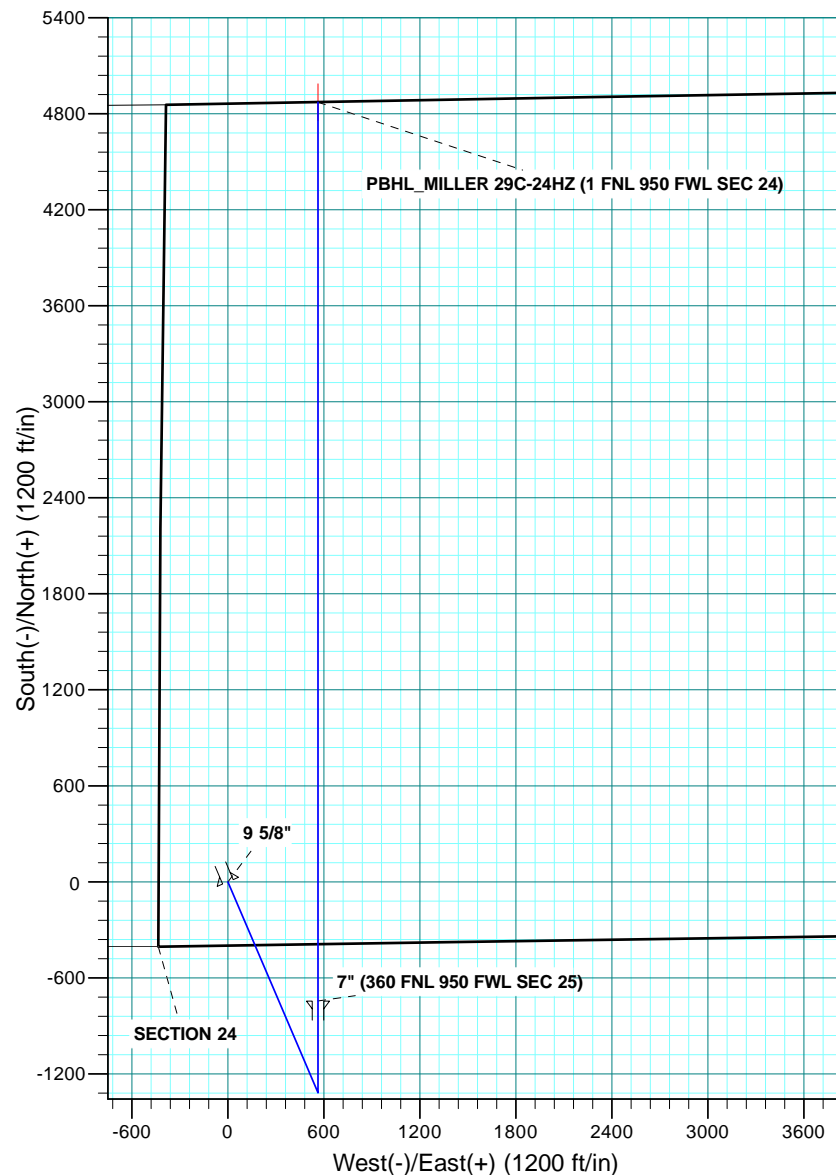
