

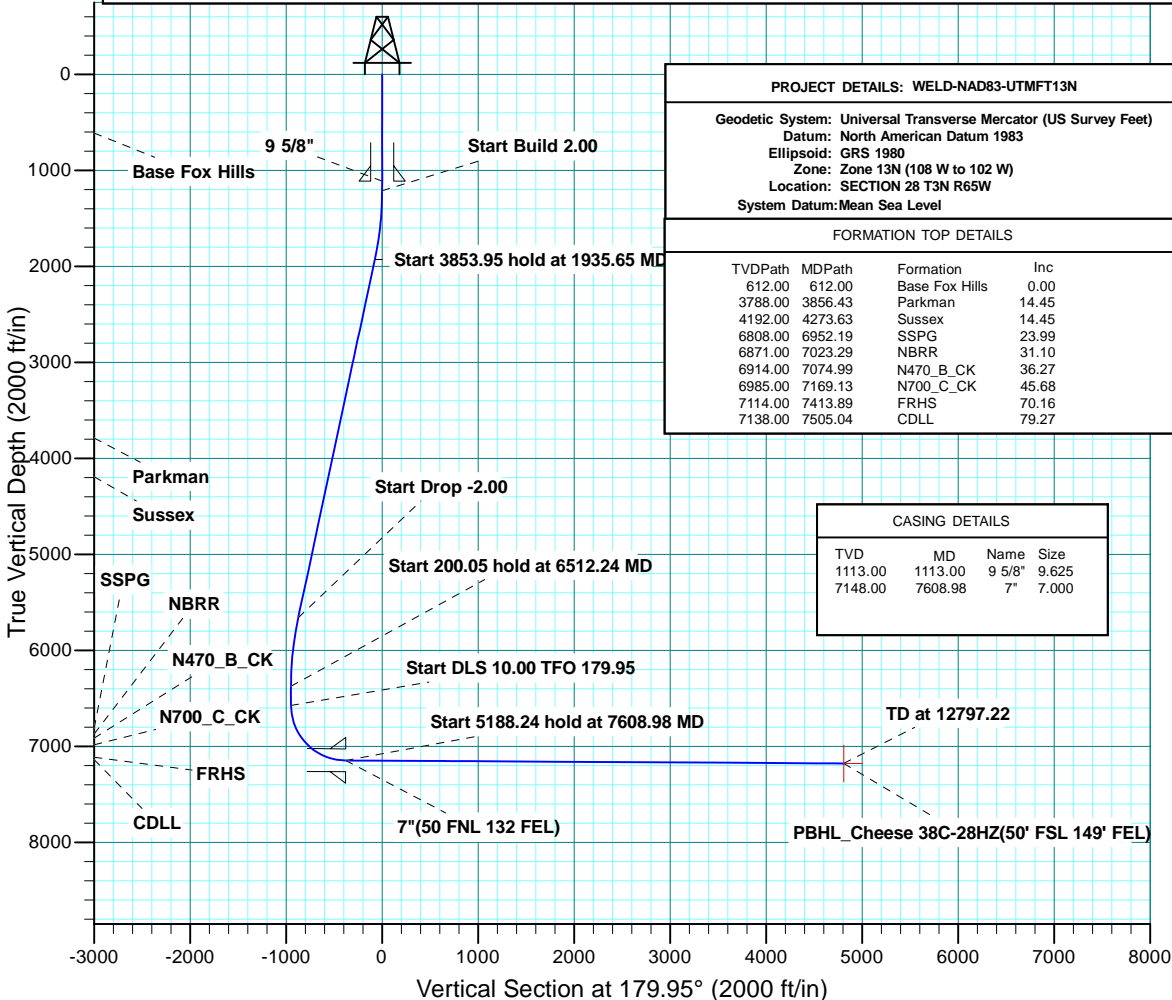
WELL DETAILS: Cheese 38C-28HZ									
GL 4816 & KB 17 @ 4833.00ft (ASSUMED)									
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
	0.00	0.00	14600656.88	1734789.01	40.2025110	-104.6620170			

