

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Miracle 16-12HZ Pad

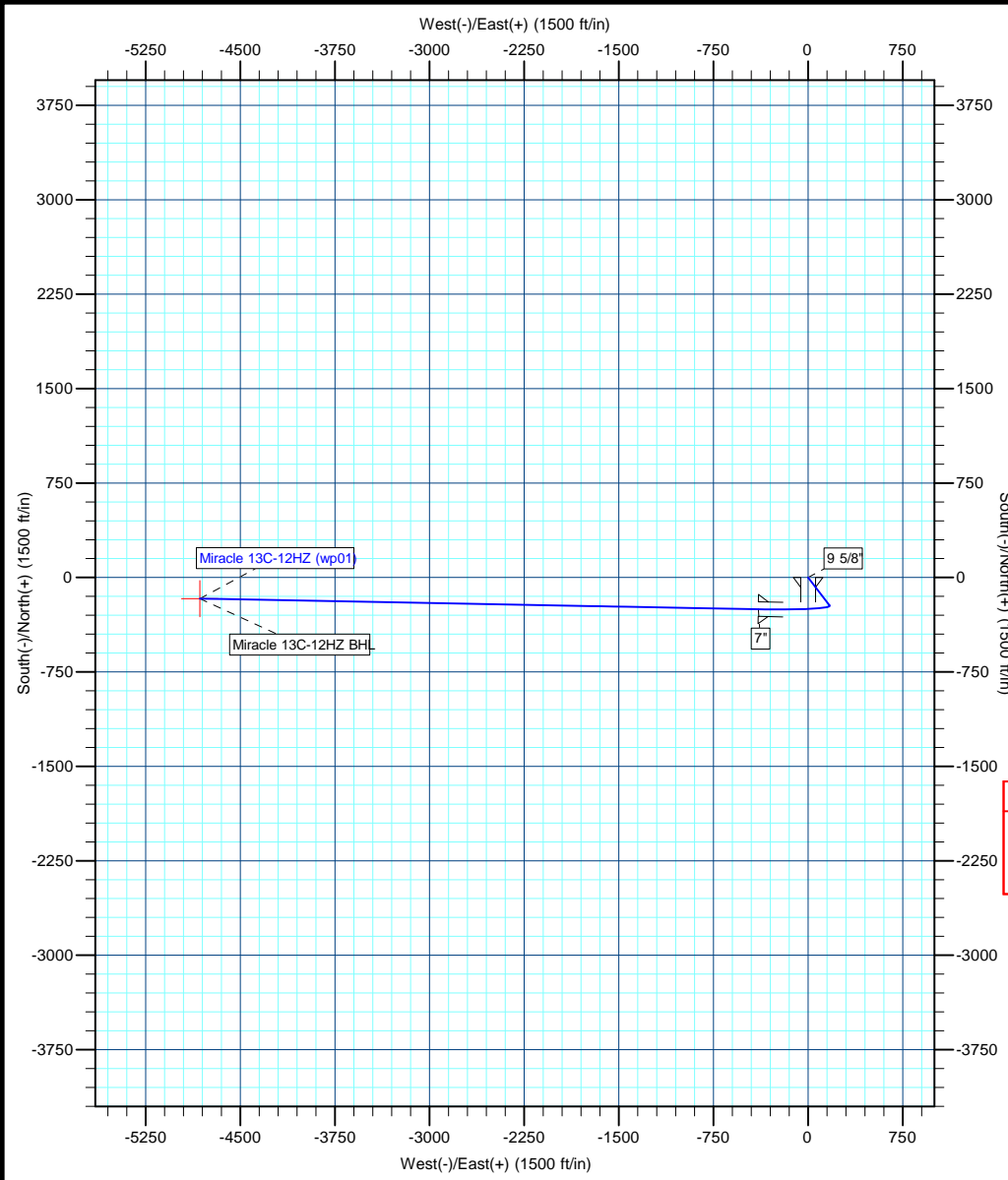
Miracle 13C-12HZ

Miracle 13C-12HZ

Plan: Miracle 13C-12HZ (wp01)

Standard Planning Report

24 May, 2012



Azimuths to True North
 Magnetic North: 8.84°
 Magnetic Field Strength: 53016.3snT
 Dip Angle: 67.00°
 Date: 5/24/2012
 Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_Miracle 16-12HZ Pad
 Well: Miracle 13C-12HZ
 Wellbore: Miracle 13C-12HZ
 Section:
 SHL:
 Design: Miracle 13C-12HZ (wp01)
 Latitude: 40.408928
 Longitude: -104.945350
 GL: 4951.00
 KB: GL + RKB @ 4968.00ft



