

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-67W-10 Butterball 4-10HZ Pad  
BUTTERBALL 12N-34HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**13 October, 2016**



Azimuths to True North  
Magnetic North: 8.19°

Magnetic Field  
Strength: 52431.0snT  
Dip Angle: 66.65°  
Date: 10/11/2016  
Model: IGRF2010

SITE: 2N-67W-10 Butterball 4-10HZ Pad

Well: BUTTERBALL 12N-34HZ  
Wellbore: Plan A  
Design: Permit Rev-1

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1043.00	1047.78	Fox Hills
3972.00	4007.19	Parkman
4387.00	4432.19	Sussex
7157.00	7255.58	Sharon Springs
7240.00	7402.24	Niobrara
7293.00	7547.77	Nio B

#### WELL DETAILS: BUTTERBALL 12N-34HZ

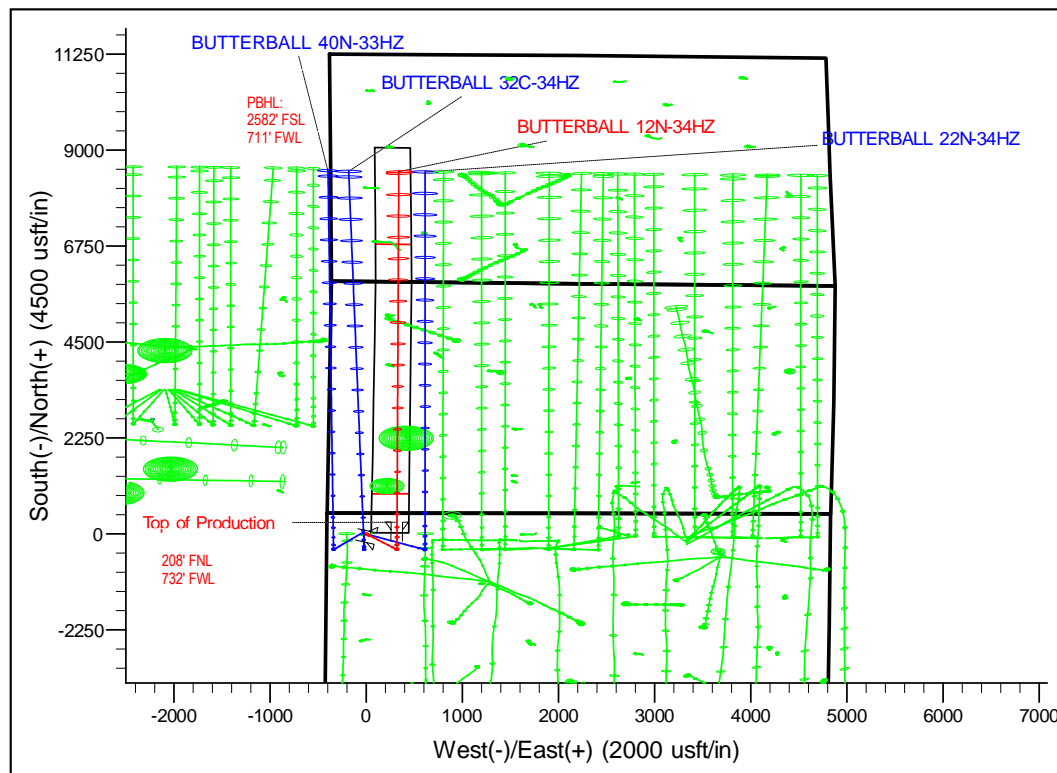
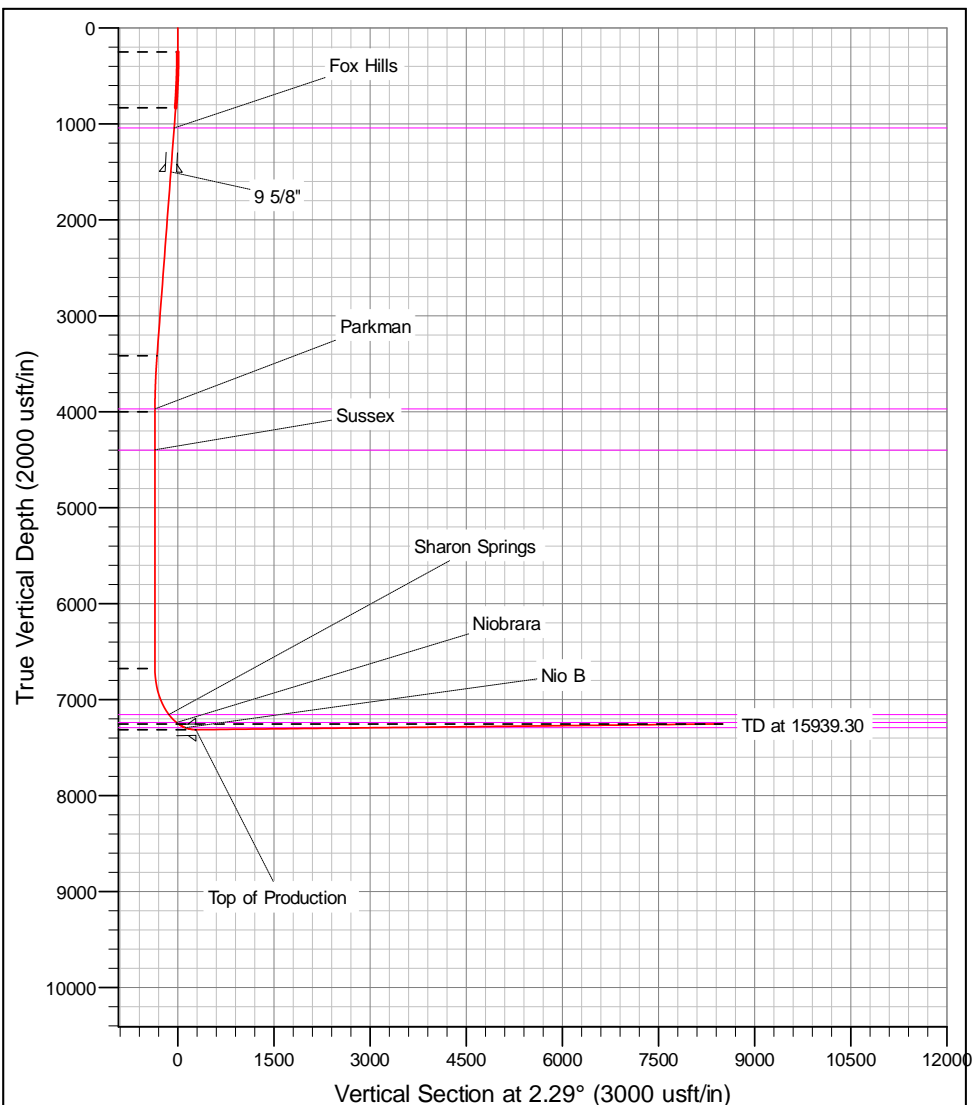
+N/-S	+E/-W	GL: 4945.00 Northing	RKB @ 4962.00usft (D Rig) Easting	Latitude	Longitude	Slot
0.00	0.00	14584493.74	1672712.76	40.158561	-104.884410	