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	
1213.00	0.00	0.00	1213.00	0.00	0.00	0.00	0.00	0.00	
1935.65	14.45	33.88	1928.01	75.27	50.54	2.00	33.88	-75.22	
5789.60	14.45	33.88	5659.99	873.84	586.73	0.00	0.00	-873.33	
6512.24	0.00	0.00	6375.00	949.11	637.27	2.00	180.00	-948.55	
6712.29	0.00	0.00	6575.05	949.11	637.27	0.00	0.00	-948.55	
7608.98	89.67	179.95	7148.00	379.46	637.77	10.00	179.95	-378.91	PBHL_Cheese 38C-28HZ(50' FSL 149' FEL)
12797.22	89.67	179.95	7178.00	-4808.69	642.34	0.00	0.00	4809.25	

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	7178.00	-4808.69	642.34	14595850.68	1735449.66	40.1893060	-104.6597170	Point	
- plan hits target center									

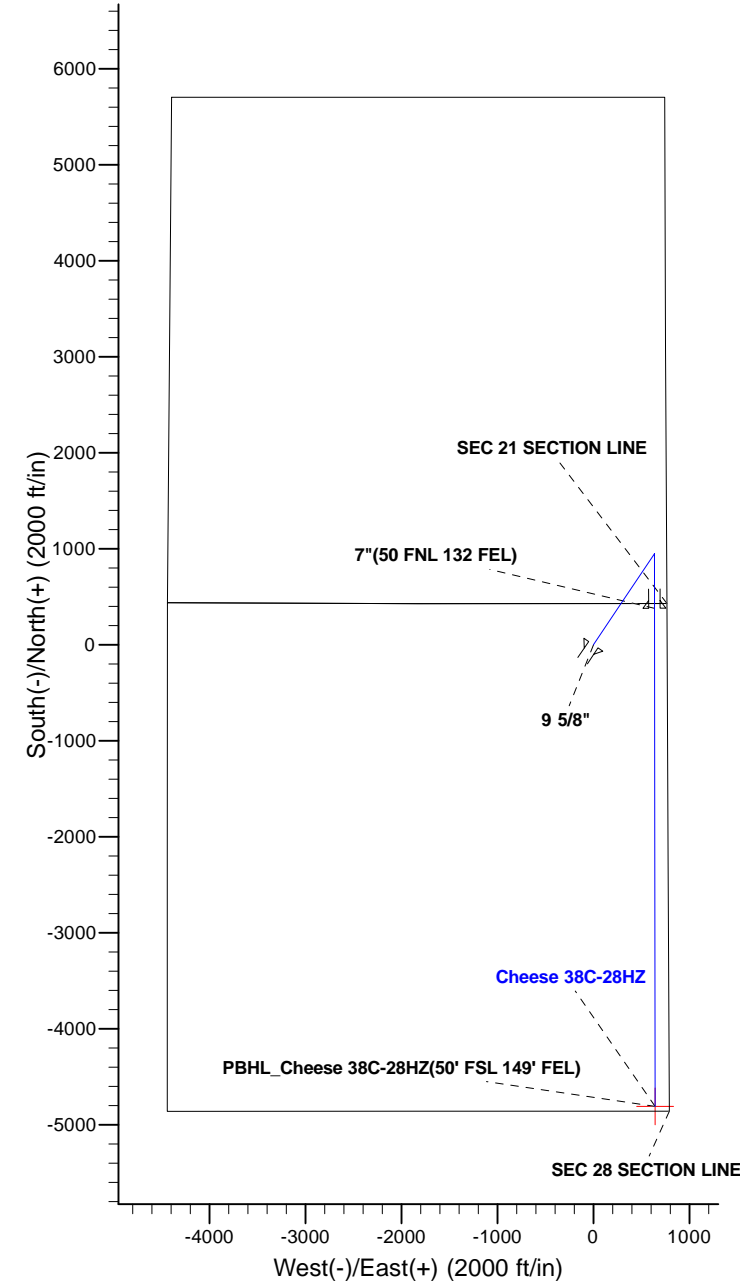


PROJECT DETAILS: WELD-NAD83-UTMFT13N			
Geodetic System: Universal Transverse Mercator (US Survey Feet)			
Datum: North American Datum 1983			
Ellipsoid: GRS 1980			
Zone: Zone 13N (108 W to 102 W)			
Location: SECTION 28 T3N R65W			
System Datum: Mean Sea Level			

