

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 10-T2N-R67W

Butterball 4N-10HZ

Plan A 0

Plan: Plan A 0 - PERMIT

## Sperry Drilling Services

## Proposal Report

24 June, 2013

Well Coordinates: 1,296,885.00 N, 3,172,188.30 E (40° 08' 48.13" N, 104° 53' 02.58" W)

Ground Level: 4,996.00 ft

Local Coordinate Origin:

Centered on Well Butterball 4N-10HZ

Viewing Datum:

RKB = 17 @ 5013.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 10-T2N-R67W  
Well: Butterball 4N-10HZ  
Wellbore: Plan A 0  
Design: Plan A 0 - PERMIT



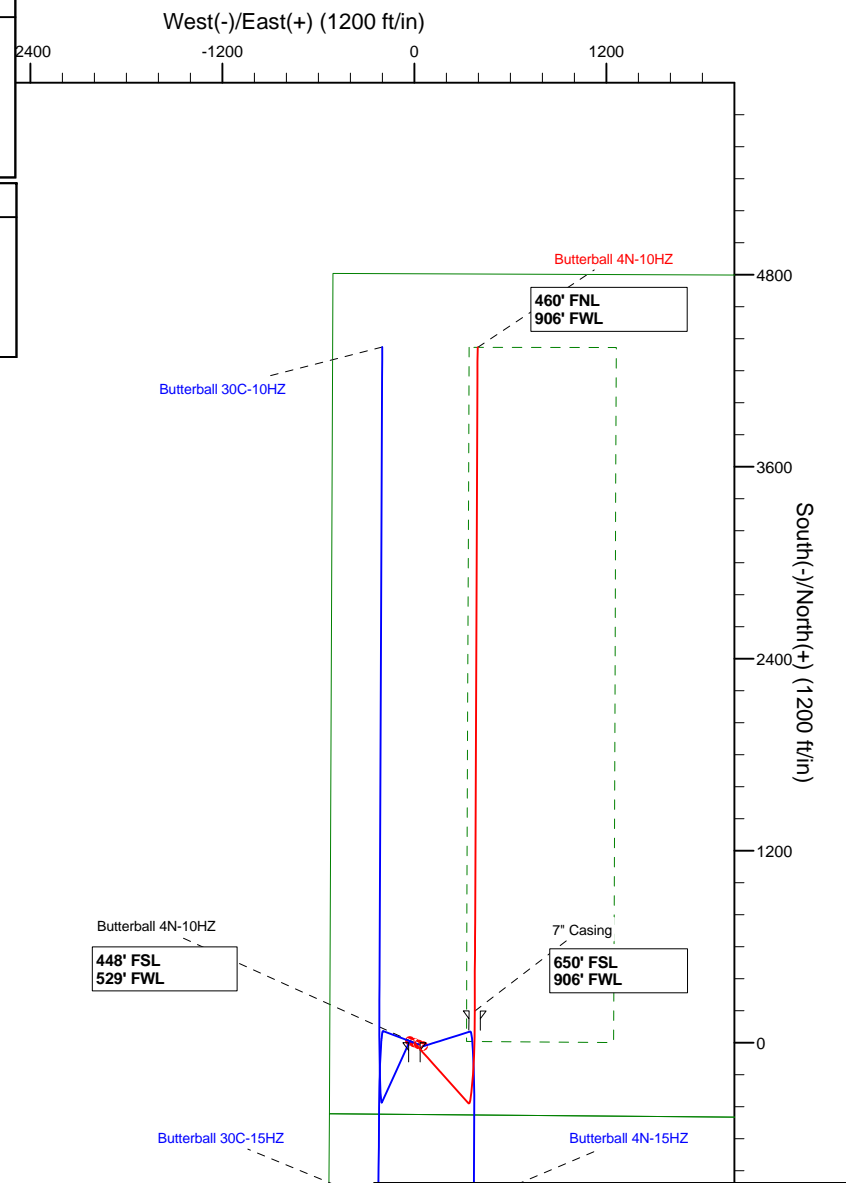
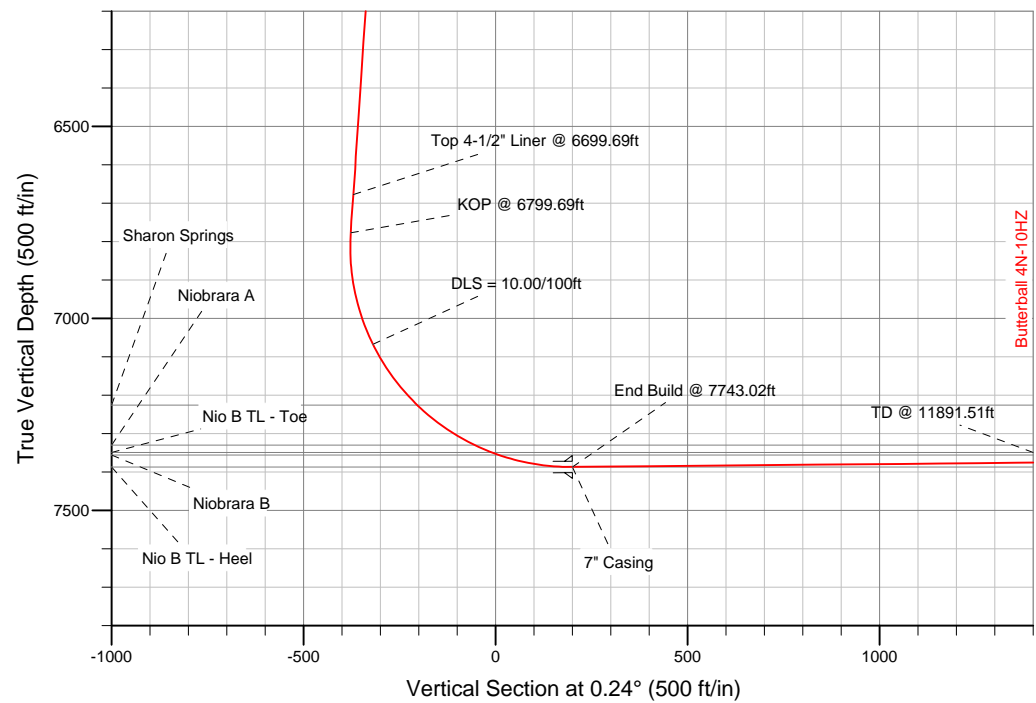
SECTION DETAILS

