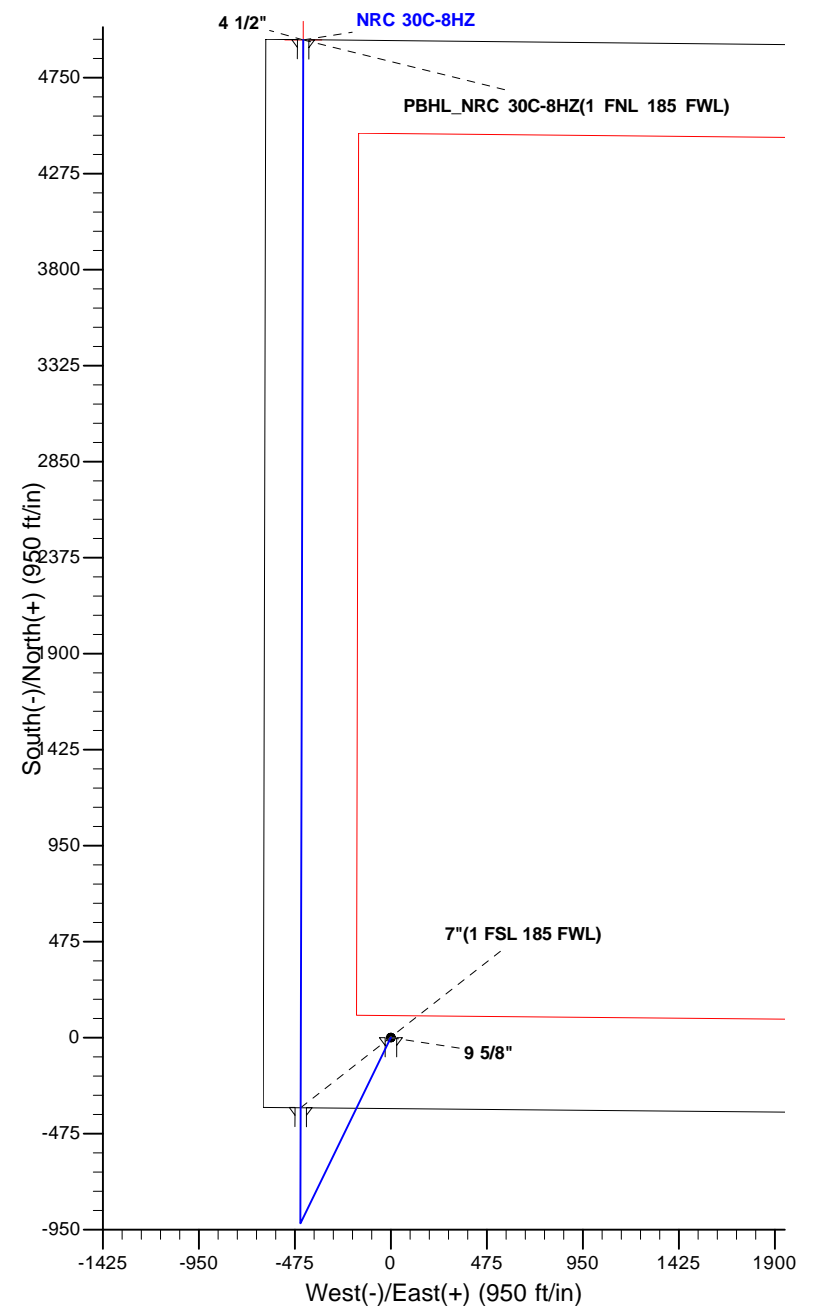
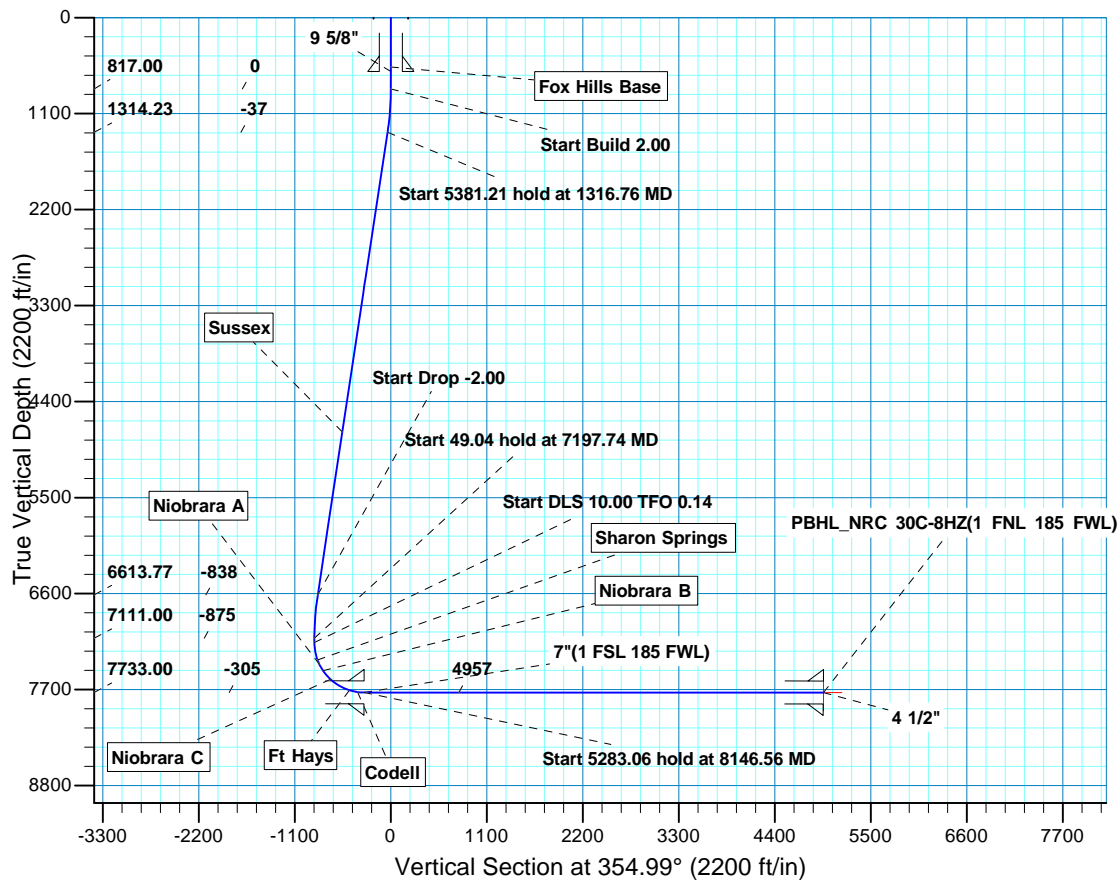