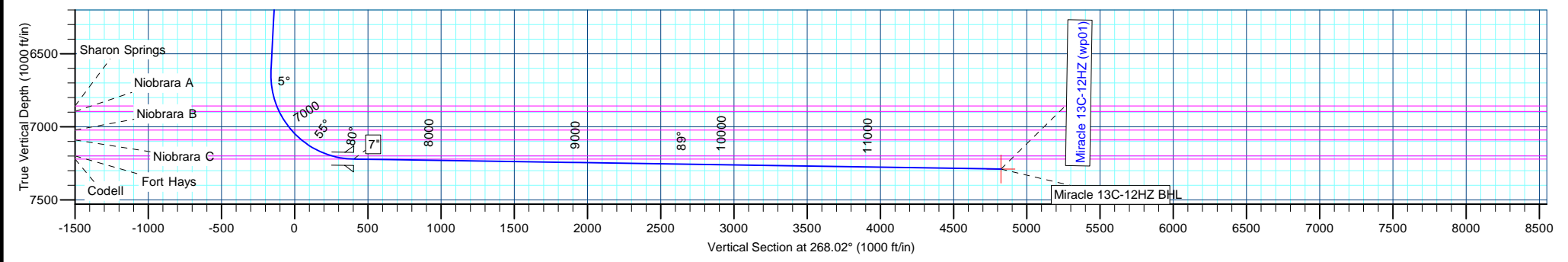
WELL DETAILS: Miracle 13C-12HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4951.00 Latitude	Longitude	Slot
0.00	0.00	1392295.88	3154454.42	40.408928	-104.945350	

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	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00	
3549.77	5.00	142.71	3549.45	-8.66	6.59	2.00	142.71	-6.29	
6630.52	5.00	142.71	6618.50	-222.09	169.10	0.00	0.00	-161.32	
7552.82	89.13	271.09	7221.00	-252.00	-395.00	10.00	128.33	403.47	
7554.24	89.12	271.10	7221.02	-251.97	-396.42	1.00	128.57	404.89	
11980.14	89.12	271.10	7289.00	-166.74	-4820.98	0.00	0.00	4823.86	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Miracle 13C-12HZ BHL	7289.00	-166.74	-4820.98	40.408469	-104.962662	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
904.00	904.00	Fox Hills
3474.00	3474.11	Parkman
4207.00	4209.82	Sussex
6857.00	6874.46	Sharon Springs
6895.00	6915.96	Niobrara A
7022.00	7068.29	Niobrara B
7090.00	7165.73	Niobrara C
7199.00	7401.83	Fort Hays
7221.00	7552.82	Codell

CASING DETAILS			
TVD	MD	Name	Size
937.00	937.00	9 5/8"	9-5/8
7221.00	7552.82	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Miracle 13C-12HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4968.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4968.00ft
Site:	WELD_Miracle 16-12HZ Pad	North Reference:	True
Well:	Miracle 13C-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Miracle 13C-12HZ		
Design:	Miracle 13C-12HZ (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_Miracle 16-12HZ Pad				
Site Position:		Northing:	1,392,295.89 usft	Latitude:	40.408928
From:	Lat/Long	Easting:	3,154,454.42 usft	Longitude:	-104.945350
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.36 °

Well	Miracle 13C-12HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,392,295.88 usft	Latitude:	40.408928
	+E/-W	0.00 ft	Easting:	3,154,454.42 usft	Longitude:	-104.945350
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,951.00 ft

Wellbore	Miracle 13C-12HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/24/2012	8.84	67.00	53,016

Design	Miracle 13C-12HZ (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	268.02

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	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,549.77	5.00	142.71	3,549.45	-8.66	6.59	2.00	2.00	0.00	142.71	
6,630.52	5.00	142.71	6,618.50	-222.09	169.10	0.00	0.00	0.00	0.00	
7,552.82	89.13	271.09	7,221.00	-252.00	-395.00	10.00	9.12	13.92	128.33	
7,554.24	89.12	271.10	7,221.02	-251.97	-396.42	1.00	-0.62	0.78	128.57	
11,980.14	89.12	271.10	7,289.00	-166.74	-4,820.98	0.00	0.00	0.00	0.00	Miracle 13C-12HZ BH

