,094.00	1,287.30	-474.15	1,316.27	0.00	0.00	0.00	0.00
8,100.00	90.00	0.00	6,094.00	1,387.30	-474.15	1,416.04	0.00	0.00	0.00	0.00
8,200.00	90.00	0.00	6,094.00	1,487.30	-474.15	1,515.81	0.00	0.00	0.00	0.00
8,300.00	90.00	0.00	6,094.00	1,587.30	-474.15	1,615.59	0.00	0.00	0.00	0.00
8,400.00	90.00	0.00	6,094.00	1,687.30	-474.14	1,715.36	0.00	0.00	0.00	0.00
8,500.00	90.00	0.00	6,094.00	1,787.30	-474.14	1,815.13	0.00	0.00	0.00	0.00
8,600.00	90.00	0.00	6,094.00	1,887.30	-474.14	1,914.91	0.00	0.00	0.00	0.00
8,700.00	90.00	0.00	6,094.00	1,987.30	-474.14	2,014.68	0.00	0.00	0.00	0.00
8,800.00	90.00	0.00	6,094.00	2,087.30	-474.13	2,114.46	0.00	0.00	0.00	0.00
8,900.00	90.00	0.00	6,094.00	2,187.30	-474.13	2,214.23	0.00	0.00	0.00	0.00
9,000.00	90.00	0.00	6,094.00	2,287.30	-474.13	2,314.00	0.00	0.00	0.00	0.00
9,100.00	90.00	0.00	6,094.00	2,387.30	-474.12	2,413.78	0.00	0.00	0.00	0.00
9,200.00	90.00	0.00	6,094.00	2,487.30	-474.12	2,513.55	0.00	0.00	0.00	0.00
9,300.00	90.00	0.00	6,094.00	2,587.30	-474.12	2,613.32	0.00	0.00	0.00	0.00
9,400.00	90.00	0.00	6,094.00	2,687.30	-474.12	2,713.10	0.00	0.00	0.00	0.00
9,500.00	90.00	0.00	6,094.00	2,787.30	-474.11	2,812.87	0.00	0.00	0.00	0.00
9,600.00	90.00	0.00	6,094.00	2,887.30	-474.11	2,912.64	0.00	0.00	0.00	0.00
9,700.00	90.00	0.00	6,094.00	2,987.30	-474.11	3,012.42	0.00	0.00	0.00	0.00
9,800.00	90.00	0.00	6,094.00	3,087.30	-474.10	3,112.19	0.00	0.00	0.00	0.00
9,900.00	90.00	0.00	6,094.00	3,187.30	-474.10	3,211.96	0.00	0.00	0.00	0.00
10,000.00	90.00	0.00	6,094.00	3,287.30	-474.10	3,311.74	0.00	0.00	0.00	0.00
10,100.00	90.00	0.00	6,094.00	3,387.30	-474.10	3,411.51	0.00	0.00	0.00	0.00
10,200.00	90.00	0.00	6,094.00	3,487.30	-474.09	3,511.29	0.00	0.00	0.00	0.00
10,300.00	90.00	0.00	6,094.00	3,587.30	-474.09	3,611.06	0.00	0.00	0.00	0.00
10,400.00	90.00	0.00	6,094.00	3,687.30	-474.09	3,710.83	0.00	0.00	0.00	0.00
10,500.00	90.00	0.00	6,094.00	3,787.30	-474.09	3,810.61	0.00	0.00	0.00	0.00
10,600.00	90.00	0.00	6,094.00	3,887.30	-474.08	3,910.38	0.00	0.00	0.00	0.00
10,700.00	90.00	0.00	6,094.00	3,987.30	-474.08	4,010.15	0.00	0.00	0.00	0.00
10,800.00	90.00	0.00	6,094.00	4,087.30	-474.08	4,109.93	0.00	0.00	0.00	0.00
10,900.00	90.00	0.00	6,094.00	4,187.30	-474.07	4,209.70	0.00	0.00	0.00	0.00
11,000.00	90.00	0.00	6,094.00	4,287.30	-474.07	4,309.47	0.00	0.00	0.00	0.00
11,100.00	90.00	0.00	6,094.00	4,387.30	-474.07	4,409.25	0.00	0.00	0.00	0.00
11,200.00	90.00	0.00	6,094.00	4,487.30	-474.07	4,509.02	0.00	0.00	0.00	0.00
11,300.00	90.00	0.00	6,094.00	4,587.30	-474.06	4,608.79	0.00	0.00	0.00	0.00
11,400.00	90.00	0.00	6,094.00	4,687.30	-474.06	4,708.57	0.00	0.00	0.00	0.00
11,500.00	90.00	0.00	6,094.00	4,787.30	-474.06	4,808.34	0.00	0.00	0.00	0.00
11,600.00	90.00	0.00	6,094.00	4,887.30	-474.06	4,908.12	0.00	0.00	0.00	0.00
11,700.00	90.00	0.00	6,094.00	4,987.30	-474.05	5,007.89	0.00	0.00	0.00	0.00
11,800.00	90.00	0.00	6,094.00	5,087.30	-474.05	5,107.66	0.00	0.00	0.00	0.00
11,900.00	90.00	0.00	6,094.00	5,187.30	-474.05	5,207.44	0.00	0.00	0.00	0.00
12,000.00	90.00	0.00	6,094.00	5,287.30	-474.04	5,307.21	0.00	0.00	0.00	0.00
12,100.00	90.00	0.00	6,094.00	5,387.30	-474.04	5,406.98	0.00	0.00	0.00	0.00
12,200.00	90.00	0.00	6,094.00	5,487.30	-474.04	5,506.76	0.00	0.00	0.00	0.00
12,300.00	90.00	0.00	6,094.00	5,587.30	-474.04	5,606.53	0.00	0.00	0.00	0.00
12,400.00	90.00	0.00	6,094.00	5,687.30	-474.03	5,706.30	0.00	0.00	0.00	0.00
12,500.00	90.00	0.00	6,094.00	5,787.30	-474.03	5,806.08	0.00	0.00	0.00	0.00
12,600.00	90.00	0.00	6,094.00	5,887.30	-474.03	5,905.85	0.00	0.00	0.00	0.00
12,700.00	90.00	0.00	6,094.00	5,987.30	-474.02	6,005.63	0.00	0.00	0.00	0.00

