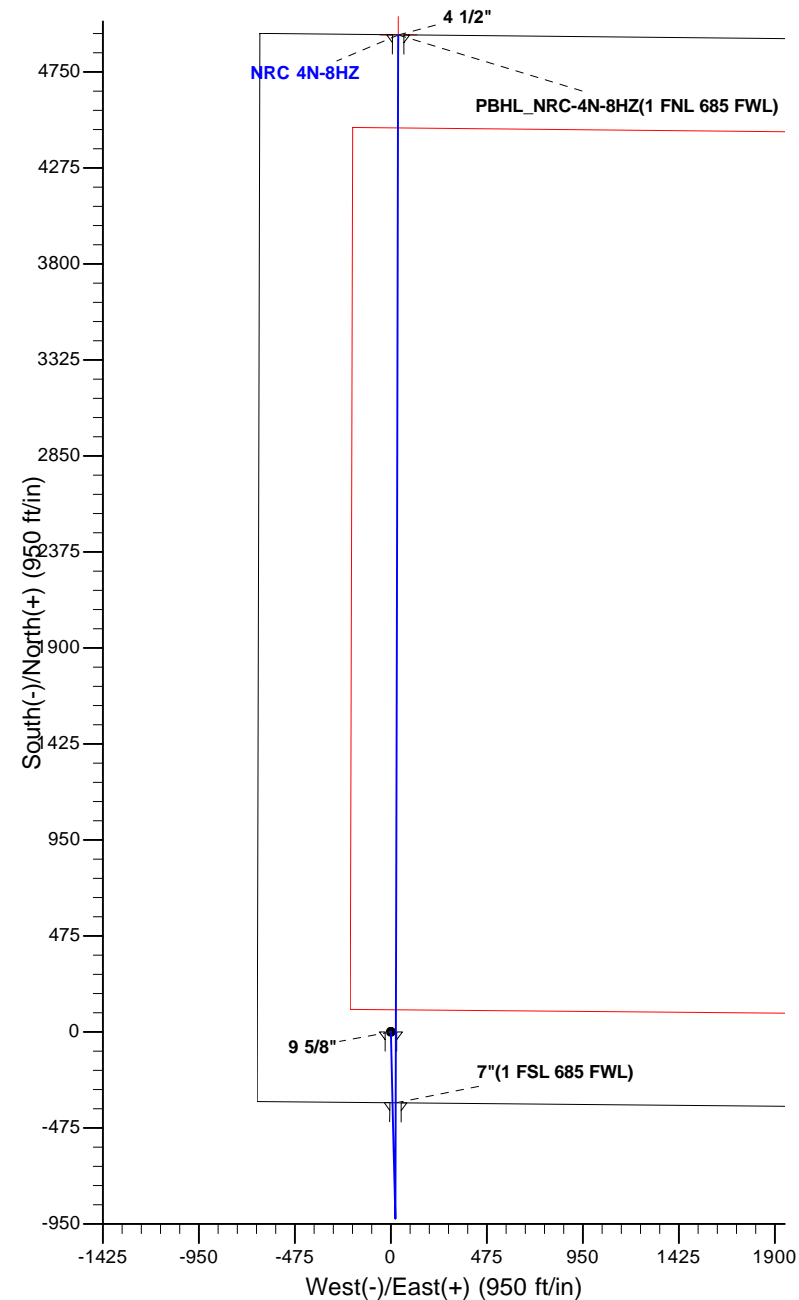
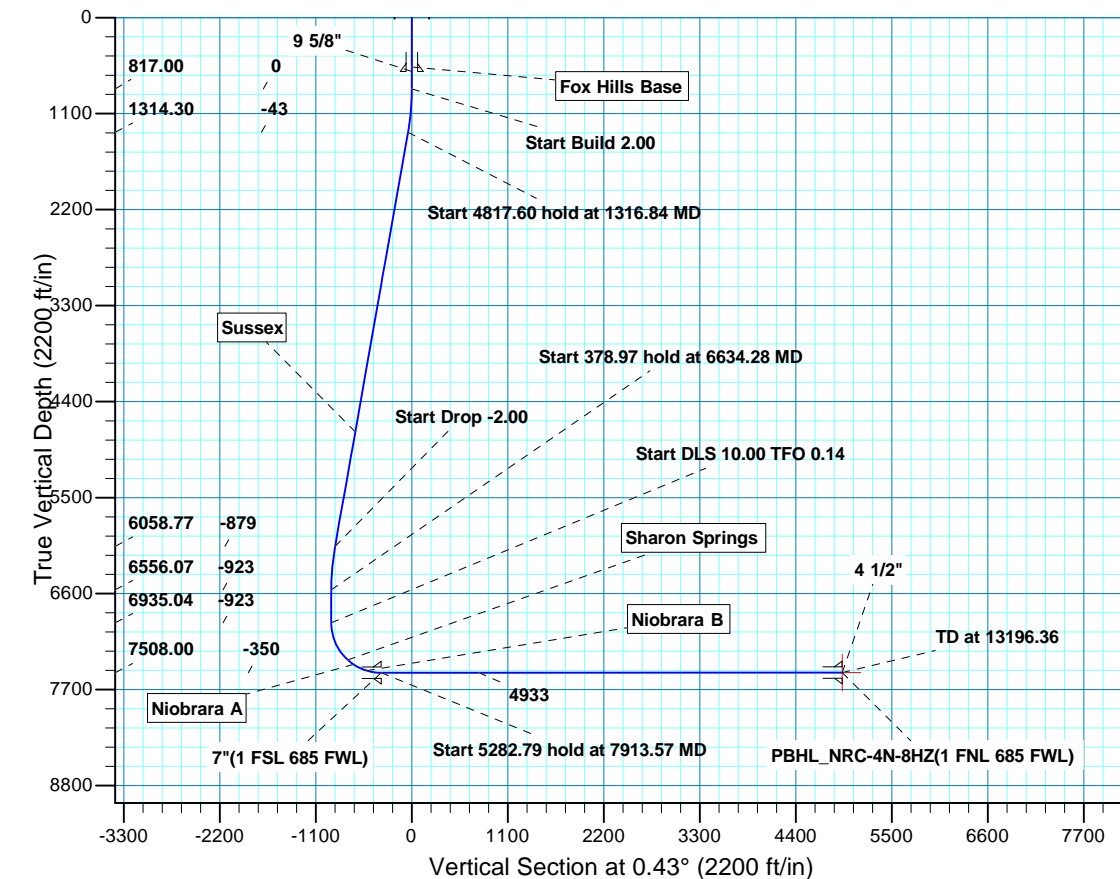


WELL DETAILS: NRC 4N-8HZ										
GL 5049 & KB 17 @ 5066.00ft (ASSUMED)										
+N/-S 0.00		+E/-W 0.00		Northing 1264991.29		Easting 3161901.77		Latitude 40.0593410		Longitude -104.9215890
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
817.00	0.00	0.00	817.00	0.00	0.00	0.00	0.00	0.00		
1316.84	10.00	178.57	1314.30	-43.48	1.08	2.00	178.57	-43.47		
6134.44	10.00	178.57	6058.77	-879.52	21.92	0.00	0.00	-879.33		
6634.28	0.00	0.00	6556.07	-923.00	23.00	2.00	180.00	-922.80		
7013.25	0.00	0.00	6935.04	-923.00	23.00	0.00	0.00	-922.80		
7913.57	90.03	0.14	7508.00	-349.72	24.39	10.00	0.14	-349.52		
13196.36	90.03	0.14	7505.00	4933.05	37.22	0.00	0.00	4933.19	PBHL_NRC-4N-8HZ(1 FNL 685 FWL)	
FORMATION TOP DETAILS							CASING DETAILS			
TVDPath	MDPath	Formation			DipDirInc		TVD	MD	Name	Size
567.00	567.00	Fox Hills Base					617.00	617.00	9 5/8"	9.625
4747.00	4802.45	Sussex			10.00		7508.00	7913.57	7"	7.000
7360.00	7492.01	Sharon Springs			47.88		7505.00	13196.36	4 1/2"	4.500
7411.00	7574.96	Niobrara A			56.17					
7483.00	7743.38	Niobrara B			73.01					





**Scientific Drilling**

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**NRC 13-8HZ PAD**

**NRC 4N-8HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**03 July, 2013**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Site:</b>	NRC 13-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	NRC 4N-8HZ	<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		

<b>Site</b>	NRC 13-8HZ PAD, SECTION 8 T1N R67W			
<b>Site Position:</b>		<b>Northing:</b>	1,264,991.47 usft	<b>Latitude:</b> 40.0593420
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,161,871.82 usft	<b>Longitude:</b> -104.9216960
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.37 °

<b>Well</b>	NRC 4N-8HZ, 350' FSL 660' FWL			
<b>Well Position</b>	<b>+N/-S</b>	-0.38 ft	<b>Northing:</b>	1,264,991.29 usft