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	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1256.62	5.13	138.21	1256.28	-8.56	7.65	2.00	138.21	-8.53	
4	6799.69	5.13	138.21	6777.12	-378.27	338.13	0.00	0.00	-376.85	
5	7743.02	90.52	0.24	7387.00	198.50	377.60	10.00	-137.82	200.08	Butterball 4N-10HZ_CP
6	11891.51	90.52	0.24	7349.00	4346.78	395.23	0.00	0.00	4348.40	Butterball 4N-10HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Butterball 4N-10HZ_LD	0.00	0.00	0.00	40.146702	-104.884049	Polygon
Butterball 4N-10HZ_SHL	0.00	0.00	0.00	40.146702	-104.884049	Point
Butterball Sec10	0.00	10.93	-27.96	40.146732	-104.884149	Polygon
Butterball 4N-10HZ_BHL	7349.00	4346.78	395.23	40.158634	-104.882635	Point
Butterball 4N-10HZ_CP	7387.00	198.50	377.60	40.147247	-104.882698	Point

MD	TVD	
6699.69	6677.52	Top 4-1/2" Liner @ 6699.69ft
6799.69	6777.12	KOP @ 6799.69ft

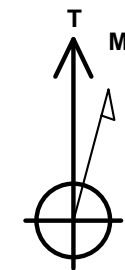
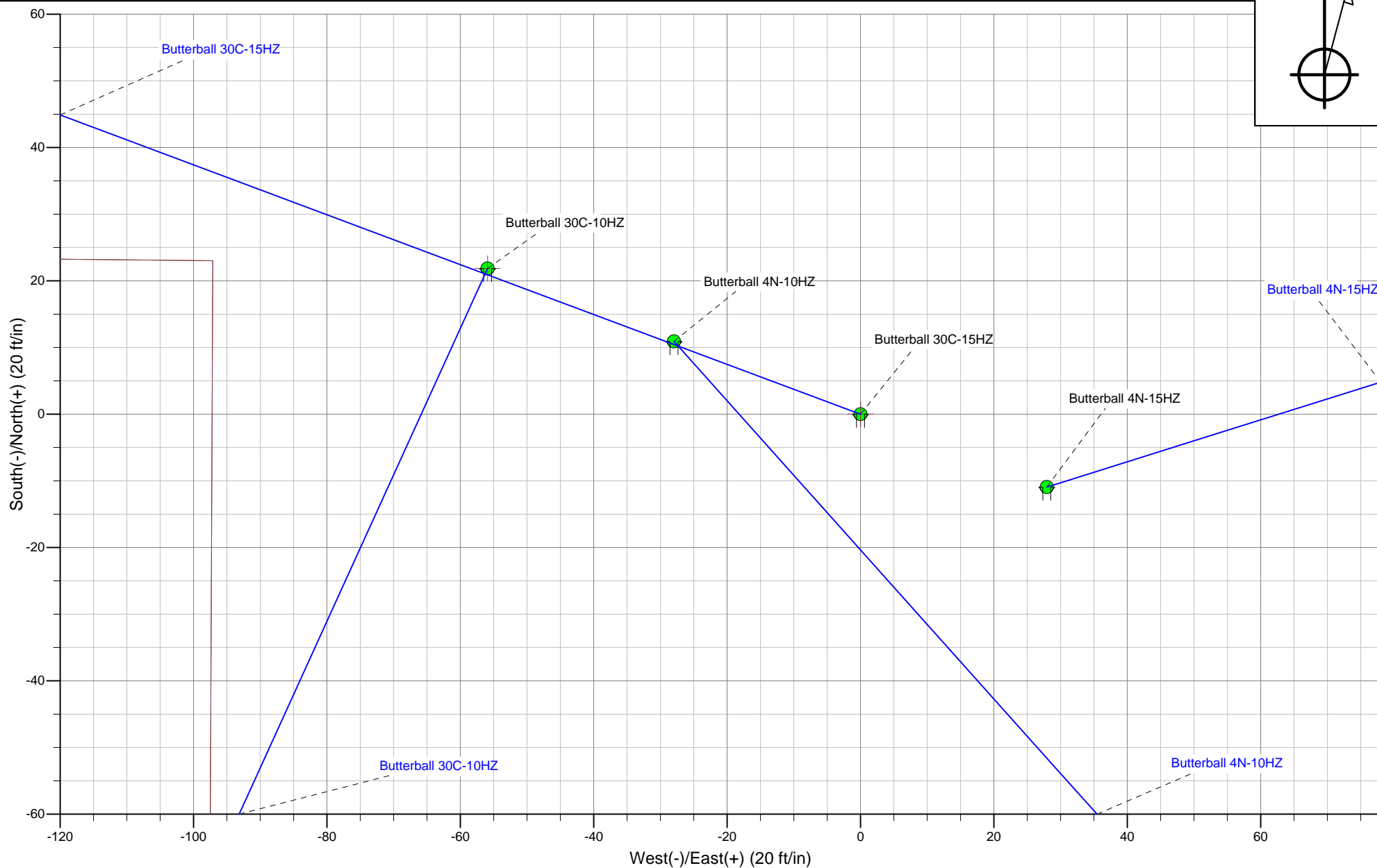


WELL DETAILS: Butterball 4N-10HZ	
Ground Level:	4996.00
RKB = 17 @ 5013.00ft (Drilling Rig)	
Plan: Plan A 0 - PERMIT (Butterball 4N-10HZ/Plan A 0)	
Created By: Fred Hartmann Date: 06/24/2013	

Project: Weld County, CO (NAD 83)  
Site: Sec. 10-T2N-R67W  
Well: Butterball 13-10HZ Pad



