

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-67W-10 Butterball 1-10HZ Pad  
BUTTERBALL 9N-34HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**13 October, 2016**



Azimuths to True North  
Magnetic North: 8.18°

Magnetic Field  
Strength: 52432.0snT  
Dip Angle: 66.65°  
Date: 10/13/2016  
Model: IGRF2010

SITE: 2N-67W-10 Butterball 1-10HZ Pad

Well: BUTTERBALL 9N-34HZ  
Wellbore: Plan A  
Design: Permit Rev-1

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1014.00	1014.60	Fox Hills
3960.00	3962.32	Parkman
4384.00	4386.32	Sussex
7102.00	7142.52	Sharon Springs
7185.00	7263.40	Niobrara
7243.00	7369.33	Nio B
7295.00	7506.67	Nio C

#### WELL DETAILS: BUTTERBALL 9N-34HZ

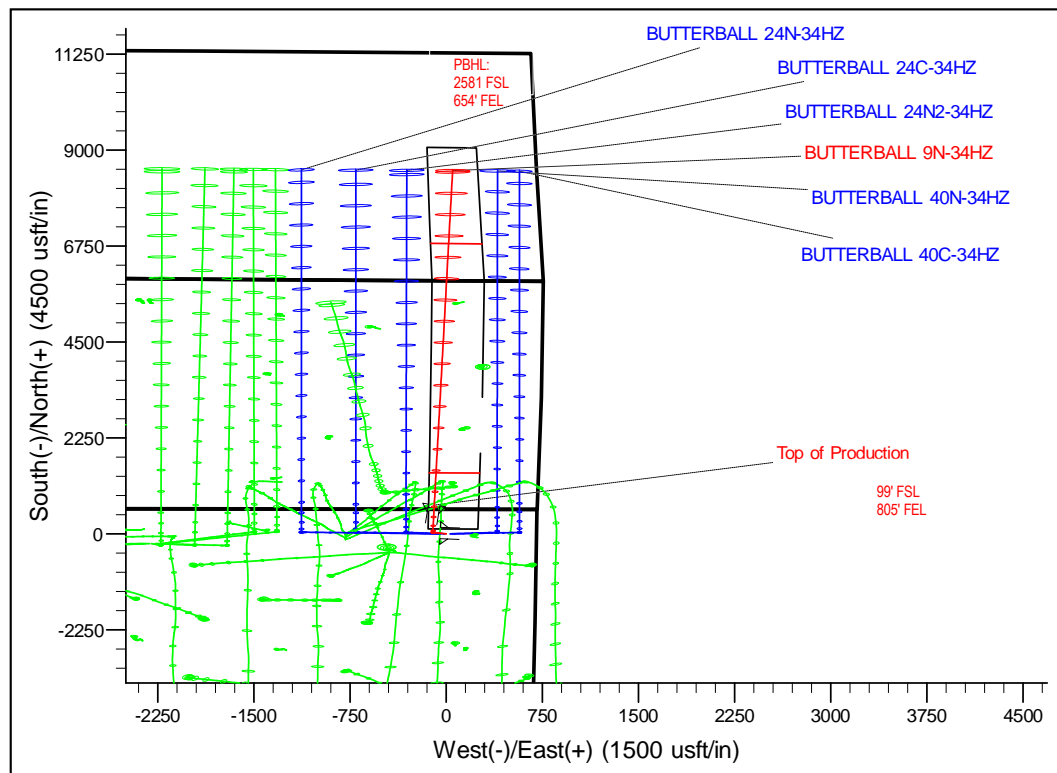
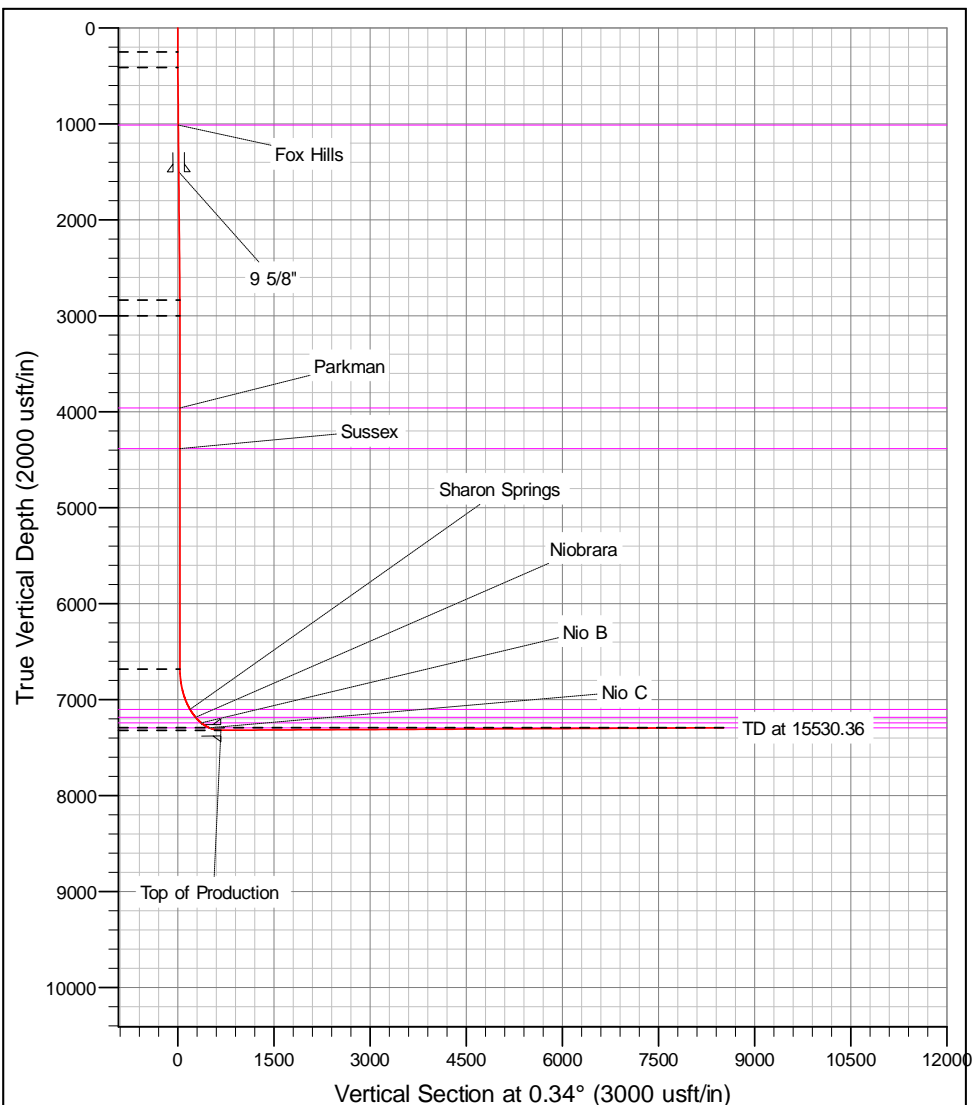
+N/-S	+E/-W	GL: 4916.00 Northing	RKB @ 4933.00usft (D Rig) Easting	Latitude	Longitude	Slot
0.00	0.00	14584393.12	1676836.61	40.158269	-104.869651	

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00
413.34	2.45	288.43	413.29	1.10	-3.31	1.50	1.08
2838.97	2.45	288.43	2836.71	33.90	-101.69	0.00	33.30
3002.32	0.00	0.00	3000.00	35.00	-105.00	1.50	34.38
6685.71	0.00	0.00	6683.39	35.00	-105.00	0.00	34.38
7687.82	90.19	1.05	7320.01	673.62	-93.34	9.00	673.07
15530.36	90.19	1.05	7294.00	8514.82	49.88	0.00	8514.96

