

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Raymond 2-29HZ Pad

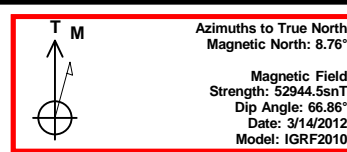
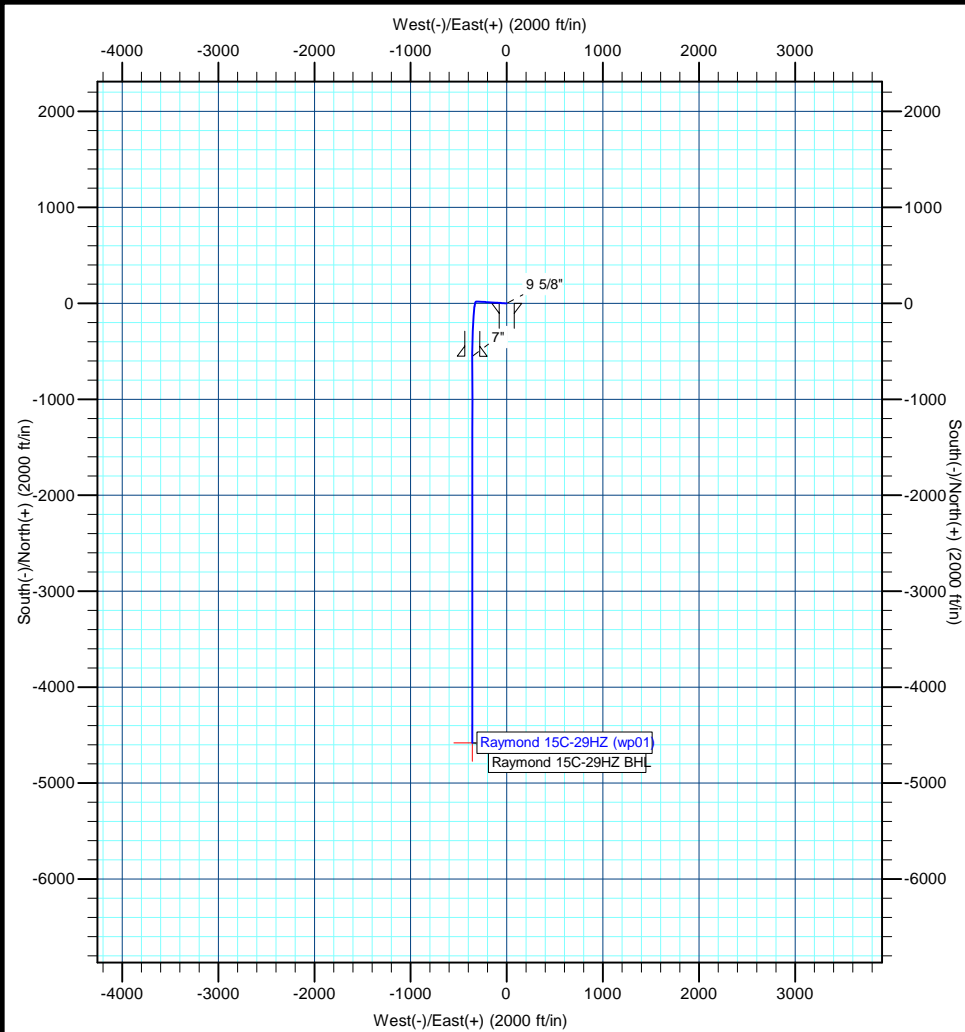
Raymond 15C-29HZ

Raymond 15C-29HZ

Plan: Raymond 15C-29HZ (wp01)

Standard Planning Report

14 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD Raymond 2-29HZ Pad
Well: Raymond 15C-29HZ
Wellbore: Raymond 15C-29HZ
Section:
SHL:
Design: Raymond 15C-29HZ (wp01)
Latitude: 40.202414
Longitude: -104.796875
GL: 4922.00
KB: rkb + gl @ 4939.00ft