**HALLIBURTON**  
Sperry Drilling



**Plan Report for Butterball 4N-10HZ - Plan A 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
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
867.00	0.00	0.00	867.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8" Casing</b>										
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
<b>Begin Nudge @ 1000.00ft</b>										
1,100.00	2.00	138.21	1,099.98	-1.30	1.16	-1.30	2.00	2.00	0.00	138.21
1,200.00	4.00	138.21	1,199.84	-5.20	4.65	-5.18	2.00	2.00	0.00	0.00
1,256.62	5.13	138.21	1,256.28	-8.56	7.65	-8.53	2.00	2.00	0.00	0.00
<b>End Nudge @ 1256.62ft</b>										
1,300.00	5.13	138.21	1,299.48	-11.46	10.24	-11.41	0.00	0.00	0.00	0.00
1,400.00	5.13	138.21	1,399.08	-18.13	16.20	-18.06	0.00	0.00	0.00	0.00
1,500.00	5.13	138.21	1,498.68	-24.80	22.16	-24.70	0.00	0.00	0.00	0.00
1,600.00	5.13	138.21	1,598.28	-31.47	28.13	-31.35	0.00	0.00	0.00	0.00
1,700.00	5.13	138.21	1,697.88	-38.14	34.09	-37.99	0.00	0.00	0.00	0.00
1,800.00	5.13	138.21	1,797.48	-44.81	40.05	-44.64	0.00	0.00	0.00	0.00
1,900.00	5.13	138.21	1,897.08	-51.47	46.01	-51.28	0.00	0.00	0.00	0.00
2,000.00	5.13	138.21	1,996.68	-58.14	51.97	-57.93	0.00	0.00	0.00	0.00
2,100.00	5.13	138.21	2,096.28	-64.81	57.94	-64.57	0.00	0.00	0.00	0.00
2,200.00	5.13	138.21	2,195.87	-71.48	63.90	-71.22	0.00	0.00	0.00	0.00
2,300.00	5.13	138.21	2,295.47	-78.15	69.86	-77.86	0.00	0.00	0.00	0.00
2,400.00	5.13	138.21	2,395.07	-84.82	75.82	-84.50	0.00	0.00	0.00	0.00
2,500.00	5.13	138.21	2,494.67	-91.49	81.78	-91.15	0.00	0.00	0.00	0.00
2,600.00	5.13	138.21	2,594.27	-98.16	87.75	-97.79	0.00	0.00	0.00	0.00
2,700.00	5.13	138.21	2,693.87	-104.83	93.71	-104.44	0.00	0.00	0.00	0.00
2,800.00	5.13	138.21	2,793.47	-111.50	99.67	-111.08	0.00	0.00	0.00	0.00
2,900.00	5.13	138.21	2,893.07	-118.17	105.63	-117.73	0.00	0.00	0.00	0.00
3,000.00	5.13	138.21	2,992.67	-124.84	111.59	-124.37	0.00	0.00	0.00	0.00
3,100.00	5.13	138.21	3,092.27	-131.51	117.56	-131.02	0.00	0.00	0.00	0.00
3,200.00	5.13	138.21	3,191.86	-138.18	123.52	-137.66	0.00	0.00	0.00	0.00
3,300.00	5.13	138.21	3,291.46	-144.85	129.48	-144.31	0.00	0.00	0.00	0.00
3,400.00	5.13	138.21	3,391.06	-151.52	135.44	-150.95	0.00	0.00	0.00	0.00
3,500.00	5.13	138.21	3,490.66	-158.19	141.40	-157.60	0.00	0.00	0.00	0.00
3,600.00	5.13	138.21	3,590.26	-164.86	147.36	-164.24	0.00	0.00	0.00	0.00
3,700.00	5.13	138.21	3,689.86	-171.53	153.33	-170.89	0.00	0.00	0.00	0.00
3,800.00	5.13	138.21	3,789.46	-178.20	159.29	-177.53	0.00	0.00	0.00	0.00
3,900.00	5.13	138.21	3,889.06	-184.87	165.25	-184.17	0.00	0.00	0.00	0.00
4,000.00	5.13	138.21	3,988.66	-191.54	171.21	-190.82	0.00	0.00	0.00	0.00
4,040.50	5.13	138.21	4,029.00	-194.24	173.63	-193.51	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,100.00	5.13	138.21	4,088.26	-198.21	177.17	-197.46	0.00	0.00	0.00	0.00
4,200.00	5.13	138.21	4,187.86	-204.88	183.14	-204.11	0.00	0.00	0.00	0.00
4,300.00	5.13	138.21	4,287.45	-211.55	189.10	-210.75	0.00	0.00	0.00	0.00
4,400.00	5.13	138.21	4,387.05	-218.22	195.06	-217.40	0.00	0.00	0.00	0.00
4,468.22	5.13	138.21	4,455.00	-222.77	199.13	-221.93	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,500.00	5.13	138.21	4,486.65	-224.89	201.02	-224.04	0.00	0.00	0.00	0.00
4,600.00	5.13	138.21	4,586.25	-231.56	206.98	-230.69	0.00	0.00	0.00	0.00
4,700.00	5.13	138.21	4,685.85	-238.23	212.95	-237.33	0.00	0.00	0.00	0.00
4,800.00	5.13	138.21	4,785.45	-244.90	218.91	-243.98	0.00	0.00	0.00	0.00

