

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Barclay 2-28HZ pad

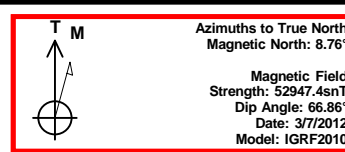
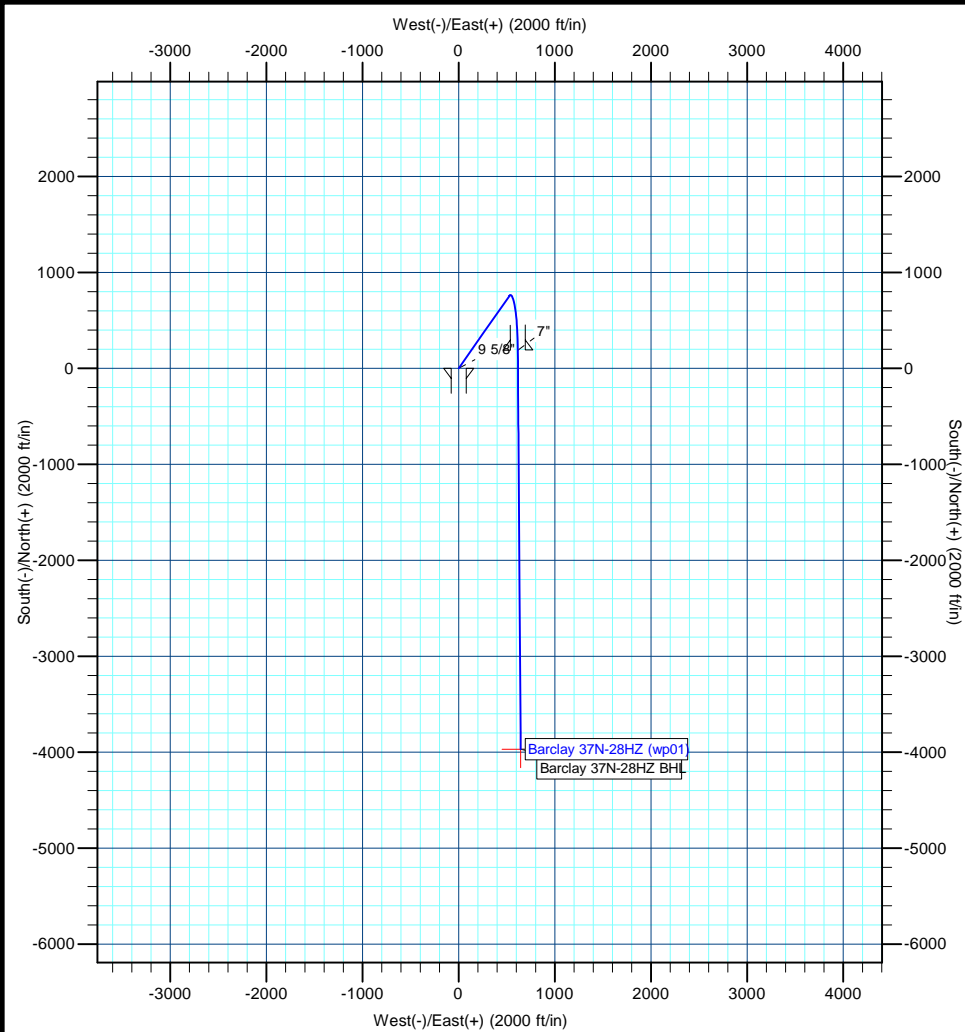
Barclay 37N-28HZ

Barclay 37N-28HZ

Plan: Barclay 37N-28HZ (wp01)

Standard Planning Report

07 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Barclay 2-28HZ pad
Well: Barclay 37N-28HZ
Wellbore: Barclay 37N-28HZ
Section:
SHL:
Design: Barclay 37N-28HZ (wp01)
Latitude: 40.200916
Longitude: -104.779616
GL: 4966.01
KB: RKB + GL @ 4983.00ft

WELL DETAILS: Barclay 37N-28HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4966.01 Latitude	Longitude	Slot
0.00	0.00	1316853.49	3201221.37	40.200916	-104.779616	

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
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
2614.50	12.29	34.91	2609.80	53.84	37.57	2.00	34.91	-47.12
6627.53	12.29	34.91	6530.86	754.31	526.46	0.00	0.00	-660.17
7628.23	90.07	179.56	7198.00	190.00	615.00	10.00	144.01	-88.97
7631.22	90.07	179.59	7198.00	187.01	615.02	1.00	96.33	-86.01
1789.01	90.07	179.59	7193.00	-3970.67	644.79	0.00	0.00	4022.68