Project: COLORADO NORTHERN ZONE - 83
 Site: NRC 13-8HZ PAD
 Well: NRC 30C-8HZ
 Wellbore: OH
 Design: PLAN #1 PRELIMINARY



WELL DETAILS: NRC 30C-8HZ									
GL 5049 & KB 17 @ 5066.00ft (ASSUMED)									
	+N-/S	+E-/W	Northing	Easting	Latitude	Longitude			
	0.00	0.00	1264991.47	3161871.82	40.0593420	-104.9216960			
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	
1316.76	10.00	205.95	1314.23	-39.10	-19.03	2.00	205.95	-37.28	
6697.97	10.00	205.95	6613.77	-878.90	-427.78	0.00	0.00	-838.18	
7197.74	0.00	0.00	7111.00	-918.00	-446.81	2.00	180.00	-875.47	
7246.78	0.00	0.00	7160.04	-918.00	-446.81	0.00	0.00	-875.47	
8146.56	89.98	0.14	7733.00	-345.26	-445.45	10.00	0.14	-305.03	
13429.62	89.98	0.14	7735.00	4937.78	-432.94	0.00	0.00	4956.72	PBHL_NRC 30C-8HZ(1 FNL 185 FWL)
FORMATION TOP DETAILS					CASING DETAILS				
TVDPath	MDPath	Formation	DipDirInc	TVD	MD	Name	Size		
567.00	567.00	Fox Hills Base	0.00	617.00	617.00	9 5/8"	9.625		
4747.00	4802.44	Sussex	10.00	7733.00	8146.56	7"	7.000		
7360.00	7451.04	Sharon Springs	20.43	7735.00	13429.62	4 1/2"	4.500		
7411.00	7506.55	Niobrara A	25.98						
7483.00	7589.88	Niobrara B	34.31						
7583.00	7722.56	Niobrara C	47.58						
7707.00	7973.52	Ft Hays	72.67						
7728.00	8071.05	Codell	82.43						





