

US ROCKIES REGION PLANNING

COLORADO CENTRAL ZONE - 83

ARAPAHOE_WATKINS 6 PAD

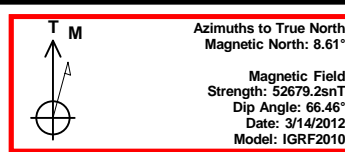
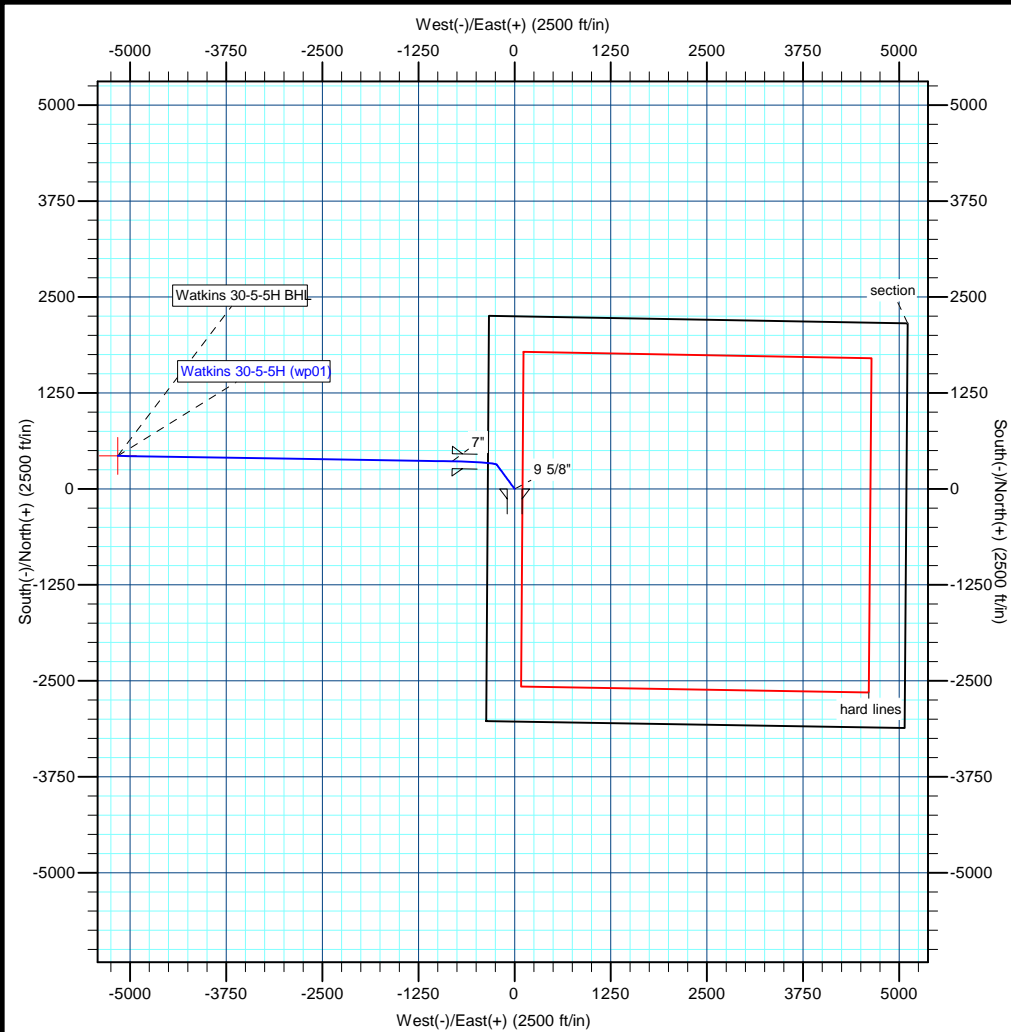
Watkins 30-5-5H

Watkins 30-5-5H

Plan: Watkins 30-5-5H (wp01)

