

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-67W-10 Butterball 21-10HZ Pad
BUTTERBALL 25C2-34HZ**

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: 10/12/2016
Model: IGRF2010

SITE: 2N-67W-10 Butterball 21-10HZ Pad

Well: BUTTERBALL 25C2-34HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1032.00	1037.49	Fox Hills
3973.00	4033.46	Parkman
4387.00	4464.99	Sussex
7147.00	7229.27	Sharon Springs
7230.00	7327.27	Niobrara
7289.00	7404.23	Nio B
7342.00	7461.78	Nio C
7459.00	7727.96	Fort Hayes
7481.00	7824.62	Codell

WELL DETAILS: BUTTERBALL 25C2-34HZ

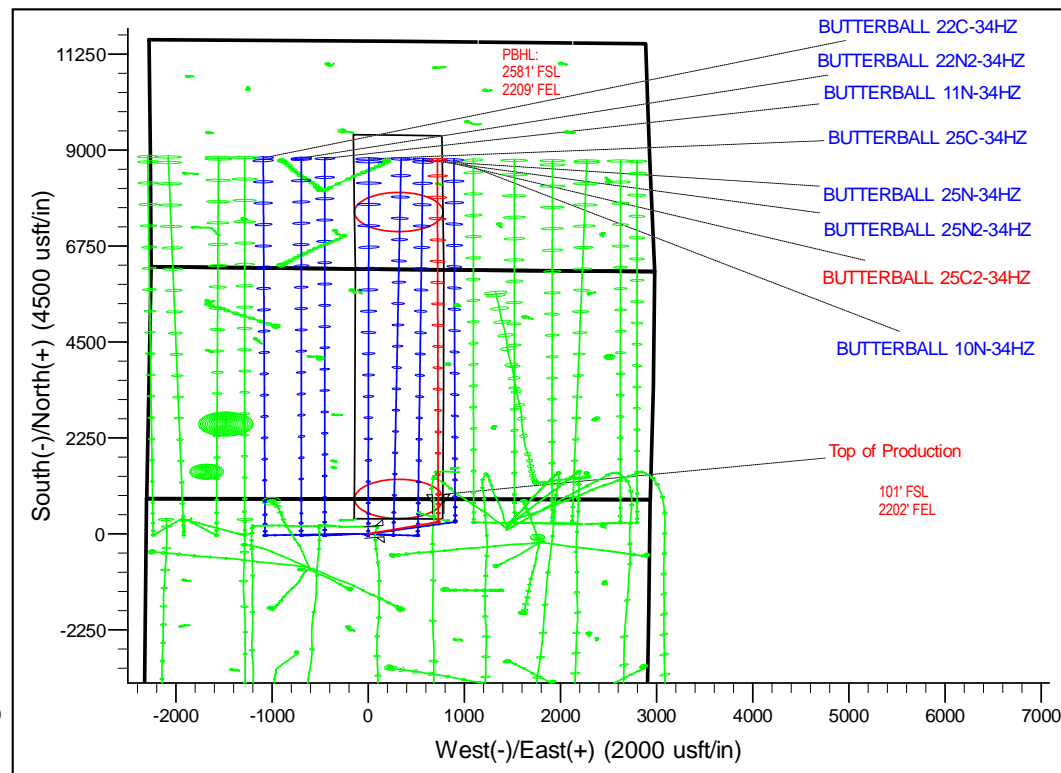
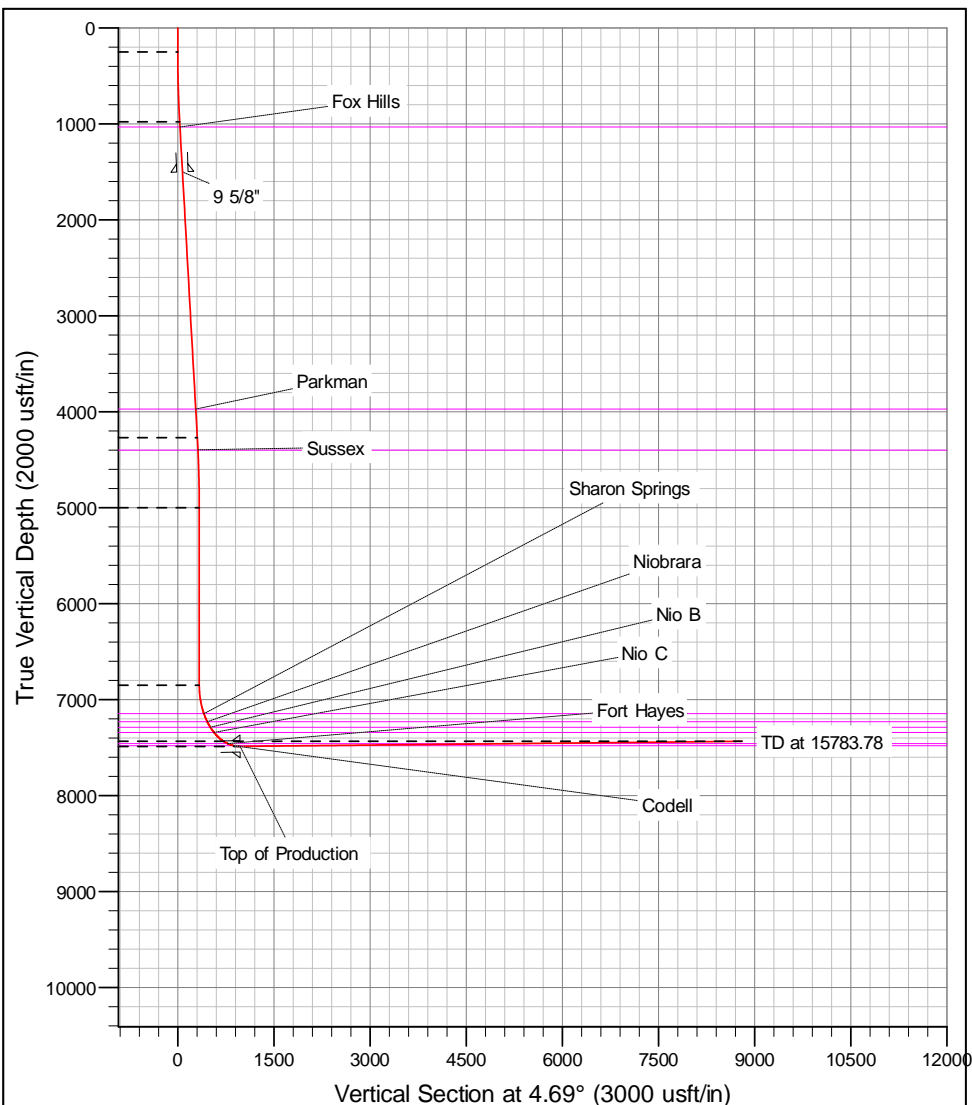
+N/-S	+E/-W	GL: 4934.00 Northing	RKB @ 4951.00usft (D Rig) Easting	Latitude	Longitude	Slot
0.00	0.00	14584160.17	1674610.92	40.157638	-104.877618	