WELL DETAILS: Raymond 15C-29HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4922.00 Latitude	Longitude	Slot
0.00	0.00	1317360.45	3196396.27	40.202414	-104.796875	

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
2194.45	3.89	273.42	2194.30	0.39	-6.58	2.00	273.42	0.12
6825.86	3.89	273.42	6815.05	19.11	-320.14	0.00	0.00	5.96
7725.33	89.72	180.01	7389.00	-551.00	-359.00	10.00	-93.42	577.37
7726.34	89.72	180.00	7389.00	-552.01	-359.00	1.00	-90.00	578.37
1754.85	89.72	180.00	7409.00	-4580.47	-359.00	0.00	0.00	4594.52

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

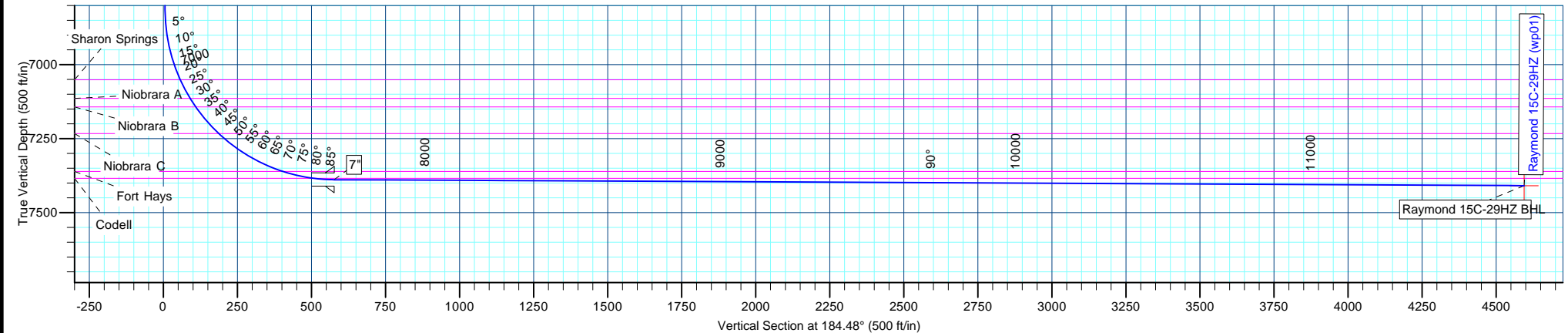
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Raymond 15C-29HZ BHL	7409.00	-4580.47	-359.00	40.189840	-104.798160	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3126.00	3128.30	Parkman
4353.00	4358.13	Sussex
7051.00	7069.42	Sharon Springs
7114.00	7140.78	Niobrara A
7143.00	7175.44	Niobrara B
7233.00	7294.61	Niobrara C
7361.00	7548.09	Fort Hays
7384.00	7652.29	Codell

CASING DETAILS

TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7389.00	7725.33	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 15C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4939.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4939.00ft
Site:	WELD_Raymond 2-29HZ Pad	North Reference:	True
Well:	Raymond 15C-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 15C-29HZ		
Design:	Raymond 15C-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 2-29HZ Pad			
Site Position:		Northing:	1,317,360.37 usft	Latitude: 40.202415
From:	Lat/Long	Easting:	3,196,336.22 usft	Longitude: -104.797090
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.45 °

Well	Raymond 15C-29HZ			
Well Position	+N/-S	-0.39 ft	Northing:	1,317,360.45 usft
	+E/-W	60.05 ft	Easting:	3,196,396.27 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Latitude: 40.202414
				Longitude: -104.796875
				Ground Level: 4,922.00 ft

Wellbore	Raymond 15C-29HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/14/2012	8.76	66.86	52,945

Design	Raymond 15C-29HZ (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	184.48