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

NRC 13-8HZ PAD

NRC 30C-8HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

03 July, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

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

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

Well	NRC 30C-8HZ, 350 FSL 630 FWL					
Well Position	+N/-S	0.00 ft	Northing:	1,264,991.47 usft	Latitude:	40.0593420
	+E/-W	0.00 ft	Easting:	3,161,871.82 usft	Longitude:	-104.9216960
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,049.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2013/07/03	8.67	66.67	52,650

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	354.99

Plan Sections										
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	
1,316.76	10.00	205.95	1,314.23	-39.10	-19.03	2.00	2.00	0.00	205.95	
6,697.97	10.00	205.95	6,613.77	-878.90	-427.78	0.00	0.00	0.00	0.00	
7,197.74	0.00	0.00	7,111.00	-918.00	-446.81	2.00	-2.00	0.00	180.00	
7,246.78	0.00	0.00	7,160.04	-918.00	-446.81	0.00	0.00	0.00	0.00	
8,146.56	89.98	0.14	7,733.00	-345.26	-445.45	10.00	10.00	0.02	0.14	
13,429.62	89.98	0.14	7,735.00	4,937.78	-432.94	0.00	0.00	0.00	0.00	PBHL_NRC 30C-8HZ

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	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 (°/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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
Fox Hills Base										
600.00	0.00	0.00	600.00	0.00	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	0.00
9 5/8"										
700.00	0.00	0.00	700.00	0.00	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	0.00
817.00	0.00	0.00	817.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
900.00	1.66	205.95	899.99	-1.08	-0.53	-1.03	2.00	2.00	0.00	0.00
1,000.00	3.66	205.95	999.88	-5.25	-2.56	-5.01	2.00	2.00	0.00	0.00
1,100.00	5.66	205.95	1,099.54	-12.56	-6.11	-11.98	2.00	2.00	0.00	0.00
1,200.00	7.66	205.95	1,198.86	-22.99	-11.19	-21.92	2.00	2.00	0.00	0.00
1,300.00	9.66	205.95	1,297.72	-36.52	-17.78	-34.83	2.00	2.00	0.00	0.00
1,316.76	10.00	205.95	1,314.23	-39.10	-19.03	-37.28	2.00	2.00	0.00	0.00
Start 5381.21 hold at 1316.76 MD										
1,400.00	10.00	205.95	1,396.21	-52.09	-25.35	-49.67	0.00	0.00	0.00	0.00
1,500.00	10.00	205.95	1,494.69	-67.69	-32.95	-64.56	0.00	0.00	0.00	0.00
1,600.00	10.00	205.95	1,593.17	-83.30	-40.54	-79.44	0.00	0.00	0.00	0.00
1,700.00	10.00	205.95	1,691.65	-98.91	-48.14	-94.32	0.00	0.00	0.00	0.00
1,800.00	10.00	205.95	1,790.13	-114.51	-55.74	-109.21	0.00	0.00	0.00	0.00
1,900.00	10.00	205.95	1,888.62	-130.12	-63.33	-124.09	0.00	0.00	0.00	0.00
2,000.00	10.00	205.95	1,987.10	-145.72	-70.93	-138.97	0.00	0.00	0.00	0.00
