

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_THOMASON 15-9HZ PAD**

**THOMASON 37N-W4HZ**

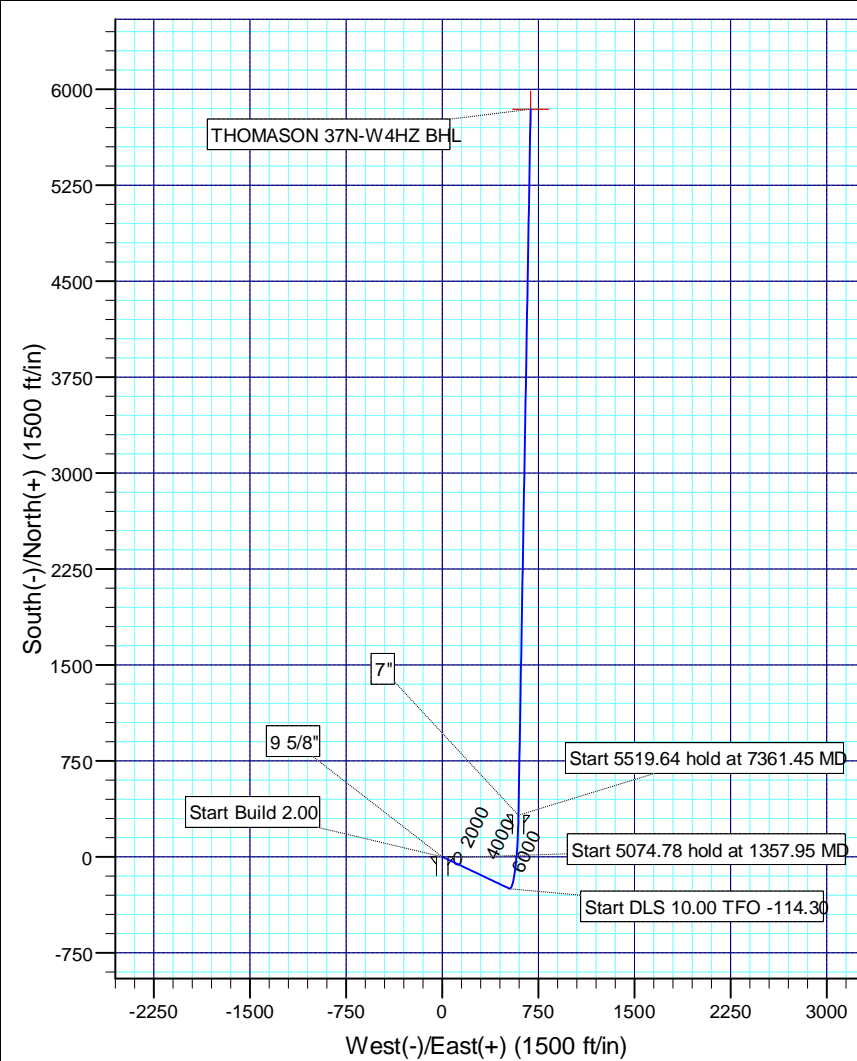
**THOMASON 37N-W4HZ**

**Plan: THOMASON 37N-W4HZ (wp01)**

## **Standard Planning Report**

**23 February, 2012**





# PROJECT DETAILS: COLORADO NORTHERN ZONE - 83

Site: WELD\_THOMASON 15-9HZ PAD  
 Well: THOMASON 37N-W4HZ  
 Wellbore: THOMASON 37N-W4HZ  
 Design: THOMASON 37N-W4HZ (wp01)  
 Latitude: 40.146822  
 Longitude: -104.667172  
 GL: 4881.00  
 KB: 16' RKB + GL @ 4897.00ft



## WELL DETAILS: THOMASON 37N-W4HZ

Ground Level: 4881.00		Latitude	Longitude
+N-S	+E-W	North	East
0.00	0.00	1297423.97	3232814.02
		40.146822	-104.667172

## DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape Point
THOMASON 37N-W4HZ BHL	6977.00	5843.46	688.65	40.162863	-104.664708	

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1040.00	0.00	0.00	1040.00	0.00	0.00	0.00	0.00	0.00	
3	1357.95	6.36	115.44	1357.29	-7.57	15.92	2.00	115.44	-5.66	
4	6432.73	6.36	115.44	6400.85	-249.00	523.49	0.00	0.00	-186.02	
5	7361.10	90.21	0.98	6997.00	324.32	594.00	10.00	-114.30	391.61	
6	7361.45	90.21	0.98	6997.00	324.67	594.01	1.00	133.84	391.96	
7	12881.09	90.21	0.98	6977.00	5843.46	688.65	0.00	0.00	5883.90	THOMASON 37N-W4HZ BHL

