

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_BARCLAY 15-27 PAD

BARCLAY 28C-27HZ

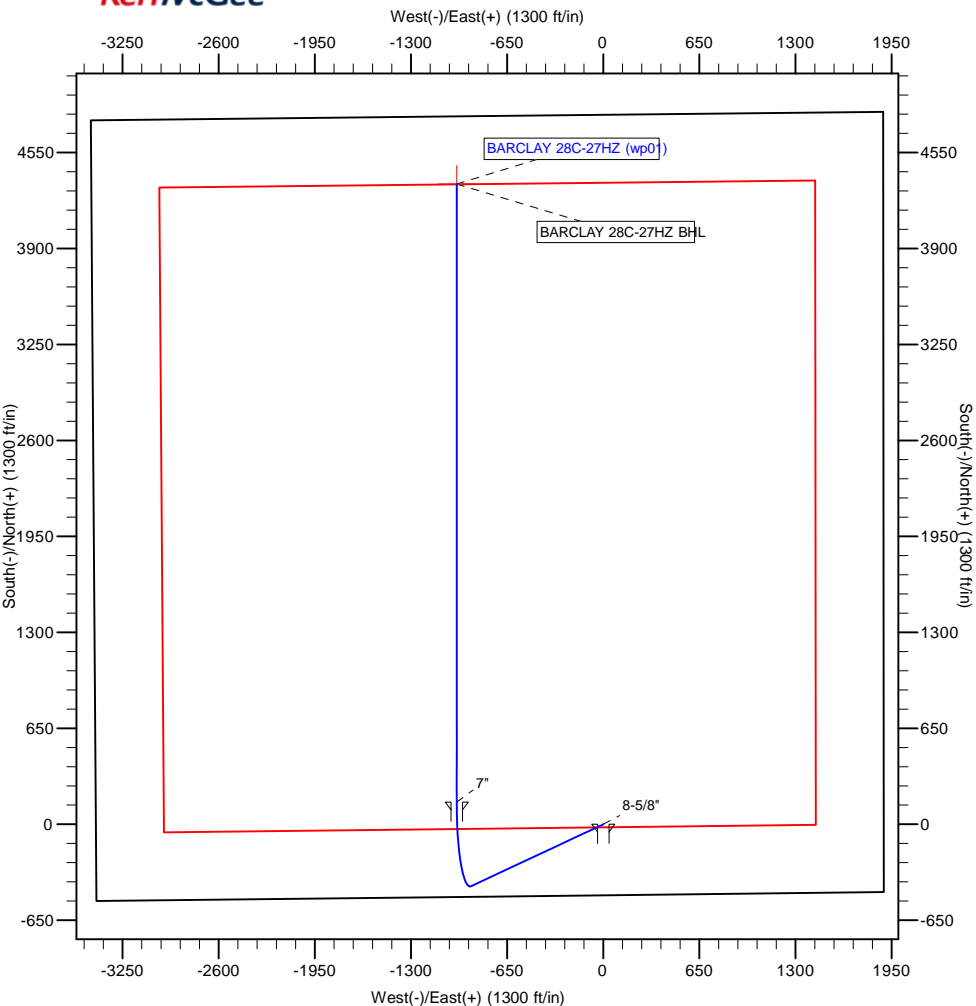
BARCLAY 28C-27HZ

Plan: BARCLAY 28C-27HZ (wp01)