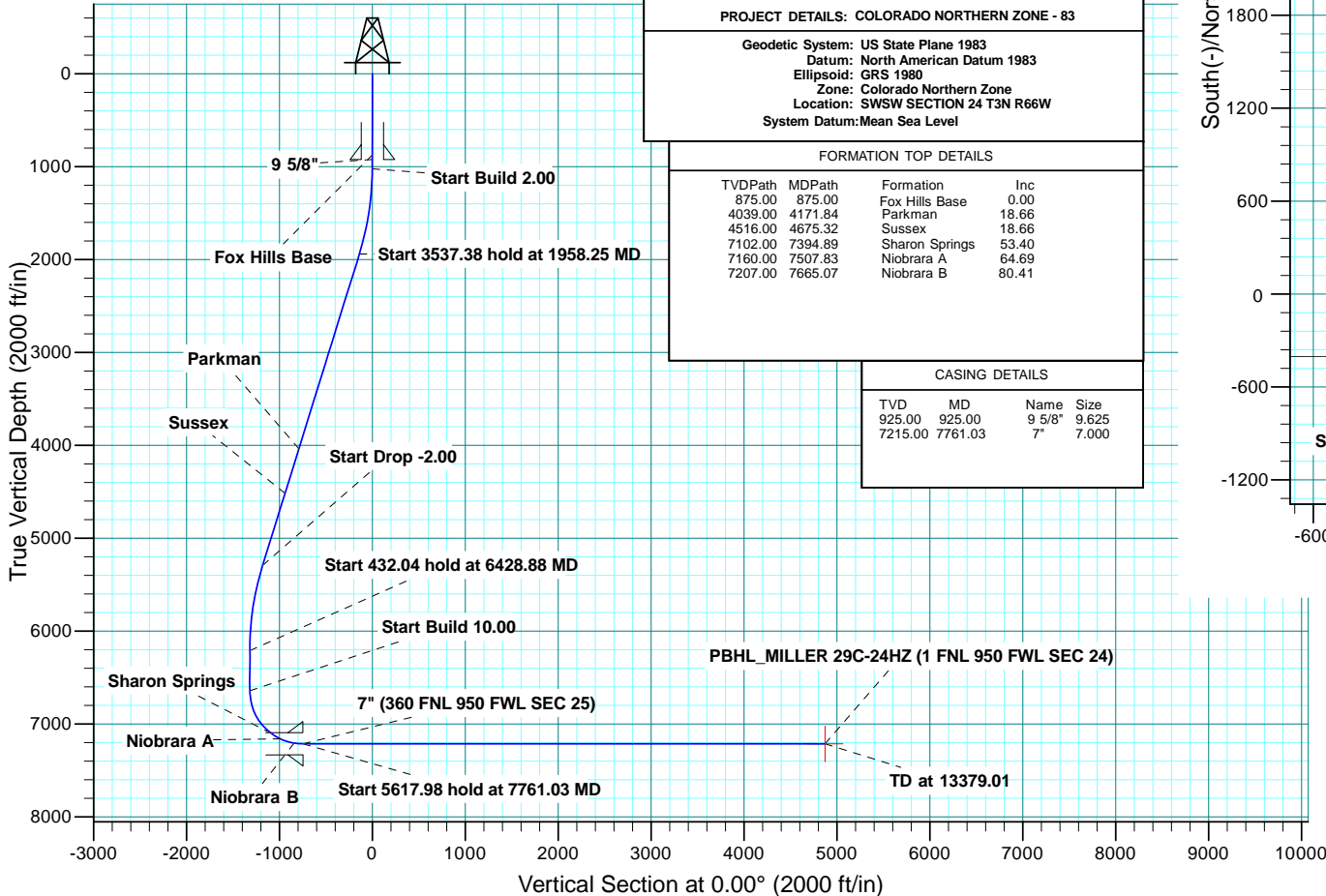