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BUTTERBALL 9N-34HZ PBHL	7294.00	8514.82	49.88	14592908.00	1676874.00	40.181652	-104.869472



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site						2N-67W-10 Butterball 1-10HZ Pad											
Site Position:						Northing:			14,584,393.39 usft			Latitude:			40.158270		
From:			Lat/Long			Easting:			1,676,776.82 usft			Longitude:			-104.869865		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.08		

Well	BUTTERBALL 9N-34HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,584,393.12 usft	Latitude:	40.158269
	+E/-W	59.79 usft	Easting:	1,676,836.61 usft	Longitude:	-104.869651
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,916.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/13/2016	8.18	66.65	52,432

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	0.34

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
413.34	2.45	288.43	413.29	1.10	-3.31	1.50	1.50	0.00	288.43	
2,838.97	2.45	288.43	2,836.71	33.90	-101.69	0.00	0.00	0.00	0.00	
3,002.32	0.00	0.00	3,000.00	35.00	-105.00	1.50	-1.50	0.00	180.00	
6,685.71	0.00	0.00	6,683.39	35.00	-105.00	0.00	0.00	0.00	0.00	
7,687.82	90.19	1.05	7,320.01	673.62	-93.34	9.00	9.00	0.00	1.05	
15,530.36	90.19	1.05	7,294.00	8,514.82	49.88	0.00	0.00	0.00	0.00	BUTTERBALL 9N-3