	<b>+E/-W</b>	29.95 ft	<b>Easting:</b>	3,161,901.77 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 5,049.00 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	2013/07/03	8.67	66.67	52,650

<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	0.43

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
817.00	0.00	0.00	817.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,316.84	10.00	178.57	1,314.30	-43.48	1.08	2.00	2.00	0.00	178.57	
6,134.44	10.00	178.57	6,058.77	-879.52	21.92	0.00	0.00	0.00	0.00	
6,634.28	0.00	0.00	6,556.07	-923.00	23.00	2.00	-2.00	0.00	180.00	
7,013.25	0.00	0.00	6,935.04	-923.00	23.00	0.00	0.00	0.00	0.00	
7,913.57	90.03	0.14	7,508.00	-349.72	24.39	10.00	10.00	0.02	0.14	
13,196.36	90.03	0.14	7,505.00	4,933.05	37.22	0.00	0.00	0.00	0.00	PBHL_NRC-4N-8HZ(

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Site:</b>	NRC 13-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	NRC 4N-8HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
567.00	0.00	0.00	567.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
617.00	0.00	0.00	617.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</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
817.00	0.00	0.00	817.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
900.00	1.66	178.57	899.99	-1.20	0.03	-1.20	2.00	2.00	0.00
1,000.00	3.66	178.57	999.88	-5.84	0.15	-5.84	2.00	2.00	0.00
1,100.00	5.66	178.57	1,099.54	-13.96	0.35	-13.96	2.00	2.00	0.00
1,200.00	7.66	178.57	1,198.86	-25.56	0.64	-25.55	2.00	2.00	0.00
1,300.00	9.66	178.57	1,297.72	-40.61	1.01	-40.60	2.00	2.00	0.00
1,316.84	10.00	178.57	1,314.30	-43.48	1.08	-43.47	2.00	2.00	0.00
<b>Start 4817.60 hold at 1316.84 MD</b>									
1,400.00	10.00	178.57	1,396.21	-57.91	1.44	-57.90	0.00	0.00	0.00
1,500.00	10.00	178.57	1,494.69	-75.27	1.88	-75.25	0.00	0.00	0.00
1,600.00	10.00	178.57	1,593.17	-92.62	2.31	-92.60	0.00	0.00	0.00
1,700.00	10.00	178.57	1,691.65	-109.97	2.74	-109.95	0.00	0.00	0.00
1,800.00	10.00	178.57	1,790.13	-127.33	3.17	-127.30	0.00	0.00	0.00
1,900.00	10.00	178.57	1,888.61	-144.68	3.61	-144.65	0.00	0.00	0.00