#### 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
835.07	8.78	139.07	832.79	-33.79	29.30	1.50	-32.59
3450.11	8.78	139.07	3417.21	-335.21	290.70	0.00	-323.32
4035.19	0.00	0.00	4000.00	-369.00	320.00	1.50	-355.91
6712.85	0.00	0.00	6677.67	-369.00	320.00	0.00	-355.91
7717.52	90.42	0.13	7314.27	272.28	321.45	9.00	284.92
15939.30	90.42	0.13	7254.00	8493.82	340.00	0.00	8500.62

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BUTTERBALL 12N-34HZ_PBHL	7254.00	8493.82	340.00	14592988.00	1673041.71	40.181886	-104.883193



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 12N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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 4-10HZ Pad				
Site Position:		Northing:	14,584,525.74 usft	Latitude:	40.158649	
From:	Lat/Long	Easting:	1,672,681.14 usft	Longitude:	-104.884523	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well		BUTTERBALL 12N-34HZ				
Well Position	+N-S	-32.05 usft	Northing:	14,584,493.74 usft	Latitude:	40.158561
	+E-W	31.57 usft	Easting:	1,672,712.76 usft	Longitude:	-104.884410
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,945.00 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	10/11/2016	8.19	66.65	52,431

<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	2.29

<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	
835.07	8.78	139.07	832.79	-33.79	29.30	1.50	1.50	0.00	139.07	
3,450.11	8.78	139.07	3,417.21	-335.21	290.70	0.00	0.00	0.00	0.00	
4,035.19	0.00	0.00	4,000.00	-369.00	320.00	1.50	-1.50	0.00	180.00	
6,712.85	0.00	0.00	6,677.67	-369.00	320.00	0.00	0.00	0.00	0.00	
7,717.52	90.42	0.13	7,314.27	272.28	321.45	9.00	9.00	0.00	0.13	
15,939.30	90.42	0.13	7,254.00	8,493.82	340.00	0.00	0.00	0.00	0.00	BUTTERBALL 12N-

