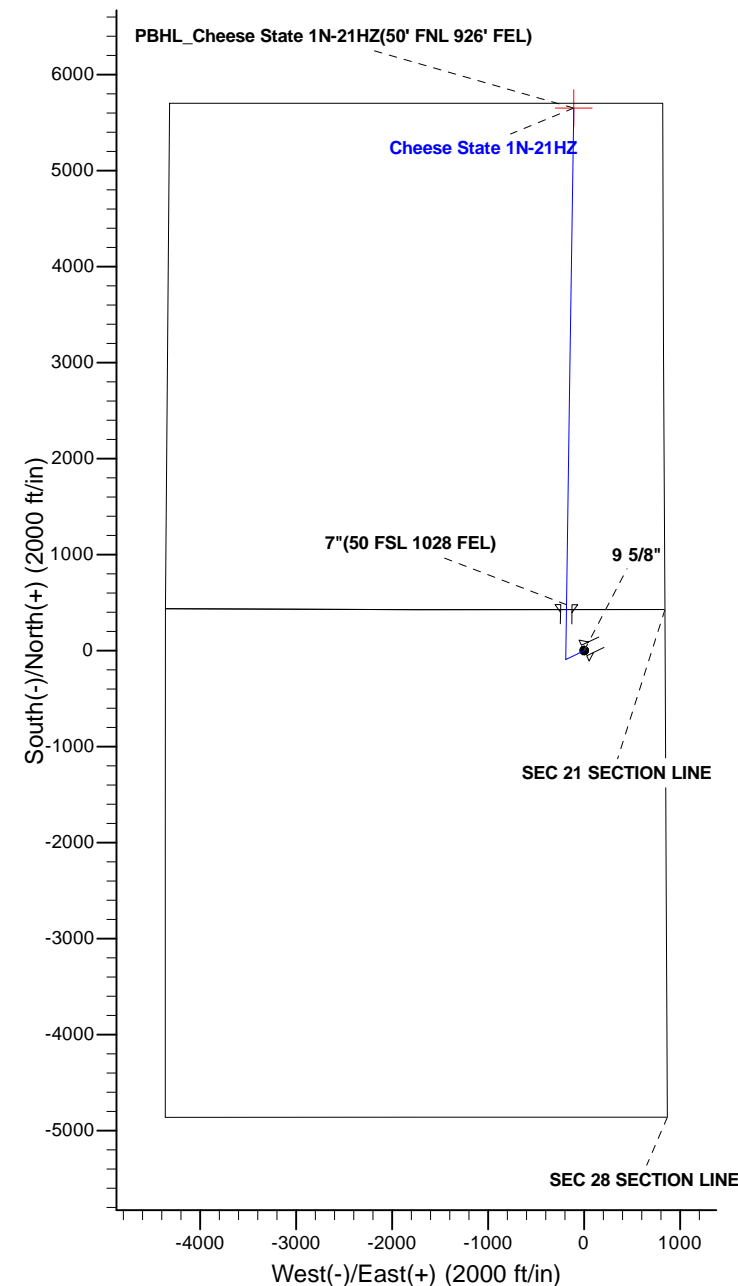
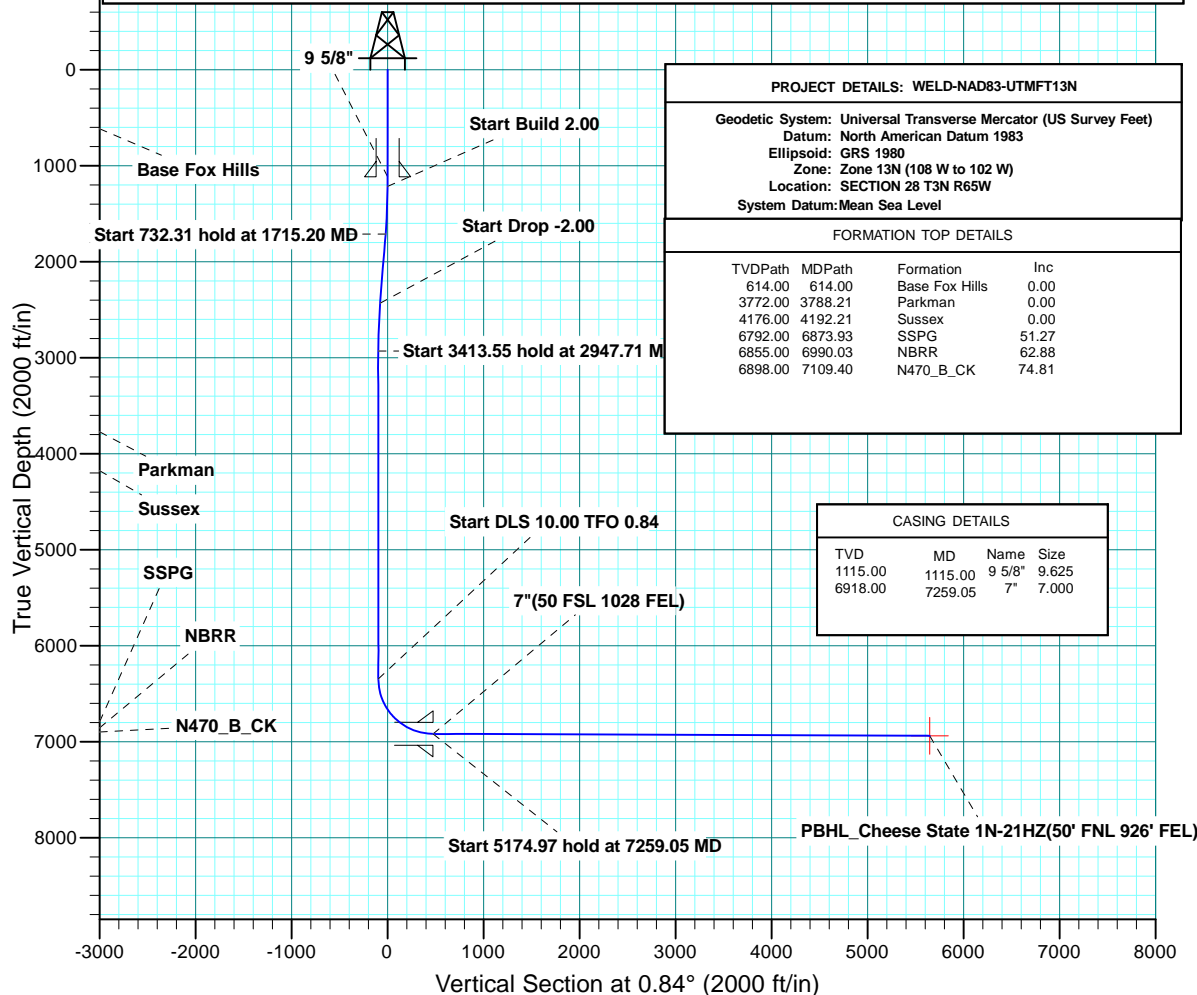