2,000.00	10.00	178.57	1,987.10	-162.04	4.04	-162.00	0.00	0.00	0.00
2,100.00	10.00	178.57	2,085.58	-179.39	4.47	-179.35	0.00	0.00	0.00
2,200.00	10.00	178.57	2,184.06	-196.74	4.90	-196.70	0.00	0.00	0.00
2,300.00	10.00	178.57	2,282.54	-214.10	5.34	-214.05	0.00	0.00	0.00
2,400.00	10.00	178.57	2,381.02	-231.45	5.77	-231.40	0.00	0.00	0.00
2,500.00	10.00	178.57	2,479.50	-248.80	6.20	-248.75	0.00	0.00	0.00
2,600.00	10.00	178.57	2,577.99	-266.16	6.63	-266.10	0.00	0.00	0.00
2,700.00	10.00	178.57	2,676.47	-283.51	7.06	-283.45	0.00	0.00	0.00
2,800.00	10.00	178.57	2,774.95	-300.87	7.50	-300.80	0.00	0.00	0.00
2,900.00	10.00	178.57	2,873.43	-318.22	7.93	-318.15	0.00	0.00	0.00
3,000.00	10.00	178.57	2,971.91	-335.57	8.36	-335.50	0.00	0.00	0.00
3,100.00	10.00	178.57	3,070.40	-352.93	8.79	-352.85	0.00	0.00	0.00
3,200.00	10.00	178.57	3,168.88	-370.28	9.23	-370.20	0.00	0.00	0.00
3,300.00	10.00	178.57	3,267.36	-387.64	9.66	-387.55	0.00	0.00	0.00
3,400.00	10.00	178.57	3,365.84	-404.99	10.09	-404.90	0.00	0.00	0.00
3,500.00	10.00	178.57	3,464.32	-422.34	10.52	-422.25	0.00	0.00	0.00
3,600.00	10.00	178.57	3,562.80	-439.70	10.96	-439.60	0.00	0.00	0.00
3,700.00	10.00	178.57	3,661.29	-457.05	11.39	-456.95	0.00	0.00	0.00
3,800.00	10.00	178.57	3,759.77	-474.40	11.82	-474.30	0.00	0.00	0.00
3,900.00	10.00	178.57	3,858.25	-491.76	12.25	-491.65	0.00	0.00	0.00
4,000.00	10.00	178.57	3,956.73	-509.11	12.69	-509.00	0.00	0.00	0.00
4,100.00	10.00	178.57	4,055.21	-526.47	13.12	-526.35	0.00	0.00	0.00
4,200.00	10.00	178.57	4,153.69	-543.82	13.55	-543.70	0.00	0.00	0.00
4,300.00	10.00	178.57	4,252.18	-561.17	13.98	-561.05	0.00	0.00	0.00
4,400.00	10.00	178.57	4,350.66	-578.53	14.42	-578.40	0.00	0.00	0.00
4,500.00	10.00	178.57	4,449.14	-595.88	14.85	-595.75	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Site:</b>	NRC 13-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	NRC 4N-8HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	10.00	178.57	4,547.62	-613.24	15.28	-613.10	0.00	0.00	0.00
4,700.00	10.00	178.57	4,646.10	-630.59	15.71	-630.45	0.00	0.00	0.00