2,100.00	10.00	205.95	2,085.58	-161.33	-78.52	-153.86	0.00	0.00	0.00	0.00
2,200.00	10.00	205.95	2,184.06	-176.94	-86.12	-168.74	0.00	0.00	0.00	0.00
2,300.00	10.00	205.95	2,282.55	-192.54	-93.71	-183.62	0.00	0.00	0.00	0.00
2,400.00	10.00	205.95	2,381.03	-208.15	-101.31	-198.51	0.00	0.00	0.00	0.00
2,500.00	10.00	205.95	2,479.51	-223.76	-108.91	-213.39	0.00	0.00	0.00	0.00
2,600.00	10.00	205.95	2,577.99	-239.36	-116.50	-228.27	0.00	0.00	0.00	0.00
2,700.00	10.00	205.95	2,676.47	-254.97	-124.10	-243.15	0.00	0.00	0.00	0.00
2,800.00	10.00	205.95	2,774.96	-270.57	-131.69	-258.04	0.00	0.00	0.00	0.00
2,900.00	10.00	205.95	2,873.44	-286.18	-139.29	-272.92	0.00	0.00	0.00	0.00
3,000.00	10.00	205.95	2,971.92	-301.79	-146.89	-287.80	0.00	0.00	0.00	0.00
3,100.00	10.00	205.95	3,070.40	-317.39	-154.48	-302.69	0.00	0.00	0.00	0.00
3,200.00	10.00	205.95	3,168.89	-333.00	-162.08	-317.57	0.00	0.00	0.00	0.00
3,300.00	10.00	205.95	3,267.37	-348.61	-169.67	-332.45	0.00	0.00	0.00	0.00
3,400.00	10.00	205.95	3,365.85	-364.21	-177.27	-347.34	0.00	0.00	0.00	0.00
3,500.00	10.00	205.95	3,464.33	-379.82	-184.87	-362.22	0.00	0.00	0.00	0.00
3,600.00	10.00	205.95	3,562.81	-395.42	-192.46	-377.10	0.00	0.00	0.00	0.00
3,700.00	10.00	205.95	3,661.30	-411.03	-200.06	-391.99	0.00	0.00	0.00	0.00
3,800.00	10.00	205.95	3,759.78	-426.64	-207.65	-406.87	0.00	0.00	0.00	0.00
3,900.00	10.00	205.95	3,858.26	-442.24	-215.25	-421.75	0.00	0.00	0.00	0.00
4,000.00	10.00	205.95	3,956.74	-457.85	-222.85	-436.64	0.00	0.00	0.00	0.00
4,100.00	10.00	205.95	4,055.23	-473.46	-230.44	-451.52	0.00	0.00	0.00	0.00
4,200.00	10.00	205.95	4,153.71	-489.06	-238.04	-466.40	0.00	0.00	0.00	0.00
4,300.00	10.00	205.95	4,252.19	-504.67	-245.63	-481.29	0.00	0.00	0.00	0.00
4,400.00	10.00	205.95	4,350.67	-520.28	-253.23	-496.17	0.00	0.00	0.00	0.00
4,500.00	10.00	205.95	4,449.15	-535.88	-260.82	-511.05	0.00	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	10.00	205.95	4,547.64	-551.49	-268.42	-525.94	0.00	0.00	0.00
4,700.00	10.00	205.95	4,646.12	-567.09	-276.02	-540.82	0.00	0.00	0.00
4,800.00	10.00	205.95	4,744.60	-582.70	-283.61	-555.70	0.00	0.00	0.00
4,802.44	10.00	205.95	4,747.00	-583.08	-283.80	-556.06	0.00	0.00	0.00
Sussex									
4,900.00	10.00	205.95	4,843.08	-598.31	-291.21	-570.59	0.00	0.00	0.00
5,000.00	10.00	205.95	4,941.57	-613.91	-298.80	-585.47	0.00	0.00	0.00
5,100.00	10.00	205.95	5,040.05	-629.52	-306.40	-600.35	0.00	0.00	0.00
5,200.00	10.00	205.95	5,138.53	-645.13	-314.00	-615.23	0.00	0.00	0.00
5,300.00	10.00	205.95	5,237.01	-660.73	-321.59	-630.12	0.00	0.00	0.00
5,400.00	10.00	205.95	5,335.49	-676.34	-329.19	-645.00	0.00	0.00	0.00
5,500.00	10.00	205.95	5,433.98	-691.94	-336.78	-659.88	0.00	0.00	0.00
