

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-67W-10 Butterball 1-10HZ Pad  
BUTTERBALL 24N2-34HZ**

**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 24N2-34HZ  
Wellbore: Plan A  
Design: Permit Rev-1

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1014.00	1015.65	Fox Hills
3960.00	3970.17	Parkman
4384.00	4395.16	Sussex
7107.00	7177.56	Sharon Springs
7190.00	7319.61	Niobrara
7248.00	7470.55	Nio B

#### WELL DETAILS: BUTTERBALL 24N2-34HZ

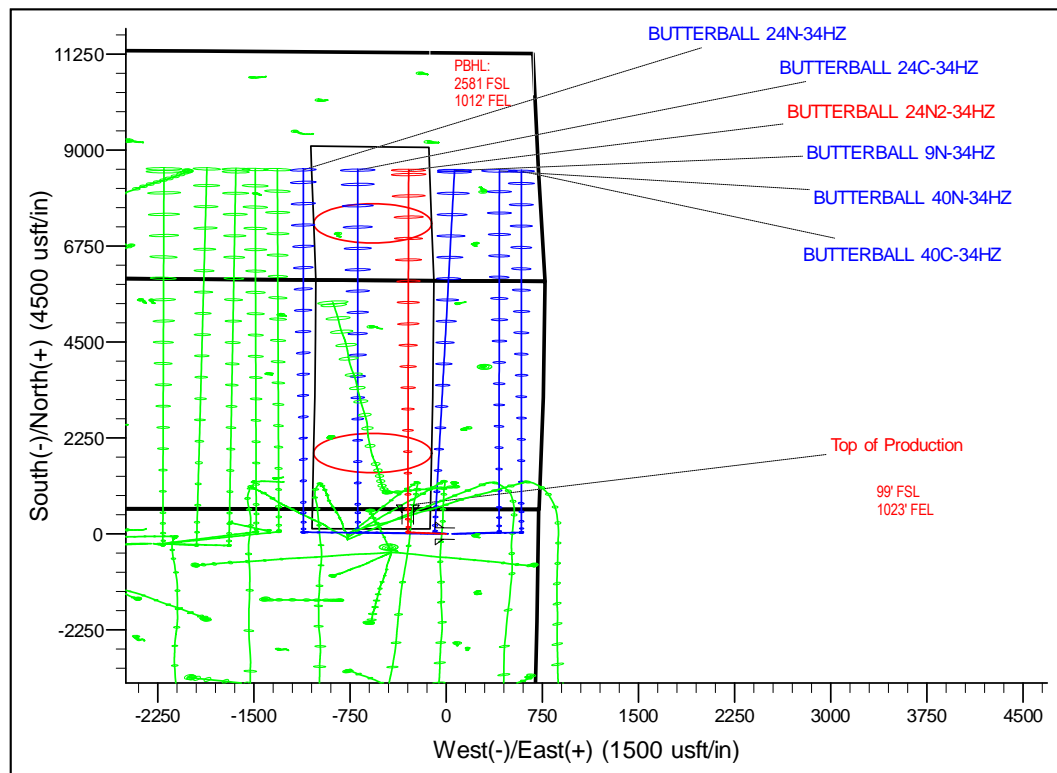
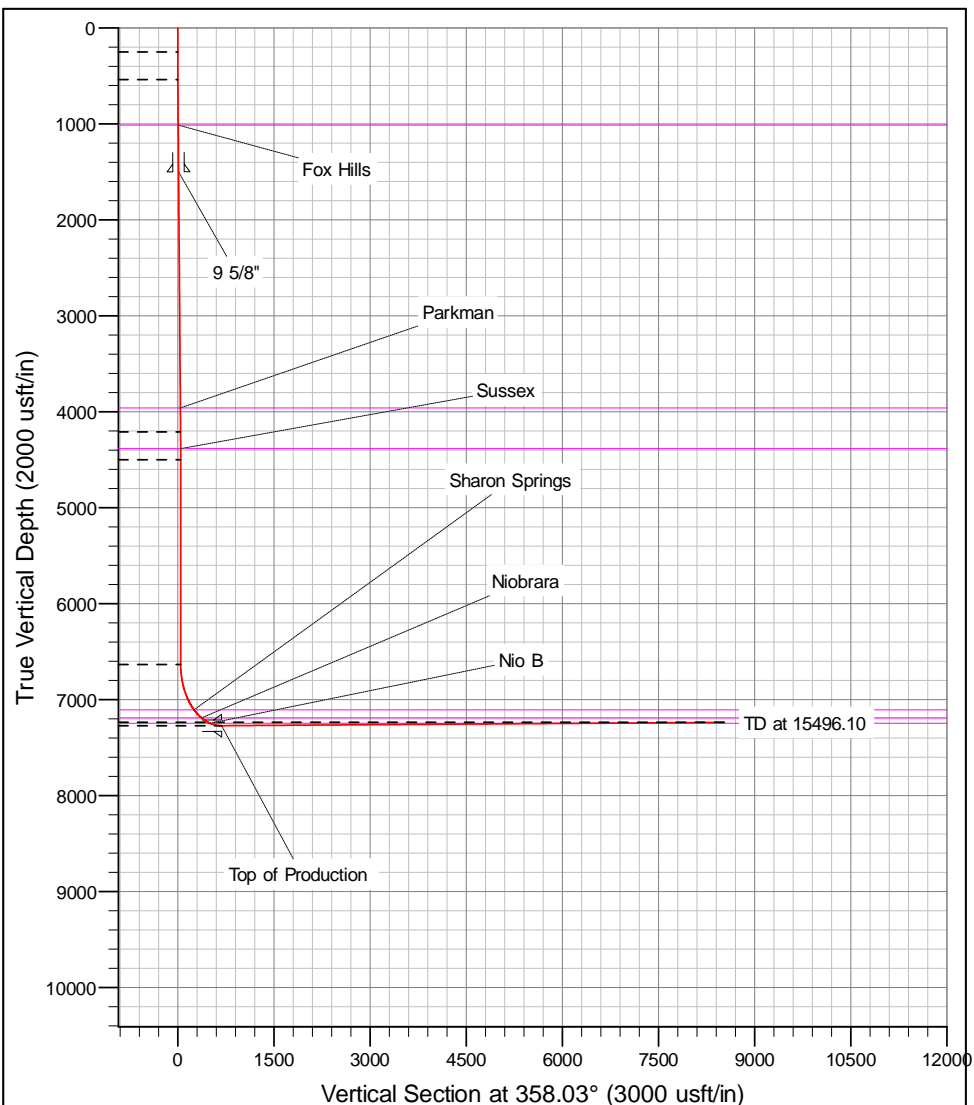
+N/-S	+E/-W	GL: 4916.00	RKB @ 4933.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northing 14584393.10	Easting 1676821.81	Latitude 40.158269	