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
612.00	612.00	Base Fox Hills	0.00
3788.00	3856.43	Parkman	14.45
4192.00	4273.63	Sussex	14.45
6808.00	6952.19	SSPG	23.99
6871.00	7023.29	NBRR	31.10
6914.00	7074.99	N470_B_CK	36.27
6985.00	7169.13	N700_C_CK	45.68
7114.00	7413.89	FRHS	70.16
7138.00	7505.04	CDLL	79.27

CASING DETAILS			
TVD	MD	Name	Size
1113.00	1113.00	9 5/8"	9.625
7148.00	7608.98	7"	7.000





**Scientific Drilling**

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**Cheese 1-28HZ PAD**

**Cheese 38C-28HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**13 October, 2014**

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well Cheese 38C-28HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Site:</b>	Cheese 1-28HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	Cheese 38C-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<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)		

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

<b>Well</b>	Cheese 38C-28HZ, 429' FNL 770' FEL			
<b>Well Position</b>	<b>+N/-S</b>	-1.09 ft	<b>Northing:</b>	14,600,656.87 usft
	<b>+E/-W</b>	104.99 ft	<b>Easting:</b>	1,734,789.01 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b> 4,816.00 ft

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

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.95

<b>Plan Sections</b>										
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	
1,213.00	0.00	0.00	1,213.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,935.65	14.45	33.88	1,928.01	75.27	50.54	2.00	2.00	0.00	33.88	
5,789.60	14.45	33.88	5,659.99	873.84	586.73	0.00	0.00	0.00	0.00	
6,512.24	0.00	0.00	6,375.00	949.11	637.27	2.00	-2.00	0.00	180.00	
6,712.29	0.00	0.00	6,575.05	949.11	637.27	0.00	0.00	0.00	0.00	
7,608.98	89.67	179.95	7,148.00	379.46	637.77	10.00	10.00	20.07	179.95	
12,797.22	89.67	179.95	7,178.00	-4,808.69	642.34	0.00	0.00	0.00	0.00	PBHL_Cheese 38C-2