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	
2,194.45	3.89	273.42	2,194.30	0.39	-6.58	2.00	2.00	0.00	273.42	
6,825.86	3.89	273.42	6,815.05	19.11	-320.14	0.00	0.00	0.00	0.00	
7,725.33	89.72	180.01	7,389.00	-551.00	-359.00	10.00	9.54	-10.38	-93.42	
7,726.34	89.72	180.00	7,389.01	-552.01	-359.00	1.00	0.00	-1.00	-90.00	
11,754.85	89.72	180.00	7,409.00	-4,580.47	-359.00	0.00	0.00	0.00	0.00	Raymond 15C-29HZ I

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4939.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4939.00ft
Site:	WELD_Raymond 2-29HZ Pad	North Reference:	True
Well:	Raymond 15C-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 15C-29HZ		
Design:	Raymond 15C-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
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
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
Start Build 2.00									
2,100.00	2.00	273.42	2,099.98	0.10	-1.74	0.03	2.00	2.00	0.00
2,194.45	3.89	273.42	2,194.30	0.39	-6.58	0.12	2.00	2.00	0.00
Start 4631.41 hold at 2194.45 MD									
2,200.00	3.89	273.42	2,199.84	0.42	-6.96	0.13	0.00	0.00	0.00
2,300.00	3.89	273.42	2,299.61	0.82	-13.73	0.26	0.00	0.00	0.00
2,400.00	3.89	273.42	2,399.38	1.22	-20.50	0.38	0.00	0.00	0.00
2,500.00	3.89	273.42	2,499.15	1.63	-27.27	0.51	0.00	0.00	0.00
2,600.00	3.89	273.42	2,598.92	2.03	-34.04	0.63	0.00	0.00	0.00
2,700.00	3.89	273.42	2,698.69	2.44	-40.81	0.76	0.00	0.00	0.00
2,800.00	3.89	273.42	2,798.46	2.84	-47.58	0.89	0.00	0.00	0.00
2,900.00	3.89	273.42	2,898.23	3.24	-54.35	1.01	0.00	0.00	0.00
3,000.00	3.89	273.42	2,998.00	3.65	-61.12	1.14	0.00	0.00	0.00
3,100.00	3.89	273.42	3,097.77	4.05	-67.89	1.26	0.00	0.00	0.00
3,128.30	3.89	273.42	3,126.00	4.17	-69.81	1.30	0.00	0.00	0.00
Parkman									
3,200.00	3.89	273.42	3,197.54	4.46	-74.66	1.39	0.00	0.00	0.00
3,300.00	3.89	273.42	3,297.31	4.86	-81.43	1.52	0.00	0.00	0.00
3,400.00	3.89	273.42	3,397.07	5.27	-88.20	1.64	0.00	0.00	0.00
3,500.00	3.89	273.42	3,496.84	5.67	-94.97	1.77	0.00	0.00	0.00
3,600.00	3.89	273.42	3,596.61	6.07	-101.74	1.90	0.00	0.00	0.00
3,700.00	3.89	273.42	3,696.38	6.48	-108.52	2.02	0.00	0.00	0.00
3,800.00	3.89	273.42	3,796.15	6.88	-115.29	2.15	0.00	0.00	0.00
3,900.00	3.89	273.42	3,895.92	7.29	-122.06	2.27	0.00	0.00	0.00
4,000.00	3.89	273.42	3,995.69	7.69	-128.83	2.40	0.00	0.00	0.00
4,100.00	3.89	273.42	4,095.46	8.09	-135.60	2.53	0.00	0.00	0.00
4,200.00	3.89	273.42	4,195.23	8.50	-142.37	2.65	0.00	0.00	0.00
4,300.00	3.89	273.42	4,295.00	8.90	-149.14	2.78	0.00	0.00	0.00
4,358.13	3.89	273.42	4,353.00	9.14	-153.07	2.85	0.00	0.00	0.00
Sussex									
4,400.00	3.89	273.42	4,394.77	9.31	-155.91	2.90	0.00	0.00	0.00
4,500.00	3.89	273.42	4,494.54	9.71	-162.68	3.03	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 15C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4939.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4939.00ft
Site:	WELD_Raymond 2-29HZ Pad	North Reference:	True
Well:	Raymond 15C-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 15C-29HZ		
Design:	Raymond 15C-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)
4,600.00	3.89	273.42	4,594.31	10.11	-169.45	3.16	0.00	0.00	0.00