5,600.00	10.00	205.95	5,532.46	-707.55	-344.38	-674.77	0.00	0.00	0.00
5,700.00	10.00	205.95	5,630.94	-723.16	-351.98	-689.65	0.00	0.00	0.00
5,800.00	10.00	205.95	5,729.42	-738.76	-359.57	-704.53	0.00	0.00	0.00
5,900.00	10.00	205.95	5,827.91	-754.37	-367.17	-719.42	0.00	0.00	0.00
6,000.00	10.00	205.95	5,926.39	-769.98	-374.76	-734.30	0.00	0.00	0.00
6,100.00	10.00	205.95	6,024.87	-785.58	-382.36	-749.18	0.00	0.00	0.00
6,200.00	10.00	205.95	6,123.35	-801.19	-389.96	-764.07	0.00	0.00	0.00
6,300.00	10.00	205.95	6,221.83	-816.79	-397.55	-778.95	0.00	0.00	0.00
6,400.00	10.00	205.95	6,320.32	-832.40	-405.15	-793.83	0.00	0.00	0.00
6,500.00	10.00	205.95	6,418.80	-848.01	-412.74	-808.72	0.00	0.00	0.00
6,600.00	10.00	205.95	6,517.28	-863.61	-420.34	-823.60	0.00	0.00	0.00
6,697.97	10.00	205.95	6,613.77	-878.90	-427.78	-838.18	0.00	0.00	0.00
Start Drop -2.00									
6,700.00	9.95	205.95	6,615.76	-879.22	-427.93	-838.48	2.00	-2.00	0.00
6,800.00	7.95	205.95	6,714.54	-893.21	-434.75	-851.83	2.00	-2.00	0.00
6,900.00	5.95	205.95	6,813.80	-904.10	-440.05	-862.21	2.00	-2.00	0.00
7,000.00	3.95	205.95	6,913.42	-911.87	-443.82	-869.62	2.00	-2.00	0.00
7,100.00	1.95	205.95	7,013.28	-916.50	-446.08	-874.04	2.00	-2.00	0.00
7,197.74	0.00	0.00	7,111.00	-918.00	-446.81	-875.47	2.00	-2.00	0.00
Start 49.04 hold at 7197.74 MD									
7,200.00	0.00	0.00	7,113.26	-918.00	-446.81	-875.47	0.00	0.00	0.00
7,246.78	0.00	0.00	7,160.04	-918.00	-446.81	-875.47	0.00	0.00	0.00
Start DLS 10.00 TFO 0.14									
7,300.00	5.32	0.14	7,213.19	-915.53	-446.80	-873.01	10.00	10.00	0.00
7,400.00	15.32	0.14	7,311.44	-897.63	-446.76	-855.18	10.00	10.00	0.00
7,451.04	20.43	0.14	7,360.00	-881.97	-446.72	-839.59	10.00	10.00	0.00
Sharon Springs									
7,500.00	25.32	0.14	7,405.10	-862.95	-446.68	-820.64	10.00	10.00	0.00
7,506.55	25.98	0.14	7,411.00	-860.11	-446.67	-817.81	10.00	10.00	0.00
Niobrara A									
7,589.88	34.31	0.14	7,483.00	-818.31	-446.57	-776.17	10.00	10.00	0.00
Niobrara B									
7,600.00	35.32	0.14	7,491.31	-812.53	-446.56	-770.42	10.00	10.00	0.00
7,700.00	45.32	0.14	7,567.45	-747.90	-446.41	-706.05	10.00	10.00	0.00
7,722.56	47.58	0.14	7,583.00	-731.55	-446.37	-689.76	10.00	10.00	0.00
Niobrara C									
7,800.00	55.32	0.14	7,631.22	-671.03	-446.22	-629.49	10.00	10.00	0.00
7,900.00	65.32	0.14	7,680.67	-584.26	-446.02	-543.07	10.00	10.00	0.00
7,973.52	72.67	0.14	7,707.00	-515.68	-445.86	-474.76	10.00	10.00	0.00
Ft Hays									
8,000.00	75.32	0.14	7,714.30	-490.22	-445.80	-449.41	10.00	10.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,071.05	82.43	0.14	7,728.00	-420.56	-445.63	-380.03	10.00	10.00	0.00
Codell									
8,100.00	85.32	0.14	7,731.09	-391.77	-445.56	-351.36	10.00	10.00	0.00
