

# **US ROCKIES REGION PLANNING**

**COLORADO CENTRAL ZONE - 83**

**ARAPAHOE\_WATKINS 6 PAD**

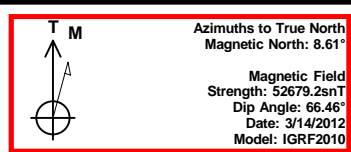
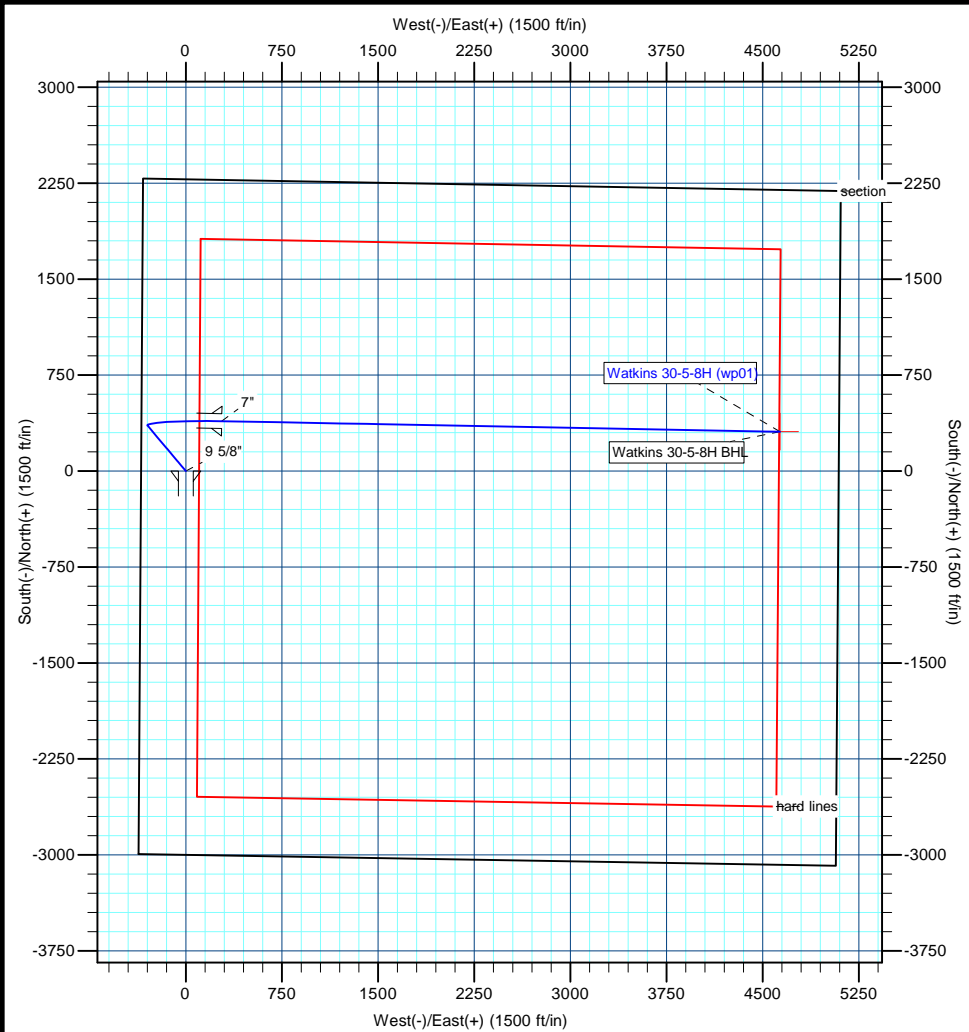
**Watkins 30-5-8H**

**Watkins 30-5-8H**

**Plan: Watkins 30-5-8H (wp01)**

## **Standard Planning Report**

**14 March, 2012**



Project: COLORADO CENTRAL ZONE - 83  
Site: ARAPAHOE WATKINS 6 PAD  
Well: Watkins 30-5-8H  
Wellbore: Watkins 30-5-8H  
Section:  
SHL:  
Design: Watkins 30-5-8H (wp01)  
Latitude: 39.675468  
Longitude: -104.602253  
GL: 5772.00  
KB: gl + rkb @ 5797.00ft