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
982.82	10.99	69.19	978.33	24.89	65.51	1.50	30.17
4337.71	10.99	69.19	4271.67	252.14	663.49	0.00	305.56
5070.53	0.00	0.00	5000.00	277.03	729.00	1.50	335.73
6922.40	0.00	0.00	6851.88	277.03	729.00	0.00	335.73
7926.74	90.39	359.94	7488.48	917.98	728.33	9.00	974.48
15783.78	90.39	359.94	7435.00	8774.84	720.16	0.00	8804.34

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BUTTERBALL 25C2-34HZ_PBHL	7435.00	8774.84	720.16	14592936.00	1675319.00	40.181735	-104.875040



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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

Site						2N-67W-10 Butterball 21-10HZ Pad											
Site Position:			Northing:			14,584,161.08 usft			Latitude:			40.157641					
From:			Lat/Long			Easting:			1,674,475.97 usft			Longitude:			-104.878101		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.08		

Well	BUTTERBALL 25C2-34HZ					
Well Position	+N/-S	-1.09 usft	Northing:	14,584,160.17 usft	Latitude:	40.157638
	+E/-W	134.95 usft	Easting:	1,674,610.92 usft	Longitude:	-104.877618
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,934.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/12/2016	8.19	66.65	52,431

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	4.69

Plan Sections										
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	
982.82	10.99	69.19	978.33	24.89	65.51	1.50	1.50	0.00	69.19	
4,337.71	10.99	69.19	4,271.67	252.14	663.49	0.00	0.00	0.00	0.00	
5,070.53	0.00	0.00	5,000.00	277.03	729.00	1.50	-1.50	0.00	180.00	
6,922.40	0.00	0.00	6,851.88	277.03	729.00	0.00	0.00	0.00	0.00	
7,926.74	90.39	359.94	7,488.48	917.98	728.33	9.00	9.00	0.00	359.94	
15,783.78	90.39	359.94	7,435.00	8,774.84	720.16	0.00	0.00	0.00	0.00	BUTTERBALL 25C;