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
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)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	288.43	300.00	0.10	-0.31	0.10	1.50	1.50	0.00
400.00	2.25	288.43	399.96	0.93	-2.79	0.91	1.50	1.50	0.00
413.34	2.45	288.43	413.29	1.10	-3.31	1.08	1.50	1.50	0.00
500.00	2.45	288.43	499.87	2.28	-6.83	2.24	0.00	0.00	0.00
600.00	2.45	288.43	599.78	3.63	-10.88	3.56	0.00	0.00	0.00
700.00	2.45	288.43	699.69	4.98	-14.94	4.89	0.00	0.00	0.00
800.00	2.45	288.43	799.60	6.33	-18.99	6.22	0.00	0.00	0.00
900.00	2.45	288.43	899.51	7.68	-23.05	7.55	0.00	0.00	0.00
1,000.00	2.45	288.43	999.41	9.04	-27.11	8.88	0.00	0.00	0.00
1,014.60	2.45	288.43	1,014.00	9.23	-27.70	9.07	0.00	0.00	0.00
<b>Fox Hills</b>									
1,100.00	2.45	288.43	1,099.32	10.39	-31.16	10.20	0.00	0.00	0.00
1,200.00	2.45	288.43	1,199.23	11.74	-35.22	11.53	0.00	0.00	0.00
1,300.00	2.45	288.43	1,299.14	13.09	-39.27	12.86	0.00	0.00	0.00
1,400.00	2.45	288.43	1,399.05	14.44	-43.33	14.19	0.00	0.00	0.00
1,500.00	2.45	288.43	1,498.96	15.79	-47.38	15.52	0.00	0.00	0.00
1,501.04	2.45	288.43	1,500.00	15.81	-47.43	15.53	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	2.45	288.43	1,598.87	17.15	-51.44	16.84	0.00	0.00	0.00
1,700.00	2.45	288.43	1,698.77	18.50	-55.49	18.17	0.00	0.00	0.00
1,800.00	2.45	288.43	1,798.68	19.85	-59.55	19.50	0.00	0.00	0.00
1,900.00	2.45	288.43	1,898.59	21.20	-63.61	20.83	0.00	0.00	0.00
2,000.00	2.45	288.43	1,998.50	22.55	-67.66	22.16	0.00	0.00	0.00
2,100.00	2.45	288.43	2,098.41	23.91	-71.72	23.49	0.00	0.00	0.00
2,200.00	2.45	288.43	2,198.32	25.26	-75.77	24.81	0.00	0.00	0.00
2,300.00	2.45	288.43	2,298.23	26.61	-79.83	26.14	0.00	0.00	0.00
2,400.00	2.45	288.43	2,398.13	27.96	-83.88	27.47	0.00	0.00	0.00
2,500.00	2.45	288.43	2,498.04	29.31	-87.94	28.80	0.00	0.00	0.00
2,600.00	2.45	288.43	2,597.95	30.67	-92.00	30.13	0.00	0.00	0.00
2,700.00	2.45	288.43	2,697.86	32.02	-96.05	31.45	0.00	0.00	0.00
2,800.00	2.45	288.43	2,797.77	33.37	-100.11	32.78	0.00	0.00	0.00
2,838.97	2.45	288.43	2,836.71	33.90	-101.69	33.30	0.00	0.00	0.00
2,900.00	1.53	288.43	2,897.70	34.57	-103.70	33.96	1.50	-1.50	0.00
3,000.00	0.03	288.43	2,997.68	35.00	-105.00	34.38	1.50	-1.50	0.00
3,002.32	0.00	0.00	3,000.00	35.00	-105.00	34.38	1.50	-1.50	0.00
3,100.00	0.00	0.00	3,097.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,200.00	0.00	0.00	3,197.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,300.00	0.00	0.00	3,297.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,400.00	0.00	0.00	3,397.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,500.00	0.00	0.00	3,497.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,600.00	0.00	0.00	3,597.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,700.00	0.00	0.00	3,697.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,800.00	0.00	0.00	3,797.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,900.00	0.00	0.00	3,897.68	35.00	-105.00	34.38	0.00	0.00	0.00
3,962.32	0.00	0.00	3,960.00	35.00	-105.00	34.38	0.00	0.00	0.00
<b>Parkman</b>									
4,000.00	0.00	0.00	3,997.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,100.00	0.00	0.00	4,097.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,200.00	0.00	0.00	4,197.68	35.00	-105.00	34.38	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
