

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Raymond 27-29HZ Pad

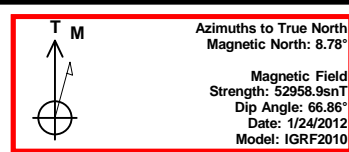
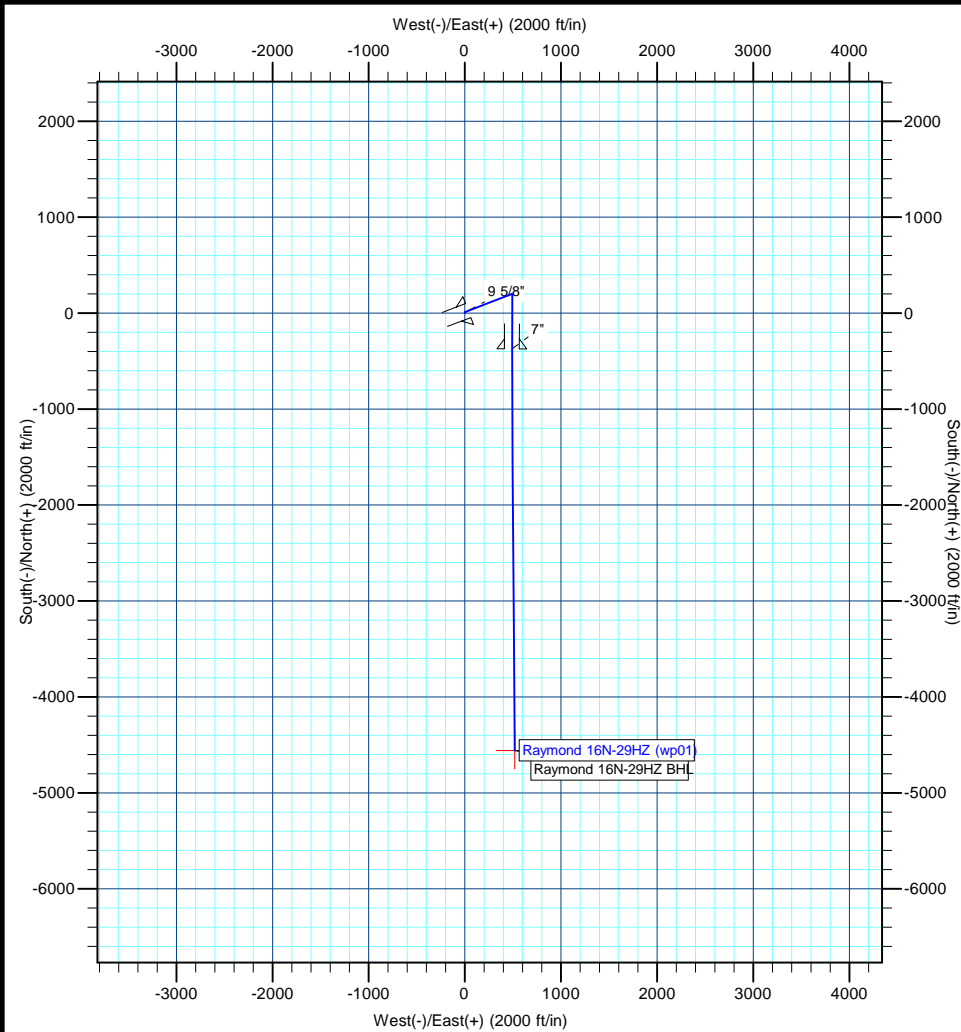
Raymond 16N-29HZ

Raymond 16N-29HZ

Plan: Raymond 16N-29HZ (wp01)

Standard Planning Report

14 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Raymond 27-29HZ Pad
Well: Raymond 16N-29HZ
Wellbore: Raymond 16N-29HZ
Section:
SHL:
Design: Raymond 16N-29HZ (wp01)
Latitude: 40.202410
Longitude: -104.796230
GL: 4925.00
KB: gl + rkb @ 4942.00ft

WELL DETAILS: Raymond 16N-29HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4925.00 Latitude	Longitude	Slot
0.00	0.00	1317360.44	3196576.44	40.202410	-104.796230	

