

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22 T2N-R66W

Gobbler 35N-27HZ

Plan B Rev 0

Plan: Plan B Rev 0 Permit

## Sperry Drilling Services

# Proposal Report

09 October, 2012

Well Coordinates: 1,286,949.10 N, 3,206,325.91 E (40° 07' 07.36" N, 104° 45' 44.04" W)

Ground Level: 5,046.00 ft

Local Coordinate Origin:	Centered on Well Gobbler 35N-27HZ
Viewing Datum:	RKB=17 @ 5063.00ft (Drilling Rig)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
 Site: Sec. 22 T2N-R66W  
 Well: Gobbler 35N-27HZ  
 Wellbore: Plan B Rev 0  
 Design: Plan B Rev 0 Permit

# Anadarko Petroleum Corp.



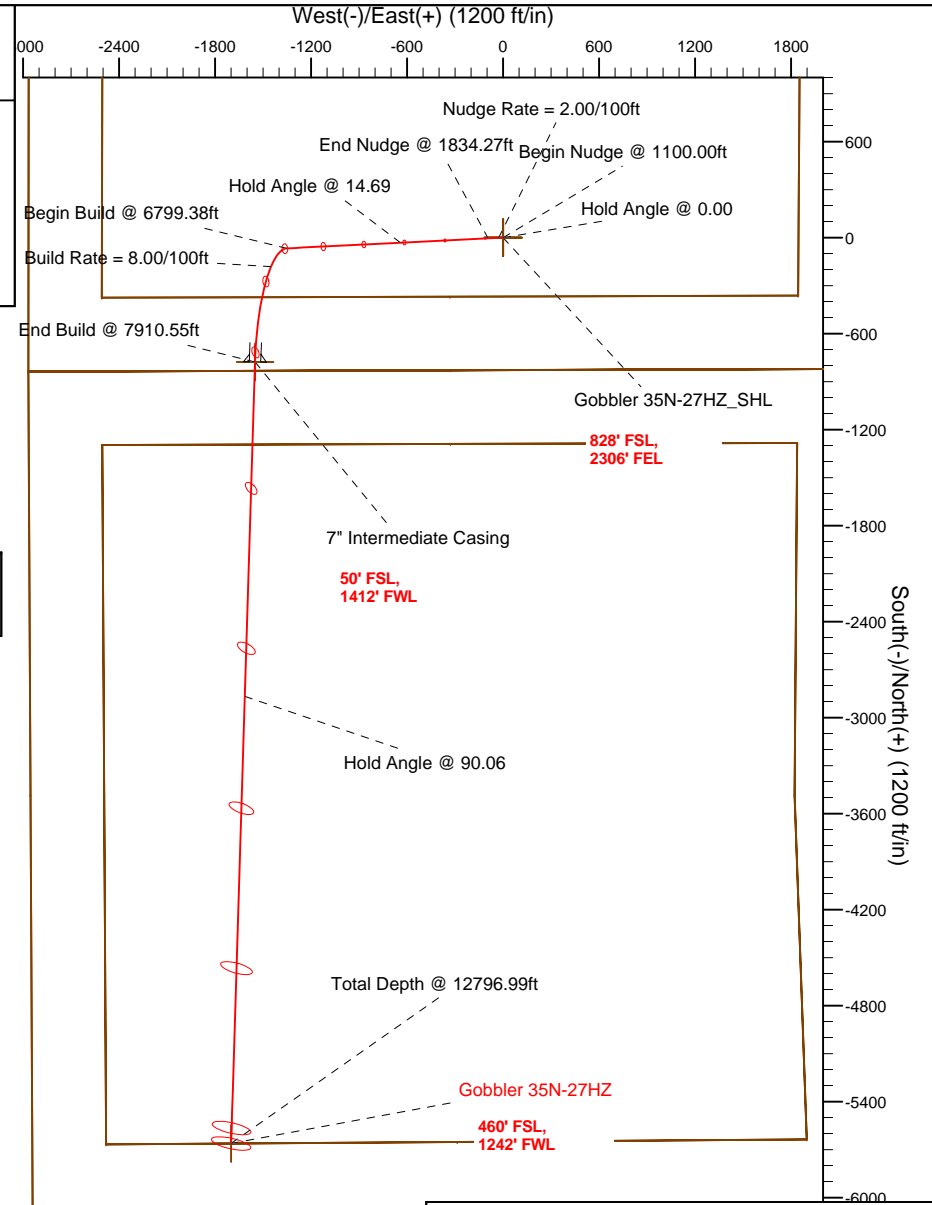
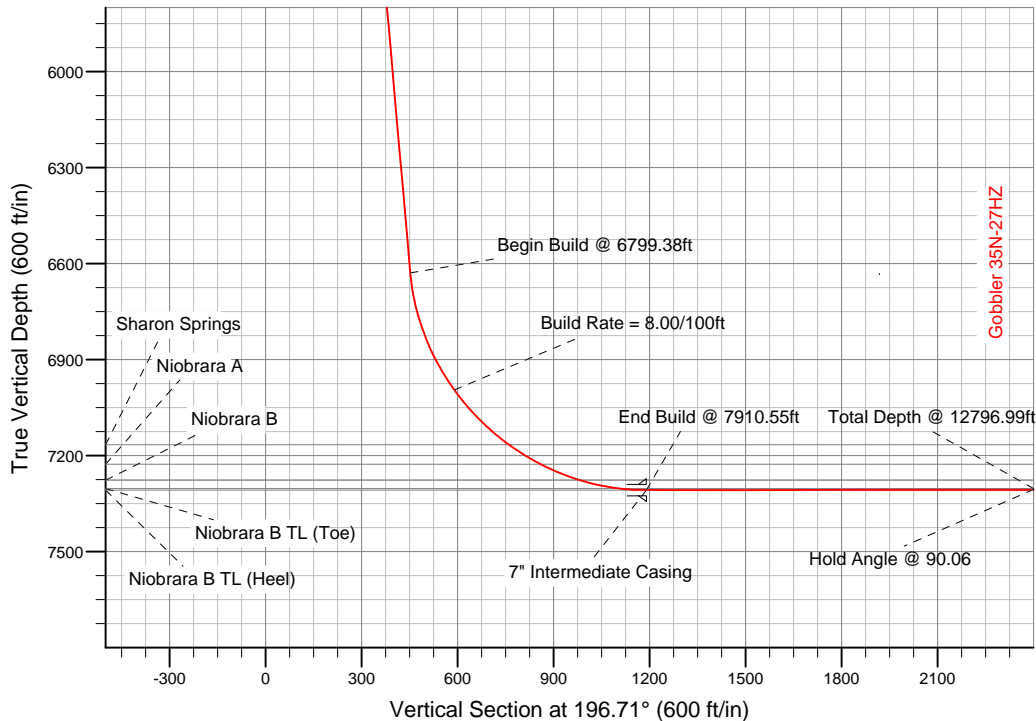
### SECTION DETAILS