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)
4,300.00	0.00	0.00	4,297.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,386.32	0.00	0.00	4,384.00	35.00	-105.00	34.38	0.00	0.00	0.00
<b>Sussex</b>									
4,400.00	0.00	0.00	4,397.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,500.00	0.00	0.00	4,497.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,600.00	0.00	0.00	4,597.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,700.00	0.00	0.00	4,697.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,800.00	0.00	0.00	4,797.68	35.00	-105.00	34.38	0.00	0.00	0.00
4,900.00	0.00	0.00	4,897.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,000.00	0.00	0.00	4,997.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,100.00	0.00	0.00	5,097.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,200.00	0.00	0.00	5,197.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,300.00	0.00	0.00	5,297.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,400.00	0.00	0.00	5,397.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,500.00	0.00	0.00	5,497.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,600.00	0.00	0.00	5,597.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,697.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,797.68	35.00	-105.00	34.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,897.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,000.00	0.00	0.00	5,997.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,100.00	0.00	0.00	6,097.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,200.00	0.00	0.00	6,197.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,297.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,397.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,497.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,600.00	0.00	0.00	6,597.68	35.00	-105.00	34.38	0.00	0.00	0.00
6,685.71	0.00	0.00	6,683.39	35.00	-105.00	34.38	0.00	0.00	0.00
6,700.00	1.29	1.05	6,697.68	35.16	-105.00	34.54	9.00	9.00	0.00
6,800.00	10.29	1.05	6,797.07	45.23	-104.81	44.62	9.00	9.00	0.00
6,900.00	19.29	1.05	6,893.66	70.72	-104.35	70.11	9.00	9.00	0.00
7,000.00	28.29	1.05	6,985.07	111.01	-103.61	110.40	9.00	9.00	0.00
7,100.00	37.29	1.05	7,069.05	165.09	-102.62	164.49	9.00	9.00	0.00
7,142.52	41.11	1.05	7,102.00	191.96	-102.13	191.36	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,200.00	46.29	1.05	7,143.54	231.65	-101.41	231.05	9.00	9.00	0.00
7,263.40	51.99	1.05	7,185.00	279.57	-100.53	278.97	9.00	9.00	0.00
<b>Niobrara</b>									
7,300.00	55.29	1.05	7,206.70	309.03	-99.99	308.44	9.00	9.00	0.00
7,369.33	61.53	1.05	7,243.00	368.05	-98.92	367.46	9.00	9.00	0.00
<b>Nio B</b>									
7,400.00	64.29	1.05	7,256.97	395.35	-98.42	394.76	9.00	9.00	0.00
7,500.00	73.29	1.05	7,293.12	488.46	-96.72	487.88	9.00	9.00	0.00
7,506.67	73.89	1.05	7,295.00	494.86	-96.60	494.28	9.00	9.00	0.00
<b>Nio C</b>									
7,600.00	82.29	1.05	7,314.25	586.08	-94.93	585.51	9.00	9.00	0.00
7,687.82	90.19	1.05	7,320.01	673.63	-93.34	673.07	9.00	9.00	0.00
<b>Top of Production - BUTTERBALL 9N-34HZ_PHL</b>									
7,700.00	90.19	1.05	7,319.97	685.80	-93.11	685.25	0.00	0.00	0.00
7,800.00	90.19	1.05	7,319.63	785.79	-91.29	785.24	0.00	0.00	0.00