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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00
450.00	5.00	69.00	449.68	10.90	0.00	2.00	0.00	-10.83
900.00	5.00	69.00	897.97	24.96	36.62	0.00	0.00	-20.66
6400.00	5.00	69.00	6377.04	196.74	484.13	0.00	0.00	-140.83
6650.00	0.00	69.00	6626.72	200.65	494.31	2.00	180.00	-143.57
6652.72	0.00	69.00	6629.44	200.65	494.31	0.00	69.00	-143.57
7553.49	90.13	180.32	7202.06	-373.27	491.15	10.01	180.32	426.32
7580.23	90.13	180.32	7202.00	-400.00	491.00	0.00	0.00	452.87
7649.53	90.14	179.62	7201.84	-469.30	491.04	1.00	-89.41	521.73
1739.32	90.14	179.62	7192.00	-4558.99	517.96	0.00	0.00	4588.32

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

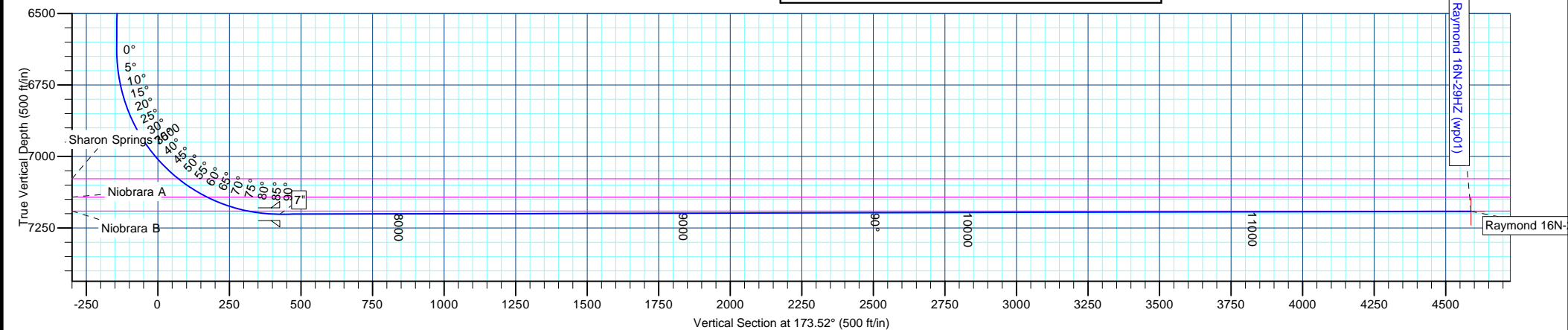
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Raymond 16N-29HZ BHL	7192.00	-4558.99	517.96	40.189895	-104.794376	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3154.00	3164.65	Parkman
4347.00	4362.20	Sussex
7078.00	7168.09	Sharon Springs
7142.00	7287.57	Niobrara A
7191.00	7439.45	Niobrara B

CASING DETAILS

TVD	MD	Name	Size
900.00	902.04	9 5/8"	9-5/8
7202.06	7553.49	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 16N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 16N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 16N-29HZ		
Design:	Raymond 16N-29HZ (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_Raymond 27-29HZ Pad			
Site Position:		Northing:	1,317,360.20 usft	Latitude:	40.202408
From:	Lat/Long	Easting:	3,196,636.22 usft	Longitude:	-104.796016
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	Raymond 16N-29HZ					
Well Position	+N/-S	0.72 ft	Northing:	1,317,360.44 usft	Latitude:	40.202410
	+E/-W	-59.78 ft	Easting:	3,196,576.44 usft	Longitude:	-104.796230
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,925.00 ft

Wellbore	Raymond 16N-29HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/24/2012	8.78	66.86	52,959

Design	Raymond 16N-29HZ (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	173.52

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
450.00	5.00	69.00	449.68	10.90	0.00	2.00	2.00	0.00	0.00	
900.00	5.00	69.00	897.97	24.96	36.62	0.00	0.00	0.00	0.00	
6,400.00	5.00	69.00	6,377.04	196.74	484.13	0.00	0.00	0.00	0.00	
6,650.00	0.00	69.00	6,626.72	200.65	494.31	2.00	-2.00	0.00	180.00	
6,652.72	0.00	69.00	6,629.44	200.65	494.31	0.00	0.00	0.00	69.00	
7,553.49	90.13	180.32	7,202.06	-373.27	491.15	10.01	10.01	12.36	180.32	
7,580.23	90.13	180.32	7,202.00	-400.00	491.00	0.00	0.00	0.00	0.00	
7,649.53	90.14	179.62	7,201.84	-469.30	491.04	1.00	0.01	-1.00	-89.41	
11,739.32	90.14	179.62	7,192.00	-4,558.99	517.96	0.00	0.00	0.00	0.00	Raymond 16N-29HZ I