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	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1834.27	14.69	267.16	1826.26	-4.64	-93.47	2.00	267.16	31.31	
4	6799.38	14.69	267.16	6629.17	-67.01	-1350.64	0.00	0.00	452.45	
5	7910.55	90.06	181.75	7308.00	-778.00	-1550.00	8.00	-85.54	1190.74	Gobbler 35N-27HZ_Casing Point
6	12796.99	90.06	181.75	7303.00	-5662.15	-1699.43	0.00	0.00	5911.68	Gobbler 35N-27HZ_BHL

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Gobbler 35N-27HZ_22-Setback Lines	0.00	0.00	0.00	40.118712	-104.762233	Polygon
Gobbler 35N-27HZ_27-Setback Lines	0.00	0.00	0.00	40.118712	-104.762233	Polygon
Gobbler 35N-27HZ_Sec 22/27 Lines	0.00	0.00	0.00	40.118712	-104.762233	Polygon
Gobbler 35N-27HZ_Section Lines	0.00	0.00	0.00	40.118712	-104.762233	Polygon
Gobbler 35N-27HZ_SHL	0.00	0.00	0.00	40.118712	-104.762233	Point
Gobbler 35N-27HZ_BHL	7303.00	-5662.15	-1699.43	40.103169	-104.768308	Point
Gobbler 35N-27HZ_Casing Point	7308.00	-778.00	-1550.00	40.116576	-104.767775	Point

**Target Line:**  
**7308.91' TVDkb @ 0° VS Drilling 90.06°**



WELL DETAILS: Gobbler 35N-27HZ

Ground Level: 5046.00 RKB=17 @ 5063.00ft (Drilling Rig)