#### 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
540.20	4.35	276.76	539.92	1.30	-10.94	1.50	1.67
4220.98	4.35	276.76	4210.08	34.20	-288.37	0.00	44.10
4511.18	0.00	0.00	4500.00	35.50	-299.31	1.50	45.78
6646.80	0.00	0.00	6635.62	35.50	-299.31	0.00	45.78
7649.58	90.25	0.04	7272.24	674.90	-298.86	9.00	684.78
15496.10	90.25	0.04	7238.00	8521.34	-293.31	0.00	8526.39

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BUTTERBALL 24N2-34HZ_PBHL	7238.00	8521.34	-293.31	14592914.00	1676516.00	40.181670	-104.870754



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 24N2-34HZ
<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 24N2-34HZ	<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 24N2-34HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,584,393.09 usft	Latitude:	40.158269
	+E/-W	44.98 usft	Easting:	1,676,821.80 usft	Longitude:	-104.869704
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	358.03	

<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	
540.20	4.35	276.76	539.92	1.30	-10.94	1.50	1.50	0.00	276.76	
4,220.98	4.35	276.76	4,210.08	34.20	-288.37	0.00	0.00	0.00	0.00	
4,511.18	0.00	0.00	4,500.00	35.50	-299.31	1.50	-1.50	0.00	180.00	
6,646.80	0.00	0.00	6,635.62	35.50	-299.31	0.00	0.00	0.00	0.00	
7,649.58	90.25	0.04	7,272.24	674.90	-298.86	9.00	9.00	0.00	0.04	
15,496.10	90.25	0.04	7,238.00	8,521.34	-293.31	0.00	0.00	0.00	0.00	BUTTERBALL 24N:

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 24N2-34HZ
<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 24N2-34HZ	<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	276.76	300.00	0.04	-0.32	0.05	1.50	1.50	0.00
400.00	2.25	276.76	399.96	0.35	-2.92	0.45	1.50	1.50	0.00
500.00	3.75	276.76	499.82	0.96	-8.12	1.24	1.50	1.50	0.00
540.20	4.35	276.76	539.92	1.30	-10.94	1.67	1.50	1.50	0.00
600.00	4.35	276.76	599.55	1.83	-15.45	2.36	0.00	0.00	0.00
700.00	4.35	276.76	699.26	2.73	-22.99	3.52	0.00	0.00	0.00
800.00	4.35	276.76	798.97	3.62	-30.52	4.67	0.00	0.00	0.00
900.00	4.35	276.76	898.68	4.51	-38.06	5.82	0.00	0.00	0.00
1,000.00	4.35	276.76	998.39	5.41	-45.60	6.97	0.00	0.00	0.00
1,015.65	4.35	276.76	1,014.00	5.55	-46.78	7.15	0.00	0.00	0.00
<b>Fox Hills</b>									
1,100.00	4.35	276.76	1,098.11	6.30	-53.13	8.13	0.00	0.00	0.00
1,200.00	4.35	276.76	1,197.82	7.20	-60.67	9.28	0.00	0.00	0.00
1,300.00	4.35	276.76	1,297.53	8.09	-68.21	10.43	0.00	0.00	0.00
1,400.00	4.35	276.76	1,397.24	8.98	-75.75	11.58	0.00	0.00	0.00
1,500.00	4.35	276.76	1,496.95	9.88	-83.28	12.74	0.00	0.00	0.00
1,503.06	4.35	276.76	1,500.00	9.91	-83.51	12.77	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	4.35	276.76	1,596.66	10.77	-90.82	13.89	0.00	0.00	0.00
1,700.00	4.35	276.76	1,696.38	11.67	-98.36	15.04	0.00	0.00	0.00
1,800.00	4.35	276.76	1,796.09	12.56	-105.90	16.20	0.00	0.00	0.00
1,900.00	4.35	276.76	1,895.80	13.45	-113.43	17.35	0.00	0.00	0.00
2,000.00	4.35	276.76	1,995.51	14.35	-120.97	18.50	0.00	0.00	0.00
2,100.00	4.35	276.76	2,095.22	15.24	-128.51	19.65	0.00	0.00	0.00
2,200.00	4.35	276.76	2,194.93	16.14	-136.04	20.81	0.00	0.00	0.00
2,300.00	4.35	276.76	2,294.64	17.03	-143.58	21.96	0.00	0.00	0.00
2,400.00	4.35	276.76	2,394.36	17.92	-151.12	23.11	0.00	0.00	0.00
2,500.00	4.35	276.76	2,494.07	18.82	-158.66	24.26	0.00	0.00	0.00
2,600.00	4.35	276.76	2,593.78	19.71	-166.19	25.42	0.00	0.00	0.00
2,700.00	4.35	276.76	2,693.49	20.61	-173.73	26.57	0.00	0.00	0.00
2,800.00	4.35	276.76	2,793.20	21.50	-181.27	27.72	0.00	0.00	0.00
2,900.00	4.35	276.76	2,892.91	22.39	-188.80	28.87	0.00	0.00	0.00
3,000.00	4.35	276.76	2,992.63	23.29	-196.34	30.03	0.00	0.00	0.00
3,100.00	4.35	276.76	3,092.34	24.18	-203.88	31.18	0.00	0.00	0.00
3,200.00	4.35	276.76	3,192.05	25.08	-211.42	32.33	0.00	0.00	0.00
3,300.00	4.35	276.76	3,291.76	25.97	-218.95	33.49	0.00	0.00	0.00
3,400.00	4.35	276.76	3,391.47	26.86	-226.49	34.64	0.00	0.00	0.00
3,500.00	4.35	276.76	3,491.18	27.76	-234.03	35.79	0.00	0.00	0.00
3,600.00	4.35	276.76	3,590.89	28.65	-241.56	36.94	0.00	0.00	0.00
3,700.00	4.35	276.76	3,690.61	29.54	-249.10	38.10	0.00	0.00	0.00
3,800.00	4.35	276.76	3,790.32	30.44	-256.64	39.25	0.00	0.00	0.00
3,900.00	4.35	276.76	3,890.03	31.33	-264.18	40.40	0.00	0.00	0.00
3,970.17	4.35	276.76	3,960.00	31.96	-269.46	41.21	0.00	0.00	0.00
<b>Parkman</b>									
4,000.00	4.35	276.76	3,989.74	32.23	-271.71	41.55	0.00	0.00	0.00
4,100.00	4.35	276.76	4,089.45	33.12	-279.25	42.71	0.00	0.00	0.00
4,200.00	4.35	276.76	4,189.16	34.01	-286.79	43.86	0.00	0.00	0.00
4,220.98	4.35	276.76	4,210.08	34.20	-288.37	44.10	0.00	0.00	0.00
4,300.00	3.17	276.76	4,288.93	34.81	-293.51	44.89	1.50	-1.50	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 24N2-34HZ
<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 24N2-34HZ	<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)
4,395.16	1.74	276.76	4,384.00	35.29	-297.56	45.51	1.50	-1.50	0.00
<b>Sussex</b>									