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

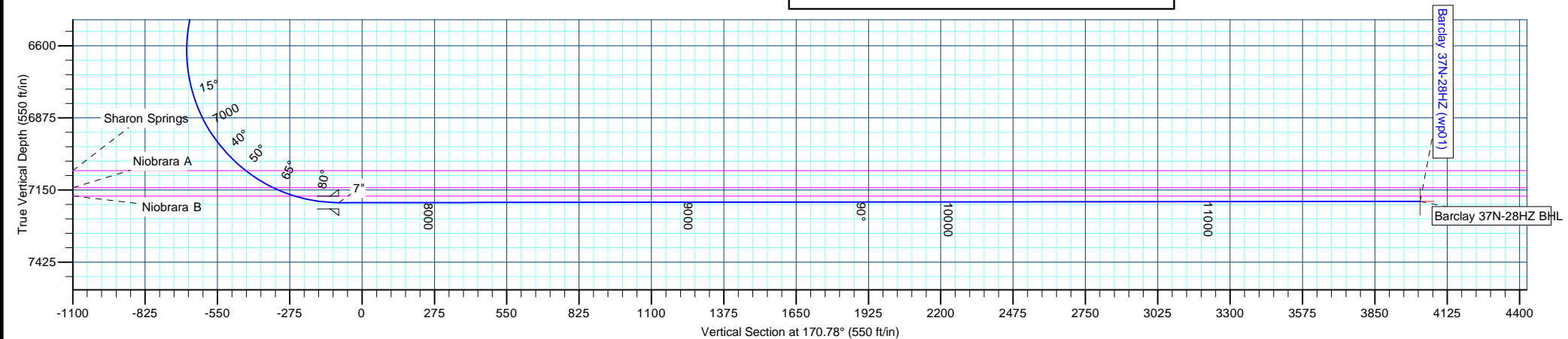
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Barclay 37N-28HZ BHL	7193.00	-3970.67	644.79	40.190016	-104.777308	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4008.00	4045.50	Parkman
4417.00	4464.09	Sussex
7076.00	7245.06	Sharon Springs
7141.00	7368.72	Niobrara A
7173.00	7456.94	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
700.00	700.00	9 5/8"	9-5/8
7198.00	7628.23	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Barclay 37N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	RKB + GL @ 4983.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	RKB + GL @ 4983.00ft
Site:	WELD_Barclay 2-28HZ pad	North Reference:	True
Well:	Barclay 37N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Barclay 37N-28HZ		
Design:	Barclay 37N-28HZ (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 2-28HZ pad			
Site Position:		Northing:	1,316,883.37 usft	Latitude: 40.200998
From:	Lat/Long	Easting:	3,201,220.85 usft	Longitude: -104.779617
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.47 °

Well	Barclay 37N-28HZ			
Well Position	+N/-S	-29.88 ft	Northing:	1,316,853.48 usft
	+E/-W	0.28 ft	Easting:	3,201,221.37 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40.200916
				Longitude: -104.779616
				Ground Level: 4,966.01 ft

Wellbore	Barclay 37N-28HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2012	8.76	66.86	52,947

Design	Barclay 37N-28HZ (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	16.99	0.00	0.00	170.78

Plan Sections										
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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,614.50	12.29	34.91	2,609.80	53.84	37.57	2.00	2.00	0.00	34.91	
6,627.53	12.29	34.91	6,530.86	754.31	526.46	0.00	0.00	0.00	0.00	
7,628.23	90.07	179.56	7,198.00	190.00	615.00	10.00	7.77	14.45	144.01	
7,631.22	90.07	179.59	7,198.00	187.01	615.02	1.00	-0.11	0.99	96.33	
11,789.01	90.07	179.59	7,193.00	-3,970.67	644.79	0.00	0.00	0.00	0.00	Barclay 37N-28HZ Bt

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Barclay 37N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	RKB + GL @ 4983.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	RKB + GL @ 4983.00ft
Site:	WELD_Barclay 2-28HZ pad	North Reference:	True
Well:	Barclay 37N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Barclay 37N-28HZ		
Design:	Barclay 37N-28HZ (wp01)		