WELL DETAILS: Cheese State 1N-21HZ						
GL 4818 & KB 17 @ 4835.00ft (ASSUMED)						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	14600657.32	1734714.18	40.2025130	-104.6622850	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1215.00	0.00	0.00	1215.00	0.00	0.00	0.00	0.00	0.00	
1715.20	10.00	244.30	1712.66	-18.89	-39.25	2.00	244.30	-19.47	
2447.51	10.00	244.30	2433.84	-74.07	-153.87	0.00	0.00	-76.32	
2947.71	0.00	0.00	2931.50	-92.96	-193.12	2.00	180.00	-95.78	
6361.26	0.00	0.00	6345.05	-92.96	-193.12	0.00	0.00	-95.78	
7259.05	89.78	0.84	6918.00	477.72	-184.72	10.00	0.84	474.96	
12434.02	89.78	0.84	6938.00	5652.10	-108.60	0.00	0.00	5649.90	PBHL_Cheese State 1N-21HZ(50' FNL 926' FEL)

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	6938.00	5652.10	-108.60	14606308.95	1734584.08	40.2180340	-104.6626740	Point	
- plan hits target center									





Scientific Drilling

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Cheese 1-28HZ PAD

Cheese State 1N-21HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

13 October, 2014

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese State 1N-21HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese State 1N-21HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

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		Cheese 1-28HZ PAD, SECTION 28 T3N R65W			
Site Position:		Northing:	14,600,657.57 usft	Latitude:	40.2025140
From:	Lat/Long	Easting:	1,734,684.02 usft	Longitude:	-104.6623930
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.22 °

Well	Cheese State 1N-21HZ, 428' FNL 845' FEL					
Well Position	+N/-S	-0.36 ft	Northing:	14,600,657.32 usft	Latitude:	40.2025130
	+E/-W	30.16 ft	Easting:	1,734,714.18 usft	Longitude:	-104.6622850
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,818.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/9/2014	8.44	66.79	52,582

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	0.84

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,215.00	0.00	0.00	1,215.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,715.20	10.00	244.30	1,712.66	-18.89	-39.25	2.00	2.00	0.00	244.30	
2,447.51	10.00	244.30	2,433.84	-74.07	-153.87	0.00	0.00	0.00	0.00	
2,947.71	0.00	0.00	2,931.50	-92.96	-193.12	2.00	-2.00	0.00	180.00	
6,361.26	0.00	0.00	6,345.05	-92.96	-193.12	0.00	0.00	0.00	0.00	
7,259.05	89.78	0.84	6,918.00	477.72	-184.72	10.00	10.00	0.09	0.84	
12,434.02	89.78	0.84	6,938.00	5,652.10	-108.60	0.00	0.00	0.00	0.00	PBHL_Cheese State