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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	69.19	300.00	0.12	0.31	0.14	1.50	1.50	0.00
400.00	2.25	69.19	399.96	1.05	2.75	1.27	1.50	1.50	0.00
500.00	3.75	69.19	499.82	2.91	7.64	3.52	1.50	1.50	0.00
600.00	5.25	69.19	599.51	5.69	14.98	6.90	1.50	1.50	0.00
700.00	6.75	69.19	698.96	9.41	24.75	11.40	1.50	1.50	0.00
800.00	8.25	69.19	798.10	14.04	36.95	17.02	1.50	1.50	0.00
900.00	9.75	69.19	896.87	19.60	51.57	23.75	1.50	1.50	0.00
982.82	10.99	69.19	978.33	24.89	65.51	30.17	1.50	1.50	0.00
1,000.00	10.99	69.19	995.20	26.06	68.57	31.58	0.00	0.00	0.00
1,037.49	10.99	69.19	1,032.00	28.60	75.25	34.66	0.00	0.00	0.00
Fox Hills									
1,100.00	10.99	69.19	1,093.36	32.83	86.40	39.79	0.00	0.00	0.00
1,200.00	10.99	69.19	1,191.53	39.61	104.22	48.00	0.00	0.00	0.00
1,300.00	10.99	69.19	1,289.69	46.38	122.04	56.21	0.00	0.00	0.00
1,400.00	10.99	69.19	1,387.86	53.15	139.87	64.41	0.00	0.00	0.00
1,500.00	10.99	69.19	1,486.02	59.93	157.69	72.62	0.00	0.00	0.00
1,514.24	10.99	69.19	1,500.00	60.89	160.23	73.79	0.00	0.00	0.00
9 5/8"									
1,600.00	10.99	69.19	1,584.19	66.70	175.52	80.83	0.00	0.00	0.00
1,700.00	10.99	69.19	1,682.35	73.47	193.34	89.04	0.00	0.00	0.00
1,800.00	10.99	69.19	1,780.52	80.25	211.17	97.25	0.00	0.00	0.00
1,900.00	10.99	69.19	1,878.69	87.02	228.99	105.46	0.00	0.00	0.00
2,000.00	10.99	69.19	1,976.85	93.79	246.81	113.67	0.00	0.00	0.00
2,100.00	10.99	69.19	2,075.02	100.57	264.64	121.88	0.00	0.00	0.00
2,200.00	10.99	69.19	2,173.18	107.34	282.46	130.08	0.00	0.00	0.00
2,300.00	10.99	69.19	2,271.35	114.11	300.29	138.29	0.00	0.00	0.00
2,400.00	10.99	69.19	2,369.51	120.89	318.11	146.50	0.00	0.00	0.00
2,500.00	10.99	69.19	2,467.68	127.66	335.93	154.71	0.00	0.00	0.00
2,600.00	10.99	69.19	2,565.84	134.43	353.76	162.92	0.00	0.00	0.00
2,700.00	10.99	69.19	2,664.01	141.21	371.58	171.13	0.00	0.00	0.00
2,800.00	10.99	69.19	2,762.17	147.98	389.41	179.34	0.00	0.00	0.00
2,900.00	10.99	69.19	2,860.34	154.75	407.23	187.54	0.00	0.00	0.00
3,000.00	10.99	69.19	2,958.50	161.53	425.06	195.75	0.00	0.00	0.00
3,100.00	10.99	69.19	3,056.67	168.30	442.88	203.96	0.00	0.00	0.00
3,200.00	10.99	69.19	3,154.83	175.07	460.70	212.17	0.00	0.00	0.00
3,300.00	10.99	69.19	3,253.00	181.85	478.53	220.38	0.00	0.00	0.00
3,400.00	10.99	69.19	3,351.16	188.62	496.35	228.59	0.00	0.00	0.00
3,500.00	10.99	69.19	3,449.33	195.39	514.18	236.80	0.00	0.00	0.00
3,600.00	10.99	69.19	3,547.49	202.17	532.00	245.01	0.00	0.00	0.00
3,700.00	10.99	69.19	3,645.66	208.94	549.82	253.21	0.00	0.00	0.00
3,800.00	10.99	69.19	3,743.83	215.71	567.65	261.42	0.00	0.00	0.00
3,900.00	10.99	69.19	3,841.99	222.49	585.47	269.63	0.00	0.00	0.00
4,000.00	10.99	69.19	3,940.16	229.26	603.30	277.84	0.00	0.00	0.00
4,033.46	10.99	69.19	3,973.00	231.53	609.26	280.59	0.00	0.00	0.00
Parkman									
4,100.00	10.99	69.19	4,038.32	236.03	621.12	286.05	0.00	0.00	0.00
4,200.00	10.99	69.19	4,136.49	242.81	638.94	294.26	0.00	0.00	0.00
4,300.00	10.99	69.19	4,234.65	249.58	656.77	302.47	0.00	0.00	0.00
4,337.71	10.99	69.19	4,271.67	252.14	663.49	305.56	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
4,400.00	10.06	69.19	4,332.91	256.18	674.13	310.46	1.50	-1.50	0.00	
4,464.99	9.08	69.19	4,397.00	260.02	684.23	315.11	1.50	-1.50	0.00	
Sussex										