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4968.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4968.00ft
Site:	WELD_Miracle 16-12HZ Pad	North Reference:	True
Well:	Miracle 13C-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Miracle 13C-12HZ		
Design:	Miracle 13C-12HZ (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	
904.00	0.00	0.00	904.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fox Hills										
937.00	0.00	0.00	937.00	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	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,400.00	2.00	142.71	3,399.98	-1.39	1.06	-1.01	2.00	2.00	0.00	
3,474.11	3.48	142.71	3,474.00	-4.21	3.20	-3.06	2.00	2.00	0.00	
Parkman										
3,500.00	4.00	142.71	3,499.84	-5.55	4.23	-4.03	2.00	2.00	0.00	
3,549.77	5.00	142.71	3,549.45	-8.66	6.59	-6.29	2.00	2.00	0.00	
3,600.00	5.00	142.71	3,599.49	-12.14	9.24	-8.82	0.00	0.00	0.00	
3,700.00	5.00	142.71	3,699.11	-19.07	14.52	-13.85	0.00	0.00	0.00	
3,800.00	5.00	142.71	3,798.73	-25.99	19.79	-18.88	0.00	0.00	0.00	
3,900.00	5.00	142.71	3,898.35	-32.92	25.07	-23.91	0.00	0.00	0.00	
4,000.00	5.00	142.71	3,997.97	-39.85	30.34	-28.95	0.00	0.00	0.00	
4,100.00	5.00	142.71	4,097.59	-46.78	35.62	-33.98	0.00	0.00	0.00	
4,200.00	5.00	142.71	4,197.21	-53.70	40.89	-39.01	0.00	0.00	0.00	
4,209.82	5.00	142.71	4,207.00	-54.38	41.41	-39.51	0.00	0.00	0.00	
Sussex										
4,300.00	5.00	142.71	4,296.83	-60.63	46.17	-44.04	0.00	0.00	0.00	
4,400.00	5.00	142.71	4,396.45	-67.56	51.44	-49.08	0.00	0.00	0.00	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Miracle 13C-12HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4968.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4968.00ft
Site:	WELD_Miracle 16-12HZ Pad	North Reference:	True
Well:	Miracle 13C-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Miracle 13C-12HZ		
Design:	Miracle 13C-12HZ (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)
4,500.00	5.00	142.71	4,496.07	-74.49	56.72	-54.11	0.00	0.00	0.00
4,600.00	5.00	142.71	4,595.69	-81.42	61.99	-59.14	0.00	0.00	0.00
4,700.00	5.00	142.71	4,695.31	-88.34	67.27	-64.17	0.00	0.00	0.00
4,800.00	5.00	142.71	4,794.94	-95.27	72.54	-69.21	0.00	0.00	0.00
4,900.00	5.00	142.71	4,894.56	-102.20	77.82	-74.24	0.00	0.00	0.00
5,000.00	5.00	142.71	4,994.18	-109.13	83.09	-79.27	0.00	0.00	0.00
5,100.00	5.00	142.71	5,093.80	-116.06	88.37	-84.30	0.00	0.00	0.00
5,200.00	5.00	142.71	5,193.42	-122.98	93.64	-89.34	0.00	0.00	0.00
5,300.00	5.00	142.71	5,293.04	-129.91	98.92	-94.37	0.00	0.00	0.00
5,400.00	5.00	142.71	5,392.66	-136.84	104.19	-99.40	0.00	0.00	0.00
5,500.00	5.00	142.71	5,492.28	-143.77	109.47	-104.43	0.00	0.00	0.00