7,900.00	90.19	1.05	7,319.30	885.77	-89.46	885.23	0.00	0.00	0.00
8,000.00	90.19	1.05	7,318.97	985.75	-87.64	985.22	0.00	0.00	0.00
8,100.00	90.19	1.05	7,318.64	1,085.73	-85.81	1,085.21	0.00	0.00	0.00
8,200.00	90.19	1.05	7,318.31	1,185.72	-83.98	1,185.21	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
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)
8,300.00	90.19	1.05	7,317.98	1,285.70	-82.16	1,285.20	0.00	0.00	0.00
8,400.00	90.19	1.05	7,317.65	1,385.68	-80.33	1,385.19	0.00	0.00	0.00
8,500.00	90.19	1.05	7,317.31	1,485.67	-78.50	1,485.18	0.00	0.00	0.00
8,600.00	90.19	1.05	7,316.98	1,585.65	-76.68	1,585.17	0.00	0.00	0.00
8,700.00	90.19	1.05	7,316.65	1,685.63	-74.85	1,685.16	0.00	0.00	0.00
8,800.00	90.19	1.05	7,316.32	1,785.61	-73.03	1,785.16	0.00	0.00	0.00
8,900.00	90.19	1.05	7,315.99	1,885.60	-71.20	1,885.15	0.00	0.00	0.00
9,000.00	90.19	1.05	7,315.66	1,985.58	-69.37	1,985.14	0.00	0.00	0.00
9,100.00	90.19	1.05	7,315.32	2,085.56	-67.55	2,085.13	0.00	0.00	0.00
9,200.00	90.19	1.05	7,314.99	2,185.55	-65.72	2,185.12	0.00	0.00	0.00
9,300.00	90.19	1.05	7,314.66	2,285.53	-63.90	2,285.11	0.00	0.00	0.00
9,400.00	90.19	1.05	7,314.33	2,385.51	-62.07	2,385.11	0.00	0.00	0.00
9,500.00	90.19	1.05	7,314.00	2,485.49	-60.24	2,485.10	0.00	0.00	0.00
9,600.00	90.19	1.05	7,313.67	2,585.48	-58.42	2,585.09	0.00	0.00	0.00
9,700.00	90.19	1.05	7,313.33	2,685.46	-56.59	2,685.08	0.00	0.00	0.00
9,800.00	90.19	1.05	7,313.00	2,785.44	-54.76	2,785.07	0.00	0.00	0.00
9,900.00	90.19	1.05	7,312.67	2,885.42	-52.94	2,885.06	0.00	0.00	0.00
10,000.00	90.19	1.05	7,312.34	2,985.41	-51.11	2,985.06	0.00	0.00	0.00
10,100.00	90.19	1.05	7,312.01	3,085.39	-49.29	3,085.05	0.00	0.00	0.00
10,200.00	90.19	1.05	7,311.68	3,185.37	-47.46	3,185.04	0.00	0.00	0.00
10,300.00	90.19	1.05	7,311.34	3,285.36	-45.63	3,285.03	0.00	0.00	0.00
10,400.00	90.19	1.05	7,311.01	3,385.34	-43.81	3,385.02	0.00	0.00	0.00
10,500.00	90.19	1.05	7,310.68	3,485.32	-41.98	3,485.02	0.00	0.00	0.00
10,600.00	90.19	1.05	7,310.35	3,585.30	-40.16	3,585.01	0.00	0.00	0.00
10,700.00	90.19	1.05	7,310.02	3,685.29	-38.33	3,685.00	0.00	0.00	0.00
10,800.00	90.19	1.05	7,309.69	3,785.27	-36.50	3,784.99	0.00	0.00	0.00
10,900.00	90.19	1.05	7,309.35	3,885.25	-34.68	3,884.98	0.00	0.00	0.00
11,000.00	90.19	1.05	7,309.02	3,985.24	-32.85	3,984.97	0.00	0.00	0.00
11,100.00	90.19	1.05	7,308.69	4,085.22	-31.03	4,084.97	0.00	0.00	0.00
11,200.00	90.19	1.05	7,308.36	4,185.20	-29.20	4,184.96	0.00	0.00	0.00
11,300.00	90.19	1.05	7,308.03	4,285.18	-27.37	4,284.95	0.00	0.00	0.00
11,400.00	90.19	1.05	7,307.70	4,385.17	-25.55	4,384.94	0.00	0.00	0.00
11,500.00	90.19	1.05	7,307.37	4,485.15	-23.72	4,484.93	0.00	0.00	0.00
11,600.00	90.19	1.05	7,307.03	4,585.13	-21.89	4,584.92	0.00	0.00	0.00
11,700.00	90.19	1.05	7,306.70	4,685.11	-20.07	4,684.92	0.00	0.00	0.00
11,800.00	90.19	1.05	7,306.37	4,785.10	-18.24	4,784.91	0.00	0.00	0.00
11,900.00	90.19	1.05	7,306.04	4,885.08	-16.42	4,884.90	0.00	0.00	0.00
12,000.00	90.19	1.05	7,305.71	4,985.06	-14.59	4,984.89	0.00	0.00	0.00
12,100.00	90.19	1.05	7,305.38	5,085.05	-12.76	5,084.88	0.00	0.00	0.00
12,200.00	90.19	1.05	7,305.04	5,185.03	-10.94	5,184.88	0.00	0.00	0.00
12,300.00	90.19	1.05	7,304.71	5,285.01	-9.11	5,284.87	0.00	0.00	0.00
12,400.00	90.19	1.05	7,304.38	5,384.99	-7.29	5,384.86	0.00	0.00	0.00