4,800.00	10.00	178.57	4,744.59	-647.94	16.15	-647.80	0.00	0.00	0.00
4,802.45	10.00	178.57	4,747.00	-648.37	16.16	-648.23	0.00	0.00	0.00
<b>Sussex</b>									
4,900.00	10.00	178.57	4,843.07	-665.30	16.58	-665.15	0.00	0.00	0.00
5,000.00	10.00	178.57	4,941.55	-682.65	17.01	-682.50	0.00	0.00	0.00
5,100.00	10.00	178.57	5,040.03	-700.00	17.44	-699.85	0.00	0.00	0.00
5,200.00	10.00	178.57	5,138.51	-717.36	17.88	-717.20	0.00	0.00	0.00
5,300.00	10.00	178.57	5,236.99	-734.71	18.31	-734.55	0.00	0.00	0.00
5,400.00	10.00	178.57	5,335.48	-752.07	18.74	-751.90	0.00	0.00	0.00
5,500.00	10.00	178.57	5,433.96	-769.42	19.17	-769.25	0.00	0.00	0.00
5,600.00	10.00	178.57	5,532.44	-786.77	19.61	-786.60	0.00	0.00	0.00
5,700.00	10.00	178.57	5,630.92	-804.13	20.04	-803.95	0.00	0.00	0.00
5,800.00	10.00	178.57	5,729.40	-821.48	20.47	-821.30	0.00	0.00	0.00
5,900.00	10.00	178.57	5,827.88	-838.83	20.90	-838.65	0.00	0.00	0.00
6,000.00	10.00	178.57	5,926.37	-856.19	21.34	-856.00	0.00	0.00	0.00
6,100.00	10.00	178.57	6,024.85	-873.54	21.77	-873.35	0.00	0.00	0.00
6,134.44	10.00	178.57	6,058.77	-879.52	21.92	-879.33	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,200.00	8.69	178.57	6,123.45	-890.16	22.18	-889.96	2.00	-2.00	0.00
6,300.00	6.69	178.57	6,222.55	-903.53	22.51	-903.33	2.00	-2.00	0.00
6,400.00	4.69	178.57	6,322.05	-913.43	22.76	-913.23	2.00	-2.00	0.00
6,500.00	2.69	178.57	6,421.84	-919.85	22.92	-919.66	2.00	-2.00	0.00
6,600.00	0.69	178.57	6,521.79	-922.80	22.99	-922.60	2.00	-2.00	0.00
6,634.28	0.00	0.00	6,556.07	-923.00	23.00	-922.80	2.00	-2.00	0.00
<b>Start 378.97 hold at 6634.28 MD</b>									
6,700.00	0.00	0.00	6,621.79	-923.00	23.00	-922.80	0.00	0.00	0.00
6,800.00	0.00	0.00	6,721.79	-923.00	23.00	-922.80	0.00	0.00	0.00
6,900.00	0.00	0.00	6,821.79	-923.00	23.00	-922.80	0.00	0.00	0.00
7,000.00	0.00	0.00	6,921.79	-923.00	23.00	-922.80	0.00	0.00	0.00
7,013.25	0.00	0.00	6,935.04	-923.00	23.00	-922.80	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 0.14</b>									