WELL DETAILS: Watkins 30-5-8H

+N/-S	+E/-W	Northing	Ground Level: Easting	5772.00 Latitude	39.675468 Longitude	Slot
0.00	0.00	1672166.60	3252694.51			

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
2419.65	5.39	319.93	2419.25	9.70	-8.16	2.00	319.93	-7.50
7227.01	5.39	319.93	7205.34	355.45	-299.03	0.00	0.00	-274.87
8168.89	90.66	90.91	7812.00	390.00	280.00	10.00	130.81	305.17
8186.92	90.66	91.09	7811.79	389.69	298.03	1.00	89.19	323.14
2525.06	90.66	91.09	7762.00	307.14	4635.10	0.00	0.00	4645.26

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

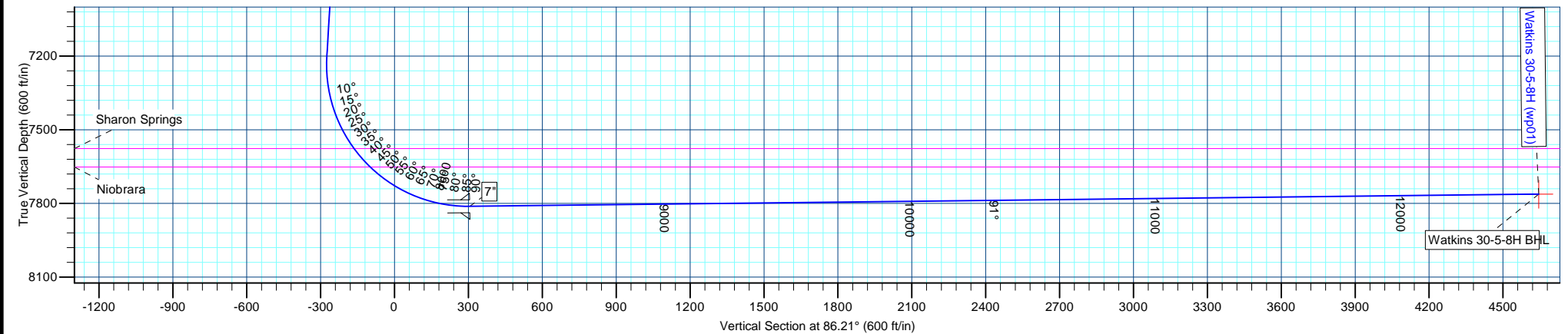
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Watkins 30-5-8H BHL	7762.00	307.14	4635.10	39.676310	-104.585786	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1864.00	1864.00	Fox Hills
5133.00	5145.46	Sussex
6203.00	6220.22	Shannon
7577.00	7623.00	Sharon Springs
7652.00	7722.84	Niobrara

CASING DETAILS

TVD	MD	Name	Size
2010.00	2010.00	9 5/8"	9-5/8
7812.00	8168.89	7"	7



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Watkins 30-5-8H
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	gl + rkb @ 5797.00ft
<b>Project:</b>	COLORADO CENTRAL ZONE - 83	<b>MD Reference:</b>	gl + rkb @ 5797.00ft
<b>Site:</b>	ARAPAHOE_WATKINS 6 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Watkins 30-5-8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Watkins 30-5-8H		
<b>Design:</b>	Watkins 30-5-8H (wp01)		

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

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

<b>Well</b>	Watkins 30-5-8H			
<b>Well Position</b>	<b>+N/-S</b>	-30.25 ft	<b>Northing:</b>	1,672,166.59 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,252,694.52 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 5,772.00 ft

<b>Wellbore</b>	Watkins 30-5-8H				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/14/2012	8.61	66.46	52,679

<b>Design</b>	Watkins 30-5-8H (wp01)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	86.21