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well Cheese 38C-28HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Site:</b>	Cheese 1-28HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	Cheese 38C-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
612.00	0.00	0.00	612.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Fox Hills</b>									
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
1,113.00	0.00	0.00	1,113.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,213.00	0.00	0.00	1,213.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,300.00	1.74	33.88	1,299.99	1.10	0.74	-1.10	2.00	2.00	0.00
1,400.00	3.74	33.88	1,399.87	5.07	3.40	-5.06	2.00	2.00	0.00
1,500.00	5.74	33.88	1,499.52	11.93	8.01	-11.92	2.00	2.00	0.00
1,600.00	7.74	33.88	1,598.82	21.67	14.55	-21.66	2.00	2.00	0.00
1,700.00	9.74	33.88	1,697.66	34.28	23.02	-34.26	2.00	2.00	0.00
1,800.00	11.74	33.88	1,795.90	49.75	33.41	-49.72	2.00	2.00	0.00
1,900.00	13.74	33.88	1,893.43	68.06	45.70	-68.02	2.00	2.00	0.00
1,935.65	14.45	33.88	1,928.01	75.27	50.54	-75.22	2.00	2.00	0.00
<b>Start 3853.95 hold at 1935.65 MD</b>									
2,000.00	14.45	33.88	1,990.32	88.60	59.49	-88.55	0.00	0.00	0.00
2,100.00	14.45	33.88	2,087.16	109.32	73.40	-109.26	0.00	0.00	0.00
2,200.00	14.45	33.88	2,183.99	130.05	87.32	-129.97	0.00	0.00	0.00
2,300.00	14.45	33.88	2,280.83	150.77	101.23	-150.68	0.00	0.00	0.00
2,400.00	14.45	33.88	2,377.67	171.49	115.14	-171.39	0.00	0.00	0.00
2,500.00	14.45	33.88	2,474.50	192.21	129.06	-192.10	0.00	0.00	0.00
2,600.00	14.45	33.88	2,571.34	212.93	142.97	-212.80	0.00	0.00	0.00
2,700.00	14.45	33.88	2,668.17	233.65	156.88	-233.51	0.00	0.00	0.00
2,800.00	14.45	33.88	2,765.01	254.37	170.79	-254.22	0.00	0.00	0.00
2,900.00	14.45	33.88	2,861.84	275.09	184.71	-274.93	0.00	0.00	0.00
3,000.00	14.45	33.88	2,958.68	295.81	198.62	-295.64	0.00	0.00	0.00
3,100.00	14.45	33.88	3,055.51	316.53	212.53	-316.35	0.00	0.00	0.00
3,200.00	14.45	33.88	3,152.35	337.25	226.45	-337.06	0.00	0.00	0.00
3,300.00	14.45	33.88	3,249.18	357.97	240.36	-357.76	0.00	0.00	0.00
3,400.00	14.45	33.88	3,346.02	378.70	254.27	-378.47	0.00	0.00	0.00
3,500.00	14.45	33.88	3,442.85	399.42	268.18	-399.18	0.00	0.00	0.00
3,600.00	14.45	33.88	3,539.69	420.14	282.10	-419.89	0.00	0.00	0.00
3,700.00	14.45	33.88	3,636.52	440.86	296.01	-440.60	0.00	0.00	0.00
3,800.00	14.45	33.88	3,733.36	461.58	309.92	-461.31	0.00	0.00	0.00
3,856.43	14.45	33.88	3,788.00	473.27	317.77	-472.99	0.00	0.00	0.00
<b>Parkman</b>									
3,900.00	14.45	33.88	3,830.20	482.30	323.84	-482.02	0.00	0.00	0.00
4,000.00	14.45	33.88	3,927.03	503.02	337.75	-502.73	0.00	0.00	0.00
4,100.00	14.45	33.88	4,023.87	523.74	351.66	-523.43	0.00	0.00	0.00
4,200.00	14.45	33.88	4,120.70	544.46	365.57	-544.14	0.00	0.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well Cheese 38C-28HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Site:</b>	Cheese 1-28HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	Cheese 38C-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
4,273.63	14.45	33.88	4,192.00	559.72	375.82	-559.39	0.00	0.00	0.00
<b>Sussex</b>									
4,300.00	14.45	33.88	4,217.54	565.18	379.49	-564.85	0.00	0.00	0.00
4,400.00	14.45	33.88	4,314.37	585.90	393.40	-585.56	0.00	0.00	0.00
4,500.00	14.45	33.88	4,411.21	606.63	407.31	-606.27	0.00	0.00	0.00
4,600.00	14.45	33.88	4,508.04	627.35	421.23	-626.98	0.00	0.00	0.00
4,700.00	14.45	33.88	4,604.88	648.07	435.14	-647.69	0.00	0.00	0.00