Standard Planning Report

15 March, 2012



Project: COLORADO CENTRAL ZONE - 83
 Site: ARAPAHOE WATKINS 6 PAD
 Well: Watkins 30-5-5H
 Wellbore: Watkins 30-5-5H
 Section:
 SHL:
 Design: Watkins 30-5-5H (wp01)
 Latitude: 39.675551
 Longitude: -104.602253
 GL: 5772.00
 KB: GL + RKB @ 5797.00ft

WELL DETAILS: Watkins 30-5-5H

+N/-S	+E/-W	Northing	Ground Level: Easting	5772.00 Latitude	Longitude	Slot
0.00	0.00	1672196.84	3252694.21	39.675551	-104.602253	

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
2150.00	0.00	0.00	2150.00	0.00	0.00	0.00	0.00	0.00
2373.13	4.46	323.74	2372.90	7.00	-5.14	2.00	323.74	5.70
7302.27	4.46	323.74	7287.10	316.26	-231.96	0.00	0.00	257.43
8181.66	90.64	270.94	7832.00	360.00	-810.00	10.00	-52.85	837.10
8184.53	90.66	270.92	7831.97	360.05	-812.87	1.00	-38.73	839.96
12531.13	90.66	270.92	7782.00	429.99	-5158.62	0.00	0.00	5176.51

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

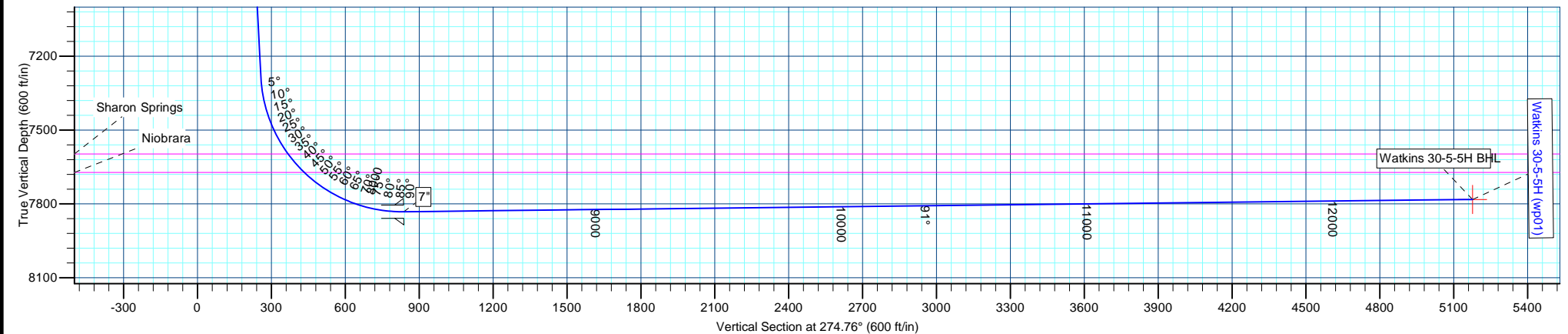
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Watkins 30-5-5H BHL	7782.00	429.99	-5158.62	39.676730	-104.620580	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1864.00	1864.00	Fox Hills
5133.00	5141.62	Sussex
6203.00	6214.87	Shannon
7597.00	7636.14	Sharon Springs
7672.00	7735.95	Niobrara

CASING DETAILS

TVD	MD	Name	Size
2010.00	2010.00	9 5/8"	9-5/8
7832.00	8181.66	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-5H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 5797.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	GL + RKB @ 5797.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-5H		
Design:	Watkins 30-5-5H (wp01)		

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

Site	ARAPAHOE_WATKINS 6 PAD			
Site Position:		Northing:	1,672,196.84 usft	Latitude: 39.675551
From:	Lat/Long	Easting:	3,252,694.22 usft	Longitude: -104.602253
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.57 °

Well	Watkins 30-5-5H			
Well Position	+N/-S	0.00 ft	Northing:	1,672,196.84 usft
	+E/-W	0.00 ft	Easting:	3,252,694.22 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 5,772.00 ft

Wellbore	Watkins 30-5-5H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/14/2012	8.61	66.46	52,679

Design	Watkins 30-5-5H (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	274.76