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 12N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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	139.07	300.00	-0.25	0.21	-0.24	1.50	1.50	0.00
400.00	2.25	139.07	399.96	-2.22	1.93	-2.15	1.50	1.50	0.00
500.00	3.75	139.07	499.82	-6.18	5.36	-5.96	1.50	1.50	0.00
600.00	5.25	139.07	599.51	-12.11	10.50	-11.68	1.50	1.50	0.00
700.00	6.75	139.07	698.96	-20.00	17.35	-19.29	1.50	1.50	0.00
800.00	8.25	139.07	798.10	-29.86	25.90	-28.80	1.50	1.50	0.00
835.07	8.78	139.07	832.79	-33.79	29.30	-32.59	1.50	1.50	0.00
900.00	8.78	139.07	896.95	-41.27	35.79	-39.81	0.00	0.00	0.00
1,000.00	8.78	139.07	995.78	-52.80	45.79	-50.92	0.00	0.00	0.00
1,047.78	8.78	139.07	1,043.00	-58.30	50.56	-56.23	0.00	0.00	0.00
<b>Fox Hills</b>									
1,100.00	8.78	139.07	1,094.61	-64.32	55.78	-62.04	0.00	0.00	0.00
1,200.00	8.78	139.07	1,193.44	-75.85	65.78	-73.16	0.00	0.00	0.00
1,300.00	8.78	139.07	1,292.27	-87.38	75.77	-84.28	0.00	0.00	0.00
1,400.00	8.78	139.07	1,391.10	-98.90	85.77	-95.39	0.00	0.00	0.00
1,500.00	8.78	139.07	1,489.93	-110.43	95.77	-106.51	0.00	0.00	0.00
1,510.19	8.78	139.07	1,500.00	-111.60	96.78	-107.64	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	8.78	139.07	1,588.76	-121.96	105.76	-117.63	0.00	0.00	0.00
1,700.00	8.78	139.07	1,687.59	-133.48	115.76	-128.75	0.00	0.00	0.00
1,800.00	8.78	139.07	1,786.42	-145.01	125.75	-139.86	0.00	0.00	0.00
1,900.00	8.78	139.07	1,885.25	-156.54	135.75	-150.98	0.00	0.00	0.00
2,000.00	8.78	139.07	1,984.08	-168.06	145.75	-162.10	0.00	0.00	0.00
2,100.00	8.78	139.07	2,082.91	-179.59	155.74	-173.22	0.00	0.00	0.00
2,200.00	8.78	139.07	2,181.73	-191.12	165.74	-184.34	0.00	0.00	0.00
2,300.00	8.78	139.07	2,280.56	-202.64	175.73	-195.45	0.00	0.00	0.00
2,400.00	8.78	139.07	2,379.39	-214.17	185.73	-206.57	0.00	0.00	0.00
2,500.00	8.78	139.07	2,478.22	-225.70	195.73	-217.69	0.00	0.00	0.00
2,600.00	8.78	139.07	2,577.05	-237.22	205.72	-228.81	0.00	0.00	0.00
2,700.00	8.78	139.07	2,675.88	-248.75	215.72	-239.92	0.00	0.00	0.00
2,800.00	8.78	139.07	2,774.71	-260.28	225.71	-251.04	0.00	0.00	0.00
2,900.00	8.78	139.07	2,873.54	-271.80	235.71	-262.16	0.00	0.00	0.00
3,000.00	8.78	139.07	2,972.37	-283.33	245.71	-273.28	0.00	0.00	0.00
3,100.00	8.78	139.07	3,071.20	-294.86	255.70	-284.39	0.00	0.00	0.00
3,200.00	8.78	139.07	3,170.03	-306.38	265.70	-295.51	0.00	0.00	0.00
3,300.00	8.78	139.07	3,268.86	-317.91	275.70	-306.63	0.00	0.00	0.00
3,400.00	8.78	139.07	3,367.69	-329.44	285.69	-317.75	0.00	0.00	0.00
3,450.11	8.78	139.07	3,417.21	-335.21	290.70	-323.32	0.00	0.00	0.00
3,500.00	8.03	139.07	3,466.56	-340.72	295.48	-328.63	1.50	-1.50	0.00
3,600.00	6.53	139.07	3,565.75	-350.29	303.78	-337.86	1.50	-1.50	0.00
3,700.00	5.03	139.07	3,665.24	-357.90	310.37	-345.20	1.50	-1.50	0.00
3,800.00	3.53	139.07	3,764.96	-363.53	315.26	-350.63	1.50	-1.50	0.00
3,900.00	2.03	139.07	3,864.84	-367.19	318.43	-354.16	1.50	-1.50	0.00
4,000.00	0.53	139.07	3,964.81	-368.88	319.89	-355.79	1.50	-1.50	0.00
4,007.19	0.42	139.07	3,972.00	-368.92	319.93	-355.83	1.50	-1.50	0.00
<b>Parkman</b>									
4,035.19	0.00	0.00	4,000.00	-369.00	320.00	-355.91	1.50	-1.50	0.00
4,100.00	0.00	0.00	4,064.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,200.00	0.00	0.00	4,164.81	-369.00	320.00	-355.91	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 12N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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	4,264.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,400.00	0.00	0.00	4,364.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,432.19	0.00	0.00	4,397.00	-369.00	320.00	-355.91	0.00	0.00	0.00