WELL DETAILS: MILLER 18N-24HZ										
GL 5017 & KB 17 @ 5034.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1318293.21	Easting 3214126.94	Latitude 40.2045710		Longitude -104.7333710		
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1025.00	0.00	0.00	1025.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1958.25	18.66	156.85	1941.83	-138.54	59.24	2.00	156.85	-138.54		Start 3537.38 hold at 1958.25 MD
5495.63	18.66	156.85	5293.17	-1179.46	504.31	0.00	0.00	-1179.46		Start Drop -2.00
6428.88	0.00	0.00	6210.00	-1318.00	563.54	2.00	180.00	-1318.00		Start 432.04 hold at 6428.88 MD
6860.92	0.00	0.00	6642.04	-1318.00	563.54	0.00	0.00	-1318.00		Start Build 10.00
7761.03	90.01	0.00	7215.00	-744.94	563.54	10.00	0.00	-744.94		Start 5617.98 hold at 7761.03 MD
13379.01	90.01	0.00	7214.00	4873.04	563.54	0.00	0.00	4873.04	PBHL_MILLER 29C-24HZ	TD at 13379.01
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude		Longitude		Shape
PBHL	7214.00	4873.04	563.54	1323170.93	3214648.33	40.2179480		-104.7313530		Point

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83										
Geodetic System: US State Plane 1983										
Datum: North American Datum 1983										
Ellipsoid: GRS 1980										
Zone: Colorado Northern Zone										
Location: SWSW SECTION 24 T3N R66W										
System Datum: Mean Sea Level										

FORMATION TOP DETAILS										
TVDP	MD	Formation	Inc							
875.00	875.00	Fox Hills Base	0.00							
4039.00	4171.84	Parkman	18.66							
4516.00	4675.32	Sussex	18.66							
7102.00	7394.89	Sharon Springs	53.40							
7160.00	7507.83	Niobrara A	64.69							
7207.00	7665.07	Niobrara B	80.41							

CASING DETAILS										
TVD	MD	Name	Size							
925.00	925.00	9 5/8"	9.625							
7215.00	7761.03	7"	7.000							





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**MILLER 13-24HZ PAD**

**MILLER 18N-24HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**13 March, 2014**

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 18N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 18N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site						MILLER 13-24HZ PAD, SWSW SECTION 24 T3N R66W											
Site Position:			Northing:			1,318,293.21 usft			Latitude:			40.2045710					
From:			Lat/Long			Easting:			3,214,126.94 usft			Longitude:			-104.7333710		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.50		

Well	MILLER 18N-24HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,318,293.21 usft	Latitude:	40.2045710
	+E/-W	0.00 ft	Easting:	3,214,126.94 usft	Longitude:	-104.7333710
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,017.00 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>
	BGGM2013	10/9/2013	8.55	66.81	52,713

<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	0.00

<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	
1,025.00	0.00	0.00	1,025.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,958.25	18.66	156.85	1,941.83	-138.54	59.24	2.00	2.00	0.00	156.85	
5,495.63	18.66	156.85	5,293.17	-1,179.46	504.31	0.00	0.00	0.00	0.00	
6,428.88	0.00	0.00	6,210.00	-1,318.00	563.54	2.00	-2.00	0.00	180.00	
6,860.92	0.00	0.00	6,642.04	-1,318.00	563.54	0.00	0.00	0.00	0.00	
7,761.03	90.01	0.00	7,215.00	-744.94	563.54	10.00	10.00	0.00	0.00	
13,379.01	90.01	0.00	7,214.00	4,873.05	563.54	0.00	0.00	0.00	0.00	PBHL_MILLER 29C-2