Standard Planning Report

26 July, 2011





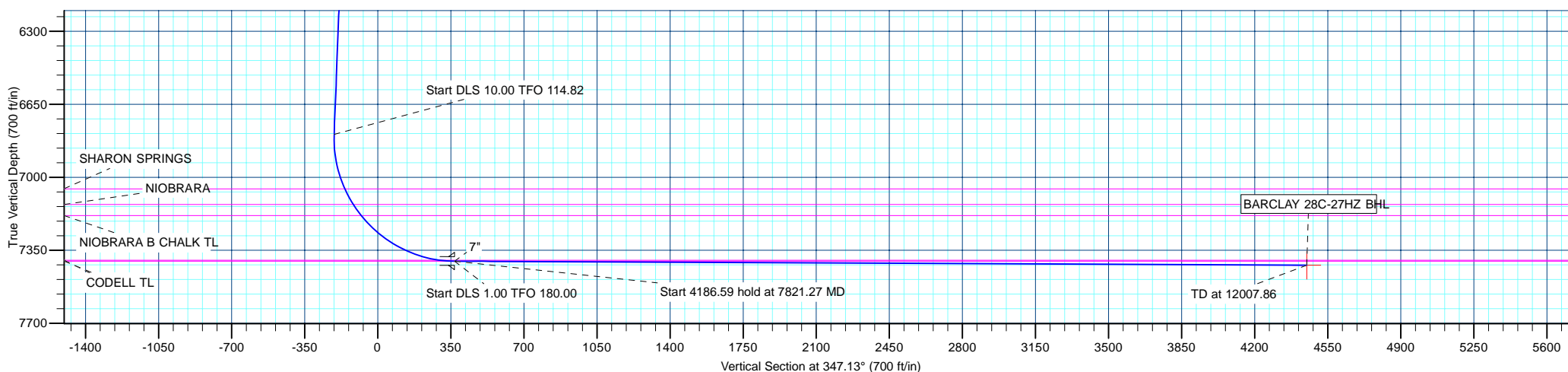
WELL DETAILS: BARCLAY 28C-27HZ						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	1312996.28	3206570.73	4956.00	40.190207	-104.760581

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BARCLAY 28C-27HZ BHL	7421.00	4337.55	-991.04	40.202114	-104.764129	Point

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	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
1504.89	10.10	244.88	1502.28	-18.84	-40.18	2.00	244.88	-9.42	
6880.06	10.10	244.88	6794.19	-418.90	-893.47	0.00	0.00	-209.37	
7820.27	89.75	360.00	7402.00	150.00	-991.04	10.00	114.82	366.98	
7821.27	89.74	0.00	7402.00	151.00	-991.04	1.00	180.00	367.95	
12007.86	89.74	0.00	7421.00	4337.55	-991.04	0.00	0.00	4449.32	BARCLAY 28C-27HZ BHL

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3227.00	3256.75	PARKMAN
4405.00	4453.28	SUSSEX
5047.00	5105.38	SHANNON
7055.00	7150.20	SHARON SPRINGS
7130.00	7235.54	NIOBRARA
7183.00	7300.75	NIOBRARA B CHALK TL
7397.00	7746.52	CODELL
7402.00	7820.27	CODELL TL

CASING DETAILS			
TVD	MD	Name	Size
850.00	850.00	8-5/8"	8-5/8"
7402.00	7820.27	7"	7"



Database:	edm5000p	Local Co-ordinate Reference:	Well BARCLAY 28C-27HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4956' GL @ 4973.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4956' GL @ 4973.00ft
Site:	WELD_BARCLAY 15-27 PAD	North Reference:	True
Well:	BARCLAY 28C-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BARCLAY 28C-27HZ		
Design:	BARCLAY 28C-27HZ (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_BARCLAY 15-27 PAD							
Site Position: From: Position Uncertainty:			Lat/Long 0.00 ft			Northing:		1,312,996.10 ft		Latitude:		40.190205	
						Easting:		3,206,634.99 ft		Longitude:		-104.760351	
						Slot Radius:		0 "		Grid Convergence:		0.48	

Well	BARCLAY 28C-27HZ					
Well Position	+N-S	0.72 ft	Northing:	1,312,996.28 ft	Latitude:	40.190207
	+E-W	-64.26 ft	Easting:	3,206,570.73 ft	Longitude:	-104.760581
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,956.00 ft

Wellbore	BARCLAY 28C-27HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/25/2011	8.83	66.88	53,009

Design	BARCLAY 28C-27HZ (wp01)			
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	347.13

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,504.89	10.10	244.88	1,502.28	-18.84	-40.18	2.00	2.00	0.00	244.88	
6,880.06	10.10	244.88	6,794.19	-418.90	-893.47	0.00	0.00	0.00	0.00	
7,820.27	89.75	360.00	7,402.00	150.00	-991.04	10.00	8.47	12.24	114.82	
7,821.27	89.74	0.00	7,402.00	151.00	-991.04	1.00	-1.00	0.00	180.00	
12,007.86	89.74	0.00	7,421.00	4,337.55	-991.04	0.00	0.00	0.00	0.00	BARCLAY 28C-27H

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Site:	WELD_BARCLAY 15-27 PAD	North Reference:	True
Well:	BARCLAY 28C-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BARCLAY 28C-27HZ		
Design:	BARCLAY 28C-27HZ (wp01)		