**Plan Report for Butterball 4N-10HZ - Plan A 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 (°)
4,900.00	5.13	138.21	4,885.05	-251.56	224.87	-250.62	0.00	0.00	0.00	0.00
5,000.00	5.13	138.21	4,984.65	-258.23	230.83	-257.27	0.00	0.00	0.00	0.00
5,100.00	5.13	138.21	5,084.25	-264.90	236.79	-263.91	0.00	0.00	0.00	0.00
5,200.00	5.13	138.21	5,183.85	-271.57	242.76	-270.55	0.00	0.00	0.00	0.00
5,300.00	5.13	138.21	5,283.45	-278.24	248.72	-277.20	0.00	0.00	0.00	0.00
5,400.00	5.13	138.21	5,383.04	-284.91	254.68	-283.84	0.00	0.00	0.00	0.00
5,500.00	5.13	138.21	5,482.64	-291.58	260.64	-290.49	0.00	0.00	0.00	0.00
5,600.00	5.13	138.21	5,582.24	-298.25	266.60	-297.13	0.00	0.00	0.00	0.00
5,700.00	5.13	138.21	5,681.84	-304.92	272.57	-303.78	0.00	0.00	0.00	0.00
5,800.00	5.13	138.21	5,781.44	-311.59	278.53	-310.42	0.00	0.00	0.00	0.00
5,900.00	5.13	138.21	5,881.04	-318.26	284.49	-317.07	0.00	0.00	0.00	0.00
6,000.00	5.13	138.21	5,980.64	-324.93	290.45	-323.71	0.00	0.00	0.00	0.00
6,100.00	5.13	138.21	6,080.24	-331.60	296.41	-330.36	0.00	0.00	0.00	0.00
6,200.00	5.13	138.21	6,179.84	-338.27	302.37	-337.00	0.00	0.00	0.00	0.00
6,300.00	5.13	138.21	6,279.44	-344.94	308.34	-343.65	0.00	0.00	0.00	0.00
6,400.00	5.13	138.21	6,379.03	-351.61	314.30	-350.29	0.00	0.00	0.00	0.00
6,500.00	5.13	138.21	6,478.63	-358.28	320.26	-356.94	0.00	0.00	0.00	0.00
6,600.00	5.13	138.21	6,578.23	-364.95	326.22	-363.58	0.00	0.00	0.00	0.00
6,699.69	5.13	138.21	6,677.52	-371.60	332.17	-370.20	0.00	0.00	0.00	0.00
<b>Top 4-1/2" Liner @ 6699.69ft</b>										
6,700.00	5.13	138.21	6,677.83	-371.62	332.18	-370.22	0.00	0.00	0.00	0.00
6,799.69	5.13	138.21	6,777.12	-378.27	338.13	-376.85	0.00	0.00	0.00	0.00
<b>KOP @ 6799.69ft</b>										
6,800.00	5.11	137.97	6,777.43	-378.29	338.15	-376.87	10.07	-7.45	-75.97	-137.82
6,900.00	7.11	29.12	6,877.10	-376.18	344.15	-374.74	10.00	2.00	-108.85	-137.58
7,000.00	16.58	11.94	6,974.89	-356.77	350.13	-355.30	10.00	9.47	-17.18	-29.04
7,100.00	26.43	7.23	7,067.82	-320.65	355.90	-319.15	10.00	9.86	-4.71	-12.16
<b>DLS = 10.00/100ft</b>										