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,373.13	4.46	323.74	2,372.90	7.00	-5.14	2.00	2.00	0.00	323.74	
7,302.27	4.46	323.74	7,287.10	316.26	-231.96	0.00	0.00	0.00	0.00	
8,181.66	90.64	270.94	7,832.00	360.00	-810.00	10.00	9.80	-6.00	-52.85	
8,184.53	90.66	270.92	7,831.97	360.05	-812.87	1.00	0.78	-0.63	-38.73	
12,531.13	90.66	270.92	7,782.00	429.99	-5,158.62	0.00	0.00	0.00	0.00	Watkins 30-5-5H BHL

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-5H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 5797.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	GL + RKB @ 5797.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-5H		
Design:	Watkins 30-5-5H (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
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
1,864.00	0.00	0.00	1,864.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills									
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
2,010.00	0.00	0.00	2,010.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,200.00	1.00	323.74	2,200.00	0.35	-0.26	0.29	2.00	2.00	0.00
2,300.00	3.00	323.74	2,299.93	3.17	-2.32	2.58	2.00	2.00	0.00
2,373.13	4.46	323.74	2,372.90	7.00	-5.14	5.70	2.00	2.00	0.00
Start 4929.15 hold at 2373.13 MD									
2,400.00	4.46	323.74	2,399.69	8.69	-6.37	7.07	0.00	0.00	0.00
2,500.00	4.46	323.74	2,499.39	14.96	-10.97	12.18	0.00	0.00	0.00
2,600.00	4.46	323.74	2,599.09	21.24	-15.58	17.29	0.00	0.00	0.00
2,700.00	4.46	323.74	2,698.78	27.51	-20.18	22.39	0.00	0.00	0.00
2,800.00	4.46	323.74	2,798.48	33.78	-24.78	27.50	0.00	0.00	0.00
2,900.00	4.46	323.74	2,898.18	40.06	-29.38	32.61	0.00	0.00	0.00
3,000.00	4.46	323.74	2,997.87	46.33	-33.98	37.71	0.00	0.00	0.00
3,100.00	4.46	323.74	3,097.57	52.61	-38.59	42.82	0.00	0.00	0.00
3,200.00	4.46	323.74	3,197.27	58.88	-43.19	47.93	0.00	0.00	0.00
3,300.00	4.46	323.74	3,296.96	65.15	-47.79	53.04	0.00	0.00	0.00
3,400.00	4.46	323.74	3,396.66	71.43	-52.39	58.14	0.00	0.00	0.00
3,500.00	4.46	323.74	3,496.36	77.70	-56.99	63.25	0.00	0.00	0.00
3,600.00	4.46	323.74	3,596.06	83.98	-61.59	68.36	0.00	0.00	0.00
3,700.00	4.46	323.74	3,695.75	90.25	-66.20	73.46	0.00	0.00	0.00
3,800.00	4.46	323.74	3,795.45	96.52	-70.80	78.57	0.00	0.00	0.00
3,900.00	4.46	323.74	3,895.15	102.80	-75.40	83.68	0.00	0.00	0.00
4,000.00	4.46	323.74	3,994.84	109.07	-80.00	88.79	0.00	0.00	0.00
4,100.00	4.46	323.74	4,094.54	115.35	-84.60	93.89	0.00	0.00	0.00
4,200.00	4.46	323.74	4,194.24	121.62	-89.21	99.00	0.00	0.00	0.00
4,300.00	4.46	323.74	4,293.93	127.89	-93.81	104.11	0.00	0.00	0.00
4,400.00	4.46	323.74	4,393.63	134.17	-98.41	109.21	0.00	0.00	0.00
4,500.00	4.46	323.74	4,493.33	140.44	-103.01	114.32	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-5H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 5797.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	GL + RKB @ 5797.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-5H		