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
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
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
8-5/8"									
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
Start Build 2.00									
1,100.00	2.00	244.88	1,099.98	-0.74	-1.58	-0.37	2.00	2.00	0.00
1,200.00	4.00	244.88	1,199.84	-2.96	-6.32	-1.48	2.00	2.00	0.00
1,300.00	6.00	244.88	1,299.45	-6.66	-14.21	-3.33	2.00	2.00	0.00
1,400.00	8.00	244.88	1,398.70	-11.84	-25.24	-5.92	2.00	2.00	0.00
1,500.00	10.00	244.88	1,497.47	-18.48	-39.41	-9.23	2.00	2.00	0.00
1,504.89	10.10	244.88	1,502.28	-18.84	-40.18	-9.42	2.00	2.00	0.00
Start 5375.17 hold at 1504.89 MD									
1,600.00	10.10	244.88	1,595.92	-25.92	-55.28	-12.95	0.00	0.00	0.00
1,700.00	10.10	244.88	1,694.37	-33.36	-71.15	-16.67	0.00	0.00	0.00
1,800.00	10.10	244.88	1,792.82	-40.80	-87.03	-20.39	0.00	0.00	0.00
1,900.00	10.10	244.88	1,891.27	-48.25	-102.90	-24.11	0.00	0.00	0.00
2,000.00	10.10	244.88	1,989.72	-55.69	-118.78	-27.83	0.00	0.00	0.00
2,100.00	10.10	244.88	2,088.17	-63.13	-134.65	-31.55	0.00	0.00	0.00
2,200.00	10.10	244.88	2,186.62	-70.57	-150.52	-35.27	0.00	0.00	0.00
2,300.00	10.10	244.88	2,285.07	-78.02	-166.40	-38.99	0.00	0.00	0.00
2,400.00	10.10	244.88	2,383.53	-85.46	-182.27	-42.71	0.00	0.00	0.00
2,500.00	10.10	244.88	2,481.98	-92.90	-198.15	-46.43	0.00	0.00	0.00
2,600.00	10.10	244.88	2,580.43	-100.34	-214.02	-50.15	0.00	0.00	0.00
2,700.00	10.10	244.88	2,678.88	-107.79	-229.90	-53.87	0.00	0.00	0.00
2,800.00	10.10	244.88	2,777.33	-115.23	-245.77	-57.59	0.00	0.00	0.00
2,900.00	10.10	244.88	2,875.78	-122.67	-261.65	-61.31	0.00	0.00	0.00
3,000.00	10.10	244.88	2,974.23	-130.12	-277.52	-65.03	0.00	0.00	0.00
3,100.00	10.10	244.88	3,072.68	-137.56	-293.40	-68.75	0.00	0.00	0.00
3,200.00	10.10	244.88	3,171.13	-145.00	-309.27	-72.47	0.00	0.00	0.00
3,256.75	10.10	244.88	3,227.00	-149.23	-318.28	-74.58	0.00	0.00	0.00
PARKMAN									
3,300.00	10.10	244.88	3,269.58	-152.44	-325.15	-76.19	0.00	0.00	0.00
3,400.00	10.10	244.88	3,368.04	-159.89	-341.02	-79.91	0.00	0.00	0.00
3,500.00	10.10	244.88	3,466.49	-167.33	-356.89	-83.63	0.00	0.00	0.00
3,600.00	10.10	244.88	3,564.94	-174.77	-372.77	-87.35	0.00	0.00	0.00
3,700.00	10.10	244.88	3,663.39	-182.22	-388.64	-91.07	0.00	0.00	0.00
3,800.00	10.10	244.88	3,761.84	-189.66	-404.52	-94.79	0.00	0.00	0.00
3,900.00	10.10	244.88	3,860.29	-197.10	-420.39	-98.51	0.00	0.00	0.00
4,000.00	10.10	244.88	3,958.74	-204.54	-436.27	-102.23	0.00	0.00	0.00
4,100.00	10.10	244.88	4,057.19	-211.99	-452.14	-105.95	0.00	0.00	0.00
4,200.00	10.10	244.88	4,155.64	-219.43	-468.02	-109.67	0.00	0.00	0.00
4,300.00	10.10	244.88	4,254.09	-226.87	-483.89	-113.39	0.00	0.00	0.00
4,400.00	10.10	244.88	4,352.55	-234.32	-499.77	-117.11	0.00	0.00	0.00
4,453.28	10.10	244.88	4,405.00	-238.28	-508.22	-119.09	0.00	0.00	0.00
SUSSEX									