12,500.00	90.19	1.05	7,304.05	5,484.98	-5.46	5,484.85	0.00	0.00	0.00
12,600.00	90.19	1.05	7,303.72	5,584.96	-3.63	5,584.84	0.00	0.00	0.00
12,700.00	90.19	1.05	7,303.39	5,684.94	-1.81	5,684.83	0.00	0.00	0.00
12,800.00	90.19	1.05	7,303.05	5,784.93	0.02	5,784.83	0.00	0.00	0.00
12,900.00	90.19	1.05	7,302.72	5,884.91	1.85	5,884.82	0.00	0.00	0.00
13,000.00	90.19	1.05	7,302.39	5,984.89	3.67	5,984.81	0.00	0.00	0.00
13,100.00	90.19	1.05	7,302.06	6,084.87	5.50	6,084.80	0.00	0.00	0.00
13,200.00	90.19	1.05	7,301.73	6,184.86	7.32	6,184.79	0.00	0.00	0.00
13,300.00	90.19	1.05	7,301.40	6,284.84	9.15	6,284.78	0.00	0.00	0.00
13,400.00	90.19	1.05	7,301.06	6,384.82	10.98	6,384.78	0.00	0.00	0.00
13,500.00	90.19	1.05	7,300.73	6,484.80	12.80	6,484.77	0.00	0.00	0.00
13,600.00	90.19	1.05	7,300.40	6,584.79	14.63	6,584.76	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
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)
13,700.00	90.19	1.05	7,300.07	6,684.77	16.45	6,684.75	0.00	0.00	0.00
13,800.00	90.19	1.05	7,299.74	6,784.75	18.28	6,784.74	0.00	0.00	0.00
13,900.00	90.19	1.05	7,299.41	6,884.74	20.11	6,884.74	0.00	0.00	0.00
14,000.00	90.19	1.05	7,299.08	6,984.72	21.93	6,984.73	0.00	0.00	0.00
14,100.00	90.19	1.05	7,298.74	7,084.70	23.76	7,084.72	0.00	0.00	0.00
14,200.00	90.19	1.05	7,298.41	7,184.68	25.58	7,184.71	0.00	0.00	0.00
14,300.00	90.19	1.05	7,298.08	7,284.67	27.41	7,284.70	0.00	0.00	0.00
14,400.00	90.19	1.05	7,297.75	7,384.65	29.24	7,384.69	0.00	0.00	0.00
14,500.00	90.19	1.05	7,297.42	7,484.63	31.06	7,484.69	0.00	0.00	0.00
14,600.00	90.19	1.05	7,297.09	7,584.62	32.89	7,584.68	0.00	0.00	0.00
14,700.00	90.19	1.05	7,296.75	7,684.60	34.72	7,684.67	0.00	0.00	0.00
14,800.00	90.19	1.05	7,296.42	7,784.58	36.54	7,784.66	0.00	0.00	0.00
14,900.00	90.19	1.05	7,296.09	7,884.56	38.37	7,884.65	0.00	0.00	0.00
15,000.00	90.19	1.05	7,295.76	7,984.55	40.19	7,984.64	0.00	0.00	0.00
15,100.00	90.19	1.05	7,295.43	8,084.53	42.02	8,084.64	0.00	0.00	0.00
15,200.00	90.19	1.05	7,295.10	8,184.51	43.85	8,184.63	0.00	0.00	0.00
15,300.00	90.19	1.05	7,294.76	8,284.49	45.67	8,284.62	0.00	0.00	0.00
15,400.00	90.19	1.05	7,294.43	8,384.48	47.50	8,384.61	0.00	0.00	0.00
15,500.00	90.19	1.05	7,294.10	8,484.46	49.32	8,484.60	0.00	0.00	0.00
15,530.36	90.19	1.05	7,294.00	8,514.82	49.88	8,514.96	0.00	0.00	0.00
BUTTERBALL 9N-34HZ_PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BUTTERBALL 9N-34H - hit/miss target - Shape - Point	0.00	0.00	7,294.00	8,514.82	49.88	14,592,908.00	1,676,874.00	40.181652	-104.869473
BUTTERBALL 9N-34H - plan hits target center - Point	0.00	0.00	7,320.01	673.63	-93.34	14,585,066.60	1,676,742.29	40.160119	-104.869985

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,501.04	1,500.00	9 5/8"	9-5/8	13-1/2	
7,687.82	7,320.01	Top of Production	5-1/2	8-1/2	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 9N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4933.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 1-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 9N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,014.60	1,014.00	Fox Hills				
3,962.32	3,960.00	Parkman				
4,386.32	4,384.00	Sussex				
7,142.52	7,102.00	Sharon Springs				
7,263.40	7,185.00	Niobrara				
7,369.33	7,243.00	Nio B				
7,506.67	7,295.00	Nio C				