4,700.00	3.89	273.42	4,694.08	10.52	-176.22	3.28	0.00	0.00	0.00
4,800.00	3.89	273.42	4,793.85	10.92	-182.99	3.41	0.00	0.00	0.00
4,900.00	3.89	273.42	4,893.62	11.33	-189.76	3.53	0.00	0.00	0.00
5,000.00	3.89	273.42	4,993.39	11.73	-196.53	3.66	0.00	0.00	0.00
5,100.00	3.89	273.42	5,093.16	12.14	-203.30	3.79	0.00	0.00	0.00
5,200.00	3.89	273.42	5,192.93	12.54	-210.07	3.91	0.00	0.00	0.00
5,300.00	3.89	273.42	5,292.70	12.94	-216.84	4.04	0.00	0.00	0.00
5,400.00	3.89	273.42	5,392.47	13.35	-223.61	4.16	0.00	0.00	0.00
5,500.00	3.89	273.42	5,492.24	13.75	-230.38	4.29	0.00	0.00	0.00
5,600.00	3.89	273.42	5,592.01	14.16	-237.15	4.42	0.00	0.00	0.00
5,700.00	3.89	273.42	5,691.78	14.56	-243.92	4.54	0.00	0.00	0.00
5,800.00	3.89	273.42	5,791.55	14.96	-250.69	4.67	0.00	0.00	0.00
5,900.00	3.89	273.42	5,891.32	15.37	-257.46	4.80	0.00	0.00	0.00
6,000.00	3.89	273.42	5,991.09	15.77	-264.23	4.92	0.00	0.00	0.00
6,100.00	3.89	273.42	6,090.86	16.18	-271.00	5.05	0.00	0.00	0.00
6,200.00	3.89	273.42	6,190.63	16.58	-277.77	5.17	0.00	0.00	0.00
6,300.00	3.89	273.42	6,290.40	16.99	-284.54	5.30	0.00	0.00	0.00
6,400.00	3.89	273.42	6,390.17	17.39	-291.31	5.43	0.00	0.00	0.00
6,500.00	3.89	273.42	6,489.94	17.79	-298.08	5.55	0.00	0.00	0.00
6,600.00	3.89	273.42	6,589.71	18.20	-304.85	5.68	0.00	0.00	0.00
6,700.00	3.89	273.42	6,689.48	18.60	-311.62	5.80	0.00	0.00	0.00
6,800.00	3.89	273.42	6,789.25	19.01	-318.39	5.93	0.00	0.00	0.00
6,825.86	3.89	273.42	6,815.05	19.11	-320.14	5.96	0.00	0.00	0.00
Start DLS 10.00 TFO -93.42									
6,900.00	8.16	208.24	6,888.83	14.62	-325.15	10.83	10.00	5.76	-87.91
7,000.00	17.60	192.34	6,986.23	-6.46	-331.76	32.36	10.00	9.44	-15.90
7,069.42	24.42	188.59	7,051.00	-30.93	-336.15	57.10	10.00	9.82	-5.41
Sharon Springs									
7,100.00	27.44	187.50	7,078.50	-44.16	-338.01	70.44	10.00	9.88	-3.55
7,140.78	31.48	186.35	7,114.00	-64.07	-340.42	90.47	10.00	9.90	-2.81
Niobrara A									
7,175.44	34.92	185.57	7,143.00	-82.94	-342.38	109.44	10.00	9.92	-2.26
Niobrara B									
7,200.00	37.35	185.09	7,162.83	-97.36	-343.73	123.92	10.00	9.93	-1.95
7,294.61	46.77	183.65	7,233.00	-160.49	-348.48	187.23	10.00	9.95	-1.52
Niobrara C									
7,300.00	47.30	183.58	7,236.67	-164.42	-348.73	191.17	10.00	9.96	-1.26
7,400.00	57.27	182.49	7,297.77	-243.32	-352.86	270.15	10.00	9.96	-1.09
7,500.00	67.24	181.62	7,344.27	-331.65	-356.00	358.45	10.00	9.97	-0.87
7,548.09	72.03	181.25	7,361.00	-376.71	-357.13	403.46	10.00	9.97	-0.77
Fort Hays									
7,600.00	77.21	180.87	7,374.76	-426.73	-358.05	453.41	10.00	9.98	-0.73
7,652.29	82.43	180.51	7,384.00	-478.18	-358.67	504.75	10.00	9.98	-0.70
Codell									
7,700.00	87.19	180.18	7,388.32	-525.68	-358.96	552.12	10.00	9.98	-0.68
7,725.33	89.72	180.01	7,389.00	-551.00	-359.00	577.36	10.00	9.98	-0.68
Start DLS 1.00 TFO -90.00 - 7"									
7,726.34	89.72	180.00	7,389.01	-552.01	-359.00	578.37	1.00	0.03	-1.00
Start 4028.51 hold at 7726.34 MD									
7,800.00	89.72	180.00	7,389.37	-625.67	-359.00	651.80	0.00	0.00	0.00
7,900.00	89.72	180.00	7,389.87	-725.66	-359.00	751.50	0.00	0.00	0.00
8,000.00	89.72	180.00	7,390.36	-825.66	-359.00	851.19	0.00	0.00	0.00