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4956' GL @ 4973.00ft
Site:	WELD_BARCLAY 15-27 PAD	North Reference:	True
Well:	BARCLAY 28C-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BARCLAY 28C-27HZ		
Design:	BARCLAY 28C-27HZ (wp01)		

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)
4,500.00	10.10	244.88	4,451.00	-241.76	-515.64	-120.83	0.00	0.00	0.00
4,600.00	10.10	244.88	4,549.45	-249.20	-531.52	-124.55	0.00	0.00	0.00
4,700.00	10.10	244.88	4,647.90	-256.64	-547.39	-128.27	0.00	0.00	0.00
4,800.00	10.10	244.88	4,746.35	-264.09	-563.26	-131.99	0.00	0.00	0.00
4,900.00	10.10	244.88	4,844.80	-271.53	-579.14	-135.71	0.00	0.00	0.00
5,000.00	10.10	244.88	4,943.25	-278.97	-595.01	-139.43	0.00	0.00	0.00
5,100.00	10.10	244.88	5,041.70	-286.41	-610.89	-143.15	0.00	0.00	0.00
5,105.38	10.10	244.88	5,047.00	-286.82	-611.74	-143.35	0.00	0.00	0.00
SHANNON									
5,200.00	10.10	244.88	5,140.15	-293.86	-626.76	-146.87	0.00	0.00	0.00
5,300.00	10.10	244.88	5,238.60	-301.30	-642.64	-150.59	0.00	0.00	0.00
5,400.00	10.10	244.88	5,337.06	-308.74	-658.51	-154.31	0.00	0.00	0.00
5,500.00	10.10	244.88	5,435.51	-316.19	-674.39	-158.03	0.00	0.00	0.00
5,600.00	10.10	244.88	5,533.96	-323.63	-690.26	-161.75	0.00	0.00	0.00
5,700.00	10.10	244.88	5,632.41	-331.07	-706.14	-165.47	0.00	0.00	0.00
5,800.00	10.10	244.88	5,730.86	-338.51	-722.01	-169.19	0.00	0.00	0.00
5,900.00	10.10	244.88	5,829.31	-345.96	-737.89	-172.91	0.00	0.00	0.00
6,000.00	10.10	244.88	5,927.76	-353.40	-753.76	-176.63	0.00	0.00	0.00
6,100.00	10.10	244.88	6,026.21	-360.84	-769.63	-180.35	0.00	0.00	0.00
6,200.00	10.10	244.88	6,124.66	-368.29	-785.51	-184.07	0.00	0.00	0.00
6,300.00	10.10	244.88	6,223.11	-375.73	-801.38	-187.79	0.00	0.00	0.00
6,400.00	10.10	244.88	6,321.57	-383.17	-817.26	-191.51	0.00	0.00	0.00
6,500.00	10.10	244.88	6,420.02	-390.61	-833.13	-195.23	0.00	0.00	0.00
6,600.00	10.10	244.88	6,518.47	-398.06	-849.01	-198.95	0.00	0.00	0.00
6,700.00	10.10	244.88	6,616.92	-405.50	-864.88	-202.67	0.00	0.00	0.00
6,800.00	10.10	244.88	6,715.37	-412.94	-880.76	-206.39	0.00	0.00	0.00
6,880.06	10.10	244.88	6,794.19	-418.90	-893.47	-209.37	0.00	0.00	0.00
Start DLS 10.00 TFO 114.82									
6,900.00	9.43	255.99	6,813.84	-420.04	-896.63	-209.77	10.00	-3.33	55.71
7,000.00	11.96	310.47	6,912.33	-415.29	-912.51	-201.60	10.00	2.52	54.47
7,100.00	19.88	333.56	7,008.51	-393.29	-927.99	-176.71	10.00	7.92	23.10
7,150.20	24.40	339.23	7,055.00	-375.93	-935.48	-158.12	9.96	9.02	11.29
SHARON SPRINGS									
7,200.00	29.08	343.19	7,099.46	-354.70	-942.63	-135.83	10.04	9.39	7.95
7,235.54	32.46	345.36	7,130.00	-337.20	-947.54	-117.68	10.00	9.50	6.10
NIOBRARA									
7,300.00	38.65	348.41	7,182.42	-300.71	-955.96	-80.23	10.00	9.62	4.74
7,300.75	38.73	348.44	7,183.00	-300.25	-956.05	-79.76	10.00	9.67	4.07
NIOBRARA B CHALK TL									
7,400.00	48.38	351.81	7,254.86	-232.95	-967.59	-11.57	10.00	9.73	3.39
7,500.00	58.18	354.30	7,314.58	-153.47	-977.16	68.03	10.00	9.80	2.49
7,600.00	68.02	356.31	7,359.77	-64.70	-984.38	156.18	10.00	9.84	2.01
7,700.00	77.88	358.06	7,389.06	30.66	-989.04	250.19	10.00	9.86	1.75
7,746.52	82.47	358.82	7,397.00	76.48	-990.28	295.13	10.00	9.87	1.64
CODELL									
7,800.00	87.75	359.68	7,401.56	129.73	-990.98	347.21	10.00	9.87	1.60
7,820.27	89.75	360.00	7,402.00	150.00	-991.04	366.98	10.00	9.87	1.59
Start DLS 1.00 TFO 180.00 - CODELL TL - 7"									
7,821.27	89.74	0.00	7,402.00	151.00	-991.04	367.95	1.00	-1.00	0.00
Start 4186.59 hold at 7821.27 MD									
7,900.00	89.74	0.00	7,402.36	229.73	-991.04	444.70	0.00	0.00	0.00
8,000.00	89.74	0.00	7,402.82	329.73	-991.04	542.19	0.00	0.00	0.00
8,100.00	89.74	0.00	7,403.27	429.73	-991.04	639.67	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4956' GL @ 4973.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4956' GL @ 4973.00ft
Site:	WELD_BARCLAY 15-27 PAD	North Reference:	True
Well:	BARCLAY 28C-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BARCLAY 28C-27HZ		
Design:	BARCLAY 28C-27HZ (wp01)		