4,500.00	8.56	69.19	4,431.59	261.92	689.24	317.42	1.50	-1.50	0.00	
4,600.00	7.06	69.19	4,530.66	266.75	701.94	323.27	1.50	-1.50	0.00	
4,700.00	5.56	69.19	4,630.05	270.65	712.21	328.00	1.50	-1.50	0.00	
4,800.00	4.06	69.19	4,729.70	273.63	720.05	331.61	1.50	-1.50	0.00	
4,900.00	2.56	69.19	4,829.53	275.68	725.44	334.09	1.50	-1.50	0.00	
5,000.00	1.06	69.19	4,929.48	276.80	728.39	335.45	1.50	-1.50	0.00	
5,070.53	0.00	0.00	5,000.00	277.03	729.00	335.73	1.50	-1.50	0.00	
5,100.00	0.00	0.00	5,029.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,129.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,229.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,329.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,429.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,529.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,629.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,729.47	277.03	729.00	335.73	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,829.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,929.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,029.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,129.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,229.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,329.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,429.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,529.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,629.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,729.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,829.47	277.03	729.00	335.73	0.00	0.00	0.00	
6,922.40	0.00	0.00	6,851.88	277.03	729.00	335.73	0.00	0.00	0.00	
7,000.00	6.98	359.94	6,929.28	281.75	729.00	340.44	9.00	9.00	0.00	
7,100.00	15.98	359.94	7,027.18	301.64	728.97	360.26	9.00	9.00	0.00	
7,200.00	24.98	359.94	7,120.76	336.60	728.94	395.10	9.00	9.00	0.00	
7,229.27	27.62	359.94	7,147.00	349.57	728.92	408.02	9.00	9.00	0.00	
Sharon Springs										
7,300.00	33.98	359.94	7,207.72	385.77	728.89	444.09	9.00	9.00	0.00	
7,327.27	36.44	359.94	7,230.00	401.49	728.87	459.76	9.00	9.00	0.00	
Niobrara										
7,400.00	42.98	359.94	7,285.92	447.93	728.82	506.05	9.00	9.00	0.00	
7,404.23	43.36	359.94	7,289.00	450.82	728.82	508.93	9.00	9.00	0.00	
Nio B										
7,481.78	50.34	359.94	7,342.00	507.37	728.76	565.28	9.00	9.00	0.00	
Nio C										
7,500.00	51.98	359.94	7,353.43	521.56	728.75	579.43	9.00	9.00	0.00	
7,600.00	60.98	359.94	7,408.59	604.85	728.66	662.43	9.00	9.00	0.00	
7,700.00	69.98	359.94	7,450.04	695.74	728.56	753.01	9.00	9.00	0.00	
7,727.86	72.49	359.94	7,459.00	722.12	728.54	779.29	9.00	9.00	0.00	
Fort Hayes										
7,800.00	78.98	359.94	7,476.76	792.00	728.46	848.93	9.00	9.00	0.00	
7,824.62	81.20	359.94	7,481.00	816.25	728.44	873.09	9.00	9.00	0.00	
Codell										
7,900.00	87.98	359.94	7,488.10	891.25	728.36	947.84	9.00	9.00	0.00	
7,926.74	90.39	359.94	7,488.48	917.99	728.33	974.49	9.00	9.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
Top of Production - BUTTERBALL 25C2-34HZ_PHL									
8,000.00	90.39	359.94	7,487.98	991.24	728.26	1,047.49	0.00	0.00	0.00
8,100.00	90.39	359.94	7,487.30	1,091.24	728.15	1,147.15	0.00	0.00	0.00
8,200.00	90.39	359.94	7,486.62	1,191.24	728.05	1,246.80	0.00	0.00	0.00