<b>Sussex</b>									
4,500.00	0.00	0.00	4,464.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,600.00	0.00	0.00	4,564.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,700.00	0.00	0.00	4,664.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,800.00	0.00	0.00	4,764.81	-369.00	320.00	-355.91	0.00	0.00	0.00
4,900.00	0.00	0.00	4,864.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,000.00	0.00	0.00	4,964.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,100.00	0.00	0.00	5,064.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,200.00	0.00	0.00	5,164.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,300.00	0.00	0.00	5,264.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,400.00	0.00	0.00	5,364.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,500.00	0.00	0.00	5,464.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,600.00	0.00	0.00	5,564.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,700.00	0.00	0.00	5,664.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,800.00	0.00	0.00	5,764.81	-369.00	320.00	-355.91	0.00	0.00	0.00
5,900.00	0.00	0.00	5,864.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,000.00	0.00	0.00	5,964.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,100.00	0.00	0.00	6,064.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,200.00	0.00	0.00	6,164.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,300.00	0.00	0.00	6,264.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,400.00	0.00	0.00	6,364.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,500.00	0.00	0.00	6,464.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,600.00	0.00	0.00	6,564.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,700.00	0.00	0.00	6,664.81	-369.00	320.00	-355.91	0.00	0.00	0.00
6,712.85	0.00	0.00	6,677.67	-369.00	320.00	-355.91	0.00	0.00	0.00
6,800.00	7.84	0.13	6,764.54	-363.04	320.01	-349.95	9.00	9.00	0.00
6,900.00	16.84	0.13	6,862.13	-341.69	320.06	-328.61	9.00	9.00	0.00
7,000.00	25.84	0.13	6,955.18	-305.33	320.14	-292.28	9.00	9.00	0.00
7,100.00	34.84	0.13	7,041.39	-254.87	320.26	-241.85	9.00	9.00	0.00
7,200.00	43.84	0.13	7,118.64	-191.53	320.40	-178.57	9.00	9.00	0.00
7,255.58	48.85	0.13	7,157.00	-151.34	320.49	-138.40	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,300.00	52.84	0.13	7,185.04	-116.90	320.57	-103.98	9.00	9.00	0.00
7,400.00	61.84	0.13	7,238.95	-32.79	320.76	-19.94	9.00	9.00	0.00
7,402.24	62.04	0.13	7,240.00	-30.82	320.76	-17.96	9.00	9.00	0.00
<b>Niobrara</b>									
7,500.00	70.84	0.13	7,279.03	58.71	320.97	71.50	9.00	9.00	0.00
7,547.77	75.14	0.13	7,293.00	104.38	321.07	117.13	9.00	9.00	0.00
<b>Nio B</b>									
7,600.00	79.84	0.13	7,304.31	155.36	321.18	168.08	9.00	9.00	0.00
7,700.00	88.84	0.13	7,314.16	254.77	321.41	267.42	9.00	9.00	0.00
7,717.52	90.42	0.13	7,314.27	272.29	321.45	284.92	9.00	9.00	0.00
<b>Top of Production - BUTTERBALL 12N-34HZ_PHL</b>									
7,800.00	90.42	0.13	7,313.66	354.76	321.63	367.34	0.00	0.00	0.00
7,900.00	90.42	0.13	7,312.93	454.76	321.86	467.27	0.00	0.00	0.00
8,000.00	90.42	0.13	7,312.20	554.76	322.08	567.20	0.00	0.00	0.00
8,100.00	90.42	0.13	7,311.46	654.75	322.31	667.12	0.00	0.00	0.00
8,200.00	90.42	0.13	7,310.73	754.75	322.54	767.05	0.00	0.00	0.00
8,300.00	90.42	0.13	7,310.00	854.75	322.76	866.97	0.00	0.00	0.00
8,400.00	90.42	0.13	7,309.27	954.75	322.99	966.90	0.00	0.00	0.00
8,500.00	90.42	0.13	7,308.53	1,054.74	323.21	1,066.83	0.00	0.00	0.00