Plan: Plan B Rev 0 Permit (Gobbler 35N-27HZ/Plan B Rev 0)

Created By: Fred Hartmann Date: 10/08/2012  
 Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

**Plan Report for Gobbler 35N-27HZ - Plan B Rev 0 Permit**

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)	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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hold Angle @ 0.00</b>										
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1100.00ft</b>										
1,200.00	2.00	267.16	1,199.98	-0.09	-1.74	0.58	2.00	2.00	0.00	267.16
1,300.00	4.00	267.16	1,299.84	-0.35	-6.97	2.33	2.00	2.00	0.00	0.00
1,400.00	6.00	267.16	1,399.45	-0.78	-15.67	5.25	2.00	2.00	0.00	0.00
1,500.00	8.00	267.16	1,498.70	-1.38	-27.85	9.33	2.00	2.00	0.00	0.00
<b>Nudge Rate = 2.00/100ft</b>										
1,600.00	10.00	267.16	1,597.47	-2.16	-43.47	14.56	2.00	2.00	0.00	0.00
1,700.00	12.00	267.16	1,695.62	-3.10	-62.53	20.95	2.00	2.00	0.00	0.00
1,800.00	14.00	267.16	1,793.06	-4.22	-84.99	28.47	2.00	2.00	0.00	0.00
1,834.27	14.69	267.16	1,826.26	-4.64	-93.47	31.31	2.00	2.00	0.00	0.00
<b>End Nudge @ 1834.27ft</b>										
1,900.00	14.69	267.16	1,889.84	-5.46	-110.11	36.89	0.00	0.00	0.00	0.00
2,000.00	14.69	267.16	1,986.57	-6.72	-135.43	45.37	0.00	0.00	0.00	0.00
2,100.00	14.69	267.16	2,083.31	-7.97	-160.75	53.85	0.00	0.00	0.00	0.00
2,200.00	14.69	267.16	2,180.04	-9.23	-186.07	62.33	0.00	0.00	0.00	0.00
2,300.00	14.69	267.16	2,276.77	-10.49	-211.39	70.81	0.00	0.00	0.00	0.00
2,400.00	14.69	267.16	2,373.51	-11.74	-236.71	79.30	0.00	0.00	0.00	0.00
2,500.00	14.69	267.16	2,470.24	-13.00	-262.03	87.78	0.00	0.00	0.00	0.00
2,600.00	14.69	267.16	2,566.97	-14.26	-287.35	96.26	0.00	0.00	0.00	0.00
2,700.00	14.69	267.16	2,663.71	-15.51	-312.67	104.74	0.00	0.00	0.00	0.00
2,800.00	14.69	267.16	2,760.44	-16.77	-337.99	113.22	0.00	0.00	0.00	0.00
2,900.00	14.69	267.16	2,857.17	-18.02	-363.32	121.71	0.00	0.00	0.00	0.00
3,000.00	14.69	267.16	2,953.90	-19.28	-388.64	130.19	0.00	0.00	0.00	0.00
3,100.00	14.69	267.16	3,050.64	-20.54	-413.96	138.67	0.00	0.00	0.00	0.00
3,200.00	14.69	267.16	3,147.37	-21.79	-439.28	147.15	0.00	0.00	0.00	0.00
3,300.00	14.69	267.16	3,244.10	-23.05	-464.60	155.63	0.00	0.00	0.00	0.00
3,400.00	14.69	267.16	3,340.84	-24.30	-489.92	164.11	0.00	0.00	0.00	0.00
3,500.00	14.69	267.16	3,437.57	-25.56	-515.24	172.60	0.00	0.00	0.00	0.00
3,600.00	14.69	267.16	3,534.30	-26.82	-540.56	181.08	0.00	0.00	0.00	0.00
3,700.00	14.69	267.16	3,631.04	-28.07	-565.88	189.56	0.00	0.00	0.00	0.00
3,800.00	14.69	267.16	3,727.77	-29.33	-591.20	198.04	0.00	0.00	0.00	0.00
3,900.00	14.69	267.16	3,824.50	-30.59	-616.52	206.52	0.00	0.00	0.00	0.00
4,000.00	14.69	267.16	3,921.24	-31.84	-641.84	215.01	0.00	0.00	0.00	0.00
<b>Hold Angle @ 14.69</b>										
4,100.00	14.69	267.16	4,017.97	-33.10	-667.16	223.49	0.00	0.00	0.00	0.00
4,200.00	14.69	267.16	4,114.70	-34.35	-692.48	231.97	0.00	0.00	0.00	0.00
4,276.81	14.69	267.16	4,189.00	-35.32	-711.92	238.48	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,300.00	14.69	267.16	4,211.44	-35.61	-717.80	240.45	0.00	0.00	0.00	0.00
4,400.00	14.69	267.16	4,308.17	-36.87	-743.12	248.93	0.00	0.00	0.00	0.00
4,500.00	14.69	267.16	4,404.90	-38.12	-768.44	257.41	0.00	0.00	0.00	0.00
4,600.00	14.69	267.16	4,501.64	-39.38	-793.76	265.90	0.00	0.00	0.00	0.00
4,675.84	14.69	267.16	4,575.00	-40.33	-812.96	272.33	0.00	0.00	0.00	0.00
<b>Sussex</b>										