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese State 1N-21HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese State 1N-21HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
300.00	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	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
614.00	0.00	0.00	614.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills									
700.00	0.00	0.00	700.00	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
900.00	0.00	0.00	900.00	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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,115.00	0.00	0.00	1,115.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,215.00	0.00	0.00	1,215.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,300.00	1.70	244.30	1,299.99	-0.55	-1.14	-0.56	2.00	2.00	0.00
1,400.00	3.70	244.30	1,399.87	-2.59	-5.38	-2.67	2.00	2.00	0.00
1,500.00	5.70	244.30	1,499.53	-6.14	-12.76	-6.33	2.00	2.00	0.00
1,600.00	7.70	244.30	1,598.84	-11.20	-23.28	-11.54	2.00	2.00	0.00
1,700.00	9.70	244.30	1,697.69	-17.76	-36.90	-18.30	2.00	2.00	0.00
1,715.20	10.00	244.30	1,712.66	-18.89	-39.25	-19.47	2.00	2.00	0.00
Start 732.31 hold at 1715.20 MD									
1,800.00	10.00	244.30	1,796.17	-25.28	-52.52	-26.05	0.00	0.00	0.00
1,900.00	10.00	244.30	1,894.65	-32.82	-68.17	-33.81	0.00	0.00	0.00
2,000.00	10.00	244.30	1,993.13	-40.35	-83.83	-41.57	0.00	0.00	0.00
2,100.00	10.00	244.30	2,091.61	-47.88	-99.48	-49.34	0.00	0.00	0.00
2,200.00	10.00	244.30	2,190.09	-55.42	-115.13	-57.10	0.00	0.00	0.00
2,300.00	10.00	244.30	2,288.57	-62.95	-130.78	-64.86	0.00	0.00	0.00
2,400.00	10.00	244.30	2,387.05	-70.49	-146.44	-72.63	0.00	0.00	0.00
2,447.51	10.00	244.30	2,433.84	-74.07	-153.87	-76.32	0.00	0.00	0.00
Start Drop -2.00									
2,500.00	8.95	244.30	2,485.61	-77.82	-161.66	-80.18	2.00	-2.00	0.00
2,600.00	6.95	244.30	2,584.64	-83.82	-174.13	-86.36	2.00	-2.00	0.00
2,700.00	4.95	244.30	2,684.10	-88.32	-183.48	-91.00	2.00	-2.00	0.00
2,800.00	2.95	244.30	2,783.86	-91.31	-189.69	-94.08	2.00	-2.00	0.00
2,900.00	0.95	244.30	2,883.79	-92.79	-192.76	-95.60	2.00	-2.00	0.00
2,947.71	0.00	0.00	2,931.50	-92.96	-193.12	-95.78	2.00	-2.00	0.00
Start 3413.55 hold at 2947.71 MD									
3,000.00	0.00	0.00	2,983.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,100.00	0.00	0.00	3,083.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,200.00	0.00	0.00	3,183.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,300.00	0.00	0.00	3,283.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,400.00	0.00	0.00	3,383.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,500.00	0.00	0.00	3,483.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,600.00	0.00	0.00	3,583.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,700.00	0.00	0.00	3,683.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
3,788.21	0.00	0.00	3,772.00	-92.96	-193.12	-95.78	0.00	0.00	0.00
Parkman									
3,800.00	0.00	0.00	3,783.79	-92.96	-193.12	-95.78	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese State 1N-21HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese State 1N-21HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,900.00	0.00	0.00	3,883.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,000.00	0.00	0.00	3,983.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,100.00	0.00	0.00	4,083.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,192.21	0.00	0.00	4,176.00	-92.96	-193.12	-95.78	0.00	0.00	0.00