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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	90.42	0.13	7,307.80	1,154.74	323.44	1,166.75	0.00	0.00	0.00
8,700.00	90.42	0.13	7,307.07	1,254.74	323.66	1,266.68	0.00	0.00	0.00
8,800.00	90.42	0.13	7,306.33	1,354.73	323.89	1,366.60	0.00	0.00	0.00
8,900.00	90.42	0.13	7,305.60	1,454.73	324.12	1,466.53	0.00	0.00	0.00
9,000.00	90.42	0.13	7,304.87	1,554.73	324.34	1,566.46	0.00	0.00	0.00
9,100.00	90.42	0.13	7,304.13	1,654.73	324.57	1,666.38	0.00	0.00	0.00
9,200.00	90.42	0.13	7,303.40	1,754.72	324.79	1,766.31	0.00	0.00	0.00
9,300.00	90.42	0.13	7,302.67	1,854.72	325.02	1,866.23	0.00	0.00	0.00
9,400.00	90.42	0.13	7,301.94	1,954.72	325.24	1,966.16	0.00	0.00	0.00
9,500.00	90.42	0.13	7,301.20	2,054.71	325.47	2,066.09	0.00	0.00	0.00
9,600.00	90.42	0.13	7,300.47	2,154.71	325.70	2,166.01	0.00	0.00	0.00
9,700.00	90.42	0.13	7,299.74	2,254.71	325.92	2,265.94	0.00	0.00	0.00
9,800.00	90.42	0.13	7,299.00	2,354.70	326.15	2,365.87	0.00	0.00	0.00
9,900.00	90.42	0.13	7,298.27	2,454.70	326.37	2,465.79	0.00	0.00	0.00
10,000.00	90.42	0.13	7,297.54	2,554.70	326.60	2,565.72	0.00	0.00	0.00
10,100.00	90.42	0.13	7,296.80	2,654.70	326.82	2,665.64	0.00	0.00	0.00
10,200.00	90.42	0.13	7,296.07	2,754.69	327.05	2,765.57	0.00	0.00	0.00
10,300.00	90.42	0.13	7,295.34	2,854.69	327.27	2,865.50	0.00	0.00	0.00
10,400.00	90.42	0.13	7,294.60	2,954.69	327.50	2,965.42	0.00	0.00	0.00
10,500.00	90.42	0.13	7,293.87	3,054.68	327.73	3,065.35	0.00	0.00	0.00
10,600.00	90.42	0.13	7,293.14	3,154.68	327.95	3,165.27	0.00	0.00	0.00
10,700.00	90.42	0.13	7,292.41	3,254.68	328.18	3,265.20	0.00	0.00	0.00
10,800.00	90.42	0.13	7,291.67	3,354.68	328.40	3,365.13	0.00	0.00	0.00
10,900.00	90.42	0.13	7,290.94	3,454.67	328.63	3,465.05	0.00	0.00	0.00
11,000.00	90.42	0.13	7,290.21	3,554.67	328.85	3,564.98	0.00	0.00	0.00
11,100.00	90.42	0.13	7,289.47	3,654.67	329.08	3,664.90	0.00	0.00	0.00
11,200.00	90.42	0.13	7,288.74	3,754.66	329.31	3,764.83	0.00	0.00	0.00
11,300.00	90.42	0.13	7,288.01	3,854.66	329.53	3,864.76	0.00	0.00	0.00
11,400.00	90.42	0.13	7,287.27	3,954.66	329.76	3,964.68	0.00	0.00	0.00
11,500.00	90.42	0.13	7,286.54	4,054.65	329.98	4,064.61	0.00	0.00	0.00
11,600.00	90.42	0.13	7,285.81	4,154.65	330.21	4,164.53	0.00	0.00	0.00
11,700.00	90.42	0.13	7,285.08	4,254.65	330.43	4,264.46	0.00	0.00	0.00
11,800.00	90.42	0.13	7,284.34	4,354.65	330.66	4,364.39	0.00	0.00	0.00
11,900.00	90.42	0.13	7,283.61	4,454.64	330.89	4,464.31	0.00	0.00	0.00
12,000.00	90.42	0.13	7,282.88	4,554.64	331.11	4,564.24	0.00	0.00	0.00
12,100.00	90.42	0.13	7,282.14	4,654.64	331.34	4,664.16	0.00	0.00	0.00
12,200.00	90.42	0.13	7,281.41	4,754.63	331.56	4,764.09	0.00	0.00	0.00
12,300.00	90.42	0.13	7,280.68	4,854.63	331.79	4,864.02	0.00	0.00	0.00
12,400.00	90.42	0.13	7,279.94	4,954.63	332.01	4,963.94	0.00	0.00	0.00
12,500.00	90.42	0.13	7,279.21	5,054.63	332.24	5,063.87	0.00	0.00	0.00
12,600.00	90.42	0.13	7,278.48	5,154.62	332.47	5,163.80	0.00	0.00	0.00
12,700.00	90.42	0.13	7,277.75	5,254.62	332.69	5,263.72	0.00	0.00	0.00
12,800.00	90.42	0.13	7,277.01	5,354.62	332.92	5,363.65	0.00	0.00	0.00
12,900.00	90.42	0.13	7,276.28	5,454.61	333.14	5,463.57	0.00	0.00	0.00
13,000.00	90.42	0.13	7,275.55	5,554.61	333.37	5,563.50	0.00	0.00	0.00