7,100.00	8.68	0.14	7,021.46	-916.44	23.02	-916.25	10.00	10.00	0.00
7,200.00	18.68	0.14	7,118.50	-892.83	23.07	-892.63	10.00	10.00	0.00
7,300.00	28.68	0.14	7,209.97	-852.73	23.17	-852.53	10.00	10.00	0.00
7,400.00	38.68	0.14	7,293.09	-797.35	23.31	-797.15	10.00	10.00	0.00
7,492.01	47.88	0.14	7,360.00	-734.35	23.46	-734.15	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,500.00	48.68	0.14	7,365.32	-728.38	23.47	-728.18	10.00	10.00	0.00
7,574.96	56.17	0.14	7,411.00	-669.01	23.62	-668.82	10.00	10.00	0.00
<b>Niobrara A</b>									
7,600.00	58.68	0.14	7,424.48	-647.92	23.67	-647.72	10.00	10.00	0.00
7,700.00	68.68	0.14	7,468.77	-558.40	23.89	-558.20	10.00	10.00	0.00
7,743.38	73.01	0.14	7,483.00	-517.44	23.98	-517.24	10.00	10.00	0.00
<b>Niobrara B</b>									
7,800.00	78.68	0.14	7,496.84	-462.55	24.12	-462.36	10.00	10.00	0.00
7,900.00	88.68	0.14	7,507.84	-363.29	24.36	-363.10	10.00	10.00	0.00
7,913.57	90.03	0.14	7,508.00	-349.72	24.39	-349.53	10.00	10.00	0.00
<b>Start 5282.79 hold at 7913.57 MD - 7"(1 FSL 685 FWL)</b>									
8,000.00	90.03	0.14	7,507.95	-263.29	24.60	-263.10	0.00	0.00	0.00
8,100.00	90.03	0.14	7,507.89	-163.29	24.84	-163.10	0.00	0.00	0.00
8,200.00	90.03	0.14	7,507.84	-63.29	25.09	-63.10	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Site:</b>	NRC 13-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	NRC 4N-8HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.00	90.03	0.14	7,507.78	36.71	25.33	36.90	0.00	0.00	0.00
8,400.00	90.03	0.14	7,507.72	136.71	25.57	136.90	0.00	0.00	0.00
8,500.00	90.03	0.14	7,507.67	236.71	25.82	236.90	0.00	0.00	0.00
8,600.00	90.03	0.14	7,507.61	336.71	26.06	336.89	0.00	0.00	0.00
8,700.00	90.03	0.14	7,507.55	436.71	26.30	436.89	0.00	0.00	0.00
8,800.00	90.03	0.14	7,507.49	536.71	26.54	536.89	0.00	0.00	0.00
8,900.00	90.03	0.14	7,507.44	636.71	26.79	636.89	0.00	0.00	0.00
9,000.00	90.03	0.14	7,507.38	736.71	27.03	736.89	0.00	0.00	0.00
9,100.00	90.03	0.14	7,507.32	836.71	27.27	836.89	0.00	0.00	0.00
9,200.00	90.03	0.14	7,507.27	936.71	27.52	936.89	0.00	0.00	0.00