7,200.00	36.36	4.96	7,153.07	-268.90	361.28	-267.38	10.00	9.93	-2.27	-7.76
7,297.03	46.03	3.60	7,226.00	-205.24	365.97	-203.71	10.00	9.96	-1.40	-5.81
<b>Sharon Springs</b>										
7,300.00	46.32	3.57	7,228.05	-203.11	366.11	-201.57	10.00	9.97	-1.15	-4.79
7,400.00	56.29	2.58	7,290.49	-125.27	370.24	-123.71	10.00	9.97	-0.99	-4.76
7,479.73	64.25	1.94	7,330.00	-56.14	372.95	-54.57	10.00	9.98	-0.80	-4.14
<b>Niobrara A</b>										
7,500.00	66.27	1.79	7,338.48	-37.74	373.55	-36.18	10.00	9.98	-0.73	-3.82
7,548.18	71.08	1.46	7,356.00	7.11	374.82	8.68	10.00	9.98	-0.69	-3.76
<b>Niobrara B</b>										
7,600.00	76.25	1.12	7,370.57	56.81	375.93	58.38	10.00	9.98	-0.65	-3.64
7,700.00	86.23	0.50	7,385.78	155.50	377.32	157.08	10.00	9.98	-0.62	-3.55
7,732.51	89.48	0.31	7,387.00	187.98	377.55	189.56	10.00	9.98	-0.60	-3.45
<b>Nio B TL - Heel</b>										
7,743.02	90.52	0.24	7,387.00	198.50	377.60	200.08	10.00	9.98	-0.60	-3.44
<b>End Build @ 7743.02ft - 7" Casing - Butterball 4N-10HZ_CP</b>										
7,800.00	90.52	0.24	7,386.48	255.47	377.84	257.05	0.00	0.00	0.00	-3.44
7,900.00	90.52	0.24	7,385.56	355.47	378.27	357.05	0.00	0.00	0.00	0.00
8,000.00	90.52	0.24	7,384.65	455.46	378.69	457.05	0.00	0.00	0.00	0.00
8,100.00	90.52	0.24	7,383.73	555.46	379.12	557.04	0.00	0.00	0.00	0.00
8,200.00	90.52	0.24	7,382.81	655.45	379.54	657.04	0.00	0.00	0.00	0.00
8,300.00	90.52	0.24	7,381.90	755.45	379.97	757.03	0.00	0.00	0.00	0.00
8,400.00	90.52	0.24	7,380.98	855.44	380.39	857.03	0.00	0.00	0.00	0.00
8,500.00	90.52	0.24	7,380.07	955.44	380.82	957.02	0.00	0.00	0.00	0.00
8,600.00	90.52	0.24	7,379.15	1,055.43	381.24	1,057.02	0.00	0.00	0.00	0.00
8,700.00	90.52	0.24	7,378.23	1,155.43	381.67	1,157.02	0.00	0.00	0.00	0.00
8,800.00	90.52	0.24	7,377.32	1,255.42	382.09	1,257.01	0.00	0.00	0.00	0.00
8,900.00	90.52	0.24	7,376.40	1,355.42	382.52	1,357.01	0.00	0.00	0.00	0.00
9,000.00	90.52	0.24	7,375.49	1,455.41	382.94	1,457.00	0.00	0.00	0.00	0.00
9,100.00	90.52	0.24	7,374.57	1,555.41	383.37	1,557.00	0.00	0.00	0.00	0.00
9,200.00	90.52	0.24	7,373.65	1,655.40	383.79	1,657.00	0.00	0.00	0.00	0.00