8,146.56	89.98	0.14	7,733.00	-345.26	-445.45	-305.03	10.00	10.00	0.00
Start 5283.06 hold at 8146.56 MD - 7"(1 FSL 185 FWL)									
8,200.00	89.98	0.14	7,733.02	-291.82	-445.33	-251.81	0.00	0.00	0.00
8,300.00	89.98	0.14	7,733.06	-191.82	-445.09	-152.21	0.00	0.00	0.00
8,400.00	89.98	0.14	7,733.09	-91.82	-444.85	-52.62	0.00	0.00	0.00
8,500.00	89.98	0.14	7,733.13	8.18	-444.62	46.98	0.00	0.00	0.00
8,600.00	89.98	0.14	7,733.17	108.18	-444.38	146.58	0.00	0.00	0.00
8,700.00	89.98	0.14	7,733.21	208.18	-444.14	246.17	0.00	0.00	0.00
8,800.00	89.98	0.14	7,733.25	308.18	-443.90	345.77	0.00	0.00	0.00
8,900.00	89.98	0.14	7,733.28	408.18	-443.67	445.37	0.00	0.00	0.00
9,000.00	89.98	0.14	7,733.32	508.18	-443.43	544.96	0.00	0.00	0.00
9,100.00	89.98	0.14	7,733.36	608.18	-443.19	644.56	0.00	0.00	0.00
9,200.00	89.98	0.14	7,733.40	708.18	-442.96	744.16	0.00	0.00	0.00
9,300.00	89.98	0.14	7,733.44	808.18	-442.72	843.76	0.00	0.00	0.00
9,400.00	89.98	0.14	7,733.47	908.18	-442.48	943.35	0.00	0.00	0.00
9,500.00	89.98	0.14	7,733.51	1,008.17	-442.25	1,042.95	0.00	0.00	0.00
9,600.00	89.98	0.14	7,733.55	1,108.17	-442.01	1,142.55	0.00	0.00	0.00
9,700.00	89.98	0.14	7,733.59	1,208.17	-441.77	1,242.14	0.00	0.00	0.00
9,800.00	89.98	0.14	7,733.62	1,308.17	-441.54	1,341.74	0.00	0.00	0.00
9,900.00	89.98	0.14	7,733.66	1,408.17	-441.30	1,441.34	0.00	0.00	0.00
10,000.00	89.98	0.14	7,733.70	1,508.17	-441.06	1,540.93	0.00	0.00	0.00
10,100.00	89.98	0.14	7,733.74	1,608.17	-440.82	1,640.53	0.00	0.00	0.00
10,200.00	89.98	0.14	7,733.78	1,708.17	-440.59	1,740.13	0.00	0.00	0.00
10,300.00	89.98	0.14	7,733.81	1,808.17	-440.35	1,839.72	0.00	0.00	0.00
10,400.00	89.98	0.14	7,733.85	1,908.17	-440.11	1,939.32	0.00	0.00	0.00
10,500.00	89.98	0.14	7,733.89	2,008.17	-439.88	2,038.92	0.00	0.00	0.00
10,600.00	89.98	0.14	7,733.93	2,108.17	-439.64	2,138.51	0.00	0.00	0.00
10,700.00	89.98	0.14	7,733.97	2,208.17	-439.40	2,238.11	0.00	0.00	0.00
10,800.00	89.98	0.14	7,734.00	2,308.17	-439.17	2,337.71	0.00	0.00	0.00
10,900.00	89.98	0.14	7,734.04	2,408.17	-438.93	2,437.30	0.00	0.00	0.00
11,000.00	89.98	0.14	7,734.08	2,508.17	-438.69	2,536.90	0.00	0.00	0.00
11,100.00	89.98	0.14	7,734.12	2,608.17	-438.46	2,636.50	0.00	0.00	0.00
11,200.00	89.98	0.14	7,734.16	2,708.17	-438.22	2,736.10	0.00	0.00	0.00
11,300.00	89.98	0.14	7,734.19	2,808.17	-437.98	2,835.69	0.00	0.00	0.00
11,400.00	89.98	0.14	7,734.23	2,908.17	-437.74	2,935.29	0.00	0.00	0.00
11,500.00	89.98	0.14	7,734.27	3,008.17	-437.51	3,034.89	0.00	0.00	0.00
11,600.00	89.98	0.14	7,734.31	3,108.17	-437.27	3,134.48	0.00	0.00	0.00
11,700.00	89.98	0.14	7,734.34	3,208.17	-437.03	3,234.08	0.00	0.00	0.00
11,800.00	89.98	0.14	7,734.38	3,308.17	-436.80	3,333.68	0.00	0.00	0.00