Design:	Watkins 30-5-5H (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	4.46	323.74	4,593.02	146.72	-107.61	119.43	0.00	0.00	0.00	
4,700.00	4.46	323.74	4,692.72	152.99	-112.21	124.53	0.00	0.00	0.00	
4,800.00	4.46	323.74	4,792.42	159.26	-116.82	129.64	0.00	0.00	0.00	
4,900.00	4.46	323.74	4,892.11	165.54	-121.42	134.75	0.00	0.00	0.00	
5,000.00	4.46	323.74	4,991.81	171.81	-126.02	139.86	0.00	0.00	0.00	
5,100.00	4.46	323.74	5,091.51	178.09	-130.62	144.96	0.00	0.00	0.00	
5,141.62	4.46	323.74	5,133.00	180.70	-132.54	147.09	0.00	0.00	0.00	
Sussex										
5,200.00	4.46	323.74	5,191.20	184.36	-135.22	150.07	0.00	0.00	0.00	
5,300.00	4.46	323.74	5,290.90	190.63	-139.82	155.18	0.00	0.00	0.00	
5,400.00	4.46	323.74	5,390.60	196.91	-144.43	160.28	0.00	0.00	0.00	
5,500.00	4.46	323.74	5,490.30	203.18	-149.03	165.39	0.00	0.00	0.00	
5,600.00	4.46	323.74	5,589.99	209.46	-153.63	170.50	0.00	0.00	0.00	
5,700.00	4.46	323.74	5,689.69	215.73	-158.23	175.60	0.00	0.00	0.00	
5,800.00	4.46	323.74	5,789.39	222.00	-162.83	180.71	0.00	0.00	0.00	
5,900.00	4.46	323.74	5,889.08	228.28	-167.44	185.82	0.00	0.00	0.00	
6,000.00	4.46	323.74	5,988.78	234.55	-172.04	190.93	0.00	0.00	0.00	
6,100.00	4.46	323.74	6,088.48	240.83	-176.64	196.03	0.00	0.00	0.00	
6,200.00	4.46	323.74	6,188.17	247.10	-181.24	201.14	0.00	0.00	0.00	
6,214.87	4.46	323.74	6,203.00	248.03	-181.92	201.90	0.00	0.00	0.00	
Shannon										
6,300.00	4.46	323.74	6,287.87	253.37	-185.84	206.25	0.00	0.00	0.00	
6,400.00	4.46	323.74	6,387.57	259.65	-190.44	211.35	0.00	0.00	0.00	
6,500.00	4.46	323.74	6,487.26	265.92	-195.05	216.46	0.00	0.00	0.00	
6,600.00	4.46	323.74	6,586.96	272.20	-199.65	221.57	0.00	0.00	0.00	
6,700.00	4.46	323.74	6,686.66	278.47	-204.25	226.67	0.00	0.00	0.00	
6,800.00	4.46	323.74	6,786.35	284.74	-208.85	231.78	0.00	0.00	0.00	
6,900.00	4.46	323.74	6,886.05	291.02	-213.45	236.89	0.00	0.00	0.00	
7,000.00	4.46	323.74	6,985.75	297.29	-218.05	242.00	0.00	0.00	0.00	
7,100.00	4.46	323.74	7,085.44	303.57	-222.66	247.10	0.00	0.00	0.00	
7,200.00	4.46	323.74	7,185.14	309.84	-227.26	252.21	0.00	0.00	0.00	
7,300.00	4.46	323.74	7,284.84	316.11	-231.86	257.32	0.00	0.00	0.00	
7,302.27	4.46	323.74	7,287.10	316.26	-231.96	257.43	0.00	0.00	0.00	
Start DLS 10.00 TFO -52.85										
7,400.00	12.96	286.64	7,383.67	322.48	-244.74	270.69	10.00	8.70	-37.96	
7,500.00	22.74	279.51	7,478.76	328.90	-274.62	300.99	10.00	9.78	-7.14	
7,600.00	32.64	276.55	7,567.20	335.18	-320.60	347.33	10.00	9.91	-2.96	
7,636.14	36.24	275.84	7,597.00	337.38	-340.91	367.76	10.00	9.94	-1.94	
Sharon Springs										
7,700.00	42.59	274.86	7,646.31	341.13	-381.26	408.28	10.00	9.95	-1.55	