<b>Plan Sections</b>										
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	
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,419.65	5.39	319.93	2,419.25	9.70	-8.16	2.00	2.00	0.00	319.93	
7,227.01	5.39	319.93	7,205.34	355.45	-299.03	0.00	0.00	0.00	0.00	
8,168.89	90.66	90.91	7,812.00	390.00	280.00	10.00	9.05	13.91	130.81	
8,186.92	90.66	91.09	7,811.79	389.69	298.03	1.00	0.01	1.00	89.19	
12,525.06	90.66	91.09	7,762.00	307.14	4,635.10	0.00	0.00	0.00	0.00	Watkins 30-5-8H BHL

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Watkins 30-5-8H
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	gl + rkb @ 5797.00ft
<b>Project:</b>	COLORADO CENTRAL ZONE - 83	<b>MD Reference:</b>	gl + rkb @ 5797.00ft
<b>Site:</b>	ARAPAHOE_WATKINS 6 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Watkins 30-5-8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Watkins 30-5-8H		
<b>Design:</b>	Watkins 30-5-8H (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
2,200.00	1.00	319.93	2,200.00	0.33	-0.28	-0.26	2.00	2.00	0.00
2,300.00	3.00	319.93	2,299.93	3.00	-2.53	-2.32	2.00	2.00	0.00
2,400.00	5.00	319.93	2,399.68	8.34	-7.02	-6.45	2.00	2.00	0.00
2,419.65	5.39	319.93	2,419.25	9.70	-8.16	-7.50	2.00	2.00	0.00
2,500.00	5.39	319.93	2,499.25	15.48	-13.02	-11.97	0.00	0.00	0.00
2,600.00	5.39	319.93	2,598.80	22.67	-19.08	-17.53	0.00	0.00	0.00
2,700.00	5.39	319.93	2,698.36	29.87	-25.13	-23.10	0.00	0.00	0.00
2,800.00	5.39	319.93	2,797.92	37.06	-31.18	-28.66	0.00	0.00	0.00
2,900.00	5.39	319.93	2,897.48	44.25	-37.23	-34.22	0.00	0.00	0.00
3,000.00	5.39	319.93	2,997.03	51.44	-43.28	-39.78	0.00	0.00	0.00
3,100.00	5.39	319.93	3,096.59	58.64	-49.33	-45.34	0.00	0.00	0.00
3,200.00	5.39	319.93	3,196.15	65.83	-55.38	-50.90	0.00	0.00	0.00
3,300.00	5.39	319.93	3,295.71	73.02	-61.43	-56.47	0.00	0.00	0.00
3,400.00	5.39	319.93	3,395.26	80.21	-67.48	-62.03	0.00	0.00	0.00
3,500.00	5.39	319.93	3,494.82	87.40	-73.53	-67.59	0.00	0.00	0.00
3,600.00	5.39	319.93	3,594.38	94.60	-79.58	-73.15	0.00	0.00	0.00
3,700.00	5.39	319.93	3,693.93	101.79	-85.63	-78.71	0.00	0.00	0.00
3,800.00	5.39	319.93	3,793.49	108.98	-91.68	-84.27	0.00	0.00	0.00
3,900.00	5.39	319.93	3,893.05	116.17	-97.73	-89.83	0.00	0.00	0.00
4,000.00	5.39	319.93	3,992.61	123.36	-103.78	-95.40	0.00	0.00	0.00
4,100.00	5.39	319.93	4,092.16	130.56	-109.83	-100.96	0.00	0.00	0.00
4,200.00	5.39	319.93	4,191.72	137.75	-115.88	-106.52	0.00	0.00	0.00
4,300.00	5.39	319.93	4,291.28	144.94	-121.93	-112.08	0.00	0.00	0.00
4,400.00	5.39	319.93	4,390.84	152.13	-127.98	-117.64	0.00	0.00	0.00
4,500.00	5.39	319.93	4,490.39	159.32	-134.03	-123.20	0.00	0.00	0.00
4,600.00	5.39	319.93	4,589.95	166.52	-140.08	-128.77	0.00	0.00	0.00