11,900.00	89.98	0.14	7,734.42	3,408.17	-436.56	3,433.27	0.00	0.00	0.00
12,000.00	89.98	0.14	7,734.46	3,508.17	-436.32	3,532.87	0.00	0.00	0.00
12,100.00	89.98	0.14	7,734.50	3,608.17	-436.09	3,632.47	0.00	0.00	0.00
12,200.00	89.98	0.14	7,734.53	3,708.17	-435.85	3,732.06	0.00	0.00	0.00
12,300.00	89.98	0.14	7,734.57	3,808.17	-435.61	3,831.66	0.00	0.00	0.00
12,400.00	89.98	0.14	7,734.61	3,908.17	-435.37	3,931.26	0.00	0.00	0.00
12,500.00	89.98	0.14	7,734.65	4,008.17	-435.14	4,030.85	0.00	0.00	0.00
12,600.00	89.98	0.14	7,734.69	4,108.17	-434.90	4,130.45	0.00	0.00	0.00
12,700.00	89.98	0.14	7,734.72	4,208.17	-434.66	4,230.05	0.00	0.00	0.00
12,800.00	89.98	0.14	7,734.76	4,308.17	-434.43	4,329.65	0.00	0.00	0.00
12,900.00	89.98	0.14	7,734.80	4,408.17	-434.19	4,429.24	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
13,000.00	89.98	0.14	7,734.84	4,508.16	-433.95	4,528.84	0.00	0.00	0.00	
13,100.00	89.98	0.14	7,734.88	4,608.16	-433.72	4,628.44	0.00	0.00	0.00	
13,200.00	89.98	0.14	7,734.91	4,708.16	-433.48	4,728.03	0.00	0.00	0.00	
13,300.00	89.98	0.14	7,734.95	4,808.16	-433.24	4,827.63	0.00	0.00	0.00	
13,400.00	89.98	0.14	7,734.99	4,908.16	-433.01	4,927.23	0.00	0.00	0.00	
13,429.62	89.98	0.14	7,735.00	4,937.78	-432.94	4,956.72	0.00	0.00	0.00	
TD at 13429.62 - PBHL_NRC 30C-8HZ(1 FNL 185 FWL)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_NRC 30C-8HZ(1 - hit/miss target - Shape - Point	0.00	0.00	7,735.00	4,937.78	-432.94	1,269,926.31	3,161,406.69	40.0728970	-104.9232430	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
617.00	617.00	9 5/8"	9.625	12.250		
8,146.56	7,733.00	7"(1 FSL 185 FWL)	7.000	7.500		
13,429.62	7,735.00	4 1/2"	4.500	6.125		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
567.00	567.00	Fox Hills Base		0.00		
4,802.44	4,747.00	Sussex				
7,451.04	7,360.00	Sharon Springs				
7,506.55	7,411.00	Niobrara A				
7,589.88	7,483.00	Niobrara B				
7,722.56	7,583.00	Niobrara C				
7,973.52	7,707.00	Ft Hays				
8,071.05	7,728.00	Codell				

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well NRC 30C-8HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5049 & KB 17 @ 5066.00ft (ASSUMED)
Site:	NRC 13-8HZ PAD	North Reference:	True
Well:	NRC 30C-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
817.00	817.00	0.00	0.00	Start Build 2.00	
1,316.76	1,314.23	-39.10	-19.03	Start 5381.21 hold at 1316.76 MD	
6,697.97	6,613.77	-878.90	-427.78	Start Drop -2.00	
7,197.74	7,111.00	-918.00	-446.81	Start 49.04 hold at 7197.74 MD	
7,246.78	7,160.04	-918.00	-446.81	Start DLS 10.00 TFO 0.14	
8,146.56	7,733.00	-345.26	-445.45	Start 5283.06 hold at 8146.56 MD	
13,429.62	7,735.00	4,937.78	-432.94	TD at 13429.62	