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 18N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 18N-24HZ	<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
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
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
925.00	0.00	0.00	925.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,025.00	0.00	0.00	1,025.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,100.00	1.50	156.85	1,099.99	-0.90	0.39	-0.90	2.00	2.00	0.00
1,200.00	3.50	156.85	1,199.89	-4.91	2.10	-4.91	2.00	2.00	0.00
1,300.00	5.50	156.85	1,299.58	-12.13	5.19	-12.13	2.00	2.00	0.00
1,400.00	7.50	156.85	1,398.93	-22.54	9.64	-22.54	2.00	2.00	0.00
1,500.00	9.50	156.85	1,497.83	-36.13	15.45	-36.13	2.00	2.00	0.00
1,600.00	11.50	156.85	1,596.15	-52.88	22.61	-52.88	2.00	2.00	0.00
1,700.00	13.50	156.85	1,693.77	-72.78	31.12	-72.78	2.00	2.00	0.00
1,800.00	15.50	156.85	1,790.58	-95.80	40.96	-95.80	2.00	2.00	0.00
1,900.00	17.50	156.85	1,886.46	-121.91	52.13	-121.91	2.00	2.00	0.00
1,958.25	18.66	156.85	1,941.83	-138.54	59.24	-138.54	2.00	2.00	0.00
<b>Start 3537.38 hold at 1958.25 MD</b>									
2,000.00	18.66	156.85	1,981.39	-150.82	64.49	-150.82	0.00	0.00	0.00
2,100.00	18.66	156.85	2,076.13	-180.25	77.07	-180.25	0.00	0.00	0.00
2,200.00	18.66	156.85	2,170.87	-209.68	89.65	-209.68	0.00	0.00	0.00
2,300.00	18.66	156.85	2,265.61	-239.10	102.23	-239.10	0.00	0.00	0.00
2,400.00	18.66	156.85	2,360.35	-268.53	114.82	-268.53	0.00	0.00	0.00
2,500.00	18.66	156.85	2,455.09	-297.96	127.40	-297.96	0.00	0.00	0.00
2,600.00	18.66	156.85	2,549.83	-327.38	139.98	-327.38	0.00	0.00	0.00
2,700.00	18.66	156.85	2,644.57	-356.81	152.56	-356.81	0.00	0.00	0.00
2,800.00	18.66	156.85	2,739.31	-386.23	165.14	-386.23	0.00	0.00	0.00
2,900.00	18.66	156.85	2,834.05	-415.66	177.73	-415.66	0.00	0.00	0.00
3,000.00	18.66	156.85	2,928.79	-445.09	190.31	-445.09	0.00	0.00	0.00
3,100.00	18.66	156.85	3,023.53	-474.51	202.89	-474.51	0.00	0.00	0.00
3,200.00	18.66	156.85	3,118.27	-503.94	215.47	-503.94	0.00	0.00	0.00
3,300.00	18.66	156.85	3,213.01	-533.37	228.05	-533.37	0.00	0.00	0.00
3,400.00	18.66	156.85	3,307.75	-562.79	240.64	-562.79	0.00	0.00	0.00
3,500.00	18.66	156.85	3,402.49	-592.22	253.22	-592.22	0.00	0.00	0.00
3,600.00	18.66	156.85	3,497.23	-621.65	265.80	-621.65	0.00	0.00	0.00
3,700.00	18.66	156.85	3,591.98	-651.07	278.38	-651.07	0.00	0.00	0.00
3,800.00	18.66	156.85	3,686.72	-680.50	290.96	-680.50	0.00	0.00	0.00
3,900.00	18.66	156.85	3,781.46	-709.92	303.55	-709.92	0.00	0.00	0.00
4,000.00	18.66	156.85	3,876.20	-739.35	316.13	-739.35	0.00	0.00	0.00
4,100.00	18.66	156.85	3,970.94	-768.78	328.71	-768.78	0.00	0.00	0.00
4,171.84	18.66	156.85	4,039.00	-789.92	337.75	-789.92	0.00	0.00	0.00
<b>Parkman</b>									
4,200.00	18.66	156.85	4,065.68	-798.20	341.29	-798.20	0.00	0.00	0.00
4,300.00	18.66	156.85	4,160.42	-827.63	353.87	-827.63	0.00	0.00	0.00