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 16N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 16N-29HZ		
Design:	Raymond 16N-29HZ (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
Start Build 2.00									
300.00	2.00	0.00	299.98	1.75	0.00	-1.73	2.00	2.00	0.00
400.00	4.00	0.00	399.84	6.98	0.00	-6.93	2.00	2.00	0.00
450.00	5.00	69.00	449.68	10.90	0.00	-10.83	10.32	2.00	138.00
Start 450.00 hold at 450.00 MD									
500.00	5.00	69.00	499.49	12.46	4.07	-11.92	0.00	0.00	0.00
600.00	5.00	69.00	599.11	15.59	12.20	-14.11	0.00	0.00	0.00
700.00	5.00	69.00	698.73	18.71	20.34	-16.29	0.00	0.00	0.00
800.00	5.00	69.00	798.35	21.83	28.48	-18.48	0.00	0.00	0.00
900.00	5.00	69.00	897.97	24.96	36.62	-20.66	0.00	0.00	0.00
Start 5500.00 hold at 900.00 MD									
902.04	5.00	69.00	900.00	25.02	36.78	-20.71	0.00	0.00	0.00
9 5/8"									
1,000.00	5.00	69.00	997.59	28.08	44.75	-22.85	0.00	0.00	0.00
1,100.00	5.00	69.00	1,097.21	31.20	52.89	-25.03	0.00	0.00	0.00
1,200.00	5.00	69.00	1,196.83	34.33	61.03	-27.22	0.00	0.00	0.00
1,300.00	5.00	69.00	1,296.45	37.45	69.16	-29.40	0.00	0.00	0.00
1,400.00	5.00	69.00	1,396.07	40.57	77.30	-31.59	0.00	0.00	0.00
1,500.00	5.00	69.00	1,495.69	43.70	85.44	-33.77	0.00	0.00	0.00
1,600.00	5.00	69.00	1,595.31	46.82	93.57	-35.96	0.00	0.00	0.00
1,700.00	5.00	69.00	1,694.93	49.94	101.71	-38.14	0.00	0.00	0.00
1,800.00	5.00	69.00	1,794.55	53.07	109.85	-40.33	0.00	0.00	0.00
1,900.00	5.00	69.00	1,894.16	56.19	117.98	-42.51	0.00	0.00	0.00
2,000.00	5.00	69.00	1,993.78	59.31	126.12	-44.70	0.00	0.00	0.00
2,100.00	5.00	69.00	2,093.40	62.44	134.26	-46.88	0.00	0.00	0.00
2,200.00	5.00	69.00	2,193.02	65.56	142.39	-49.07	0.00	0.00	0.00
2,300.00	5.00	69.00	2,292.64	68.68	150.53	-51.25	0.00	0.00	0.00
2,400.00	5.00	69.00	2,392.26	71.81	158.67	-53.44	0.00	0.00	0.00
2,500.00	5.00	69.00	2,491.88	74.93	166.80	-55.62	0.00	0.00	0.00
2,600.00	5.00	69.00	2,591.50	78.05	174.94	-57.81	0.00	0.00	0.00
2,700.00	5.00	69.00	2,691.12	81.18	183.08	-59.99	0.00	0.00	0.00
2,800.00	5.00	69.00	2,790.74	84.30	191.21	-62.18	0.00	0.00	0.00
2,900.00	5.00	69.00	2,890.36	87.42	199.35	-64.36	0.00	0.00	0.00
3,000.00	5.00	69.00	2,989.98	90.55	207.49	-66.55	0.00	0.00	0.00
3,100.00	5.00	69.00	3,089.60	93.67	215.62	-68.73	0.00	0.00	0.00
3,164.65	5.00	69.00	3,154.00	95.69	220.88	-70.14	0.00	0.00	0.00
Parkman									
3,200.00	5.00	69.00	3,189.22	96.79	223.76	-70.92	0.00	0.00	0.00
3,300.00	5.00	69.00	3,288.84	99.92	231.90	-73.10	0.00	0.00	0.00
3,400.00	5.00	69.00	3,388.46	103.04	240.03	-75.29	0.00	0.00	0.00
3,500.00	5.00	69.00	3,488.08	106.16	248.17	-77.47	0.00	0.00	0.00
3,600.00	5.00	69.00	3,587.70	109.29	256.31	-79.66	0.00	0.00	0.00
3,700.00	5.00	69.00	3,687.32	112.41	264.44	-81.84	0.00	0.00	0.00
3,800.00	5.00	69.00	3,786.93	115.53	272.58	-84.03	0.00	0.00	0.00
3,900.00	5.00	69.00	3,886.55	118.66	280.72	-86.21	0.00	0.00	0.00
4,000.00	5.00	69.00	3,986.17	121.78	288.85	-88.40	0.00	0.00	0.00
4,100.00	5.00	69.00	4,085.79	124.90	296.99	-90.58	0.00	0.00	0.00
4,200.00	5.00	69.00	4,185.41	128.03	305.13	-92.77	0.00	0.00	0.00
4,300.00	5.00	69.00	4,285.03	131.15	313.26	-94.95	0.00	0.00	0.00
4,362.20	5.00	69.00	4,347.00	133.09	318.32	-96.31	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 16N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 16N-29HZ		