Anadarko Petroleum Corp

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4939.00ft
Site:	WELD_Raymond 2-29HZ Pad	North Reference:	True
Well:	Raymond 15C-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 15C-29HZ		
Design:	Raymond 15C-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)	
8,100.00	89.72	180.00	7,390.86	-925.66	-359.00	950.88	0.00	0.00	0.00	
8,200.00	89.72	180.00	7,391.36	-1,025.66	-359.00	1,050.58	0.00	0.00	0.00	
8,300.00	89.72	180.00	7,391.85	-1,125.66	-359.00	1,150.27	0.00	0.00	0.00	
8,400.00	89.72	180.00	7,392.35	-1,225.66	-359.00	1,249.96	0.00	0.00	0.00	
8,500.00	89.72	180.00	7,392.85	-1,325.66	-359.00	1,349.65	0.00	0.00	0.00	
8,600.00	89.72	180.00	7,393.34	-1,425.66	-359.00	1,449.35	0.00	0.00	0.00	
8,700.00	89.72	180.00	7,393.84	-1,525.65	-359.00	1,549.04	0.00	0.00	0.00	
8,800.00	89.72	180.00	7,394.33	-1,625.65	-359.00	1,648.73	0.00	0.00	0.00	
8,900.00	89.72	180.00	7,394.83	-1,725.65	-359.00	1,748.43	0.00	0.00	0.00	
9,000.00	89.72	180.00	7,395.33	-1,825.65	-359.00	1,848.12	0.00	0.00	0.00	
9,100.00	89.72	180.00	7,395.82	-1,925.65	-359.00	1,947.81	0.00	0.00	0.00	
9,200.00	89.72	180.00	7,396.32	-2,025.65	-359.00	2,047.51	0.00	0.00	0.00	
9,300.00	89.72	180.00	7,396.82	-2,125.65	-359.00	2,147.20	0.00	0.00	0.00	
9,400.00	89.72	180.00	7,397.31	-2,225.65	-359.00	2,246.89	0.00	0.00	0.00	
9,500.00	89.72	180.00	7,397.81	-2,325.64	-359.00	2,346.59	0.00	0.00	0.00	
9,600.00	89.72	180.00	7,398.30	-2,425.64	-359.00	2,446.28	0.00	0.00	0.00	
9,700.00	89.72	180.00	7,398.80	-2,525.64	-359.00	2,545.97	0.00	0.00	0.00	
9,800.00	89.72	180.00	7,399.30	-2,625.64	-359.00	2,645.66	0.00	0.00	0.00	
9,900.00	89.72	180.00	7,399.79	-2,725.64	-359.00	2,745.36	0.00	0.00	0.00	
10,000.00	89.72	180.00	7,400.29	-2,825.64	-359.00	2,845.05	0.00	0.00	0.00	
10,100.00	89.72	180.00	7,400.79	-2,925.64	-359.00	2,944.74	0.00	0.00	0.00	
10,200.00	89.72	180.00	7,401.28	-3,025.64	-359.00	3,044.44	0.00	0.00	0.00	
10,300.00	89.72	180.00	7,401.78	-3,125.63	-359.00	3,144.13	0.00	0.00	0.00	
10,400.00	89.72	180.00	7,402.28	-3,225.63	-359.00	3,243.82	0.00	0.00	0.00	
10,500.00	89.72	180.00	7,402.77	-3,325.63	-359.00	3,343.52	0.00	0.00	0.00	
10,600.00	89.72	180.00	7,403.27	-3,425.63	-359.00	3,443.21	0.00	0.00	0.00	