4,400.00	1.67	276.76	4,388.84	35.31	-297.70	45.53	1.50	-1.50	0.00
4,500.00	0.17	276.76	4,488.82	35.50	-299.29	45.77	1.50	-1.50	0.00
4,511.18	0.00	0.00	4,500.00	35.50	-299.31	45.78	1.50	-1.50	0.00
4,600.00	0.00	0.00	4,588.82	35.50	-299.31	45.78	0.00	0.00	0.00
4,700.00	0.00	0.00	4,688.82	35.50	-299.31	45.78	0.00	0.00	0.00
4,800.00	0.00	0.00	4,788.82	35.50	-299.31	45.78	0.00	0.00	0.00
4,900.00	0.00	0.00	4,888.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,000.00	0.00	0.00	4,988.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,100.00	0.00	0.00	5,088.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,200.00	0.00	0.00	5,188.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,300.00	0.00	0.00	5,288.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,400.00	0.00	0.00	5,388.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,500.00	0.00	0.00	5,488.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,600.00	0.00	0.00	5,588.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,700.00	0.00	0.00	5,688.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,800.00	0.00	0.00	5,788.82	35.50	-299.31	45.78	0.00	0.00	0.00
5,900.00	0.00	0.00	5,888.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,988.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,100.00	0.00	0.00	6,088.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,200.00	0.00	0.00	6,188.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,300.00	0.00	0.00	6,288.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,400.00	0.00	0.00	6,388.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,500.00	0.00	0.00	6,488.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,600.00	0.00	0.00	6,588.82	35.50	-299.31	45.78	0.00	0.00	0.00
6,646.80	0.00	0.00	6,635.62	35.50	-299.31	45.78	0.00	0.00	0.00
6,700.00	4.79	0.04	6,688.76	37.72	-299.31	48.00	9.00	9.00	0.00
6,800.00	13.79	0.04	6,787.35	53.85	-299.30	64.11	9.00	9.00	0.00
6,900.00	22.79	0.04	6,882.20	85.19	-299.27	95.44	9.00	9.00	0.00
7,000.00	31.79	0.04	6,970.98	130.99	-299.24	141.21	9.00	9.00	0.00
7,100.00	40.79	0.04	7,051.50	190.12	-299.20	200.30	9.00	9.00	0.00
7,177.56	47.77	0.04	7,107.00	244.23	-299.16	254.38	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,200.00	49.79	0.04	7,121.79	261.11	-299.15	271.24	9.00	9.00	0.00
7,300.00	58.79	0.04	7,180.10	342.22	-299.09	352.31	9.00	9.00	0.00
7,319.61	60.55	0.04	7,190.00	359.15	-299.08	369.22	9.00	9.00	0.00
<b>Niobrara</b>									
7,400.00	67.79	0.04	7,225.00	431.46	-299.03	441.49	9.00	9.00	0.00
7,470.55	74.14	0.04	7,248.00	498.11	-298.98	508.10	9.00	9.00	0.00
<b>Nio B</b>									
7,500.00	76.79	0.04	7,255.39	526.62	-298.96	536.59	9.00	9.00	0.00
7,600.00	85.79	0.04	7,270.52	625.36	-298.89	635.27	9.00	9.00	0.00
7,649.58	90.25	0.04	7,272.24	674.90	-298.86	684.78	9.00	9.00	0.00
<b>Top of Production - BUTTERBALL 24N2-34HZ_PHL</b>									
7,700.00	90.25	0.04	7,272.02	725.32	-298.82	735.17	0.00	0.00	0.00
7,800.00	90.25	0.04	7,271.58	825.32	-298.75	835.11	0.00	0.00	0.00
7,900.00	90.25	0.04	7,271.14	925.32	-298.68	935.05	0.00	0.00	0.00
8,000.00	90.25	0.04	7,270.71	1,025.32	-298.61	1,034.98	0.00	0.00	0.00
8,100.00	90.25	0.04	7,270.27	1,125.32	-298.54	1,134.92	0.00	0.00	0.00
8,200.00	90.25	0.04	7,269.84	1,225.32	-298.47	1,234.86	0.00	0.00	0.00
8,300.00	90.25	0.04	7,269.40	1,325.31	-298.40	1,334.80	0.00	0.00	0.00
8,400.00	90.25	0.04	7,268.96	1,425.31	-298.33	1,434.73	0.00	0.00	0.00
8,500.00	90.25	0.04	7,268.53	1,525.31	-298.26	1,534.67	0.00	0.00	0.00