Design:	Raymond 16N-29HZ (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)
Sussex									
4,400.00	5.00	69.00	4,384.65	134.27	321.40	-97.14	0.00	0.00	0.00
4,500.00	5.00	69.00	4,484.27	137.40	329.54	-99.32	0.00	0.00	0.00
4,600.00	5.00	69.00	4,583.89	140.52	337.67	-101.50	0.00	0.00	0.00
4,700.00	5.00	69.00	4,683.51	143.65	345.81	-103.69	0.00	0.00	0.00
4,800.00	5.00	69.00	4,783.13	146.77	353.95	-105.87	0.00	0.00	0.00
4,900.00	5.00	69.00	4,882.75	149.89	362.08	-108.06	0.00	0.00	0.00
5,000.00	5.00	69.00	4,982.37	153.02	370.22	-110.24	0.00	0.00	0.00
5,100.00	5.00	69.00	5,081.99	156.14	378.36	-112.43	0.00	0.00	0.00
5,200.00	5.00	69.00	5,181.61	159.26	386.49	-114.61	0.00	0.00	0.00
5,300.00	5.00	69.00	5,281.23	162.39	394.63	-116.80	0.00	0.00	0.00
5,400.00	5.00	69.00	5,380.85	165.51	402.77	-118.98	0.00	0.00	0.00
5,500.00	5.00	69.00	5,480.47	168.63	410.90	-121.17	0.00	0.00	0.00
5,600.00	5.00	69.00	5,580.09	171.76	419.04	-123.35	0.00	0.00	0.00
5,700.00	5.00	69.00	5,679.70	174.88	427.18	-125.54	0.00	0.00	0.00
5,800.00	5.00	69.00	5,779.32	178.00	435.31	-127.72	0.00	0.00	0.00
5,900.00	5.00	69.00	5,878.94	181.13	443.45	-129.91	0.00	0.00	0.00
6,000.00	5.00	69.00	5,978.56	184.25	451.59	-132.09	0.00	0.00	0.00
6,100.00	5.00	69.00	6,078.18	187.37	459.72	-134.28	0.00	0.00	0.00
6,200.00	5.00	69.00	6,177.80	190.50	467.86	-136.46	0.00	0.00	0.00
6,300.00	5.00	69.00	6,277.42	193.62	476.00	-138.65	0.00	0.00	0.00
6,400.00	5.00	69.00	6,377.04	196.74	484.13	-140.83	0.00	0.00	0.00
Start Drop -2.00									
6,500.00	3.00	69.00	6,476.79	199.24	490.64	-142.58	2.00	-2.00	0.00
6,600.00	1.00	69.00	6,576.73	200.49	493.90	-143.46	2.00	-2.00	0.00
6,650.00	0.00	69.00	6,626.72	200.65	494.31	-143.57	2.00	-2.00	0.00
Start 2.72 hold at 6650.00 MD									
6,652.72	0.00	69.00	6,629.44	200.65	494.31	-143.57	0.00	0.00	0.00
Start DLS 10.01 TFO 180.32									
6,700.00	4.73	180.32	6,676.67	198.70	494.30	-141.63	10.01	10.01	0.00
6,800.00	14.74	180.32	6,775.11	181.81	494.21	-124.86	10.01	10.01	0.00
6,900.00	24.74	180.32	6,869.11	148.08	494.02	-91.37	10.01	10.01	0.00
7,000.00	34.75	180.32	6,955.82	98.53	493.75	-42.16	10.01	10.01	0.00
7,100.00	44.75	180.32	7,032.61	34.67	493.40	21.25	10.01	10.01	0.00
7,168.09	51.57	180.32	7,078.00	-16.03	493.12	71.59	10.01	10.01	0.00
Sharon Springs									
7,200.00	54.76	180.32	7,097.13	-41.57	492.98	96.95	10.01	10.01	0.00
7,287.57	63.52	180.32	7,142.00	-116.66	492.56	171.52	10.01	10.01	0.00
Niobrara A									
7,300.00	64.77	180.32	7,147.42	-127.85	492.50	182.63	10.01	10.01	0.00
7,400.00	74.77	180.32	7,181.96	-221.56	491.98	275.68	10.01	10.01	0.00
7,439.45	78.72	180.32	7,191.00	-259.95	491.77	313.80	10.01	10.01	0.00
Niobrara B									
7,500.00	84.78	180.32	7,199.69	-319.85	491.44	373.28	10.01	10.01	0.00
7,553.49	90.13	180.32	7,202.06	-373.26	491.15	426.32	10.01	10.01	0.00
Start 26.73 hold at 7553.49 MD - 7"									
7,580.23	90.13	180.32	7,202.00	-400.00	491.00	452.87	0.00	0.00	0.00
Start DLS 1.00 TFO -89.41									
7,600.00	90.13	180.12	7,201.95	-419.77	490.93	472.51	1.00	0.01	-1.00
7,649.53	90.14	179.62	7,201.84	-469.30	491.04	521.73	1.00	0.01	-1.00
Start 4089.80 hold at 7649.53 MD									
7,700.00	90.14	179.62	7,201.72	-519.77	491.37	571.92	0.00	0.00	0.00