## CASING DETAILS

TVD	MD	Name	Size
890.00	890.00	9 5/8"	9 5/8
6997.00	7361.10	7"	7

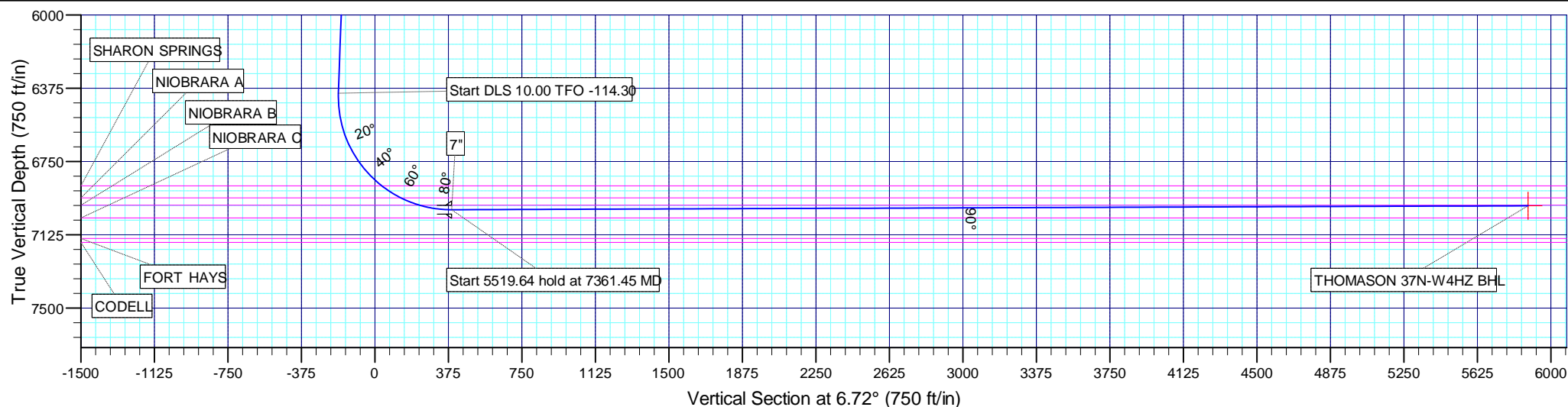
## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3880.00	3896.27	PARKMAN
4259.00	4277.62	SUSSEX
6875.00	6977.10	SHARON SPRINGS
6936.00	7091.49	NIOBRARA A
6974.00	7195.66	NIOBRARA B



Azimuths to True North  
 Magnetic North: 8.70°

Magnetic Field  
 Strength: 52935.3snT  
 Dip Angle: 66.84°  
 Date: 2/23/2012  
 Model: IGRF2010





# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well THOMASON 37N-W4HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Site:</b>	WELD_THOMASON 15-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	THOMASON 37N-W4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	THOMASON 37N-W4HZ		
<b>Design:</b>	THOMASON 37N-W4HZ (wp01)		

<b>Project</b>	COLORADO NORTHERN 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 Northern Zone		

Site		WELD_THOMASON 15-9HZ PAD			
Site Position:		Northing:	1,297,439.04 usft	Latitude:	40.146864
From:	Lat/Long	Easting:	3,232,788.16 usft	Longitude:	-104.667264
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	THOMASON 37N-W4HZ					
Well Position	+N/-S	-15.32 ft	Northing:	1,297,423.97 usft	Latitude:	40.146822
	+E/-W	25.72 ft	Easting:	3,232,814.02 usft	Longitude:	-104.667172
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,881.00 ft

<b>Wellbore</b>	THOMASON 37N-W4HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2/23/2012	8.70	66.84	52,935

<b>Design</b>	THOMASON 37N-W4HZ (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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	6.72

<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	
1,040.00	0.00	0.00	1,040.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,357.95	6.36	115.44	1,357.29	-7.57	15.92	2.00	2.00	0.00	115.44	
6,432.73	6.36	115.44	6,400.85	-249.00	523.49	0.00	0.00	0.00	0.00	
7,361.10	90.21	0.98	6,997.00	324.32	594.00	10.00	9.03	-12.33	-114.30	
7,361.45	90.21	0.98	6,997.00	324.67	594.01	1.00	-0.69	0.72	133.84	
12,881.09	90.21	0.98	6,977.00	5,843.46	688.65	0.00	0.00	0.00	0.00	THOMASON 37N-W4