10,700.00	89.72	180.00	7,403.76	-3,525.63	-359.00	3,542.90	0.00	0.00	0.00	
10,800.00	89.72	180.00	7,404.26	-3,625.63	-359.00	3,642.59	0.00	0.00	0.00	
10,900.00	89.72	180.00	7,404.76	-3,725.63	-359.00	3,742.29	0.00	0.00	0.00	
11,000.00	89.72	180.00	7,405.25	-3,825.63	-359.00	3,841.98	0.00	0.00	0.00	
11,100.00	89.72	180.00	7,405.75	-3,925.63	-359.00	3,941.67	0.00	0.00	0.00	
11,200.00	89.72	180.00	7,406.25	-4,025.62	-359.00	4,041.37	0.00	0.00	0.00	
11,300.00	89.72	180.00	7,406.74	-4,125.62	-359.00	4,141.06	0.00	0.00	0.00	
11,400.00	89.72	180.00	7,407.24	-4,225.62	-359.00	4,240.75	0.00	0.00	0.00	
11,500.00	89.72	180.00	7,407.74	-4,325.62	-359.00	4,340.45	0.00	0.00	0.00	
11,600.00	89.72	180.00	7,408.23	-4,425.62	-359.00	4,440.14	0.00	0.00	0.00	
11,700.00	89.72	180.00	7,408.73	-4,525.62	-359.00	4,539.83	0.00	0.00	0.00	
11,754.85	89.72	180.00	7,409.00	-4,580.47	-359.00	4,594.52	0.00	0.00	0.00	
TD at 11754.85 - Raymond 15C-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 15C-29HZ BH	0.00	0.00	7,409.00	-4,580.47	-359.00	1,312,777.29	3,196,073.61	40.189840	-104.798160	
- plan hits target center										
- Point										

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Raymond 15C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4939.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4939.00ft
Site:	WELD_Raymond 2-29HZ Pad	North Reference:	True
Well:	Raymond 15C-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Raymond 15C-29HZ		
Design:	Raymond 15C-29HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
900.00	900.00	9 5/8"	9-5/8	12-1/4	
7,725.33	7,389.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction	
3,128.30	3,126.00	Parkman				
4,358.13	4,353.00	Sussex				
7,069.42	7,051.00	Sharon Springs				
7,140.78	7,114.00	Niobrara A				
7,175.44	7,143.00	Niobrara B				
7,294.61	7,233.00	Niobrara C				
7,548.09	7,361.00	Fort Hays				
7,652.29	7,384.00	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
2,194.45	2,194.30	0.39	-6.58	Start 4631.41 hold at 2194.45 MD	
6,825.86	6,815.05	19.11	-320.14	Start DLS 10.00 TFO -93.42	
7,725.33	7,389.00	-551.00	-359.00	Start DLS 1.00 TFO -90.00	
7,726.34	7,389.01	-552.01	-359.00	Start 4028.51 hold at 7726.34 MD	
11,754.85	7,409.00	-4,580.47	-359.00	TD at 11754.85	