4,700.00	5.39	319.93	4,689.51	173.71	-146.13	-134.33	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	gl + rkb @ 5797.00ft
<b>Project:</b>	COLORADO CENTRAL ZONE - 83	<b>MD Reference:</b>	gl + rkb @ 5797.00ft
<b>Site:</b>	ARAPAHOE_WATKINS 6 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Watkins 30-5-8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Watkins 30-5-8H		
<b>Design:</b>	Watkins 30-5-8H (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)
4,800.00	5.39	319.93	4,789.07	180.90	-152.18	-139.89	0.00	0.00	0.00
4,900.00	5.39	319.93	4,888.62	188.09	-158.23	-145.45	0.00	0.00	0.00
5,000.00	5.39	319.93	4,988.18	195.29	-164.28	-151.01	0.00	0.00	0.00
5,100.00	5.39	319.93	5,087.74	202.48	-170.33	-156.57	0.00	0.00	0.00
5,145.46	5.39	319.93	5,133.00	205.75	-173.08	-159.10	0.00	0.00	0.00
<b>Sussex</b>									
5,200.00	5.39	319.93	5,187.30	209.67	-176.38	-162.13	0.00	0.00	0.00
5,300.00	5.39	319.93	5,286.85	216.86	-182.43	-167.70	0.00	0.00	0.00
5,400.00	5.39	319.93	5,386.41	224.05	-188.48	-173.26	0.00	0.00	0.00
5,500.00	5.39	319.93	5,485.97	231.25	-194.54	-178.82	0.00	0.00	0.00
5,600.00	5.39	319.93	5,585.52	238.44	-200.59	-184.38	0.00	0.00	0.00
5,700.00	5.39	319.93	5,685.08	245.63	-206.64	-189.94	0.00	0.00	0.00
5,800.00	5.39	319.93	5,784.64	252.82	-212.69	-195.50	0.00	0.00	0.00
5,900.00	5.39	319.93	5,884.20	260.01	-218.74	-201.07	0.00	0.00	0.00
6,000.00	5.39	319.93	5,983.75	267.21	-224.79	-206.63	0.00	0.00	0.00
6,100.00	5.39	319.93	6,083.31	274.40	-230.84	-212.19	0.00	0.00	0.00
6,200.00	5.39	319.93	6,182.87	281.59	-236.89	-217.75	0.00	0.00	0.00
6,220.22	5.39	319.93	6,203.00	283.04	-238.11	-218.88	0.00	0.00	0.00
<b>Shannon</b>									
6,300.00	5.39	319.93	6,282.43	288.78	-242.94	-223.31	0.00	0.00	0.00
6,400.00	5.39	319.93	6,381.98	295.97	-248.99	-228.87	0.00	0.00	0.00
6,500.00	5.39	319.93	6,481.54	303.17	-255.04	-234.44	0.00	0.00	0.00
6,600.00	5.39	319.93	6,581.10	310.36	-261.09	-240.00	0.00	0.00	0.00
6,700.00	5.39	319.93	6,680.66	317.55	-267.14	-245.56	0.00	0.00	0.00
6,800.00	5.39	319.93	6,780.21	324.74	-273.19	-251.12	0.00	0.00	0.00
6,900.00	5.39	319.93	6,879.77	331.94	-279.24	-256.68	0.00	0.00	0.00
7,000.00	5.39	319.93	6,979.33	339.13	-285.29	-262.24	0.00	0.00	0.00
7,100.00	5.39	319.93	7,078.88	346.32	-291.34	-267.80	0.00	0.00	0.00
7,200.00	5.39	319.93	7,178.44	353.51	-297.39	-273.37	0.00	0.00	0.00
7,227.01	5.39	319.93	7,205.34	355.45	-299.03	-274.87	0.00	0.00	0.00
7,300.00	5.55	43.66	7,278.09	360.64	-298.80	-274.30	10.00	0.22	114.72
7,400.00	14.35	74.67	7,376.54	367.43	-283.47	-258.55	10.00	8.80	31.02
7,500.00	24.10	81.69	7,470.87	373.67	-251.24	-225.98	10.00	9.75	7.01