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)
8,200.00	89.74	0.00	7,403.72	529.72	-991.04	737.16	0.00	0.00	0.00
8,300.00	89.74	0.00	7,404.18	629.72	-991.04	834.65	0.00	0.00	0.00
8,400.00	89.74	0.00	7,404.63	729.72	-991.04	932.13	0.00	0.00	0.00
8,500.00	89.74	0.00	7,405.08	829.72	-991.04	1,029.62	0.00	0.00	0.00
8,600.00	89.74	0.00	7,405.54	929.72	-991.04	1,127.11	0.00	0.00	0.00
8,700.00	89.74	0.00	7,405.99	1,029.72	-991.04	1,224.59	0.00	0.00	0.00
8,800.00	89.74	0.00	7,406.45	1,129.72	-991.04	1,322.08	0.00	0.00	0.00
8,900.00	89.74	0.00	7,406.90	1,229.72	-991.04	1,419.57	0.00	0.00	0.00
9,000.00	89.74	0.00	7,407.35	1,329.72	-991.04	1,517.05	0.00	0.00	0.00
9,100.00	89.74	0.00	7,407.81	1,429.72	-991.04	1,614.54	0.00	0.00	0.00
9,200.00	89.74	0.00	7,408.26	1,529.71	-991.04	1,712.03	0.00	0.00	0.00
9,300.00	89.74	0.00	7,408.71	1,629.71	-991.04	1,809.51	0.00	0.00	0.00
9,400.00	89.74	0.00	7,409.17	1,729.71	-991.04	1,907.00	0.00	0.00	0.00
9,500.00	89.74	0.00	7,409.62	1,829.71	-991.04	2,004.49	0.00	0.00	0.00
9,600.00	89.74	0.00	7,410.08	1,929.71	-991.04	2,101.98	0.00	0.00	0.00
9,700.00	89.74	0.00	7,410.53	2,029.71	-991.04	2,199.46	0.00	0.00	0.00
9,800.00	89.74	0.00	7,410.98	2,129.71	-991.04	2,296.95	0.00	0.00	0.00
9,900.00	89.74	0.00	7,411.44	2,229.71	-991.04	2,394.44	0.00	0.00	0.00
10,000.00	89.74	0.00	7,411.89	2,329.71	-991.04	2,491.92	0.00	0.00	0.00
10,100.00	89.74	0.00	7,412.34	2,429.70	-991.04	2,589.41	0.00	0.00	0.00
10,200.00	89.74	0.00	7,412.80	2,529.70	-991.04	2,686.90	0.00	0.00	0.00
10,300.00	89.74	0.00	7,413.25	2,629.70	-991.04	2,784.38	0.00	0.00	0.00
10,400.00	89.74	0.00	7,413.70	2,729.70	-991.04	2,881.87	0.00	0.00	0.00
10,500.00	89.74	0.00	7,414.16	2,829.70	-991.04	2,979.36	0.00	0.00	0.00
10,600.00	89.74	0.00	7,414.61	2,929.70	-991.04	3,076.84	0.00	0.00	0.00
10,700.00	89.74	0.00	7,415.07	3,029.70	-991.04	3,174.33	0.00	0.00	0.00
10,800.00	89.74	0.00	7,415.52	3,129.70	-991.04	3,271.82	0.00	0.00	0.00
10,900.00	89.74	0.00	7,415.97	3,229.70	-991.04	3,369.30	0.00	0.00	0.00
11,000.00	89.74	0.00	7,416.43	3,329.70	-991.04	3,466.79	0.00	0.00	0.00
11,100.00	89.74	0.00	7,416.88	3,429.69	-991.04	3,564.28	0.00	0.00	0.00