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 18N-24HZ	<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)
4,400.00	18.66	156.85	4,255.16	-857.06	366.46	-857.06	0.00	0.00	0.00
4,500.00	18.66	156.85	4,349.90	-886.48	379.04	-886.48	0.00	0.00	0.00
4,600.00	18.66	156.85	4,444.64	-915.91	391.62	-915.91	0.00	0.00	0.00
4,675.32	18.66	156.85	4,516.00	-938.07	401.10	-938.07	0.00	0.00	0.00
<b>Sussex</b>									
4,700.00	18.66	156.85	4,539.38	-945.34	404.20	-945.34	0.00	0.00	0.00
4,800.00	18.66	156.85	4,634.12	-974.76	416.78	-974.76	0.00	0.00	0.00
4,900.00	18.66	156.85	4,728.86	-1,004.19	429.37	-1,004.19	0.00	0.00	0.00
5,000.00	18.66	156.85	4,823.60	-1,033.62	441.95	-1,033.62	0.00	0.00	0.00
5,100.00	18.66	156.85	4,918.34	-1,063.04	454.53	-1,063.04	0.00	0.00	0.00
5,200.00	18.66	156.85	5,013.08	-1,092.47	467.11	-1,092.47	0.00	0.00	0.00
5,300.00	18.66	156.85	5,107.82	-1,121.89	479.69	-1,121.89	0.00	0.00	0.00
5,400.00	18.66	156.85	5,202.57	-1,151.32	492.28	-1,151.32	0.00	0.00	0.00
5,495.63	18.66	156.85	5,293.17	-1,179.46	504.31	-1,179.46	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,500.00	18.58	156.85	5,297.31	-1,180.74	504.86	-1,180.74	2.00	-2.00	0.00
5,600.00	16.58	156.85	5,392.63	-1,208.51	516.73	-1,208.51	2.00	-2.00	0.00
5,700.00	14.58	156.85	5,488.96	-1,233.20	527.29	-1,233.20	2.00	-2.00	0.00
5,800.00	12.58	156.85	5,586.16	-1,254.79	536.52	-1,254.79	2.00	-2.00	0.00
5,900.00	10.58	156.85	5,684.12	-1,273.24	544.41	-1,273.24	2.00	-2.00	0.00
6,000.00	8.58	156.85	5,782.72	-1,288.54	550.95	-1,288.54	2.00	-2.00	0.00
6,100.00	6.58	156.85	5,881.84	-1,300.66	556.13	-1,300.66	2.00	-2.00	0.00
6,200.00	4.58	156.85	5,981.36	-1,309.60	559.95	-1,309.60	2.00	-2.00	0.00
6,300.00	2.58	156.85	6,081.16	-1,315.33	562.40	-1,315.33	2.00	-2.00	0.00
6,400.00	0.58	156.85	6,181.12	-1,317.87	563.49	-1,317.87	2.00	-2.00	0.00
6,428.88	0.00	0.00	6,210.00	-1,318.00	563.54	-1,318.00	2.00	-2.00	0.00
<b>Start 432.04 hold at 6428.88 MD</b>									
6,500.00	0.00	0.00	6,281.12	-1,318.00	563.54	-1,318.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,381.12	-1,318.00	563.54	-1,318.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,481.12	-1,318.00	563.54	-1,318.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,581.12	-1,318.00	563.54	-1,318.00	0.00	0.00	0.00
6,860.92	0.00	0.00	6,642.04	-1,318.00	563.54	-1,318.00	0.00	0.00	0.00
<b>Start Build 10.00</b>									
6,900.00	3.91	0.00	6,681.09	-1,316.67	563.54	-1,316.67	10.00	10.00	0.00
7,000.00	13.91	0.00	6,779.75	-1,301.20	563.54	-1,301.20	10.00	10.00	0.00
7,100.00	23.91	0.00	6,874.24	-1,268.84	563.54	-1,268.84	10.00	10.00	0.00
7,200.00	33.91	0.00	6,961.67	-1,220.56	563.54	-1,220.56	10.00	10.00	0.00
7,300.00	43.91	0.00	7,039.39	-1,157.83	563.54	-1,157.83	10.00	10.00	0.00
7,394.89	53.40	0.00	7,102.00	-1,086.68	563.54	-1,086.68	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,400.00	53.91	0.00	7,105.03	-1,082.57	563.54	-1,082.57	10.00	10.00	0.00
7,500.00	63.91	0.00	7,156.61	-997.04	563.54	-997.04	10.00	10.00	0.00
7,507.83	64.69	0.00	7,160.00	-989.99	563.54	-989.99	10.00	10.00	0.00
<b>Niobrara A</b>									
7,600.00	73.91	0.00	7,192.55	-903.86	563.54	-903.86	10.00	10.00	0.00
7,665.07	80.41	0.00	7,207.00	-840.45	563.54	-840.45	10.00	10.00	0.00
<b>Niobrara B</b>									
7,700.00	83.91	0.00	7,211.76	-805.85	563.54	-805.85	10.00	10.00	0.00
7,761.03	90.01	0.00	7,215.00	-744.94	563.54	-744.94	10.00	10.00	0.00
<b>Start 5617.98 hold at 7761.03 MD - 7" (360 FNL 950 FWL SEC 25)</b>									
7,800.00	90.01	0.00	7,214.99	-705.97	563.54	-705.97	0.00	0.00	0.00
7,900.00	90.01	0.00	7,214.97	-605.97	563.54	-605.97	0.00	0.00	0.00
8,000.00	90.01	0.00	7,214.96	-505.97	563.54	-505.97	0.00	0.00	0.00