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
9 5/8"									
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
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	2.00	34.91	2,099.98	1.43	1.00	-1.25	2.00	2.00	0.00
2,200.00	4.00	34.91	2,199.84	5.72	3.99	-5.01	2.00	2.00	0.00
2,300.00	6.00	34.91	2,299.45	12.87	8.98	-11.26	2.00	2.00	0.00
2,400.00	8.00	34.91	2,398.70	22.86	15.96	-20.01	2.00	2.00	0.00
2,500.00	10.00	34.91	2,497.47	35.69	24.91	-31.24	2.00	2.00	0.00
2,600.00	12.00	34.91	2,595.62	51.34	35.83	-44.93	2.00	2.00	0.00
2,614.50	12.29	34.91	2,609.80	53.84	37.57	-47.12	2.00	2.00	0.00
2,700.00	12.29	34.91	2,693.34	68.76	47.99	-60.18	0.00	0.00	0.00
2,800.00	12.29	34.91	2,791.05	86.22	60.17	-75.46	0.00	0.00	0.00
2,900.00	12.29	34.91	2,888.76	103.67	72.36	-90.73	0.00	0.00	0.00
3,000.00	12.29	34.91	2,986.46	121.13	84.54	-106.01	0.00	0.00	0.00
3,100.00	12.29	34.91	3,084.17	138.58	96.72	-121.29	0.00	0.00	0.00
3,200.00	12.29	34.91	3,181.88	156.04	108.90	-136.56	0.00	0.00	0.00
3,300.00	12.29	34.91	3,279.59	173.49	121.09	-151.84	0.00	0.00	0.00
3,400.00	12.29	34.91	3,377.30	190.95	133.27	-167.12	0.00	0.00	0.00
3,500.00	12.29	34.91	3,475.01	208.40	145.45	-182.39	0.00	0.00	0.00
3,600.00	12.29	34.91	3,572.71	225.86	157.63	-197.67	0.00	0.00	0.00
3,700.00	12.29	34.91	3,670.42	243.31	169.82	-212.95	0.00	0.00	0.00
3,800.00	12.29	34.91	3,768.13	260.77	182.00	-228.22	0.00	0.00	0.00
3,900.00	12.29	34.91	3,865.84	278.22	194.18	-243.50	0.00	0.00	0.00
4,000.00	12.29	34.91	3,963.55	295.68	206.36	-258.77	0.00	0.00	0.00
4,045.50	12.29	34.91	4,008.00	303.62	211.91	-265.73	0.00	0.00	0.00
Parkman									
4,100.00	12.29	34.91	4,061.26	313.13	218.55	-274.05	0.00	0.00	0.00
4,200.00	12.29	34.91	4,158.96	330.59	230.73	-289.33	0.00	0.00	0.00
4,300.00	12.29	34.91	4,256.67	348.04	242.91	-304.60	0.00	0.00	0.00
4,400.00	12.29	34.91	4,354.38	365.50	255.09	-319.88	0.00	0.00	0.00
4,464.09	12.29	34.91	4,417.00	376.68	262.90	-329.67	0.00	0.00	0.00
Sussex									
4,500.00	12.29	34.91	4,452.09	382.95	267.28	-335.16	0.00	0.00	0.00
4,600.00	12.29	34.91	4,549.80	400.41	279.46	-350.43	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Barclay 37N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	RKB + GL @ 4983.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	RKB + GL @ 4983.00ft
Site:	WELD_Barclay 2-28HZ pad	North Reference:	True
Well:	Barclay 37N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Barclay 37N-28HZ		
Design:	Barclay 37N-28HZ (wp01)		