8,300.00	90.39	359.94	7,485.94	1,291.24	727.95	1,346.45	0.00	0.00	0.00
8,400.00	90.39	359.94	7,485.26	1,391.24	727.84	1,446.11	0.00	0.00	0.00
8,500.00	90.39	359.94	7,484.58	1,491.23	727.74	1,545.76	0.00	0.00	0.00
8,600.00	90.39	359.94	7,483.90	1,591.23	727.63	1,645.42	0.00	0.00	0.00
8,700.00	90.39	359.94	7,483.22	1,691.23	727.53	1,745.07	0.00	0.00	0.00
8,800.00	90.39	359.94	7,482.54	1,791.23	727.43	1,844.72	0.00	0.00	0.00
8,900.00	90.39	359.94	7,481.86	1,891.22	727.32	1,944.38	0.00	0.00	0.00
9,000.00	90.39	359.94	7,481.18	1,991.22	727.22	2,044.03	0.00	0.00	0.00
9,100.00	90.39	359.94	7,480.49	2,091.22	727.11	2,143.69	0.00	0.00	0.00
9,200.00	90.39	359.94	7,479.81	2,191.22	727.01	2,243.34	0.00	0.00	0.00
9,300.00	90.39	359.94	7,479.13	2,291.21	726.91	2,342.99	0.00	0.00	0.00
9,400.00	90.39	359.94	7,478.45	2,391.21	726.80	2,442.65	0.00	0.00	0.00
9,500.00	90.39	359.94	7,477.77	2,491.21	726.70	2,542.30	0.00	0.00	0.00
9,600.00	90.39	359.94	7,477.09	2,591.21	726.59	2,641.96	0.00	0.00	0.00
9,700.00	90.39	359.94	7,476.41	2,691.20	726.49	2,741.61	0.00	0.00	0.00
9,800.00	90.39	359.94	7,475.73	2,791.20	726.39	2,841.26	0.00	0.00	0.00
9,900.00	90.39	359.94	7,475.05	2,891.20	726.28	2,940.92	0.00	0.00	0.00
10,000.00	90.39	359.94	7,474.37	2,991.20	726.18	3,040.57	0.00	0.00	0.00
10,100.00	90.39	359.94	7,473.69	3,091.19	726.07	3,140.23	0.00	0.00	0.00
10,200.00	90.39	359.94	7,473.01	3,191.19	725.97	3,239.88	0.00	0.00	0.00
10,300.00	90.39	359.94	7,472.33	3,291.19	725.87	3,339.53	0.00	0.00	0.00
10,400.00	90.39	359.94	7,471.65	3,391.19	725.76	3,439.19	0.00	0.00	0.00
10,500.00	90.39	359.94	7,470.97	3,491.19	725.66	3,538.84	0.00	0.00	0.00
10,600.00	90.39	359.94	7,470.28	3,591.18	725.55	3,638.50	0.00	0.00	0.00
10,700.00	90.39	359.94	7,469.60	3,691.18	725.45	3,738.15	0.00	0.00	0.00
10,800.00	90.39	359.94	7,468.92	3,791.18	725.35	3,837.80	0.00	0.00	0.00
10,900.00	90.39	359.94	7,468.24	3,891.18	725.24	3,937.46	0.00	0.00	0.00
11,000.00	90.39	359.94	7,467.56	3,991.17	725.14	4,037.11	0.00	0.00	0.00
11,100.00	90.39	359.94	7,466.88	4,091.17	725.03	4,136.77	0.00	0.00	0.00
11,200.00	90.39	359.94	7,466.20	4,191.17	724.93	4,236.42	0.00	0.00	0.00
11,300.00	90.39	359.94	7,465.52	4,291.17	724.83	4,336.08	0.00	0.00	0.00
11,400.00	90.39	359.94	7,464.84	4,391.16	724.72	4,435.73	0.00	0.00	0.00
11,500.00	90.39	359.94	7,464.16	4,491.16	724.62	4,535.38	0.00	0.00	0.00
11,600.00	90.39	359.94	7,463.48	4,591.16	724.51	4,635.04	0.00	0.00	0.00
11,700.00	90.39	359.94	7,462.80	4,691.16	724.41	4,734.69	0.00	0.00	0.00
11,800.00	90.39	359.94	7,462.12	4,791.15	724.31	4,834.35	0.00	0.00	0.00
11,900.00	90.39	359.94	7,461.44	4,891.15	724.20	4,934.00	0.00	0.00	0.00
12,000.00	90.39	359.94	7,460.76	4,991.15	724.10	5,033.65	0.00	0.00	0.00
12,100.00	90.39	359.94	7,460.07	5,091.15	723.99	5,133.31	0.00	0.00	0.00
12,200.00	90.39	359.94	7,459.39	5,191.15	723.89	5,232.96	0.00	0.00	0.00
12,300.00	90.39	359.94	7,458.71	5,291.14	723.79	5,332.62	0.00	0.00	0.00
12,400.00	90.39	359.94	7,458.03	5,391.14	723.68	5,432.27	0.00	0.00	0.00
12,500.00	90.39	359.94	7,457.35	5,491.14	723.58	5,531.92	0.00	0.00	0.00
12,600.00	90.39	359.94	7,456.67	5,591.14	723.47	5,631.58	0.00	0.00	0.00
12,700.00	90.39	359.94	7,455.99	5,691.13	723.37	5,731.23	0.00	0.00	0.00
12,800.00	90.39	359.94	7,455.31	5,791.13	723.27	5,830.89	0.00	0.00	0.00