**Plan Report for Gobbler 35N-27HZ - Plan B Rev 0 Permit**

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)	Toolface Azimuth (°)
4,700.00	14.69	267.16	4,598.37	-40.63	-819.08	274.38	0.00	0.00	0.00	0.00
4,800.00	14.69	267.16	4,695.10	-41.89	-844.40	282.86	0.00	0.00	0.00	0.00
4,900.00	14.69	267.16	4,791.84	-43.15	-869.72	291.34	0.00	0.00	0.00	0.00
5,000.00	14.69	267.16	4,888.57	-44.40	-895.04	299.82	0.00	0.00	0.00	0.00
5,100.00	14.69	267.16	4,985.30	-45.66	-920.36	308.31	0.00	0.00	0.00	0.00
5,200.00	14.69	267.16	5,082.04	-46.91	-945.68	316.79	0.00	0.00	0.00	0.00
5,300.00	14.69	267.16	5,178.77	-48.17	-971.00	325.27	0.00	0.00	0.00	0.00
5,400.00	14.69	267.16	5,275.50	-49.43	-996.32	333.75	0.00	0.00	0.00	0.00
5,500.00	14.69	267.16	5,372.23	-50.68	-1,021.64	342.23	0.00	0.00	0.00	0.00
5,600.00	14.69	267.16	5,468.97	-51.94	-1,046.96	350.72	0.00	0.00	0.00	0.00
5,700.00	14.69	267.16	5,565.70	-53.20	-1,072.28	359.20	0.00	0.00	0.00	0.00
5,800.00	14.69	267.16	5,662.43	-54.45	-1,097.60	367.68	0.00	0.00	0.00	0.00
5,900.00	14.69	267.16	5,759.17	-55.71	-1,122.92	376.16	0.00	0.00	0.00	0.00
6,000.00	14.69	267.16	5,855.90	-56.96	-1,148.24	384.64	0.00	0.00	0.00	0.00
6,100.00	14.69	267.16	5,952.63	-58.22	-1,173.56	393.12	0.00	0.00	0.00	0.00
6,200.00	14.69	267.16	6,049.37	-59.48	-1,198.88	401.61	0.00	0.00	0.00	0.00
6,300.00	14.69	267.16	6,146.10	-60.73	-1,224.20	410.09	0.00	0.00	0.00	0.00
6,400.00	14.69	267.16	6,242.83	-61.99	-1,249.52	418.57	0.00	0.00	0.00	0.00
6,500.00	14.69	267.16	6,339.57	-63.24	-1,274.84	427.05	0.00	0.00	0.00	0.00
6,600.00	14.69	267.16	6,436.30	-64.50	-1,300.16	435.53	0.00	0.00	0.00	0.00
6,700.00	14.69	267.16	6,533.03	-65.76	-1,325.48	444.02	0.00	0.00	0.00	0.00
6,799.38	14.69	267.16	6,629.17	-67.01	-1,350.64	452.45	0.00	0.00	0.00	0.00
<b>Begin Build @ 6799.38ft</b>										
6,800.00	14.69	266.97	6,629.77	-67.01	-1,350.80	452.50	7.98	0.63	-31.37	-85.54
6,900.00	17.25	239.07	6,726.04	-75.32	-1,376.22	467.76	8.00	2.56	-27.90	-85.35
7,000.00	22.45	220.97	6,820.16	-97.39	-1,401.50	496.17	8.00	5.21	-18.10	-58.49
7,100.00	28.92	209.99	6,910.28	-132.81	-1,426.14	537.18	8.00	6.46	-10.98	-41.43
7,200.00	35.96	202.87	6,994.65	-180.88	-1,449.68	589.98	8.00	7.04	-7.12	-31.51
<b>Build Rate = 8.00/100ft</b>										