5,600.00	5.00	142.71	5,591.90	-150.69	114.74	-109.46	0.00	0.00	0.00
5,700.00	5.00	142.71	5,691.52	-157.62	120.02	-114.50	0.00	0.00	0.00
5,800.00	5.00	142.71	5,791.14	-164.55	125.29	-119.53	0.00	0.00	0.00
5,900.00	5.00	142.71	5,890.76	-171.48	130.57	-124.56	0.00	0.00	0.00
6,000.00	5.00	142.71	5,990.38	-178.41	135.84	-129.59	0.00	0.00	0.00
6,100.00	5.00	142.71	6,090.00	-185.33	141.12	-134.63	0.00	0.00	0.00
6,200.00	5.00	142.71	6,189.62	-192.26	146.39	-139.66	0.00	0.00	0.00
6,300.00	5.00	142.71	6,289.24	-199.19	151.67	-144.69	0.00	0.00	0.00
6,400.00	5.00	142.71	6,388.86	-206.12	156.94	-149.72	0.00	0.00	0.00
6,500.00	5.00	142.71	6,488.48	-213.05	162.22	-154.76	0.00	0.00	0.00
6,600.00	5.00	142.71	6,588.10	-219.97	167.49	-159.79	0.00	0.00	0.00
6,630.52	5.00	142.71	6,618.50	-222.09	169.10	-161.32	0.00	0.00	0.00
6,700.00	5.49	225.69	6,687.78	-226.82	168.56	-160.62	10.00	0.71	119.42
6,800.00	14.38	255.66	6,786.23	-233.25	153.07	-144.91	10.00	8.89	29.97
6,874.46	21.63	261.21	6,857.00	-237.64	130.52	-122.23	10.00	9.74	7.45
Sharon Springs									
6,900.00	24.15	262.37	6,880.53	-239.06	120.69	-112.35	10.00	9.84	4.53
6,915.96	25.72	262.98	6,895.00	-239.91	114.01	-105.65	10.00	9.87	3.85
Niobrara A									
7,000.00	34.04	265.34	6,967.81	-244.06	72.39	-63.91	10.00	9.90	2.80
7,068.29	40.83	266.61	7,022.00	-246.94	31.01	-22.45	10.00	9.94	1.86
Niobrara B									
7,100.00	43.98	267.08	7,045.41	-248.11	9.66	-1.07	10.00	9.95	1.50
7,165.73	50.53	267.92	7,090.00	-250.20	-38.54	47.17	10.00	9.96	1.27
Niobrara C									
7,200.00	53.94	268.29	7,110.98	-251.09	-65.62	74.26	10.00	9.96	1.09
7,300.00	63.91	269.23	7,162.53	-252.90	-151.14	159.79	10.00	9.97	0.94
7,400.00	73.88	270.02	7,198.49	-253.49	-244.31	252.93	10.00	9.97	0.79
7,401.83	74.07	270.03	7,199.00	-253.49	-246.07	254.69	10.00	9.97	0.74
Fort Hays									
7,500.00	83.86	270.73	7,217.77	-252.84	-342.30	350.84	10.00	9.98	0.71
7,552.82	89.13	271.09	7,221.00	-252.00	-395.00	403.47	10.00	9.98	0.69
Codell - 7"									
7,554.24	89.12	271.10	7,221.02	-251.97	-396.42	404.89	1.00	-0.62	0.78
7,600.00	89.12	271.10	7,221.72	-251.09	-442.17	450.58	0.00	0.00	0.00
7,700.00	89.12	271.10	7,223.26	-249.17	-542.13	550.42	0.00	0.00	0.00
7,800.00	89.12	271.10	7,224.80	-247.24	-642.10	650.27	0.00	0.00	0.00
7,900.00	89.12	271.10	7,226.33	-245.31	-742.07	750.11	0.00	0.00	0.00
8,000.00	89.12	271.10	7,227.87	-243.39	-842.04	849.95	0.00	0.00	0.00
8,100.00	89.12	271.10	7,229.40	-241.46	-942.01	949.80	0.00	0.00	0.00
8,200.00	89.12	271.10	7,230.94	-239.54	-1,041.98	1,049.64	0.00	0.00	0.00
8,300.00	89.12	271.10	7,232.48	-237.61	-1,141.95	1,149.48	0.00	0.00	0.00