# Anadarko Petroleum Corp

## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Site:</b>	WELD_THOMASON 15-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	THOMASON 37N-W4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	THOMASON 37N-W4HZ		
<b>Design:</b>	THOMASON 37N-W4HZ (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
890.00	0.00	0.00	890.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
1,040.00	0.00	0.00	1,040.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	1.20	115.44	1,100.00	-0.27	0.57	-0.20	2.00	2.00	0.00
1,200.00	3.20	115.44	1,199.92	-1.92	4.03	-1.43	2.00	2.00	0.00
1,300.00	5.20	115.44	1,299.64	-5.06	10.65	-3.78	2.00	2.00	0.00
1,357.95	6.36	115.44	1,357.29	-7.57	15.92	-5.66	2.00	2.00	0.00
Start 5074.78 hold at 1357.95 MD									
1,400.00	6.36	115.44	1,399.09	-9.57	20.12	-7.15	0.00	0.00	0.00
1,500.00	6.36	115.44	1,498.47	-14.33	30.12	-10.70	0.00	0.00	0.00
1,600.00	6.36	115.44	1,597.86	-19.09	40.13	-14.26	0.00	0.00	0.00
1,700.00	6.36	115.44	1,697.24	-23.84	50.13	-17.81	0.00	0.00	0.00
1,800.00	6.36	115.44	1,796.63	-28.60	60.13	-21.37	0.00	0.00	0.00
1,900.00	6.36	115.44	1,896.01	-33.36	70.13	-24.92	0.00	0.00	0.00
2,000.00	6.36	115.44	1,995.40	-38.12	80.13	-28.48	0.00	0.00	0.00
2,100.00	6.36	115.44	2,094.78	-42.87	90.14	-32.03	0.00	0.00	0.00
2,200.00	6.36	115.44	2,194.17	-47.63	100.14	-35.58	0.00	0.00	0.00
2,300.00	6.36	115.44	2,293.55	-52.39	110.14	-39.14	0.00	0.00	0.00
2,400.00	6.36	115.44	2,392.94	-57.15	120.14	-42.69	0.00	0.00	0.00
2,500.00	6.36	115.44	2,492.32	-61.90	130.14	-46.25	0.00	0.00	0.00
2,600.00	6.36	115.44	2,591.71	-66.66	140.14	-49.80	0.00	0.00	0.00
2,700.00	6.36	115.44	2,691.09	-71.42	150.15	-53.36	0.00	0.00	0.00
2,800.00	6.36	115.44	2,790.48	-76.18	160.15	-56.91	0.00	0.00	0.00
2,900.00	6.36	115.44	2,889.86	-80.93	170.15	-60.46	0.00	0.00	0.00
3,000.00	6.36	115.44	2,989.25	-85.69	180.15	-64.02	0.00	0.00	0.00
3,100.00	6.36	115.44	3,088.63	-90.45	190.15	-67.57	0.00	0.00	0.00
3,200.00	6.36	115.44	3,188.01	-95.21	200.16	-71.13	0.00	0.00	0.00
3,300.00	6.36	115.44	3,287.40	-99.96	210.16	-74.68	0.00	0.00	0.00
3,400.00	6.36	115.44	3,386.78	-104.72	220.16	-78.23	0.00	0.00	0.00
3,500.00	6.36	115.44	3,486.17	-109.48	230.16	-81.79	0.00	0.00	0.00
3,600.00	6.36	115.44	3,585.55	-114.24	240.16	-85.34	0.00	0.00	0.00
3,700.00	6.36	115.44	3,684.94	-118.99	250.16	-88.90	0.00	0.00	0.00
3,800.00	6.36	115.44	3,784.32	-123.75	260.17	-92.45	0.00	0.00	0.00
3,896.27	6.36	115.44	3,880.00	-128.33	269.79	-95.87	0.00	0.00	0.00
PARKMAN									
3,900.00	6.36	115.44	3,883.71	-128.51	270.17	-96.01	0.00	0.00	0.00
4,000.00	6.36	115.44	3,983.09	-133.27	280.17	-99.56	0.00	0.00	0.00
4,100.00	6.36	115.44	4,082.48	-138.02	290.17	-103.11	0.00	0.00	0.00
4,200.00	6.36	115.44	4,181.86	-142.78	300.17	-106.67	0.00	0.00	0.00
4,277.62	6.36	115.44	4,259.00	-146.47	307.94	-109.43	0.00	0.00	0.00
SUSSEX									
4,300.00	6.36	115.44	4,281.25	-147.54	310.17	-110.22	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>	16' RKB + GL @ 4897.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Site:</b>	WELD_THOMASON 15-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	THOMASON 37N-W4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	THOMASON 37N-W4HZ		
<b>Design:</b>	THOMASON 37N-W4HZ (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)
4,400.00	6.36	115.44	4,380.63	-152.30	320.18	-113.78	0.00	0.00	0.00
4,500.00	6.36	115.44	4,480.02	-157.05	330.18	-117.33	0.00	0.00	0.00