**Plan Report for Razor 11F-0205C - Rev C0**

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 (°)
12,800.00	90.00	0.00	6,094.00	6,087.30	-474.02	6,105.40	0.00	0.00	0.00	0.00
12,900.00	90.00	0.00	6,094.00	6,187.30	-474.02	6,205.17	0.00	0.00	0.00	0.00
13,000.00	90.00	0.00	6,094.00	6,287.30	-474.02	6,304.95	0.00	0.00	0.00	0.00
13,100.00	90.00	0.00	6,094.00	6,387.30	-474.01	6,404.72	0.00	0.00	0.00	0.00
13,200.00	90.00	0.00	6,094.00	6,487.30	-474.01	6,504.49	0.00	0.00	0.00	0.00
13,300.00	90.00	0.00	6,094.00	6,587.30	-474.01	6,604.27	0.00	0.00	0.00	0.00
13,400.00	90.00	0.00	6,094.00	6,687.30	-474.01	6,704.04	0.00	0.00	0.00	0.00
13,500.00	90.00	0.00	6,094.00	6,787.30	-474.00	6,803.81	0.00	0.00	0.00	0.00
13,600.00	90.00	0.00	6,094.00	6,887.30	-474.00	6,903.59	0.00	0.00	0.00	0.00
13,700.00	90.00	0.00	6,094.00	6,987.30	-474.00	7,003.36	0.00	0.00	0.00	0.00
13,747.53	90.00	0.00	6,094.00	7,034.84	-474.00	7,050.79	0.00	0.00	0.00	0.00
Total Depth 13747.53 ft										