7,300.00	43.30	197.86	7,071.64	-240.66	-1,471.64	653.56	8.00	7.34	-5.01	-25.49
7,400.00	50.80	194.07	7,139.74	-311.00	-1,491.61	726.66	8.00	7.51	-3.79	-21.63
7,443.08	54.07	192.68	7,166.00	-344.21	-1,499.50	760.74	8.00	7.58	-3.22	-19.03
<b>Sharon Springs</b>										
7,500.00	58.41	191.01	7,197.63	-390.52	-1,509.20	807.88	8.00	7.62	-2.93	-18.19
7,560.04	63.00	189.42	7,227.00	-442.04	-1,518.46	859.89	8.00	7.66	-2.66	-17.26
<b>Niobrara A</b>										
7,600.00	66.07	188.42	7,244.18	-477.68	-1,524.05	895.63	8.00	7.68	-2.48	-16.48
7,694.76	73.37	186.24	7,277.00	-565.77	-1,535.35	983.26	8.00	7.70	-2.30	-16.05
<b>Niobrara B</b>										
7,700.00	73.78	186.13	7,278.48	-570.77	-1,535.89	988.20	8.00	7.72	-2.20	-15.29
7,800.00	81.50	184.00	7,299.87	-668.00	-1,544.48	1,083.79	8.00	7.73	-2.12	-15.26
7,900.00	89.24	181.97	7,307.94	-767.45	-1,549.66	1,180.54	8.00	7.74	-2.04	-14.81
7,910.55	90.06	181.75	7,308.00	-778.00	-1,550.00	1,190.74	8.00	7.74	-2.02	-14.64
<b>End Build @ 7910.55ft - Niobrara B TL (Heel) - 7" Intermediate Casing - Gobbler 35N-27HZ_Casing Point</b>										
8,000.00	90.06	181.75	7,307.91	-867.41	-1,552.74	1,277.16	0.00	0.00	0.00	-14.64
8,100.00	90.06	181.75	7,307.81	-967.36	-1,555.79	1,373.77	0.00	0.00	0.00	0.00
8,200.00	90.06	181.75	7,307.70	-1,067.31	-1,558.85	1,470.38	0.00	0.00	0.00	0.00
8,300.00	90.06	181.75	7,307.60	-1,167.27	-1,561.91	1,567.00	0.00	0.00	0.00	0.00
8,400.00	90.06	181.75	7,307.50	-1,267.22	-1,564.97	1,663.61	0.00	0.00	0.00	0.00
8,500.00	90.06	181.75	7,307.40	-1,367.17	-1,568.03	1,760.22	0.00	0.00	0.00	0.00
8,600.00	90.06	181.75	7,307.29	-1,467.13	-1,571.08	1,856.84	0.00	0.00	0.00	0.00
8,700.00	90.06	181.75	7,307.19	-1,567.08	-1,574.14	1,953.45	0.00	0.00	0.00	0.00
8,800.00	90.06	181.75	7,307.09	-1,667.03	-1,577.20	2,050.06	0.00	0.00	0.00	0.00
8,900.00	90.06	181.75	7,306.99	-1,766.98	-1,580.26	2,146.68	0.00	0.00	0.00	0.00
9,000.00	90.06	181.75	7,306.89	-1,866.94	-1,583.32	2,243.29	0.00	0.00	0.00	0.00
9,100.00	90.06	181.75	7,306.78	-1,966.89	-1,586.37	2,339.90	0.00	0.00	0.00	0.00
9,200.00	90.06	181.75	7,306.68	-2,066.84	-1,589.43	2,436.51	0.00	0.00	0.00	0.00
9,300.00	90.06	181.75	7,306.58	-2,166.80	-1,592.49	2,533.13	0.00	0.00	0.00	0.00
9,400.00	90.06	181.75	7,306.48	-2,266.75	-1,595.55	2,629.74	0.00	0.00	0.00	0.00