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 18N-24HZ	<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)
8,100.00	90.01	0.00	7,214.94	-405.97	563.54	-405.97	0.00	0.00	0.00
8,200.00	90.01	0.00	7,214.92	-305.97	563.54	-305.97	0.00	0.00	0.00
8,300.00	90.01	0.00	7,214.90	-205.97	563.54	-205.97	0.00	0.00	0.00
8,400.00	90.01	0.00	7,214.89	-105.97	563.54	-105.97	0.00	0.00	0.00
8,500.00	90.01	0.00	7,214.87	-5.97	563.54	-5.97	0.00	0.00	0.00
8,600.00	90.01	0.00	7,214.85	94.03	563.54	94.03	0.00	0.00	0.00
8,700.00	90.01	0.00	7,214.83	194.03	563.54	194.03	0.00	0.00	0.00
8,800.00	90.01	0.00	7,214.81	294.03	563.54	294.03	0.00	0.00	0.00
8,900.00	90.01	0.00	7,214.80	394.03	563.54	394.03	0.00	0.00	0.00
9,000.00	90.01	0.00	7,214.78	494.03	563.54	494.03	0.00	0.00	0.00
9,100.00	90.01	0.00	7,214.76	594.03	563.54	594.03	0.00	0.00	0.00
9,200.00	90.01	0.00	7,214.74	694.03	563.54	694.03	0.00	0.00	0.00
9,300.00	90.01	0.00	7,214.73	794.03	563.54	794.03	0.00	0.00	0.00
9,400.00	90.01	0.00	7,214.71	894.03	563.54	894.03	0.00	0.00	0.00
9,500.00	90.01	0.00	7,214.69	994.03	563.54	994.03	0.00	0.00	0.00
9,600.00	90.01	0.00	7,214.67	1,094.03	563.54	1,094.03	0.00	0.00	0.00
9,700.00	90.01	0.00	7,214.65	1,194.03	563.54	1,194.03	0.00	0.00	0.00
9,800.00	90.01	0.00	7,214.64	1,294.03	563.54	1,294.03	0.00	0.00	0.00
9,900.00	90.01	0.00	7,214.62	1,394.03	563.54	1,394.03	0.00	0.00	0.00
10,000.00	90.01	0.00	7,214.60	1,494.03	563.54	1,494.03	0.00	0.00	0.00
10,100.00	90.01	0.00	7,214.58	1,594.03	563.54	1,594.03	0.00	0.00	0.00
10,200.00	90.01	0.00	7,214.57	1,694.03	563.54	1,694.03	0.00	0.00	0.00
10,300.00	90.01	0.00	7,214.55	1,794.03	563.54	1,794.03	0.00	0.00	0.00
10,400.00	90.01	0.00	7,214.53	1,894.03	563.54	1,894.03	0.00	0.00	0.00
10,500.00	90.01	0.00	7,214.51	1,994.03	563.54	1,994.03	0.00	0.00	0.00
10,600.00	90.01	0.00	7,214.49	2,094.03	563.54	2,094.03	0.00	0.00	0.00
10,700.00	90.01	0.00	7,214.48	2,194.03	563.54	2,194.03	0.00	0.00	0.00
10,800.00	90.01	0.00	7,214.46	2,294.03	563.54	2,294.03	0.00	0.00	0.00
10,900.00	90.01	0.00	7,214.44	2,394.03	563.54	2,394.03	0.00	0.00	0.00
11,000.00	90.01	0.00	7,214.42	2,494.03	563.54	2,494.03	0.00	0.00	0.00
11,100.00	90.01	0.00	7,214.41	2,594.03	563.54	2,594.03	0.00	0.00	0.00
11,200.00	90.01	0.00	7,214.39	2,694.03	563.54	2,694.03	0.00	0.00	0.00
11,300.00	90.01	0.00	7,214.37	2,794.03	563.54	2,794.03	0.00	0.00	0.00
11,400.00	90.01	0.00	7,214.35	2,894.03	563.54	2,894.03	0.00	0.00	0.00
11,500.00	90.01	0.00	7,214.33	2,994.03	563.54	2,994.03	0.00	0.00	0.00
11,600.00	90.01	0.00	7,214.32	3,094.03	563.54	3,094.03	0.00	0.00	0.00