4,800.00	14.45	33.88	4,701.71	668.79	449.05	-668.40	0.00	0.00	0.00
4,900.00	14.45	33.88	4,798.55	689.51	462.96	-689.10	0.00	0.00	0.00
5,000.00	14.45	33.88	4,895.38	710.23	476.88	-709.81	0.00	0.00	0.00
5,100.00	14.45	33.88	4,992.22	730.95	490.79	-730.52	0.00	0.00	0.00
5,200.00	14.45	33.88	5,089.05	751.67	504.70	-751.23	0.00	0.00	0.00
5,300.00	14.45	33.88	5,185.89	772.39	518.61	-771.94	0.00	0.00	0.00
5,400.00	14.45	33.88	5,282.73	793.11	532.53	-792.65	0.00	0.00	0.00
5,500.00	14.45	33.88	5,379.56	813.83	546.44	-813.36	0.00	0.00	0.00
5,600.00	14.45	33.88	5,476.40	834.55	560.35	-834.07	0.00	0.00	0.00
5,700.00	14.45	33.88	5,573.23	855.28	574.27	-854.77	0.00	0.00	0.00
5,789.60	14.45	33.88	5,659.99	873.84	586.73	-873.33	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,800.00	14.24	33.88	5,670.07	875.98	588.17	-875.47	2.00	-2.00	0.00
5,900.00	12.24	33.88	5,767.41	895.00	600.94	-894.48	2.00	-2.00	0.00
6,000.00	10.24	33.88	5,865.48	911.19	611.81	-910.66	2.00	-2.00	0.00
6,100.00	8.24	33.88	5,964.18	924.53	620.76	-923.99	2.00	-2.00	0.00
6,200.00	6.24	33.88	6,063.37	935.00	627.79	-934.45	2.00	-2.00	0.00
6,300.00	4.24	33.88	6,162.95	942.59	632.89	-942.03	2.00	-2.00	0.00
6,400.00	2.24	33.88	6,262.78	947.28	636.04	-946.73	2.00	-2.00	0.00
6,500.00	0.24	33.88	6,362.76	949.09	637.26	-948.53	2.00	-2.00	0.00
6,512.24	0.00	0.00	6,375.00	949.11	637.27	-948.55	2.00	-2.00	-276.70
<b>Start 200.05 hold at 6512.24 MD</b>									
6,600.00	0.00	0.00	6,462.76	949.11	637.27	-948.55	0.00	0.00	0.00
6,700.00	0.00	0.00	6,562.76	949.11	637.27	-948.55	0.00	0.00	0.00
6,712.29	0.00	0.00	6,575.05	949.11	637.27	-948.55	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 179.95</b>									
6,800.00	8.77	179.95	6,662.41	942.41	637.28	-941.85	10.00	10.00	0.00
6,900.00	18.77	179.95	6,759.42	918.64	637.30	-918.08	10.00	10.00	0.00
6,952.19	23.99	179.95	6,808.00	899.62	637.31	-899.06	10.00	10.00	0.00
<b>SSPG</b>									
7,000.00	28.77	179.95	6,850.82	878.38	637.33	-877.82	10.00	10.00	0.00
7,023.29	31.10	179.95	6,871.00	866.76	637.34	-866.20	10.00	10.00	0.00
<b>NBRR</b>									
7,074.99	36.27	179.95	6,914.00	838.10	637.37	-837.54	10.00	10.00	0.00
<b>N470_B_CK</b>									
7,100.00	38.77	179.95	6,933.84	822.86	637.38	-822.31	10.00	10.00	0.00
7,169.13	45.68	179.95	6,985.00	776.43	637.42	-775.87	10.00	10.00	0.00
<b>N700_C_CK</b>									
7,200.00	48.77	179.95	7,005.96	753.78	637.44	-753.22	10.00	10.00	0.00
7,300.00	58.77	179.95	7,064.99	673.21	637.51	-672.66	10.00	10.00	0.00
7,400.00	68.77	179.95	7,109.13	583.62	637.59	-583.07	10.00	10.00	0.00
7,413.89	70.16	179.95	7,114.00	570.61	637.60	-570.05	10.00	10.00	0.00
<b>FRHS</b>									
7,500.00	78.77	179.95	7,137.04	487.73	637.68	-487.17	10.00	10.00	0.00
7,505.04	79.27	179.95	7,138.00	482.78	637.68	-482.22	10.00	10.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well Cheese 38C-28HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Site:</b>	Cheese 1-28HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	Cheese 38C-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
<b>CDLL</b>									
7,600.00	88.77	179.95	7,147.88	388.45	637.76	-387.89	10.00	10.00	0.00
7,608.98	89.67	179.95	7,148.00	379.47	637.77	-378.91	10.00	10.00	0.00
<b>Start 5188.24 hold at 7608.98 MD - 7"(50 FNL 132 FEL)</b>									
7,700.00	89.67	179.95	7,148.53	288.45	637.85	-287.89	0.00	0.00	0.00
7,800.00	89.67	179.95	7,149.10	188.45	637.94	-187.89	0.00	0.00	0.00