**Plan Report for Gobbler 35N-27HZ - Plan B Rev 0 Permit**

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)	Toolface Azimuth (°)
9,500.00	90.06	181.75	7,306.37	-2,366.70	-1,598.61	2,726.35	0.00	0.00	0.00	0.00
9,600.00	90.06	181.75	7,306.27	-2,466.66	-1,601.66	2,822.97	0.00	0.00	0.00	0.00
9,700.00	90.06	181.75	7,306.17	-2,566.61	-1,604.72	2,919.58	0.00	0.00	0.00	0.00
9,800.00	90.06	181.75	7,306.07	-2,666.56	-1,607.78	3,016.19	0.00	0.00	0.00	0.00
9,900.00	90.06	181.75	7,305.96	-2,766.52	-1,610.84	3,112.81	0.00	0.00	0.00	0.00
10,000.00	90.06	181.75	7,305.86	-2,866.47	-1,613.90	3,209.42	0.00	0.00	0.00	0.00
<b>Hold Angle @ 90.06</b>										
10,100.00	90.06	181.75	7,305.76	-2,966.42	-1,616.95	3,306.03	0.00	0.00	0.00	0.00
10,200.00	90.06	181.75	7,305.66	-3,066.38	-1,620.01	3,402.65	0.00	0.00	0.00	0.00
10,300.00	90.06	181.75	7,305.56	-3,166.33	-1,623.07	3,499.26	0.00	0.00	0.00	0.00
10,400.00	90.06	181.75	7,305.45	-3,266.28	-1,626.13	3,595.87	0.00	0.00	0.00	0.00
10,500.00	90.06	181.75	7,305.35	-3,366.24	-1,629.19	3,692.49	0.00	0.00	0.00	0.00
10,600.00	90.06	181.75	7,305.25	-3,466.19	-1,632.24	3,789.10	0.00	0.00	0.00	0.00
10,700.00	90.06	181.75	7,305.15	-3,566.14	-1,635.30	3,885.71	0.00	0.00	0.00	0.00
10,800.00	90.06	181.75	7,305.04	-3,666.10	-1,638.36	3,982.33	0.00	0.00	0.00	0.00
10,900.00	90.06	181.75	7,304.94	-3,766.05	-1,641.42	4,078.94	0.00	0.00	0.00	0.00
11,000.00	90.06	181.75	7,304.84	-3,866.00	-1,644.48	4,175.55	0.00	0.00	0.00	0.00
11,100.00	90.06	181.75	7,304.74	-3,965.95	-1,647.53	4,272.17	0.00	0.00	0.00	0.00
11,200.00	90.06	181.75	7,304.63	-4,065.91	-1,650.59	4,368.78	0.00	0.00	0.00	0.00
11,300.00	90.06	181.75	7,304.53	-4,165.86	-1,653.65	4,465.39	0.00	0.00	0.00	0.00
11,400.00	90.06	181.75	7,304.43	-4,265.81	-1,656.71	4,562.01	0.00	0.00	0.00	0.00
11,500.00	90.06	181.75	7,304.33	-4,365.77	-1,659.77	4,658.62	0.00	0.00	0.00	0.00
11,600.00	90.06	181.75	7,304.22	-4,465.72	-1,662.82	4,755.23	0.00	0.00	0.00	0.00
11,700.00	90.06	181.75	7,304.12	-4,565.67	-1,665.88	4,851.85	0.00	0.00	0.00	0.00
11,800.00	90.06	181.75	7,304.02	-4,665.63	-1,668.94	4,948.46	0.00	0.00	0.00	0.00
11,900.00	90.06	181.75	7,303.92	-4,765.58	-1,672.00	5,045.07	0.00	0.00	0.00	0.00
12,000.00	90.06	181.75	7,303.82	-4,865.53	-1,675.06	5,141.69	0.00	0.00	0.00	0.00
12,100.00	90.06	181.75	7,303.71	-4,965.49	-1,678.11	5,238.30	0.00	0.00	0.00	0.00
12,200.00	90.06	181.75	7,303.61	-5,065.44	-1,681.17	5,334.91	0.00	0.00	0.00	0.00
12,300.00	90.06	181.75	7,303.51	-5,165.39	-1,684.23	5,431.52	0.00	0.00	0.00	0.00
12,400.00	90.06	181.75	7,303.41	-5,265.35	-1,687.29	5,528.14	0.00	0.00	0.00	0.00
12,500.00	90.06	181.75	7,303.30	-5,365.30	-1,690.35	5,624.75	0.00	0.00	0.00	0.00
12,600.00	90.06	181.75	7,303.20	-5,465.25	-1,693.40	5,721.36	0.00	0.00	0.00	0.00
12,700.00	90.06	181.75	7,303.10	-5,565.21	-1,696.46	5,817.98	0.00	0.00	0.00	0.00
12,796.99	90.06	181.75	7,303.00	-5,662.15	-1,699.43	5,914.60	0.00	0.00	0.00	0.00
<b>Total Depth @ 12796.99ft - Niobrara B TL (Toe) - Gobbler 35N-27HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.00	600.00	0.00	0.00	Hold Angle @ 0.00
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,500.00	1,498.70	-1.38	-27.85	Nudge Rate = 2.00/100ft
1,834.27	1,826.26	-4.64	-93.47	End Nudge @ 1834.27ft
4,000.00	3,921.24	-31.84	-641.84	Hold Angle @ 14.69
6,799.38	6,629.17	-67.01	-1,350.64	Begin Build @ 6799.38ft
7,200.00	6,994.65	-180.88	-1,449.68	Build Rate = 8.00/100ft
7,910.55	7,308.00	-778.00	-1,550.00	End Build @ 7910.55ft
10,000.00	7,305.86	-2,866.47	-1,613.90	Hold Angle @ 90.06
12,796.99	7,303.00	-5,662.15	-1,699.43	Total Depth @ 12796.99ft