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Begin Nudge @ 400.00 ft
1,012.50	1,007.84	-55.17	-34.81	End Nudge @ 1012.50 ft
4,586.02	4,500.00	-696.41	-439.40	Begin Drop @ 4586.02 ft
5,198.52	5,107.84	-751.58	-474.21	End Drop @ 5198.52 ft
5,663.81	5,573.13	-751.58	-474.21	Kick Off Point @ 5663.81 ft
5,800.00	5,707.78	-733.88	-474.21	Build Rate 11.00 °/100 ft
6,481.99	6,094.00	-230.71	-474.20	End Build @ 6481.99 ft
13,747.53	6,094.00	7,034.84	-474.00	Total Depth 13747.53 ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Razor 11F-0205C_Rev C0_BHL Tgt	356.15	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,800.00	Rev C0	MWD+IFR1+MS+sag
1,800.00	6,481.99	Rev C0	MWD+IFR1+MS+sag
6,481.99	13,747.53	Rev C0	MWD+IFR1+MS+sag

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,800.00	1,777.41	9 5/8" Casing Pt.	9-5/8	13-1/2
6,481.99	6,094.00	7" Casing Pt.	7	8-3/4

**Plan Report for Razor 11F-0205C - Rev C0****Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,567.29	1,550.00	UPPER PIERRE			
3,562.72	3,500.00	HYGIENE			
3,716.22	3,650.00	LOWER PIERRE			
5,605.68	5,515.00	P200 MARKER			
5,620.68	5,530.00	P300 MARKER			
5,640.68	5,550.00	P350 MARKER			
5,655.68	5,565.00	SHARON SPRINGS			
5,926.70	5,825.00	NIOBRARA			
5,955.72	5,850.00	TOP A CHALK (N100)			
6,006.97	5,892.00	TOP A MARL (N200)			
6,040.72	5,918.00	A MARL (N250)			
6,055.59	5,929.00	TOP UPPER B (N400)			
6,093.92	5,956.00	BASE UPPER B (N430)			
6,113.49	5,969.00	TOP LOWER B (N460)			
6,145.43	5,989.00	BASE LOWER B (N490)			
6,180.21	6,009.00	TOP B MARL (N500)			
6,266.36	6,050.00	TOP C CHALK (N700)			

***Targets associated with this wellbore***

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Razor 11F-0205A_Mid-Line	0.00	0.00	0.00	Polygon
Razor 11F-0205A_Mid-Line North SB	0.00	0.00	0.00	Polygon
Razor 11F-0205A_SL	0.00	0.00	0.00	Polygon
Razor 11F-0205A_SB	0.00	0.00	0.00	Polygon
Razor 11F-0205C_Rev C0_BHL Tgt	6,094.00	7,034.84	-474.00	Point

**Directional Difficulty Index**

Average Dogleg over Survey:	0.83 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 6,481.99 usft
Net Tortousity applicable to Plans:	0.83 °/100usft	Directional Difficulty Index:	6.427

**Audit Info**

# North Reference Sheet for Sec. 11-T10N-R58W (Razor 11F Pad) - Razor 11F-0205C - Plan C

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 (copy) @ 5010.60usft (Frontier 26). Northing and Easting are relative to Razor 11F-0205C

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: 1.00001227

Grid Coordinates of Well: 1,558,361.82 usft N, 3,460,454.94 usft E

Geographical Coordinates of Well: 40° 51' 15.18" N, 103° 50' 07.70" W

Grid Convergence at Surface is: 1.08°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,747.53usft  
the Bottom Hole Displacement is 7,050.79usft in the Direction of 356.15° ( True).

Magnetic Convergence at surface is: -6.92° (23 January 2015, , BGGM2014)