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)
4,700.00	12.29	34.91	4,647.51	417.86	291.64	-365.71	0.00	0.00	0.00
4,800.00	12.29	34.91	4,745.21	435.32	303.82	-380.99	0.00	0.00	0.00
4,900.00	12.29	34.91	4,842.92	452.77	316.01	-396.26	0.00	0.00	0.00
5,000.00	12.29	34.91	4,940.63	470.23	328.19	-411.54	0.00	0.00	0.00
5,100.00	12.29	34.91	5,038.34	487.68	340.37	-426.82	0.00	0.00	0.00
5,200.00	12.29	34.91	5,136.05	505.14	352.55	-442.09	0.00	0.00	0.00
5,300.00	12.29	34.91	5,233.75	522.59	364.74	-457.37	0.00	0.00	0.00
5,400.00	12.29	34.91	5,331.46	540.05	376.92	-472.65	0.00	0.00	0.00
5,500.00	12.29	34.91	5,429.17	557.50	389.10	-487.92	0.00	0.00	0.00
5,600.00	12.29	34.91	5,526.88	574.96	401.28	-503.20	0.00	0.00	0.00
5,700.00	12.29	34.91	5,624.59	592.41	413.47	-518.48	0.00	0.00	0.00
5,800.00	12.29	34.91	5,722.30	609.87	425.65	-533.75	0.00	0.00	0.00
5,900.00	12.29	34.91	5,820.00	627.32	437.83	-549.03	0.00	0.00	0.00
6,000.00	12.29	34.91	5,917.71	644.78	450.01	-564.31	0.00	0.00	0.00
6,100.00	12.29	34.91	6,015.42	662.23	462.20	-579.58	0.00	0.00	0.00
6,200.00	12.29	34.91	6,113.13	679.69	474.38	-594.86	0.00	0.00	0.00
6,300.00	12.29	34.91	6,210.84	697.14	486.56	-610.14	0.00	0.00	0.00
6,400.00	12.29	34.91	6,308.55	714.60	498.74	-625.41	0.00	0.00	0.00
6,500.00	12.29	34.91	6,406.25	732.05	510.93	-640.69	0.00	0.00	0.00
6,600.00	12.29	34.91	6,503.96	749.51	523.11	-655.97	0.00	0.00	0.00
6,627.53	12.29	34.91	6,530.86	754.31	526.46	-660.17	0.00	0.00	0.00
6,700.00	7.69	68.55	6,602.27	762.42	535.40	-666.74	10.00	-6.35	46.41
6,800.00	10.19	135.03	6,701.28	758.60	547.92	-660.96	10.00	2.50	66.49
6,900.00	18.64	157.61	6,798.12	737.50	560.29	-638.16	10.00	8.45	22.57
7,000.00	28.11	165.90	6,889.83	699.78	572.15	-599.02	10.00	9.47	8.29
7,100.00	37.84	170.21	6,973.63	646.57	583.13	-544.74	10.00	9.73	4.31
7,200.00	47.66	172.96	7,046.97	579.49	592.91	-476.96	10.00	9.83	2.75
7,245.06	52.11	173.92	7,076.00	545.26	596.83	-442.55	10.00	9.87	2.14
Sharon Springs									
7,300.00	57.54	174.95	7,107.64	500.58	601.17	-397.75	10.00	9.88	1.88
7,368.72	64.34	176.08	7,141.00	440.73	605.85	-337.92	10.00	9.90	1.64
Niobrara A									
7,400.00	67.44	176.55	7,153.78	412.25	607.68	-309.51	10.00	9.91	1.50
7,456.94	73.08	177.35	7,173.00	358.75	610.53	-256.25	10.00	9.91	1.41
Niobrara B									
7,500.00	77.35	177.93	7,183.98	317.16	612.24	-214.92	10.00	9.92	1.34
7,600.00	87.27	179.21	7,197.35	218.21	614.70	-116.86	10.00	9.92	1.28
7,628.23	90.07	179.56	7,198.00	190.00	615.00	-88.96	10.00	9.92	1.25
7"									
7,631.22	90.07	179.59	7,198.00	187.01	615.02	-86.01	1.00	-0.11	1.00
7,700.00	90.07	179.59	7,197.91	118.23	615.51	-18.04	0.00	0.00	0.00
7,800.00	90.07	179.59	7,197.79	18.23	616.23	80.78	0.00	0.00	0.00
7,900.00	90.07	179.59	7,197.67	-81.77	616.95	179.60	0.00	0.00	0.00
8,000.00	90.07	179.59	7,197.55	-181.76	617.66	278.42	0.00	0.00	0.00
8,100.00	90.07	179.59	7,197.43	-281.76	618.38	377.24	0.00	0.00	0.00
8,200.00	90.07	179.59	7,197.31	-381.76	619.09	476.06	0.00	0.00	0.00
8,300.00	90.07	179.59	7,197.19	-481.76	619.81	574.88	0.00	0.00	0.00
8,400.00	90.07	179.59	7,197.07	-581.75	620.53	673.69	0.00	0.00	0.00
8,500.00	90.07	179.59	7,196.95	-681.75	621.24	772.51	0.00	0.00	0.00
8,600.00	90.07	179.59	7,196.83	-781.75	621.96	871.33	0.00	0.00	0.00
8,700.00	90.07	179.59	7,196.71	-881.75	622.68	970.15	0.00	0.00	0.00
8,800.00	90.07	179.59	7,196.59	-981.74	623.39	1,068.97	0.00	0.00	0.00
8,900.00	90.07	179.59	7,196.47	-1,081.74	624.11	1,167.79	0.00	0.00	0.00
9,000.00	90.07	179.59	7,196.35	-1,181.74	624.82	1,266.61	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Barclay 37N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	RKB + GL @ 4983.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	RKB + GL @ 4983.00ft
Site:	WELD_Barclay 2-28HZ pad	North Reference:	True
Well:	Barclay 37N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Barclay 37N-28HZ		
Design:	Barclay 37N-28HZ (wp01)		