9,300.00	90.03	0.14	7,507.21	1,036.70	27.76	1,036.88	0.00	0.00	0.00
9,400.00	90.03	0.14	7,507.15	1,136.70	28.00	1,136.88	0.00	0.00	0.00
9,500.00	90.03	0.14	7,507.10	1,236.70	28.24	1,236.88	0.00	0.00	0.00
9,600.00	90.03	0.14	7,507.04	1,336.70	28.49	1,336.88	0.00	0.00	0.00
9,700.00	90.03	0.14	7,506.98	1,436.70	28.73	1,436.88	0.00	0.00	0.00
9,800.00	90.03	0.14	7,506.93	1,536.70	28.97	1,536.88	0.00	0.00	0.00
9,900.00	90.03	0.14	7,506.87	1,636.70	29.22	1,636.88	0.00	0.00	0.00
10,000.00	90.03	0.14	7,506.81	1,736.70	29.46	1,736.88	0.00	0.00	0.00
10,100.00	90.03	0.14	7,506.76	1,836.70	29.70	1,836.87	0.00	0.00	0.00
10,200.00	90.03	0.14	7,506.70	1,936.70	29.94	1,936.87	0.00	0.00	0.00
10,300.00	90.03	0.14	7,506.64	2,036.70	30.19	2,036.87	0.00	0.00	0.00
10,400.00	90.03	0.14	7,506.59	2,136.70	30.43	2,136.87	0.00	0.00	0.00
10,500.00	90.03	0.14	7,506.53	2,236.70	30.67	2,236.87	0.00	0.00	0.00
10,600.00	90.03	0.14	7,506.47	2,336.70	30.92	2,336.87	0.00	0.00	0.00
10,700.00	90.03	0.14	7,506.42	2,436.70	31.16	2,436.87	0.00	0.00	0.00
10,800.00	90.03	0.14	7,506.36	2,536.70	31.40	2,536.86	0.00	0.00	0.00
10,900.00	90.03	0.14	7,506.30	2,636.70	31.64	2,636.86	0.00	0.00	0.00
11,000.00	90.03	0.14	7,506.25	2,736.70	31.89	2,736.86	0.00	0.00	0.00
11,100.00	90.03	0.14	7,506.19	2,836.70	32.13	2,836.86	0.00	0.00	0.00
11,200.00	90.03	0.14	7,506.13	2,936.70	32.37	2,936.86	0.00	0.00	0.00
11,300.00	90.03	0.14	7,506.08	3,036.70	32.62	3,036.86	0.00	0.00	0.00
11,400.00	90.03	0.14	7,506.02	3,136.70	32.86	3,136.86	0.00	0.00	0.00
11,500.00	90.03	0.14	7,505.96	3,236.70	33.10	3,236.86	0.00	0.00	0.00
11,600.00	90.03	0.14	7,505.91	3,336.70	33.34	3,336.85	0.00	0.00	0.00
11,700.00	90.03	0.14	7,505.85	3,436.70	33.59	3,436.85	0.00	0.00	0.00
11,800.00	90.03	0.14	7,505.79	3,536.70	33.83	3,536.85	0.00	0.00	0.00
11,900.00	90.03	0.14	7,505.74	3,636.70	34.07	3,636.85	0.00	0.00	0.00
12,000.00	90.03	0.14	7,505.68	3,736.70	34.32	3,736.85	0.00	0.00	0.00
12,100.00	90.03	0.14	7,505.62	3,836.70	34.56	3,836.85	0.00	0.00	0.00
12,200.00	90.03	0.14	7,505.57	3,936.70	34.80	3,936.85	0.00	0.00	0.00