# Corporate Planning Report

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<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 24N2-34HZ	<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)
8,600.00	90.25	0.04	7,268.09	1,625.31	-298.19	1,634.61	0.00	0.00	0.00
8,700.00	90.25	0.04	7,267.65	1,725.31	-298.11	1,734.54	0.00	0.00	0.00
8,800.00	90.25	0.04	7,267.22	1,825.31	-298.04	1,834.48	0.00	0.00	0.00
8,900.00	90.25	0.04	7,266.78	1,925.31	-297.97	1,934.42	0.00	0.00	0.00
9,000.00	90.25	0.04	7,266.34	2,025.31	-297.90	2,034.36	0.00	0.00	0.00
9,100.00	90.25	0.04	7,265.91	2,125.31	-297.83	2,134.29	0.00	0.00	0.00
9,200.00	90.25	0.04	7,265.47	2,225.31	-297.76	2,234.23	0.00	0.00	0.00
9,300.00	90.25	0.04	7,265.04	2,325.30	-297.69	2,334.17	0.00	0.00	0.00
9,400.00	90.25	0.04	7,264.60	2,425.30	-297.62	2,434.11	0.00	0.00	0.00
9,500.00	90.25	0.04	7,264.16	2,525.30	-297.55	2,534.04	0.00	0.00	0.00
9,600.00	90.25	0.04	7,263.73	2,625.30	-297.48	2,633.98	0.00	0.00	0.00
9,700.00	90.25	0.04	7,263.29	2,725.30	-297.41	2,733.92	0.00	0.00	0.00
9,800.00	90.25	0.04	7,262.85	2,825.30	-297.34	2,833.86	0.00	0.00	0.00
9,900.00	90.25	0.04	7,262.42	2,925.30	-297.27	2,933.79	0.00	0.00	0.00
10,000.00	90.25	0.04	7,261.98	3,025.30	-297.20	3,033.73	0.00	0.00	0.00
10,100.00	90.25	0.04	7,261.55	3,125.30	-297.12	3,133.67	0.00	0.00	0.00
10,200.00	90.25	0.04	7,261.11	3,225.30	-297.05	3,233.61	0.00	0.00	0.00
10,300.00	90.25	0.04	7,260.67	3,325.30	-296.98	3,333.54	0.00	0.00	0.00
10,400.00	90.25	0.04	7,260.24	3,425.29	-296.91	3,433.48	0.00	0.00	0.00
10,500.00	90.25	0.04	7,259.80	3,525.29	-296.84	3,533.42	0.00	0.00	0.00
10,600.00	90.25	0.04	7,259.36	3,625.29	-296.77	3,633.36	0.00	0.00	0.00
10,700.00	90.25	0.04	7,258.93	3,725.29	-296.70	3,733.29	0.00	0.00	0.00
10,800.00	90.25	0.04	7,258.49	3,825.29	-296.63	3,833.23	0.00	0.00	0.00
10,900.00	90.25	0.04	7,258.05	3,925.29	-296.56	3,933.17	0.00	0.00	0.00
11,000.00	90.25	0.04	7,257.62	4,025.29	-296.49	4,033.11	0.00	0.00	0.00
11,100.00	90.25	0.04	7,257.18	4,125.29	-296.42	4,133.04	0.00	0.00	0.00
11,200.00	90.25	0.04	7,256.75	4,225.29	-296.35	4,232.98	0.00	0.00	0.00
11,300.00	90.25	0.04	7,256.31	4,325.29	-296.28	4,332.92	0.00	0.00	0.00
11,400.00	90.25	0.04	7,255.87	4,425.28	-296.21	4,432.85	0.00	0.00	0.00
11,500.00	90.25	0.04	7,255.44	4,525.28	-296.13	4,532.79	0.00	0.00	0.00
11,600.00	90.25	0.04	7,255.00	4,625.28	-296.06	4,632.73	0.00	0.00	0.00
11,700.00	90.25	0.04	7,254.56	4,725.28	-295.99	4,732.67	0.00	0.00	0.00
11,800.00	90.25	0.04	7,254.13	4,825.28	-295.92	4,832.60	0.00	0.00	0.00
11,900.00	90.25	0.04	7,253.69	4,925.28	-295.85	4,932.54	0.00	0.00	0.00
12,000.00	90.25	0.04	7,253.25	5,025.28	-295.78	5,032.48	0.00	0.00	0.00
12,100.00	90.25	0.04	7,252.82	5,125.28	-295.71	5,132.42	0.00	0.00	0.00
12,200.00	90.25	0.04	7,252.38	5,225.28	-295.64	5,232.35	0.00	0.00	0.00
12,300.00	90.25	0.04	7,251.95	5,325.28	-295.57	5,332.29	0.00	0.00	0.00
12,400.00	90.25	0.04	7,251.51	5,425.27	-295.50	5,432.23	0.00	0.00	0.00
12,500.00	90.25	0.04	7,251.07	5,525.27	-295.43	5,532.17	0.00	0.00	0.00
12,600.00	90.25	0.04	7,250.64	5,625.27	-295.36	5,632.10	0.00	0.00	0.00
12,700.00	90.25	0.04	7,250.20	5,725.27	-295.29	5,732.04	0.00	0.00	0.00