Sussex									
4,200.00	0.00	0.00	4,183.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,300.00	0.00	0.00	4,283.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,400.00	0.00	0.00	4,383.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,500.00	0.00	0.00	4,483.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,600.00	0.00	0.00	4,583.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,700.00	0.00	0.00	4,683.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,800.00	0.00	0.00	4,783.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
4,900.00	0.00	0.00	4,883.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,000.00	0.00	0.00	4,983.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,100.00	0.00	0.00	5,083.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,200.00	0.00	0.00	5,183.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,300.00	0.00	0.00	5,283.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,400.00	0.00	0.00	5,383.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,500.00	0.00	0.00	5,483.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,600.00	0.00	0.00	5,583.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,700.00	0.00	0.00	5,683.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,800.00	0.00	0.00	5,783.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
5,900.00	0.00	0.00	5,883.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
6,000.00	0.00	0.00	5,983.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
6,100.00	0.00	0.00	6,083.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
6,200.00	0.00	0.00	6,183.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
6,300.00	0.00	0.00	6,283.79	-92.96	-193.12	-95.78	0.00	0.00	0.00
6,361.26	0.00	0.00	6,345.05	-92.96	-193.12	-95.78	0.00	0.00	0.00
Start DLS 10.00 TFO 0.84									
6,400.00	3.87	0.84	6,383.76	-91.65	-193.10	-94.47	10.00	10.00	0.00
6,500.00	13.87	0.84	6,482.44	-76.25	-192.87	-79.07	10.00	10.00	0.00
6,600.00	23.87	0.84	6,576.94	-43.94	-192.40	-46.76	10.00	10.00	0.00
6,700.00	33.87	0.84	6,664.40	4.28	-191.69	1.47	10.00	10.00	0.00
6,800.00	43.87	0.84	6,742.15	66.95	-190.77	64.15	10.00	10.00	0.00
6,873.93	51.27	0.84	6,792.00	121.48	-189.97	118.68	10.00	10.00	0.00
SSPG									
6,900.00	53.87	0.84	6,807.84	142.18	-189.66	139.38	10.00	10.00	0.00
6,990.03	62.88	0.84	6,855.00	218.75	-188.53	215.96	10.00	10.00	0.00
NBRR									
7,000.00	63.87	0.84	6,859.47	227.66	-188.40	224.88	10.00	10.00	0.00
7,100.00	73.87	0.84	6,895.46	320.81	-187.03	318.04	10.00	10.00	0.00
7,109.40	74.81	0.84	6,898.00	329.86	-186.90	327.08	10.00	10.00	0.00
N470_B_CK									
7,200.00	83.87	0.84	6,914.74	418.80	-185.59	416.03	10.00	10.00	0.00
7,259.05	89.78	0.84	6,918.00	477.73	-184.72	474.97	10.00	10.00	0.00
Start 5174.97 hold at 7259.05 MD - 7"(50 FSL 1028 FEL)									
7,300.00	89.78	0.84	6,918.16	518.67	-184.12	515.92	0.00	0.00	0.00
7,400.00	89.78	0.84	6,918.55	618.66	-182.65	615.92	0.00	0.00	0.00
7,500.00	89.78	0.84	6,918.94	718.65	-181.18	715.91	0.00	0.00	0.00
7,600.00	89.78	0.84	6,919.32	818.64	-179.71	815.91	0.00	0.00	0.00
7,700.00	89.78	0.84	6,919.71	918.62	-178.24	915.91	0.00	0.00	0.00
7,800.00	89.78	0.84	6,920.09	1,018.61	-176.77	1,015.91	0.00	0.00	0.00