## Plan Report for Butterball 4N-10HZ - Plan A 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 (°)
9,300.00	90.52	0.24	7,372.74	1,755.40	384.22	1,756.99	0.00	0.00	0.00	0.00
9,400.00	90.52	0.24	7,371.82	1,855.39	384.64	1,856.99	0.00	0.00	0.00	0.00
9,500.00	90.52	0.24	7,370.91	1,955.39	385.07	1,956.98	0.00	0.00	0.00	0.00
9,600.00	90.52	0.24	7,369.99	2,055.38	385.49	2,056.98	0.00	0.00	0.00	0.00
9,700.00	90.52	0.24	7,369.07	2,155.38	385.92	2,156.97	0.00	0.00	0.00	0.00
9,800.00	90.52	0.24	7,368.16	2,255.37	386.34	2,256.97	0.00	0.00	0.00	0.00
9,900.00	90.52	0.24	7,367.24	2,355.37	386.77	2,356.97	0.00	0.00	0.00	0.00
10,000.00	90.52	0.24	7,366.33	2,455.36	387.19	2,456.96	0.00	0.00	0.00	0.00
10,100.00	90.52	0.24	7,365.41	2,555.36	387.62	2,556.96	0.00	0.00	0.00	0.00
10,200.00	90.52	0.24	7,364.49	2,655.35	388.04	2,656.95	0.00	0.00	0.00	0.00
10,300.00	90.52	0.24	7,363.58	2,755.35	388.47	2,756.95	0.00	0.00	0.00	0.00
10,400.00	90.52	0.24	7,362.66	2,855.34	388.89	2,856.94	0.00	0.00	0.00	0.00
10,500.00	90.52	0.24	7,361.75	2,955.34	389.32	2,956.94	0.00	0.00	0.00	0.00
10,600.00	90.52	0.24	7,360.83	3,055.33	389.74	3,056.94	0.00	0.00	0.00	0.00
10,700.00	90.52	0.24	7,359.91	3,155.33	390.17	3,156.93	0.00	0.00	0.00	0.00
10,800.00	90.52	0.24	7,359.00	3,255.32	390.59	3,256.93	0.00	0.00	0.00	0.00
10,900.00	90.52	0.24	7,358.08	3,355.32	391.02	3,356.92	0.00	0.00	0.00	0.00
11,000.00	90.52	0.24	7,357.17	3,455.31	391.44	3,456.92	0.00	0.00	0.00	0.00
11,100.00	90.52	0.24	7,356.25	3,555.31	391.87	3,556.92	0.00	0.00	0.00	0.00
11,200.00	90.52	0.24	7,355.33	3,655.30	392.29	3,656.91	0.00	0.00	0.00	0.00
11,300.00	90.52	0.24	7,354.42	3,755.30	392.72	3,756.91	0.00	0.00	0.00	0.00
11,400.00	90.52	0.24	7,353.50	3,855.29	393.14	3,856.90	0.00	0.00	0.00	0.00
11,500.00	90.52	0.24	7,352.59	3,955.28	393.57	3,956.90	0.00	0.00	0.00	0.00
11,600.00	90.52	0.24	7,351.67	4,055.28	393.99	4,056.89	0.00	0.00	0.00	0.00
11,700.00	90.52	0.24	7,350.75	4,155.27	394.42	4,156.89	0.00	0.00	0.00	0.00
11,800.00	90.52	0.24	7,349.84	4,255.27	394.84	4,256.89	0.00	0.00	0.00	0.00
11,891.50	90.52	0.24	7,349.00	4,346.77	395.23	4,348.38	0.00	0.00	0.00	0.00
<b>Nio B TL - Toe</b>										
11,891.51	90.52	0.24	7,349.00	4,346.78	395.23	4,348.39	0.01	0.00	0.00	0.00
<b>TD @ 11891.51ft - Butterball 4N-10HZ_BHL</b>										