11,700.00	90.01	0.00	7,214.30	3,194.03	563.54	3,194.03	0.00	0.00	0.00
11,800.00	90.01	0.00	7,214.28	3,294.03	563.54	3,294.03	0.00	0.00	0.00
11,900.00	90.01	0.00	7,214.26	3,394.03	563.54	3,394.03	0.00	0.00	0.00
12,000.00	90.01	0.00	7,214.25	3,494.03	563.54	3,494.03	0.00	0.00	0.00
12,100.00	90.01	0.00	7,214.23	3,594.03	563.54	3,594.03	0.00	0.00	0.00
12,200.00	90.01	0.00	7,214.21	3,694.03	563.54	3,694.03	0.00	0.00	0.00
12,300.00	90.01	0.00	7,214.19	3,794.03	563.54	3,794.03	0.00	0.00	0.00
12,400.00	90.01	0.00	7,214.17	3,894.03	563.54	3,894.03	0.00	0.00	0.00
12,500.00	90.01	0.00	7,214.16	3,994.03	563.54	3,994.03	0.00	0.00	0.00
12,600.00	90.01	0.00	7,214.14	4,094.03	563.54	4,094.03	0.00	0.00	0.00
12,700.00	90.01	0.00	7,214.12	4,194.03	563.54	4,194.03	0.00	0.00	0.00
12,800.00	90.01	0.00	7,214.10	4,294.03	563.54	4,294.03	0.00	0.00	0.00
12,900.00	90.01	0.00	7,214.09	4,394.03	563.54	4,394.03	0.00	0.00	0.00
13,000.00	90.01	0.00	7,214.07	4,494.03	563.54	4,494.03	0.00	0.00	0.00
13,100.00	90.01	0.00	7,214.05	4,594.03	563.54	4,594.03	0.00	0.00	0.00
13,200.00	90.01	0.00	7,214.03	4,694.03	563.54	4,694.03	0.00	0.00	0.00
13,300.00	90.01	0.00	7,214.01	4,794.03	563.54	4,794.03	0.00	0.00	0.00
13,379.01	90.01	0.00	7,214.00	4,873.05	563.54	4,873.05	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 18N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5017 & KB 17 @ 5034.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 18N-24HZ	<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)
TD at 13379.01 - PBHL_MILLER 29C-24HZ (1 FNL 950 FWL SEC 24)									

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_MILLER 29C-24H	0.00	0.00	7,214.00	4,873.05	563.54	1,323,170.93	3,214,648.33	40.2179480	-104.7313530
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
925.00	925.00	9 5/8"	9.625	12.250	
7,761.03	7,215.00	7" (360 FNL 950 FWL SEC 25)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
875.00	875.00	Fox Hills Base				
4,171.84	4,039.00	Parkman				
4,675.32	4,516.00	Sussex				
7,394.89	7,102.00	Sharon Springs				
7,507.83	7,160.00	Niobrara A				
7,665.07	7,207.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,025.00	1,025.00	0.00	0.00	Start Build 2.00	
1,958.25	1,941.83	-138.54	59.24	Start 3537.38 hold at 1958.25 MD	
5,495.63	5,293.17	-1,179.46	504.31	Start Drop -2.00	
6,428.88	6,210.00	-1,318.00	563.54	Start 432.04 hold at 6428.88 MD	
6,860.92	6,642.04	-1,318.00	563.54	Start Build 10.00	
7,761.03	7,215.00	-744.94	563.54	Start 5617.98 hold at 7761.03 MD	
13,379.01	7,214.00	4,873.05	563.54	TD at 13379.01	