7,900.00	89.67	179.95	7,149.68	88.45	638.03	-87.90	0.00	0.00	0.00
8,000.00	89.67	179.95	7,150.26	-11.55	638.12	12.10	0.00	0.00	0.00
8,100.00	89.67	179.95	7,150.84	-111.54	638.20	112.10	0.00	0.00	0.00
8,200.00	89.67	179.95	7,151.42	-211.54	638.29	212.10	0.00	0.00	0.00
8,300.00	89.67	179.95	7,152.00	-311.54	638.38	312.10	0.00	0.00	0.00
8,400.00	89.67	179.95	7,152.57	-411.54	638.47	412.10	0.00	0.00	0.00
8,500.00	89.67	179.95	7,153.15	-511.54	638.56	512.09	0.00	0.00	0.00
8,600.00	89.67	179.95	7,153.73	-611.54	638.64	612.09	0.00	0.00	0.00
8,700.00	89.67	179.95	7,154.31	-711.53	638.73	712.09	0.00	0.00	0.00
8,800.00	89.67	179.95	7,154.89	-811.53	638.82	812.09	0.00	0.00	0.00
8,900.00	89.67	179.95	7,155.46	-911.53	638.91	912.09	0.00	0.00	0.00
9,000.00	89.67	179.95	7,156.04	-1,011.53	639.00	1,012.09	0.00	0.00	0.00
9,100.00	89.67	179.95	7,156.62	-1,111.53	639.08	1,112.08	0.00	0.00	0.00
9,200.00	89.67	179.95	7,157.20	-1,211.53	639.17	1,212.08	0.00	0.00	0.00
9,300.00	89.67	179.95	7,157.78	-1,311.52	639.26	1,312.08	0.00	0.00	0.00
9,400.00	89.67	179.95	7,158.36	-1,411.52	639.35	1,412.08	0.00	0.00	0.00
9,500.00	89.67	179.95	7,158.93	-1,511.52	639.44	1,512.08	0.00	0.00	0.00
9,600.00	89.67	179.95	7,159.51	-1,611.52	639.52	1,612.08	0.00	0.00	0.00
9,700.00	89.67	179.95	7,160.09	-1,711.52	639.61	1,712.07	0.00	0.00	0.00
9,800.00	89.67	179.95	7,160.67	-1,811.52	639.70	1,812.07	0.00	0.00	0.00
9,900.00	89.67	179.95	7,161.25	-1,911.51	639.79	1,912.07	0.00	0.00	0.00
10,000.00	89.67	179.95	7,161.83	-2,011.51	639.88	2,012.07	0.00	0.00	0.00
10,100.00	89.67	179.95	7,162.40	-2,111.51	639.96	2,112.07	0.00	0.00	0.00
10,200.00	89.67	179.95	7,162.98	-2,211.51	640.05	2,212.07	0.00	0.00	0.00
10,300.00	89.67	179.95	7,163.56	-2,311.51	640.14	2,312.06	0.00	0.00	0.00
10,400.00	89.67	179.95	7,164.14	-2,411.51	640.23	2,412.06	0.00	0.00	0.00
10,500.00	89.67	179.95	7,164.72	-2,511.50	640.32	2,512.06	0.00	0.00	0.00
10,600.00	89.67	179.95	7,165.29	-2,611.50	640.40	2,612.06	0.00	0.00	0.00
10,700.00	89.67	179.95	7,165.87	-2,711.50	640.49	2,712.06	0.00	0.00	0.00
10,800.00	89.67	179.95	7,166.45	-2,811.50	640.58	2,812.06	0.00	0.00	0.00
10,900.00	89.67	179.95	7,167.03	-2,911.50	640.67	2,912.05	0.00	0.00	0.00
11,000.00	89.67	179.95	7,167.61	-3,011.50	640.76	3,012.05	0.00	0.00	0.00
11,100.00	89.67	179.95	7,168.19	-3,111.49	640.85	3,112.05	0.00	0.00	0.00
11,200.00	89.67	179.95	7,168.76	-3,211.49	640.93	3,212.05	0.00	0.00	0.00
11,300.00	89.67	179.95	7,169.34	-3,311.49	641.02	3,312.05	0.00	0.00	0.00
11,400.00	89.67	179.95	7,169.92	-3,411.49	641.11	3,412.05	0.00	0.00	0.00
11,500.00	89.67	179.95	7,170.50	-3,511.49	641.20	3,512.04	0.00	0.00	0.00
11,600.00	89.67	179.95	7,171.08	-3,611.48	641.29	3,612.04	0.00	0.00	0.00
11,700.00	89.67	179.95	7,171.66	-3,711.48	641.37	3,712.04	0.00	0.00	0.00
11,800.00	89.67	179.95	7,172.23	-3,811.48	641.46	3,812.04	0.00	0.00	0.00
11,900.00	89.67	179.95	7,172.81	-3,911.48	641.55	3,912.04	0.00	0.00	0.00
12,000.00	89.67	179.95	7,173.39	-4,011.48	641.64	4,012.04	0.00	0.00	0.00
12,100.00	89.67	179.95	7,173.97	-4,111.48	641.73	4,112.03	0.00	0.00	0.00
12,200.00	89.67	179.95	7,174.55	-4,211.47	641.81	4,212.03	0.00	0.00	0.00
12,300.00	89.67	179.95	7,175.12	-4,311.47	641.90	4,312.03	0.00	0.00	0.00
12,400.00	89.67	179.95	7,175.70	-4,411.47	641.99	4,412.03	0.00	0.00	0.00
12,500.00	89.67	179.95	7,176.28	-4,511.47	642.08	4,512.03	0.00	0.00	0.00
12,600.00	89.67	179.95	7,176.86	-4,611.47	642.17	4,612.03	0.00	0.00	0.00