12,900.00	90.39	359.94	7,454.63	5,891.13	723.16	5,930.54	0.00	0.00	0.00
13,000.00	90.39	359.94	7,453.95	5,991.13	723.06	6,030.19	0.00	0.00	0.00
13,100.00	90.39	359.94	7,453.27	6,091.12	722.95	6,129.85	0.00	0.00	0.00
13,200.00	90.39	359.94	7,452.59	6,191.12	722.85	6,229.50	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
13,300.00	90.39	359.94	7,451.91	6,291.12	722.75	6,329.16	0.00	0.00	0.00
13,400.00	90.39	359.94	7,451.23	6,391.12	722.64	6,428.81	0.00	0.00	0.00
13,500.00	90.39	359.94	7,450.55	6,491.11	722.54	6,528.46	0.00	0.00	0.00
13,600.00	90.39	359.94	7,449.86	6,591.11	722.44	6,628.12	0.00	0.00	0.00
13,700.00	90.39	359.94	7,449.18	6,691.11	722.33	6,727.77	0.00	0.00	0.00
13,800.00	90.39	359.94	7,448.50	6,791.11	722.23	6,827.43	0.00	0.00	0.00
13,900.00	90.39	359.94	7,447.82	6,891.10	722.12	6,927.08	0.00	0.00	0.00
14,000.00	90.39	359.94	7,447.14	6,991.10	722.02	7,026.73	0.00	0.00	0.00
14,100.00	90.39	359.94	7,446.46	7,091.10	721.92	7,126.39	0.00	0.00	0.00
14,200.00	90.39	359.94	7,445.78	7,191.10	721.81	7,226.04	0.00	0.00	0.00
14,300.00	90.39	359.94	7,445.10	7,291.10	721.71	7,325.70	0.00	0.00	0.00
14,400.00	90.39	359.94	7,444.42	7,391.09	721.60	7,425.35	0.00	0.00	0.00
14,500.00	90.39	359.94	7,443.74	7,491.09	721.50	7,525.00	0.00	0.00	0.00
14,600.00	90.39	359.94	7,443.06	7,591.09	721.40	7,624.66	0.00	0.00	0.00
14,700.00	90.39	359.94	7,442.38	7,691.09	721.29	7,724.31	0.00	0.00	0.00
14,800.00	90.39	359.94	7,441.70	7,791.08	721.19	7,823.97	0.00	0.00	0.00
14,900.00	90.39	359.94	7,441.02	7,891.08	721.08	7,923.62	0.00	0.00	0.00
15,000.00	90.39	359.94	7,440.34	7,991.08	720.98	8,023.27	0.00	0.00	0.00
15,100.00	90.39	359.94	7,439.65	8,091.08	720.88	8,122.93	0.00	0.00	0.00
15,200.00	90.39	359.94	7,438.97	8,191.07	720.77	8,222.58	0.00	0.00	0.00
15,300.00	90.39	359.94	7,438.29	8,291.07	720.67	8,322.24	0.00	0.00	0.00
15,400.00	90.39	359.94	7,437.61	8,391.07	720.56	8,421.89	0.00	0.00	0.00
15,500.00	90.39	359.94	7,436.93	8,491.07	720.46	8,521.54	0.00	0.00	0.00
15,600.00	90.39	359.94	7,436.25	8,591.06	720.36	8,621.20	0.00	0.00	0.00
15,700.00	90.39	359.94	7,435.57	8,691.06	720.25	8,720.85	0.00	0.00	0.00
15,783.78	90.39	359.94	7,435.00	8,774.84	720.16	8,804.34	0.00	0.00	0.00
BUTTERBALL 25C2-34HZ_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 25C2-34HZ	0.00	0.00	7,435.00	8,774.84	720.16	14,592,936.00	1,675,319.00	40.181735	-104.875040
- plan hits target center									
- Point									
BUTTERBALL 25C2-34HZ	0.00	0.00	7,488.48	917.99	728.33	14,585,079.16	1,675,337.99	40.160159	-104.875011
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,514.24	1,500.00	9 5/8"	9-5/8	13-1/2	
7,926.74	7,488.48	Top of Production	5-1/2	8-1/2	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BUTTERBALL 25C2-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4951.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4951.00usft (D Rig)
Site:	2N-67W-10 Butterball 21-10HZ Pad	North Reference:	True
Well:	BUTTERBALL 25C2-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,037.49	1,032.00	Fox Hills				
4,033.46	3,973.00	Parkman				
4,464.99	4,397.00	Sussex				
7,229.27	7,147.00	Sharon Springs				
7,327.27	7,230.00	Niobrara				
7,404.23	7,289.00	Nio B				
7,481.78	7,342.00	Nio C				
7,727.86	7,459.00	Fort Hayes				
7,824.62	7,481.00	Codell				