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Wellbore:	Raymond 16N-29HZ		
Design:	Raymond 16N-29HZ (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)
7,800.00	90.14	179.62	7,201.48	-619.77	492.03	671.35	0.00	0.00	0.00
7,900.00	90.14	179.62	7,201.24	-719.77	492.69	770.78	0.00	0.00	0.00
8,000.00	90.14	179.62	7,200.99	-819.76	493.34	870.22	0.00	0.00	0.00
8,100.00	90.14	179.62	7,200.75	-919.76	494.00	969.65	0.00	0.00	0.00
8,200.00	90.14	179.62	7,200.51	-1,019.76	494.66	1,069.08	0.00	0.00	0.00
8,300.00	90.14	179.62	7,200.27	-1,119.76	495.32	1,168.51	0.00	0.00	0.00
8,400.00	90.14	179.62	7,200.03	-1,219.75	495.98	1,267.95	0.00	0.00	0.00
8,500.00	90.14	179.62	7,199.79	-1,319.75	496.64	1,367.38	0.00	0.00	0.00
8,600.00	90.14	179.62	7,199.55	-1,419.75	497.29	1,466.81	0.00	0.00	0.00
8,700.00	90.14	179.62	7,199.31	-1,519.75	497.95	1,566.24	0.00	0.00	0.00
8,800.00	90.14	179.62	7,199.07	-1,619.74	498.61	1,665.68	0.00	0.00	0.00
8,900.00	90.14	179.62	7,198.83	-1,719.74	499.27	1,765.11	0.00	0.00	0.00
9,000.00	90.14	179.62	7,198.59	-1,819.74	499.93	1,864.54	0.00	0.00	0.00
9,100.00	90.14	179.62	7,198.35	-1,919.74	500.59	1,963.97	0.00	0.00	0.00
9,200.00	90.14	179.62	7,198.11	-2,019.73	501.24	2,063.41	0.00	0.00	0.00
9,300.00	90.14	179.62	7,197.87	-2,119.73	501.90	2,162.84	0.00	0.00	0.00
9,400.00	90.14	179.62	7,197.63	-2,219.73	502.56	2,262.27	0.00	0.00	0.00
9,500.00	90.14	179.62	7,197.39	-2,319.73	503.22	2,361.71	0.00	0.00	0.00
9,600.00	90.14	179.62	7,197.15	-2,419.72	503.88	2,461.14	0.00	0.00	0.00
9,700.00	90.14	179.62	7,196.91	-2,519.72	504.54	2,560.57	0.00	0.00	0.00
9,800.00	90.14	179.62	7,196.67	-2,619.72	505.19	2,660.00	0.00	0.00	0.00
9,900.00	90.14	179.62	7,196.42	-2,719.72	505.85	2,759.44	0.00	0.00	0.00
10,000.00	90.14	179.62	7,196.18	-2,819.71	506.51	2,858.87	0.00	0.00	0.00
10,100.00	90.14	179.62	7,195.94	-2,919.71	507.17	2,958.30	0.00	0.00	0.00
10,200.00	90.14	179.62	7,195.70	-3,019.71	507.83	3,057.73	0.00	0.00	0.00
10,300.00	90.14	179.62	7,195.46	-3,119.71	508.48	3,157.17	0.00	0.00	0.00
10,400.00	90.14	179.62	7,195.22	-3,219.70	509.14	3,256.60	0.00	0.00	0.00
10,500.00	90.14	179.62	7,194.98	-3,319.70	509.80	3,356.03	0.00	0.00	0.00
10,600.00	90.14	179.62	7,194.74	-3,419.70	510.46	3,455.46	0.00	0.00	0.00
10,700.00	90.14	179.62	7,194.50	-3,519.70	511.12	3,554.90	0.00	0.00	0.00
10,800.00	90.14	179.62	7,194.26	-3,619.69	511.78	3,654.33	0.00	0.00	0.00
10,900.00	90.14	179.62	7,194.02	-3,719.69	512.43	3,753.76	0.00	0.00	0.00
11,000.00	90.14	179.62	7,193.78	-3,819.69	513.09	3,853.20	0.00	0.00	0.00
11,100.00	90.14	179.62	7,193.54	-3,919.69	513.75	3,952.63	0.00	0.00	0.00
11,200.00	90.14	179.62	7,193.30	-4,019.68	514.41	4,052.06	0.00	0.00	0.00
11,300.00	90.14	179.62	7,193.06	-4,119.68	515.07	4,151.49	0.00	0.00	0.00
11,400.00	90.14	179.62	7,192.82	-4,219.68	515.73	4,250.93	0.00	0.00	0.00
11,500.00	90.14	179.62	7,192.58	-4,319.68	516.38	4,350.36	0.00	0.00	0.00
11,600.00	90.14	179.62	7,192.34	-4,419.67	517.04	4,449.79	0.00	0.00	0.00
11,700.00	90.14	179.62	7,192.09	-4,519.67	517.70	4,549.22	0.00	0.00	0.00
11,739.32	90.14	179.62	7,192.00	-4,558.99	517.96	4,588.32	0.00	0.00	0.00
TD at 11739.32 - Raymond 16N-29HZ BHL									