4,600.00	6.36	115.44	4,579.40	-161.81	340.18	-120.88	0.00	0.00	0.00
4,700.00	6.36	115.44	4,678.79	-166.57	350.18	-124.44	0.00	0.00	0.00
4,800.00	6.36	115.44	4,778.17	-171.33	360.18	-127.99	0.00	0.00	0.00
4,900.00	6.36	115.44	4,877.56	-176.08	370.19	-131.55	0.00	0.00	0.00
5,000.00	6.36	115.44	4,976.94	-180.84	380.19	-135.10	0.00	0.00	0.00
5,100.00	6.36	115.44	5,076.33	-185.60	390.19	-138.66	0.00	0.00	0.00
5,200.00	6.36	115.44	5,175.71	-190.36	400.19	-142.21	0.00	0.00	0.00
5,300.00	6.36	115.44	5,275.09	-195.11	410.19	-145.76	0.00	0.00	0.00
5,400.00	6.36	115.44	5,374.48	-199.87	420.19	-149.32	0.00	0.00	0.00
5,500.00	6.36	115.44	5,473.86	-204.63	430.20	-152.87	0.00	0.00	0.00
5,600.00	6.36	115.44	5,573.25	-209.39	440.20	-156.43	0.00	0.00	0.00
5,700.00	6.36	115.44	5,672.63	-214.14	450.20	-159.98	0.00	0.00	0.00
5,800.00	6.36	115.44	5,772.02	-218.90	460.20	-163.53	0.00	0.00	0.00
5,900.00	6.36	115.44	5,871.40	-223.66	470.20	-167.09	0.00	0.00	0.00
6,000.00	6.36	115.44	5,970.79	-228.42	480.21	-170.64	0.00	0.00	0.00
6,100.00	6.36	115.44	6,070.17	-233.17	490.21	-174.20	0.00	0.00	0.00
6,200.00	6.36	115.44	6,169.56	-237.93	500.21	-177.75	0.00	0.00	0.00
6,300.00	6.36	115.44	6,268.94	-242.69	510.21	-181.31	0.00	0.00	0.00
6,400.00	6.36	115.44	6,368.33	-247.45	520.21	-184.86	0.00	0.00	0.00
6,432.73	6.36	115.44	6,400.85	-249.00	523.49	-186.02	0.00	0.00	0.00
<b>Start DLS 10.00 TFO -114.30</b>									
6,500.00	7.09	55.61	6,467.74	-248.26	530.29	-184.49	10.00	1.09	-88.93
6,600.00	15.22	22.89	6,565.85	-232.64	540.52	-167.77	10.00	8.13	-32.72
6,700.00	24.75	13.72	6,659.74	-200.12	550.61	-134.31	10.00	9.52	-9.18
6,800.00	34.53	9.48	6,746.56	-151.71	560.27	-85.10	10.00	9.78	-4.24
6,900.00	44.40	6.95	6,823.67	-88.87	569.19	-21.64	10.00	9.87	-2.53
6,977.10	52.04	5.54	6,875.00	-31.76	575.40	35.80	10.00	9.91	-1.82
<b>SHARON SPRINGS</b>									
7,000.00	54.31	5.18	6,888.73	-13.51	577.11	54.13	10.00	9.92	-1.58
7,091.49	63.40	3.91	6,936.00	64.47	583.27	132.29	10.00	9.93	-1.38
<b>NIOBRARA A</b>									
7,100.00	64.24	3.81	6,939.75	72.09	583.78	139.92	10.00	9.94	-1.25
7,195.66	73.75	2.70	6,974.00	161.15	588.81	228.96	10.00	9.94	-1.16
<b>NIOBRARA B</b>									
7,200.00	74.18	2.65	6,975.20	165.31	589.01	233.12	10.00	9.94	-1.09
7,300.00	84.13	1.60	6,993.99	263.34	592.63	330.89	10.00	9.95	-1.05
7,361.10	90.21	0.98	6,997.00	324.32	594.00	391.61	10.00	9.95	-1.01
<b>7"</b>									
7,361.45	90.21	0.98	6,997.00	324.67	594.01	391.96	0.96	-0.64	0.71
<b>Start 5519.64 hold at 7361.45 MD</b>									
7,400.00	90.21	0.98	6,996.86	363.21	594.67	430.32	0.00	0.00	0.00
7,500.00	90.21	0.98	6,996.50	463.20	596.38	529.81	0.00	0.00	0.00
7,600.00	90.21	0.98	6,996.13	563.18	598.10	629.31	0.00	0.00	0.00
7,700.00	90.21	0.98	6,995.77	663.17	599.81	728.81	0.00	0.00	0.00
7,800.00	90.21	0.98	6,995.41	763.15	601.53	828.31	0.00	0.00	0.00
7,900.00	90.21	0.98	6,995.05	863.14	603.24	927.81	0.00	0.00	0.00
8,000.00	90.21	0.98	6,994.69	963.12	604.96	1,027.30	0.00	0.00	0.00
8,100.00	90.21	0.98	6,994.32	1,063.10	606.67	1,126.80	0.00	0.00	0.00
8,200.00	90.21	0.98	6,993.96	1,163.09	608.38	1,226.30	0.00	0.00	0.00
8,300.00	90.21	0.98	6,993.60	1,263.07	610.10	1,325.80	0.00	0.00	0.00
8,400.00	90.21	0.98	6,993.24	1,363.06	611.81	1,425.30	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>	16' RKB + GL @ 4897.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Site:</b>	WELD_THOMASON 15-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	THOMASON 37N-W4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	THOMASON 37N-W4HZ		