7,735.95	46.17	274.40	7,672.00	343.16	-406.32	433.42	10.00	9.96	-1.27	
Niobrara										
7,800.00	52.56	273.71	7,713.69	346.57	-454.78	482.00	10.00	9.97	-1.08	
7,900.00	62.53	272.83	7,767.29	351.34	-538.92	566.24	10.00	9.97	-0.88	
8,000.00	72.51	272.10	7,805.48	355.29	-631.11	658.44	10.00	9.98	-0.73	
8,100.00	82.49	271.45	7,827.11	358.30	-728.57	755.82	10.00	9.98	-0.65	
8,181.66	90.64	270.94	7,832.00	360.00	-810.00	837.10	10.00	9.98	-0.62	
Start DLS 1.00 TFO -38.73 - 7"										
8,184.53	90.66	270.92	7,831.97	360.05	-812.87	839.96	1.01	0.79	-0.63	
Start 4346.60 hold at 8184.53 MD										
8,200.00	90.66	270.92	7,831.79	360.30	-828.33	855.40	0.00	0.00	0.00	
8,300.00	90.66	270.92	7,830.64	361.90	-928.31	955.17	0.00	0.00	0.00	
8,400.00	90.66	270.92	7,829.49	363.51	-1,028.29	1,054.94	0.00	0.00	0.00	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-5H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 5797.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	GL + RKB @ 5797.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-5H		
Design:	Watkins 30-5-5H (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)	
8,500.00	90.66	270.92	7,828.34	365.12	-1,128.27	1,154.70	0.00	0.00	0.00	
8,600.00	90.66	270.92	7,827.19	366.73	-1,228.26	1,254.47	0.00	0.00	0.00	
8,700.00	90.66	270.92	7,826.04	368.34	-1,328.24	1,354.24	0.00	0.00	0.00	
8,800.00	90.66	270.92	7,824.89	369.95	-1,428.22	1,454.01	0.00	0.00	0.00	
8,900.00	90.66	270.92	7,823.74	371.56	-1,528.20	1,553.78	0.00	0.00	0.00	
9,000.00	90.66	270.92	7,822.59	373.17	-1,628.18	1,653.55	0.00	0.00	0.00	
9,100.00	90.66	270.92	7,821.44	374.78	-1,728.16	1,753.32	0.00	0.00	0.00	
9,200.00	90.66	270.92	7,820.29	376.39	-1,828.14	1,853.08	0.00	0.00	0.00	
9,300.00	90.66	270.92	7,819.14	378.00	-1,928.12	1,952.85	0.00	0.00	0.00	
9,400.00	90.66	270.92	7,817.99	379.61	-2,028.10	2,052.62	0.00	0.00	0.00	
9,500.00	90.66	270.92	7,816.85	381.21	-2,128.08	2,152.39	0.00	0.00	0.00	
9,600.00	90.66	270.92	7,815.70	382.82	-2,228.06	2,252.16	0.00	0.00	0.00	
9,700.00	90.66	270.92	7,814.55	384.43	-2,328.04	2,351.93	0.00	0.00	0.00	
9,800.00	90.66	270.92	7,813.40	386.04	-2,428.02	2,451.70	0.00	0.00	0.00	
9,900.00	90.66	270.92	7,812.25	387.65	-2,528.00	2,551.46	0.00	0.00	0.00	
10,000.00	90.66	270.92	7,811.10	389.26	-2,627.98	2,651.23	0.00	0.00	0.00	
10,100.00	90.66	270.92	7,809.95	390.87	-2,727.96	2,751.00	0.00	0.00	0.00	
10,200.00	90.66	270.92	7,808.80	392.48	-2,827.94	2,850.77	0.00	0.00	0.00	
10,300.00	90.66	270.92	7,807.65	394.09	-2,927.92	2,950.54	0.00	0.00	0.00	
10,400.00	90.66	270.92	7,806.50	395.70	-3,027.90	3,050.31	0.00	0.00	0.00	
10,500.00	90.66	270.92	7,805.35	397.31	-3,127.88	3,150.08	0.00	0.00	0.00	
10,600.00	90.66	270.92	7,804.20	398.91	-3,227.86	3,249.85	0.00	0.00	0.00	