7,600.00	33.98	84.79	7,558.19	379.18	-203.08	-177.57	10.00	9.89	3.10
7,623.00	36.27	85.29	7,577.00	380.32	-189.90	-164.34	10.00	9.92	2.15
<b>Sharon Springs</b>									
7,700.00	43.92	86.62	7,635.86	383.77	-140.47	-114.79	10.00	9.94	1.73
7,722.84	46.19	86.94	7,652.00	384.68	-124.33	-98.62	10.00	9.95	1.42
<b>Niobrara</b>									
7,800.00	53.87	87.88	7,701.53	387.32	-65.30	-39.55	10.00	9.96	1.22
7,900.00	63.84	88.86	7,753.18	389.72	20.15	45.87	10.00	9.97	0.98
8,000.00	73.81	89.68	7,789.26	390.89	113.27	138.87	10.00	9.97	0.82
8,100.00	83.78	90.42	7,808.66	390.80	211.24	236.62	10.00	9.97	0.74
8,168.89	90.66	90.91	7,812.00	390.00	280.00	305.17	10.00	9.97	0.71
<b>7"</b>									
8,186.92	90.66	91.09	7,811.79	389.69	298.03	323.14	1.00	0.01	1.00
8,200.00	90.66	91.09	7,811.64	389.44	311.10	336.17	0.00	0.00	0.00
8,300.00	90.66	91.09	7,810.50	387.53	411.08	435.80	0.00	0.00	0.00
8,400.00	90.66	91.09	7,809.35	385.63	511.05	535.43	0.00	0.00	0.00
8,500.00	90.66	91.09	7,808.20	383.73	611.03	635.06	0.00	0.00	0.00
8,600.00	90.66	91.09	7,807.05	381.83	711.01	734.70	0.00	0.00	0.00
8,700.00	90.66	91.09	7,805.90	379.92	810.98	834.33	0.00	0.00	0.00
8,800.00	90.66	91.09	7,804.76	378.02	910.96	933.96	0.00	0.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Watkins 30-5-8H
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	gl + rkb @ 5797.00ft
<b>Project:</b>	COLORADO CENTRAL ZONE - 83	<b>MD Reference:</b>	gl + rkb @ 5797.00ft
<b>Site:</b>	ARAPAHOE_WATKINS 6 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Watkins 30-5-8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Watkins 30-5-8H		
<b>Design:</b>	Watkins 30-5-8H (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)	
8,900.00	90.66	91.09	7,803.61	376.12	1,010.93	1,033.59	0.00	0.00	0.00	
9,000.00	90.66	91.09	7,802.46	374.21	1,110.91	1,133.22	0.00	0.00	0.00	
9,100.00	90.66	91.09	7,801.31	372.31	1,210.88	1,232.85	0.00	0.00	0.00	
9,200.00	90.66	91.09	7,800.17	370.41	1,310.86	1,332.48	0.00	0.00	0.00	
9,300.00	90.66	91.09	7,799.02	368.51	1,410.83	1,432.11	0.00	0.00	0.00	
9,400.00	90.66	91.09	7,797.87	366.60	1,510.81	1,531.74	0.00	0.00	0.00	
9,500.00	90.66	91.09	7,796.72	364.70	1,610.78	1,631.37	0.00	0.00	0.00	
9,600.00	90.66	91.09	7,795.57	362.80	1,710.76	1,731.00	0.00	0.00	0.00	
9,700.00	90.66	91.09	7,794.43	360.90	1,810.73	1,830.63	0.00	0.00	0.00	
9,800.00	90.66	91.09	7,793.28	358.99	1,910.71	1,930.26	0.00	0.00	0.00	
9,900.00	90.66	91.09	7,792.13	357.09	2,010.68	2,029.89	0.00	0.00	0.00	
10,000.00	90.66	91.09	7,790.98	355.19	2,110.66	2,129.53	0.00	0.00	0.00	
10,100.00	90.66	91.09	7,789.84	353.28	2,210.63	2,229.16	0.00	0.00	0.00	
10,200.00	90.66	91.09	7,788.69	351.38	2,310.61	2,328.79	0.00	0.00	0.00	