13,100.00	90.42	0.13	7,274.81	5,654.61	333.59	5,663.43	0.00	0.00	0.00
13,200.00	90.42	0.13	7,274.08	5,754.60	333.82	5,763.35	0.00	0.00	0.00
13,300.00	90.42	0.13	7,273.35	5,854.60	334.04	5,863.28	0.00	0.00	0.00
13,400.00	90.42	0.13	7,272.61	5,954.60	334.27	5,963.20	0.00	0.00	0.00
13,500.00	90.42	0.13	7,271.88	6,054.60	334.50	6,063.13	0.00	0.00	0.00
13,600.00	90.42	0.13	7,271.15	6,154.59	334.72	6,163.06	0.00	0.00	0.00
13,700.00	90.42	0.13	7,270.41	6,254.59	334.95	6,262.98	0.00	0.00	0.00
13,800.00	90.42	0.13	7,269.68	6,354.59	335.17	6,362.91	0.00	0.00	0.00
13,900.00	90.42	0.13	7,268.95	6,454.58	335.40	6,462.83	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 12N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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	90.42	0.13	7,268.22	6,554.58	335.62	6,562.76	0.00	0.00	0.00	
14,100.00	90.42	0.13	7,267.48	6,654.58	335.85	6,662.69	0.00	0.00	0.00	
14,200.00	90.42	0.13	7,266.75	6,754.58	336.08	6,762.61	0.00	0.00	0.00	
14,300.00	90.42	0.13	7,266.02	6,854.57	336.30	6,862.54	0.00	0.00	0.00	
14,400.00	90.42	0.13	7,265.28	6,954.57	336.53	6,962.46	0.00	0.00	0.00	
14,500.00	90.42	0.13	7,264.55	7,054.57	336.75	7,062.39	0.00	0.00	0.00	
14,600.00	90.42	0.13	7,263.82	7,154.56	336.98	7,162.32	0.00	0.00	0.00	
14,700.00	90.42	0.13	7,263.08	7,254.56	337.20	7,262.24	0.00	0.00	0.00	
14,800.00	90.42	0.13	7,262.35	7,354.56	337.43	7,362.17	0.00	0.00	0.00	
14,900.00	90.42	0.13	7,261.62	7,454.55	337.66	7,462.09	0.00	0.00	0.00	
15,000.00	90.42	0.13	7,260.89	7,554.55	337.88	7,562.02	0.00	0.00	0.00	
15,100.00	90.42	0.13	7,260.15	7,654.55	338.11	7,661.95	0.00	0.00	0.00	
15,200.00	90.42	0.13	7,259.42	7,754.55	338.33	7,761.87	0.00	0.00	0.00	
15,300.00	90.42	0.13	7,258.69	7,854.54	338.56	7,861.80	0.00	0.00	0.00	
15,400.00	90.42	0.13	7,257.95	7,954.54	338.78	7,961.73	0.00	0.00	0.00	
15,500.00	90.42	0.13	7,257.22	8,054.54	339.01	8,061.65	0.00	0.00	0.00	
15,600.00	90.42	0.13	7,256.49	8,154.53	339.24	8,161.58	0.00	0.00	0.00	
15,700.00	90.42	0.13	7,255.75	8,254.53	339.46	8,261.50	0.00	0.00	0.00	
15,800.00	90.42	0.13	7,255.02	8,354.53	339.69	8,361.43	0.00	0.00	0.00	
15,900.00	90.42	0.13	7,254.29	8,454.53	339.91	8,461.36	0.00	0.00	0.00	
15,939.30	90.42	0.13	7,254.00	8,493.82	340.00	8,500.62	0.00	0.00	0.00	
BUTTERBALL 12N-34HZ_PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BUTTERBALL 12N-34	0.00	0.00	7,254.00	8,493.82	340.00	14,592,988.00	1,673,041.71	40.181886	-104.883193	
- plan hits target center										
- Point										
BUTTERBALL 12N-34	0.00	0.00	7,314.27	272.29	321.45	14,584,766.44	1,673,033.85	40.159309	-104.883260	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
1,510.19	1,500.00	9 5/8"	9-5/8	13-1/2		
7,717.52	7,314.27	Top of Production	5-1/2	8-1/2		

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 12N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4962.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 4-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 12N-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 (°)	
1,047.78	1,043.00	Fox Hills				
4,007.19	3,972.00	Parkman				
4,432.19	4,397.00	Sussex				
7,255.58	7,157.00	Sharon Springs				
7,402.24	7,240.00	Niobrara				
7,547.77	7,293.00	Nio B				