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Database:	edmp	Local Co-ordinate Reference:	Well Miracle 13C-12HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4968.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4968.00ft
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Well:	Miracle 13C-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Miracle 13C-12HZ		
Design:	Miracle 13C-12HZ (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)	
8,400.00	89.12	271.10	7,234.01	-235.69	-1,241.92	1,249.33	0.00	0.00	0.00	
8,500.00	89.12	271.10	7,235.55	-233.76	-1,341.89	1,349.17	0.00	0.00	0.00	
8,600.00	89.12	271.10	7,237.08	-231.83	-1,441.86	1,449.01	0.00	0.00	0.00	
8,700.00	89.12	271.10	7,238.62	-229.91	-1,541.83	1,548.86	0.00	0.00	0.00	
8,800.00	89.12	271.10	7,240.16	-227.98	-1,641.80	1,648.70	0.00	0.00	0.00	
8,900.00	89.12	271.10	7,241.69	-226.06	-1,741.77	1,748.54	0.00	0.00	0.00	
9,000.00	89.12	271.10	7,243.23	-224.13	-1,841.74	1,848.39	0.00	0.00	0.00	
9,100.00	89.12	271.10	7,244.76	-222.20	-1,941.71	1,948.23	0.00	0.00	0.00	
9,200.00	89.12	271.10	7,246.30	-220.28	-2,041.68	2,048.07	0.00	0.00	0.00	
9,300.00	89.12	271.10	7,247.84	-218.35	-2,141.65	2,147.92	0.00	0.00	0.00	
9,400.00	89.12	271.10	7,249.37	-216.43	-2,241.62	2,247.76	0.00	0.00	0.00	
9,500.00	89.12	271.10	7,250.91	-214.50	-2,341.59	2,347.60	0.00	0.00	0.00	
9,600.00	89.12	271.10	7,252.44	-212.58	-2,441.56	2,447.45	0.00	0.00	0.00	
9,700.00	89.12	271.10	7,253.98	-210.65	-2,541.53	2,547.29	0.00	0.00	0.00	
9,800.00	89.12	271.10	7,255.51	-208.72	-2,641.50	2,647.13	0.00	0.00	0.00	
9,900.00	89.12	271.10	7,257.05	-206.80	-2,741.47	2,746.98	0.00	0.00	0.00	
10,000.00	89.12	271.10	7,258.59	-204.87	-2,841.44	2,846.82	0.00	0.00	0.00	
10,100.00	89.12	271.10	7,260.12	-202.95	-2,941.41	2,946.66	0.00	0.00	0.00	
10,200.00	89.12	271.10	7,261.66	-201.02	-3,041.38	3,046.51	0.00	0.00	0.00	
10,300.00	89.12	271.10	7,263.19	-199.09	-3,141.35	3,146.35	0.00	0.00	0.00	
10,400.00	89.12	271.10	7,264.73	-197.17	-3,241.32	3,246.19	0.00	0.00	0.00	
10,500.00	89.12	271.10	7,266.27	-195.24	-3,341.29	3,346.04	0.00	0.00	0.00	
10,600.00	89.12	271.10	7,267.80	-193.32	-3,441.25	3,445.88	0.00	0.00	0.00	
10,700.00	89.12	271.10	7,269.34	-191.39	-3,541.22	3,545.72	0.00	0.00	0.00	
10,800.00	89.12	271.10	7,270.87	-189.47	-3,641.19	3,645.57	0.00	0.00	0.00	
10,900.00	89.12	271.10	7,272.41	-187.54	-3,741.16	3,745.41	0.00	0.00	0.00	
11,000.00	89.12	271.10	7,273.95	-185.61	-3,841.13	3,845.25	0.00	0.00	0.00	
11,100.00	89.12	271.10	7,275.48	-183.69	-3,941.10	3,945.10	0.00	0.00	0.00	
11,200.00	89.12	271.10	7,277.02	-181.76	-4,041.07	4,044.94	0.00	0.00	0.00	
11,300.00	89.12	271.10	7,278.55	-179.84	-4,141.04	4,144.78	0.00	0.00	0.00	
11,400.00	89.12	271.10	7,280.09	-177.91	-4,241.01	4,244.63	0.00	0.00	0.00	
11,500.00	89.12	271.10	7,281.63	-175.98	-4,340.98	4,344.47	0.00	0.00	0.00	
11,600.00	89.12	271.10	7,283.16	-174.06	-4,440.95	4,444.31	0.00	0.00	0.00	
11,700.00	89.12	271.10	7,284.70	-172.13	-4,540.92	4,544.16	0.00	0.00	0.00	
11,800.00	89.12	271.10	7,286.23	-170.21	-4,640.89	4,644.00	0.00	0.00	0.00	
11,900.00	89.12	271.10	7,287.77	-168.28	-4,740.86	4,743.84	0.00	0.00	0.00	
11,980.14	89.12	271.10	7,289.00	-166.74	-4,820.98	4,823.86	0.00	0.00	0.00	
Miracle 13C-12HZ BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Miracle 13C-12HZ BHL	0.00	0.00	7,289.00	-166.74	-4,820.98	1,392,098.99	3,149,634.59	40.408469	-104.962662	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Miracle 13C-12HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4968.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4968.00ft
Site:	WELD_Miracle 16-12HZ Pad	North Reference:	True
Well:	Miracle 13C-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Miracle 13C-12HZ		
Design:	Miracle 13C-12HZ (wp01)		

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")	
937.00	937.00	9 5/8"		9-5/8	12-1/4	
7,552.82	7,221.00	7"		7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
904.00	904.00	Fox Hills				
3,474.11	3,474.00	Parkman				
4,209.82	4,207.00	Sussex				
6,874.46	6,857.00	Sharon Springs				
6,915.96	6,895.00	Niobrara A				
7,068.29	7,022.00	Niobrara B				
7,165.73	7,090.00	Niobrara C				
7,401.83	7,199.00	Fort Hays				
7,552.82	7,221.00	Codell				