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,000.00	1,000.00	0.00	0.00	Begin Nudge @ 1000.00ft
1,256.62	1,256.28	-8.56	7.65	End Nudge @ 1256.62ft
6,699.69	6,677.52	-371.60	332.17	Top 4-1/2" Liner @ 6699.69ft
6,799.69	6,777.12	-378.27	338.13	KOP @ 6799.69ft
7,100.00	7,067.82	-320.65	355.90	DLS = 10.00/100ft
7,743.02	7,387.00	198.50	377.60	End Build @ 7743.02ft
11,891.51	7,349.00	4,346.78	395.23	TD @ 11891.51ft

### Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.24	Slot	0.00	0.00	0.00

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,891.51	Plan A 0 - PERMIT	MWD

**Plan Report for Butterball 4N-10HZ - Plan A 0 - PERMIT****Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
867.00	867.00	9 5/8" Casing	9-5/8	13-1/2
7,743.02	7,387.00	7" Casing	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,040.50	4,029.00	Parkman		0.00	
4,468.22	4,455.00	Sussex		0.00	
7,297.03	7,226.00	Sharon Springs		0.00	
7,479.73	7,330.00	Niobrara A		0.00	
7,548.18	7,356.00	Niobrara B		0.00	
7,732.51	7,387.00	Nio B TL - Heel		0.00	
11,891.50	7,349.00	Nio B TL - Toe		0.00	

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Butterball 4N-10HZ_CP	7,387.00	198.50	377.60	Point
Butterball 4N-10HZ_LD	0.00	0.00	0.00	Polygon
Butterball Sec10	0.00	10.93	-27.96	Polygon
Butterball 4N-10HZ_BHL	7,349.00	4,346.78	395.23	Point
Butterball 4N-10HZ_SHL	0.00	0.00	0.00	Point

## North Reference Sheet for Sec. 10-T2N-R67W - Butterball 4N-10HZ - Plan A 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 @ 5013.00ft (Drilling Rig). Northing and Easting are relative to Butterball 4N-10HZ  
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: 0.99995849

Grid Coordinates of Well: 1,296,885.00 ft N, 3,172,188.30 ft E  
Geographical Coordinates of Well: 40° 08' 48.13" N, 104° 53' 02.58" W  
Grid Convergence at Surface is: 0.40°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,891.51ft  
the Bottom Hole Displacement is 4,364.71ft in the Direction of 5.20° (True).

Magnetic Convergence at surface is: -8.26° (24 June 2013, , BGGM2013)