<b>Design:</b>	THOMASON 37N-W4HZ (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	90.21	0.98	6,992.87	1,463.04	613.53	1,524.80	0.00	0.00	0.00	
8,600.00	90.21	0.98	6,992.51	1,563.03	615.24	1,624.29	0.00	0.00	0.00	
8,700.00	90.21	0.98	6,992.15	1,663.01	616.96	1,723.79	0.00	0.00	0.00	
8,800.00	90.21	0.98	6,991.79	1,763.00	618.67	1,823.29	0.00	0.00	0.00	
8,900.00	90.21	0.98	6,991.42	1,862.98	620.39	1,922.79	0.00	0.00	0.00	
9,000.00	90.21	0.98	6,991.06	1,962.97	622.10	2,022.29	0.00	0.00	0.00	
9,100.00	90.21	0.98	6,990.70	2,062.95	623.82	2,121.78	0.00	0.00	0.00	
9,200.00	90.21	0.98	6,990.34	2,162.94	625.53	2,221.28	0.00	0.00	0.00	
9,300.00	90.21	0.98	6,989.98	2,262.92	627.25	2,320.78	0.00	0.00	0.00	
9,400.00	90.21	0.98	6,989.61	2,362.91	628.96	2,420.28	0.00	0.00	0.00	
9,500.00	90.21	0.98	6,989.25	2,462.89	630.68	2,519.78	0.00	0.00	0.00	
9,600.00	90.21	0.98	6,988.89	2,562.87	632.39	2,619.28	0.00	0.00	0.00	
9,700.00	90.21	0.98	6,988.53	2,662.86	634.11	2,718.77	0.00	0.00	0.00	
9,800.00	90.21	0.98	6,988.16	2,762.84	635.82	2,818.27	0.00	0.00	0.00	
9,900.00	90.21	0.98	6,987.80	2,862.83	637.53	2,917.77	0.00	0.00	0.00	
10,000.00	90.21	0.98	6,987.44	2,962.81	639.25	3,017.27	0.00	0.00	0.00	
10,100.00	90.21	0.98	6,987.08	3,062.80	640.96	3,116.77	0.00	0.00	0.00	
10,200.00	90.21	0.98	6,986.71	3,162.78	642.68	3,216.26	0.00	0.00	0.00	
10,300.00	90.21	0.98	6,986.35	3,262.77	644.39	3,315.76	0.00	0.00	0.00	
10,400.00	90.21	0.98	6,985.99	3,362.75	646.11	3,415.26	0.00	0.00	0.00	
10,500.00	90.21	0.98	6,985.63	3,462.74	647.82	3,514.76	0.00	0.00	0.00	
10,600.00	90.21	0.98	6,985.26	3,562.72	649.54	3,614.26	0.00	0.00	0.00	
10,700.00	90.21	0.98	6,984.90	3,662.71	651.25	3,713.75	0.00	0.00	0.00	
10,800.00	90.21	0.98	6,984.54	3,762.69	652.97	3,813.25	0.00	0.00	0.00	
10,900.00	90.21	0.98	6,984.18	3,862.67	654.68	3,912.75	0.00	0.00	0.00	
11,000.00	90.21	0.98	6,983.82	3,962.66	656.40	4,012.25	0.00	0.00	0.00	
11,100.00	90.21	0.98	6,983.45	4,062.64	658.11	4,111.75	0.00	0.00	0.00	
11,200.00	90.21	0.98	6,983.09	4,162.63	659.83	4,211.25	0.00	0.00	0.00	
11,300.00	90.21	0.98	6,982.73	4,262.61	661.54	4,310.74	0.00	0.00	0.00	
11,400.00	90.21	0.98	6,982.37	4,362.60	663.25	4,410.24	0.00	0.00	0.00	
11,500.00	90.21	0.98	6,982.00	4,462.58	664.97	4,509.74	0.00	0.00	0.00	
11,600.00	90.21	0.98	6,981.64	4,562.57	666.68	4,609.24	0.00	0.00	0.00	
11,700.00	90.21	0.98	6,981.28	4,662.55	668.40	4,708.74	0.00	0.00	0.00	
11,800.00	90.21	0.98	6,980.92	4,762.54	670.11	4,808.23	0.00	0.00	0.00	
11,900.00	90.21	0.98	6,980.55	4,862.52	671.83	4,907.73	0.00	0.00	0.00	
12,000.00	90.21	0.98	6,980.19	4,962.51	673.54	5,007.23	0.00	0.00	0.00	
12,100.00	90.21	0.98	6,979.83	5,062.49	675.26	5,106.73	0.00	0.00	0.00	
12,200.00	90.21	0.98	6,979.47	5,162.48	676.97	5,206.23	0.00	0.00	0.00	
12,300.00	90.21	0.98	6,979.11	5,262.46	678.69	5,305.73	0.00	0.00	0.00	
12,400.00	90.21	0.98	6,978.74	5,362.44	680.40	5,405.22	0.00	0.00	0.00	
12,500.00	90.21	0.98	6,978.38	5,462.43	682.12	5,504.72	0.00	0.00	0.00	
12,600.00	90.21	0.98	6,978.02	5,562.41	683.83	5,604.22	0.00	0.00	0.00	
12,700.00	90.21	0.98	6,977.66	5,662.40	685.55	5,703.72	0.00	0.00	0.00	
12,800.00	90.21	0.98	6,977.29	5,762.38	687.26	5,803.22	0.00	0.00	0.00	
12,881.09	90.21	0.98	6,977.00	5,843.46	688.65	5,883.90	0.00	0.00	0.00	
TD at 12881.09 - THOMASON 37N-W4HZ BHL										