11,200.00	89.74	0.00	7,417.33	3,529.69	-991.04	3,661.76	0.00	0.00	0.00
11,300.00	89.74	0.00	7,417.79	3,629.69	-991.04	3,759.25	0.00	0.00	0.00
11,400.00	89.74	0.00	7,418.24	3,729.69	-991.04	3,856.74	0.00	0.00	0.00
11,500.00	89.74	0.00	7,418.70	3,829.69	-991.04	3,954.22	0.00	0.00	0.00
11,600.00	89.74	0.00	7,419.15	3,929.69	-991.04	4,051.71	0.00	0.00	0.00
11,700.00	89.74	0.00	7,419.60	4,029.69	-991.04	4,149.20	0.00	0.00	0.00
11,800.00	89.74	0.00	7,420.06	4,129.69	-991.04	4,246.68	0.00	0.00	0.00
11,900.00	89.74	0.00	7,420.51	4,229.69	-991.04	4,344.17	0.00	0.00	0.00
12,000.00	89.74	0.00	7,420.96	4,329.69	-991.04	4,441.66	0.00	0.00	0.00
12,007.86	89.74	0.00	7,421.00	4,337.55	-991.04	4,449.32	0.00	0.00	0.00
TD at 12007.86 - BARCLAY 28C-27HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BARCLAY 28C-27HZ	0.00	0.00	7,421.00	4,337.55	-991.04	1,317,325.41	3,205,543.56	40.202114	-104.764129
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Database:	edm5000p	Local Co-ordinate Reference:	Well BARCLAY 28C-27HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4956' GL @ 4973.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4956' GL @ 4973.00ft
Site:	WELD_BARCLAY 15-27 PAD	North Reference:	True
Well:	BARCLAY 28C-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	BARCLAY 28C-27HZ		
Design:	BARCLAY 28C-27HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
850.00	850.00	8-5/8"	8-5/8	11	
7,820.27	7,402.00	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,256.75	3,227.00	PARKMAN		0.00	
4,453.28	4,405.00	SUSSEX		0.00	
5,105.38	5,047.00	SHANNON		0.00	
7,150.20	7,055.00	SHARON SPRINGS		0.00	
7,235.54	7,130.00	NIOBRARA		0.00	
7,300.75	7,183.00	NIOBRARA B CHALK TL		0.00	
7,746.52	7,397.00	CODELL		0.00	
7,820.27	7,402.00	CODELL TL		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,504.89	1,502.28	-18.84	-40.18	Start 5375.17 hold at 1504.89 MD	
6,880.06	6,794.19	-418.90	-893.47	Start DLS 10.00 TFO 114.82	
7,820.27	7,402.00	150.00	-991.04	Start DLS 1.00 TFO 180.00	
7,821.27	7,402.00	151.00	-991.04	Start 4186.59 hold at 7821.27 MD	
12,007.86	7,421.00	4,337.55	-991.04	TD at 12007.86	