10,300.00	90.66	91.09	7,787.54	349.48	2,410.59	2,428.42	0.00	0.00	0.00	
10,400.00	90.66	91.09	7,786.39	347.58	2,510.56	2,528.05	0.00	0.00	0.00	
10,500.00	90.66	91.09	7,785.24	345.67	2,610.54	2,627.68	0.00	0.00	0.00	
10,600.00	90.66	91.09	7,784.10	343.77	2,710.51	2,727.31	0.00	0.00	0.00	
10,700.00	90.66	91.09	7,782.95	341.87	2,810.49	2,826.94	0.00	0.00	0.00	
10,800.00	90.66	91.09	7,781.80	339.96	2,910.46	2,926.57	0.00	0.00	0.00	
10,900.00	90.66	91.09	7,780.65	338.06	3,010.44	3,026.20	0.00	0.00	0.00	
11,000.00	90.66	91.09	7,779.50	336.16	3,110.41	3,125.83	0.00	0.00	0.00	
11,100.00	90.66	91.09	7,778.36	334.26	3,210.39	3,225.46	0.00	0.00	0.00	
11,200.00	90.66	91.09	7,777.21	332.35	3,310.36	3,325.09	0.00	0.00	0.00	
11,300.00	90.66	91.09	7,776.06	330.45	3,410.34	3,424.72	0.00	0.00	0.00	
11,400.00	90.66	91.09	7,774.91	328.55	3,510.31	3,524.36	0.00	0.00	0.00	
11,500.00	90.66	91.09	7,773.77	326.65	3,610.29	3,623.99	0.00	0.00	0.00	
11,600.00	90.66	91.09	7,772.62	324.74	3,710.26	3,723.62	0.00	0.00	0.00	
11,700.00	90.66	91.09	7,771.47	322.84	3,810.24	3,823.25	0.00	0.00	0.00	
11,800.00	90.66	91.09	7,770.32	320.94	3,910.21	3,922.88	0.00	0.00	0.00	
11,900.00	90.66	91.09	7,769.17	319.03	4,010.19	4,022.51	0.00	0.00	0.00	
12,000.00	90.66	91.09	7,768.03	317.13	4,110.17	4,122.14	0.00	0.00	0.00	
12,100.00	90.66	91.09	7,766.88	315.23	4,210.14	4,221.77	0.00	0.00	0.00	
12,200.00	90.66	91.09	7,765.73	313.33	4,310.12	4,321.40	0.00	0.00	0.00	
12,300.00	90.66	91.09	7,764.58	311.42	4,410.09	4,421.03	0.00	0.00	0.00	
12,400.00	90.66	91.09	7,763.44	309.52	4,510.07	4,520.66	0.00	0.00	0.00	
12,500.00	90.66	91.09	7,762.29	307.62	4,610.04	4,620.29	0.00	0.00	0.00	
12,525.06	90.66	91.09	7,762.00	307.14	4,635.10	4,645.26	0.00	0.00	0.00	
Watkins 30-5-8H 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 30-5-8H BHL	0.00	0.00	7,762.00	307.14	4,635.10	1,672,519.52	3,257,326.34	39.676310	-104.585786	
- plan hits target center										
- Point										

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well Watkins 30-5-8H
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	gl + rkb @ 5797.00ft
<b>Project:</b>	COLORADO CENTRAL ZONE - 83	<b>MD Reference:</b>	gl + rkb @ 5797.00ft
<b>Site:</b>	ARAPAHOE_WATKINS 6 PAD	<b>North Reference:</b>	True
<b>Well:</b>	Watkins 30-5-8H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Watkins 30-5-8H		
<b>Design:</b>	Watkins 30-5-8H (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	
8,168.89	7,812.00	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				
5,145.46	5,133.00	Sussex				
6,220.22	6,203.00	Shannon				
7,623.00	7,577.00	Sharon Springs				
7,722.84	7,652.00	Niobrara				