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									
Raymond 16N-29HZ BH	0.00	0.00	7,192.00	-4,558.99	517.96	1,312,805.71	3,197,130.57	40.189895	-104.794376
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 16N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4942.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4942.00ft
Site:	WELD_Raymond 27-29HZ Pad	North Reference:	True
Well:	Raymond 16N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 16N-29HZ		
Design:	Raymond 16N-29HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
902.04	900.00	9 5/8"	9-5/8	12-1/4	
7,553.49	7,202.06	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,164.65	3,154.00	Parkman			
4,362.20	4,347.00	Sussex			
7,168.09	7,078.00	Sharon Springs			
7,287.57	7,142.00	Niobrara A			
7,439.45	7,191.00	Niobrara B			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
450.00	449.68	10.90	0.00	Start 450.00 hold at 450.00 MD	
900.00	897.97	24.96	36.62	Start 5500.00 hold at 900.00 MD	
6,400.00	6,377.04	196.74	484.13	Start Drop -2.00	
6,650.00	6,626.72	200.65	494.31	Start 2.72 hold at 6650.00 MD	
6,652.72	6,629.44	200.65	494.31	Start DLS 10.01 TFO 180.32	
7,553.49	7,202.06	-373.27	491.15	Start 26.73 hold at 7553.49 MD	
7,580.23	7,202.00	-400.00	491.00	Start DLS 1.00 TFO -89.41	
7,649.53	7,201.84	-469.30	491.04	Start 4089.80 hold at 7649.53 MD	
11,739.32	7,192.00	-4,558.99	517.96	TD at 11739.32	