12,300.00	90.03	0.14	7,505.51	4,036.70	35.04	4,036.85	0.00	0.00	0.00
12,400.00	90.03	0.14	7,505.45	4,136.70	35.29	4,136.84	0.00	0.00	0.00
12,500.00	90.03	0.14	7,505.40	4,236.70	35.53	4,236.84	0.00	0.00	0.00
12,600.00	90.03	0.14	7,505.34	4,336.69	35.77	4,336.84	0.00	0.00	0.00
12,700.00	90.03	0.14	7,505.28	4,436.69	36.02	4,436.84	0.00	0.00	0.00
12,800.00	90.03	0.14	7,505.23	4,536.69	36.26	4,536.84	0.00	0.00	0.00
12,900.00	90.03	0.14	7,505.17	4,636.69	36.50	4,636.84	0.00	0.00	0.00
13,000.00	90.03	0.14	7,505.11	4,736.69	36.74	4,736.84	0.00	0.00	0.00
13,100.00	90.03	0.14	7,505.05	4,836.69	36.99	4,836.83	0.00	0.00	0.00
13,196.36	90.03	0.14	7,505.00	4,933.05	37.22	4,933.19	0.00	0.00	0.00
TD at 13196.36 - 4 1/2" - PBHL_NRC-4N-8HZ(1 FNL 685 FWL)									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NRC 4N-8HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
<b>Site:</b>	NRC 13-8HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	NRC 4N-8HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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_NRC-4N-8HZ(1 F	0.00	0.00	7,505.00	4,933.05	37.22	1,269,924.47	3,161,906.81	40.0728830	-104.9214560
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
617.00	617.00	9 5/8"		9.625	12.250
7,913.57	7,508.00	7"(1 FSL 685 FWL)		7.000	7.500
13,196.36	7,505.00	4 1/2"		4.500	6.125

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
567.00	567.00	Fox Hills Base			
4,802.45	4,747.00	Sussex			
7,492.01	7,360.00	Sharon Springs			
7,574.96	7,411.00	Niobrara A			
7,743.38	7,483.00	Niobrara B			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
817.00	817.00	0.00	0.00	Start Build 2.00	
1,316.84	1,314.30	-43.48	1.08	Start 4817.60 hold at 1316.84 MD	
6,134.44	6,058.77	-879.52	21.92	Start Drop -2.00	
6,634.28	6,556.07	-923.00	23.00	Start 378.97 hold at 6634.28 MD	
7,013.25	6,935.04	-923.00	23.00	Start DLS 10.00 TFO 0.14	
7,913.57	7,508.00	-349.72	24.39	Start 5282.79 hold at 7913.57 MD	
13,196.36	7,505.00	4,933.05	37.22	TD at 13196.36	