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)
9,100.00	90.07	179.59	7,196.23	-1,281.73	625.54	1,365.43	0.00	0.00	0.00
9,200.00	90.07	179.59	7,196.11	-1,381.73	626.26	1,464.25	0.00	0.00	0.00
9,300.00	90.07	179.59	7,195.99	-1,481.73	626.97	1,563.07	0.00	0.00	0.00
9,400.00	90.07	179.59	7,195.87	-1,581.73	627.69	1,661.89	0.00	0.00	0.00
9,500.00	90.07	179.59	7,195.75	-1,681.72	628.40	1,760.71	0.00	0.00	0.00
9,600.00	90.07	179.59	7,195.63	-1,781.72	629.12	1,859.53	0.00	0.00	0.00
9,700.00	90.07	179.59	7,195.51	-1,881.72	629.84	1,958.34	0.00	0.00	0.00
9,800.00	90.07	179.59	7,195.39	-1,981.72	630.55	2,057.16	0.00	0.00	0.00
9,900.00	90.07	179.59	7,195.27	-2,081.71	631.27	2,155.98	0.00	0.00	0.00
10,000.00	90.07	179.59	7,195.15	-2,181.71	631.98	2,254.80	0.00	0.00	0.00
10,100.00	90.07	179.59	7,195.03	-2,281.71	632.70	2,353.62	0.00	0.00	0.00
10,200.00	90.07	179.59	7,194.91	-2,381.71	633.42	2,452.44	0.00	0.00	0.00
10,300.00	90.07	179.59	7,194.79	-2,481.70	634.13	2,551.26	0.00	0.00	0.00
10,400.00	90.07	179.59	7,194.67	-2,581.70	634.85	2,650.08	0.00	0.00	0.00
10,500.00	90.07	179.59	7,194.55	-2,681.70	635.56	2,748.90	0.00	0.00	0.00
10,600.00	90.07	179.59	7,194.43	-2,781.70	636.28	2,847.72	0.00	0.00	0.00
10,700.00	90.07	179.59	7,194.31	-2,881.69	637.00	2,946.54	0.00	0.00	0.00
10,800.00	90.07	179.59	7,194.19	-2,981.69	637.71	3,045.36	0.00	0.00	0.00
10,900.00	90.07	179.59	7,194.07	-3,081.69	638.43	3,144.17	0.00	0.00	0.00
11,000.00	90.07	179.59	7,193.95	-3,181.68	639.14	3,242.99	0.00	0.00	0.00
11,100.00	90.07	179.59	7,193.83	-3,281.68	639.86	3,341.81	0.00	0.00	0.00
11,200.00	90.07	179.59	7,193.71	-3,381.68	640.58	3,440.63	0.00	0.00	0.00
11,300.00	90.07	179.59	7,193.59	-3,481.68	641.29	3,539.45	0.00	0.00	0.00
11,400.00	90.07	179.59	7,193.47	-3,581.67	642.01	3,638.27	0.00	0.00	0.00
11,500.00	90.07	179.59	7,193.35	-3,681.67	642.72	3,737.09	0.00	0.00	0.00
11,600.00	90.07	179.59	7,193.23	-3,781.67	643.44	3,835.91	0.00	0.00	0.00
11,700.00	90.07	179.59	7,193.11	-3,881.67	644.16	3,934.73	0.00	0.00	0.00
11,789.01	90.07	179.59	7,193.00	-3,970.67	644.79	4,022.68	0.00	0.00	0.00
Barclay 37N-28HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Barclay 37N-28HZ BHL	0.00	0.00	7,193.00	-3,970.67	644.79	1,312,888.19	3,201,898.40	40.190016	-104.777308
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
700.00	700.00	9 5/8"	9-5/8	12-1/4	
7,628.23	7,198.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Barclay 37N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	RKB + GL @ 4983.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	RKB + GL @ 4983.00ft
Site:	WELD_Barclay 2-28HZ pad	North Reference:	True
Well:	Barclay 37N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Barclay 37N-28HZ		
Design:	Barclay 37N-28HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,045.50	4,008.00	Parkman				
4,464.09	4,417.00	Sussex				
7,245.06	7,076.00	Sharon Springs				
7,368.72	7,141.00	Niobrara A				
7,456.94	7,173.00	Niobrara B				