12,800.00	90.25	0.04	7,249.76	5,825.27	-295.22	5,831.98	0.00	0.00	0.00
12,900.00	90.25	0.04	7,249.33	5,925.27	-295.14	5,931.92	0.00	0.00	0.00
13,000.00	90.25	0.04	7,248.89	6,025.27	-295.07	6,031.85	0.00	0.00	0.00
13,100.00	90.25	0.04	7,248.46	6,125.27	-295.00	6,131.79	0.00	0.00	0.00
13,200.00	90.25	0.04	7,248.02	6,225.27	-294.93	6,231.73	0.00	0.00	0.00
13,300.00	90.25	0.04	7,247.58	6,325.27	-294.86	6,331.67	0.00	0.00	0.00
13,400.00	90.25	0.04	7,247.15	6,425.26	-294.79	6,431.60	0.00	0.00	0.00
13,500.00	90.25	0.04	7,246.71	6,525.26	-294.72	6,531.54	0.00	0.00	0.00
13,600.00	90.25	0.04	7,246.27	6,625.26	-294.65	6,631.48	0.00	0.00	0.00
13,700.00	90.25	0.04	7,245.84	6,725.26	-294.58	6,731.42	0.00	0.00	0.00
13,800.00	90.25	0.04	7,245.40	6,825.26	-294.51	6,831.35	0.00	0.00	0.00
13,900.00	90.25	0.04	7,244.96	6,925.26	-294.44	6,931.29	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 24N2-34HZ
<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 24N2-34HZ	<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)	
14,000.00	90.25	0.04	7,244.53	7,025.26	-294.37	7,031.23	0.00	0.00	0.00	
14,100.00	90.25	0.04	7,244.09	7,125.26	-294.30	7,131.16	0.00	0.00	0.00	
14,200.00	90.25	0.04	7,243.66	7,225.26	-294.23	7,231.10	0.00	0.00	0.00	
14,300.00	90.25	0.04	7,243.22	7,325.26	-294.15	7,331.04	0.00	0.00	0.00	
14,400.00	90.25	0.04	7,242.78	7,425.26	-294.08	7,430.98	0.00	0.00	0.00	
14,500.00	90.25	0.04	7,242.35	7,525.25	-294.01	7,530.91	0.00	0.00	0.00	
14,600.00	90.25	0.04	7,241.91	7,625.25	-293.94	7,630.85	0.00	0.00	0.00	
14,700.00	90.25	0.04	7,241.47	7,725.25	-293.87	7,730.79	0.00	0.00	0.00	
14,800.00	90.25	0.04	7,241.04	7,825.25	-293.80	7,830.73	0.00	0.00	0.00	
14,900.00	90.25	0.04	7,240.60	7,925.25	-293.73	7,930.66	0.00	0.00	0.00	
15,000.00	90.25	0.04	7,240.16	8,025.25	-293.66	8,030.60	0.00	0.00	0.00	
15,100.00	90.25	0.04	7,239.73	8,125.25	-293.59	8,130.54	0.00	0.00	0.00	
15,200.00	90.25	0.04	7,239.29	8,225.25	-293.52	8,230.48	0.00	0.00	0.00	
15,300.00	90.25	0.04	7,238.86	8,325.25	-293.45	8,330.41	0.00	0.00	0.00	
15,400.00	90.25	0.04	7,238.42	8,425.25	-293.38	8,430.35	0.00	0.00	0.00	
15,496.10	90.25	0.04	7,238.00	8,521.34	-293.31	8,526.39	0.00	0.00	0.00	
BUTTERBALL 24N2-34HZ_PBHL										

Design Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
	- Shape								Latitude Longitude
BUTTERBALL 24N2-34HZ	- plan hits target center	0.00	0.00	7,238.00	8,521.34	-293.31	14,592,914.00	1,676,516.00	40.181670 -104.870754
	- Point								
BUTTERBALL 24N2-34HZ	- plan hits target center	0.00	0.00	7,272.24	674.90	-298.86	14,585,067.56	1,676,521.96	40.160122 -104.870774
	- Point								

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,503.06	1,500.00	9 5/8"	9-5/8	13-1/2	
7,649.58	7,272.24	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,015.65	1,014.00	Fox Hills				
3,970.17	3,960.00	Parkman				
4,395.16	4,384.00	Sussex				
7,177.56	7,107.00	Sharon Springs				
7,319.61	7,190.00	Niobrara				
7,470.55	7,248.00	Nio B				

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 24N2-34HZ
<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 24N2-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		