7,900.00	89.78	0.84	6,920.48	1,118.60	-175.29	1,115.91	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese State 1N-21HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese State 1N-21HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.00	89.78	0.84	6,920.87	1,218.59	-173.82	1,215.91	0.00	0.00	0.00
8,100.00	89.78	0.84	6,921.25	1,318.58	-172.35	1,315.91	0.00	0.00	0.00
8,200.00	89.78	0.84	6,921.64	1,418.57	-170.88	1,415.91	0.00	0.00	0.00
8,300.00	89.78	0.84	6,922.03	1,518.56	-169.41	1,515.91	0.00	0.00	0.00
8,400.00	89.78	0.84	6,922.41	1,618.54	-167.94	1,615.91	0.00	0.00	0.00
8,500.00	89.78	0.84	6,922.80	1,718.53	-166.47	1,715.91	0.00	0.00	0.00
8,600.00	89.78	0.84	6,923.19	1,818.52	-165.00	1,815.91	0.00	0.00	0.00
8,700.00	89.78	0.84	6,923.57	1,918.51	-163.53	1,915.91	0.00	0.00	0.00
8,800.00	89.78	0.84	6,923.96	2,018.50	-162.06	2,015.90	0.00	0.00	0.00
8,900.00	89.78	0.84	6,924.35	2,118.49	-160.58	2,115.90	0.00	0.00	0.00
9,000.00	89.78	0.84	6,924.73	2,218.47	-159.11	2,215.90	0.00	0.00	0.00
9,100.00	89.78	0.84	6,925.12	2,318.46	-157.64	2,315.90	0.00	0.00	0.00
9,200.00	89.78	0.84	6,925.50	2,418.45	-156.17	2,415.90	0.00	0.00	0.00
9,300.00	89.78	0.84	6,925.89	2,518.44	-154.70	2,515.90	0.00	0.00	0.00
9,400.00	89.78	0.84	6,926.28	2,618.43	-153.23	2,615.90	0.00	0.00	0.00
9,500.00	89.78	0.84	6,926.66	2,718.42	-151.76	2,715.90	0.00	0.00	0.00
9,600.00	89.78	0.84	6,927.05	2,818.40	-150.29	2,815.90	0.00	0.00	0.00
9,700.00	89.78	0.84	6,927.44	2,918.39	-148.82	2,915.90	0.00	0.00	0.00
9,800.00	89.78	0.84	6,927.82	3,018.38	-147.34	3,015.90	0.00	0.00	0.00
9,900.00	89.78	0.84	6,928.21	3,118.37	-145.87	3,115.90	0.00	0.00	0.00
10,000.00	89.78	0.84	6,928.60	3,218.36	-144.40	3,215.90	0.00	0.00	0.00
10,100.00	89.78	0.84	6,928.98	3,318.35	-142.93	3,315.90	0.00	0.00	0.00
10,200.00	89.78	0.84	6,929.37	3,418.34	-141.46	3,415.89	0.00	0.00	0.00
10,300.00	89.78	0.84	6,929.75	3,518.32	-139.99	3,515.89	0.00	0.00	0.00
10,400.00	89.78	0.84	6,930.14	3,618.31	-138.52	3,615.89	0.00	0.00	0.00
10,500.00	89.78	0.84	6,930.53	3,718.30	-137.05	3,715.89	0.00	0.00	0.00
10,600.00	89.78	0.84	6,930.91	3,818.29	-135.58	3,815.89	0.00	0.00	0.00
10,700.00	89.78	0.84	6,931.30	3,918.28	-134.10	3,915.89	0.00	0.00	0.00
10,800.00	89.78	0.84	6,931.69	4,018.27	-132.63	4,015.89	0.00	0.00	0.00
10,900.00	89.78	0.84	6,932.07	4,118.25	-131.16	4,115.89	0.00	0.00	0.00
11,000.00	89.78	0.84	6,932.46	4,218.24	-129.69	4,215.89	0.00	0.00	0.00
11,100.00	89.78	0.84	6,932.85	4,318.23	-128.22	4,315.89	0.00	0.00	0.00
11,200.00	89.78	0.84	6,933.23	4,418.22	-126.75	4,415.89	0.00	0.00	0.00
11,300.00	89.78	0.84	6,933.62	4,518.21	-125.28	4,515.89	0.00	0.00	0.00
11,400.00	89.78	0.84	6,934.00	4,618.20	-123.81	4,615.89	0.00	0.00	0.00
11,500.00	89.78	0.84	6,934.39	4,718.19	-122.34	4,715.88	0.00	0.00	0.00
11,600.00	89.78	0.84	6,934.78	4,818.17	-120.87	4,815.88	0.00	0.00	0.00
11,700.00	89.78	0.84	6,935.16	4,918.16	-119.39	4,915.88	0.00	0.00	0.00
11,800.00	89.78	0.84	6,935.55	5,018.15	-117.92	5,015.88	0.00	0.00	0.00
11,900.00	89.78	0.84	6,935.94	5,118.14	-116.45	5,115.88	0.00	0.00	0.00
12,000.00	89.78	0.84	6,936.32	5,218.13	-114.98	5,215.88	0.00	0.00	0.00
12,100.00	89.78	0.84	6,936.71	5,318.12	-113.51	5,315.88	0.00	0.00	0.00
12,200.00	89.78	0.84	6,937.10	5,418.10	-112.04	5,415.88	0.00	0.00	0.00
12,300.00	89.78	0.84	6,937.48	5,518.09	-110.57	5,515.88	0.00	0.00	0.00
12,400.00	89.78	0.84	6,937.87	5,618.08	-109.10	5,615.88	0.00	0.00	0.00
12,434.02	89.78	0.84	6,938.00	5,652.10	-108.60	5,649.90	0.00	0.00	0.00
TD at 12434.02									