10,700.00	90.66	270.92	7,803.05	400.52	-3,327.84	3,349.61	0.00	0.00	0.00	
10,800.00	90.66	270.92	7,801.90	402.13	-3,427.83	3,449.38	0.00	0.00	0.00	
10,900.00	90.66	270.92	7,800.75	403.74	-3,527.81	3,549.15	0.00	0.00	0.00	
11,000.00	90.66	270.92	7,799.60	405.35	-3,627.79	3,648.92	0.00	0.00	0.00	
11,100.00	90.66	270.92	7,798.45	406.96	-3,727.77	3,748.69	0.00	0.00	0.00	
11,200.00	90.66	270.92	7,797.30	408.57	-3,827.75	3,848.46	0.00	0.00	0.00	
11,300.00	90.66	270.92	7,796.15	410.18	-3,927.73	3,948.23	0.00	0.00	0.00	
11,400.00	90.66	270.92	7,795.00	411.79	-4,027.71	4,047.99	0.00	0.00	0.00	
11,500.00	90.66	270.92	7,793.85	413.40	-4,127.69	4,147.76	0.00	0.00	0.00	
11,600.00	90.66	270.92	7,792.70	415.01	-4,227.67	4,247.53	0.00	0.00	0.00	
11,700.00	90.66	270.92	7,791.55	416.61	-4,327.65	4,347.30	0.00	0.00	0.00	
11,800.00	90.66	270.92	7,790.41	418.22	-4,427.63	4,447.07	0.00	0.00	0.00	
11,900.00	90.66	270.92	7,789.26	419.83	-4,527.61	4,546.84	0.00	0.00	0.00	
12,000.00	90.66	270.92	7,788.11	421.44	-4,627.59	4,646.61	0.00	0.00	0.00	
12,100.00	90.66	270.92	7,786.96	423.05	-4,727.57	4,746.37	0.00	0.00	0.00	
12,200.00	90.66	270.92	7,785.81	424.66	-4,827.55	4,846.14	0.00	0.00	0.00	
12,300.00	90.66	270.92	7,784.66	426.27	-4,927.53	4,945.91	0.00	0.00	0.00	
12,400.00	90.66	270.92	7,783.51	427.88	-5,027.51	5,045.68	0.00	0.00	0.00	
12,500.00	90.66	270.92	7,782.36	429.49	-5,127.49	5,145.45	0.00	0.00	0.00	
12,531.13	90.66	270.92	7,782.00	429.99	-5,158.62	5,176.51	0.00	0.00	0.00	
TD at 12531.13 - Watkins 30-5-5H 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									
Watkins 30-5-5H BHL	0.00	0.00	7,782.00	429.99	-5,158.62	1,672,575.83	3,247,531.61	39.676730	-104.620580
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Watkins 30-5-5H
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 5797.00ft
Project:	COLORADO CENTRAL ZONE - 83	MD Reference:	GL + RKB @ 5797.00ft
Site:	ARAPAHOE_WATKINS 6 PAD	North Reference:	True
Well:	Watkins 30-5-5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Watkins 30-5-5H		
Design:	Watkins 30-5-5H (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,010.00	2,010.00	9 5/8"	9-5/8	12-1/4	
8,181.66	7,832.00	7"	7	8-3/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,864.00	1,864.00	Fox Hills			
5,141.62	5,133.00	Sussex			
6,214.87	6,203.00	Shannon			
7,636.14	7,597.00	Sharon Springs			
7,735.95	7,672.00	Niobrara			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,150.00	2,150.00	0.00	0.00	Start Build 2.00	
2,373.13	2,372.90	7.00	-5.14	Start 4929.15 hold at 2373.13 MD	
7,302.27	7,287.10	316.26	-231.96	Start DLS 10.00 TFO -52.85	
8,181.66	7,832.00	360.00	-810.00	Start DLS 1.00 TFO -38.73	
8,184.53	7,831.97	360.05	-812.87	Start 4346.60 hold at 8184.53 MD	
12,531.13	7,782.00	429.99	-5,158.62	TD at 12531.13	