<b>Database:</b>	Denver Sales	<b>Local Co-ordinate Reference:</b>	Well Cheese 38C-28HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	GL 4816 & KB 17 @ 4833.00ft (ASSUMED)
<b>Site:</b>	Cheese 1-28HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	Cheese 38C-28HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
12,700.00	89.67	179.95	7,177.44	-4,711.47	642.25	4,712.02	0.00	0.00	0.00
12,797.22	89.67	179.95	7,178.00	-4,808.69	642.34	4,809.25	0.00	0.00	0.00
TD at 12797.22									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_Cheese 38C-28H	0.00	0.00	7,178.00	-4,808.69	642.34	14,595,850.68	1,735,449.66	40.1893060	-104.6597170
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,113.00	1,113.00	9 5/8"	9.625	13.500	
7,608.98	7,148.00	7"(50 FNL 132 FEL)	7.000	8.750	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
612.00	614.00	Base Fox Hills				
3,856.43	3,790.00	Parkman				
4,273.63	4,194.00	Sussex				
6,952.19	6,810.00	SSPG				
7,023.29	6,873.00	NBRR				
7,074.99	6,916.00	N470_B_CK				
7,169.13	6,987.00	N700_C_CK				
7,413.89	7,116.00	FRHS				
7,505.04	7,140.00	CDLL				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,213.00	1,213.00	0.00	0.00	Start Build 2.00
1,935.65	1,928.01	75.27	50.54	Start 3853.95 hold at 1935.65 MD
5,789.60	5,659.99	873.84	586.73	Start Drop -2.00
6,512.24	6,375.00	949.11	637.27	Start 200.05 hold at 6512.24 MD
6,712.29	6,575.05	949.11	637.27	Start DLS 10.00 TFO 179.95
7,608.98	7,148.00	379.46	637.77	Start 5188.24 hold at 7608.98 MD
12,797.22	7,178.00	-4,808.69	642.34	TD at 12797.22