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese State 1N-21HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4835.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese State 1N-21HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_Cheese State 1N	0.00	0.00	6,938.00	5,652.10	-108.60	14,606,308.95	1,734,584.08	40.2180340	-104.6626740
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,115.00	1,115.00	9 5/8"		9.625	13.500
7,259.05	6,918.00	7"(50 FSL 1028 FEL)		7.000	8.750

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
614.00	613.00	Base Fox Hills			
3,788.21	3,771.00	Parkman			
4,192.21	4,175.00	Sussex			
6,873.93	6,791.00	SSPG			
6,990.03	6,854.00	NBRR			
7,109.40	6,897.00	N470_B_CK			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
1,215.00	1,215.00	0.00	0.00	Start Build 2.00	
1,715.20	1,712.66	-18.89	-39.25	Start 732.31 hold at 1715.20 MD	
2,447.51	2,433.84	-74.07	-153.87	Start Drop -2.00	
2,947.71	2,931.50	-92.96	-193.12	Start 3413.55 hold at 2947.71 MD	
6,361.26	6,345.05	-92.96	-193.12	Start DLS 10.00 TFO 0.84	
7,259.05	6,918.00	477.72	-184.72	Start 5174.97 hold at 7259.05 MD	
12,434.02	6,938.00	5,652.10	-108.60	TD at 12434.02	