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well THOMASON 37N-W4HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + GL @ 4897.00ft
<b>Site:</b>	WELD_THOMASON 15-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	THOMASON 37N-W4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	THOMASON 37N-W4HZ		
<b>Design:</b>	THOMASON 37N-W4HZ (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
THOMASON 37N-W4HZ	0.00	0.00	6,977.00	5,843.46	688.65	1,303,273.63	3,233,447.76	40.162863	-104.664708
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
890.00	890.00	9 5/8"		9-5/8	13-1/2
7,361.10	6,997.00	7"		7	8-3/4

Formations					
Measured Depth	Vertical Depth	Name		Lithology	Dip
(ft)	(ft)				(°)
3,896.27	3,880.00	PARKMAN			0.00
4,277.62	4,259.00	SUSSEX			0.00
6,977.10	6,875.00	SHARON SPRINGS			0.00
7,091.49	6,936.00	NIOBRARA A			0.00
7,195.66	6,974.00	NIOBRARA B			0.00

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
1,040.00	1,040.00	0.00	0.00	Start Build 2.00	
1,357.95	1,357.29	-7.57	15.92	Start 5074.78 hold at 1357.95 MD	
6,432.73	6,400.85	-249.00	523.49	Start DLS 10.00 TFO -114.30	
7,361.45	6,997.00	324.67	594.01	Start 5519.64 hold at 7361.45 MD	
12,881.09	6,977.00	5,843.46	688.65	TD at 12881.09	