**Plan Report for Gobbler 35N-27HZ - Plan B Rev 0 Permit****Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Gobbler 35N-27HZ_BHL	196.71	Slot	0.00	0.00	7,303.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,910.55	Plan B Rev 0 Permit	MWD
7,910.55	12,796.99	Plan B Rev 0 Permit	MWD

**Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,910.55	7,308.00	7" Intermediate Casing	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,276.81	4,189.00	Parkman		0.00	
4,675.84	4,575.00	Sussex		0.00	
7,443.08	7,166.00	Sharon Springs		0.00	
7,560.04	7,227.00	Niobrara A		0.00	
7,694.76	7,277.00	Niobrara B		0.00	
7,910.55	7,308.00	Niobrara B TL (Heel)		0.00	
12,796.99	7,303.00	Niobrara B TL (Toe)		0.00	

**Targets associated with this wellbore**

Target Name	TVD (ft)	+N-S (ft)	+E-W (ft)	Shape
Gobbler 35N-27HZ_Section Lines	0.00	0.00	0.00	Polygon
Gobbler 35N-27HZ_Sec 22/27 Lines	0.00	0.00	0.00	Polygon
Gobbler 35N-27HZ_22-Setback Lines	0.00	0.00	0.00	Polygon
Gobbler 35N-27HZ_27-Setback Lines	0.00	0.00	0.00	Polygon
Gobbler 35N-27HZ_Casing Point	7,308.00	-778.00	-1,550.00	Point
Gobbler 35N-27HZ_SHL	0.00	0.00	0.00	Point
Gobbler 35N-27HZ_BHL	7,303.00	-5,662.15	-1,699.43	Point

**North Reference Sheet for Sec. 22 T2N-R66W - Gobbler 35N-27HZ - Plan B Rev 0**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.  
 Vertical Depths are relative to RKB=17 @ 5063.00ft (Drilling Rig). Northing and Easting are relative to Gobbler 35N-27HZ  
 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:0.000000°, Latitude Origin:40.783333°  
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995949

Grid Coordinates of Well: 1,286,949.10 ft N, 3,206,325.91 ft E  
 Geographical Coordinates of Well: 40° 07' 07.36" N, 104° 45' 44.04" W  
 Grid Convergence at Surface is: 0.48°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,796.99ft  
 the Bottom Hole Displacement is 5,911.68ft in the Direction of 196.71° (True).

Magnetic Convergence at surface is: -8.23° ( 9 October 2012, , BGGM2012)

Magnetic Model: BGGM 2012  
 Date: 09-Oct-12  
 Declination: 8.71°  
 Inclination/Dip: 66.76°  
 Field Strength: 52763

Grid North is 0.48° East of True North (Grid Convergence)  
 Magnetic North is 8.71° East of True North (Magnetic Declination)  
 Magnetic North is 8.23° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.48°  
 To convert a Magnetic Direction to a True Direction, Add 8.71° East  
 To convert a Magnetic Direction to a Grid Direction, Add 8.23°