

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Thomason 16-9HZ Pad

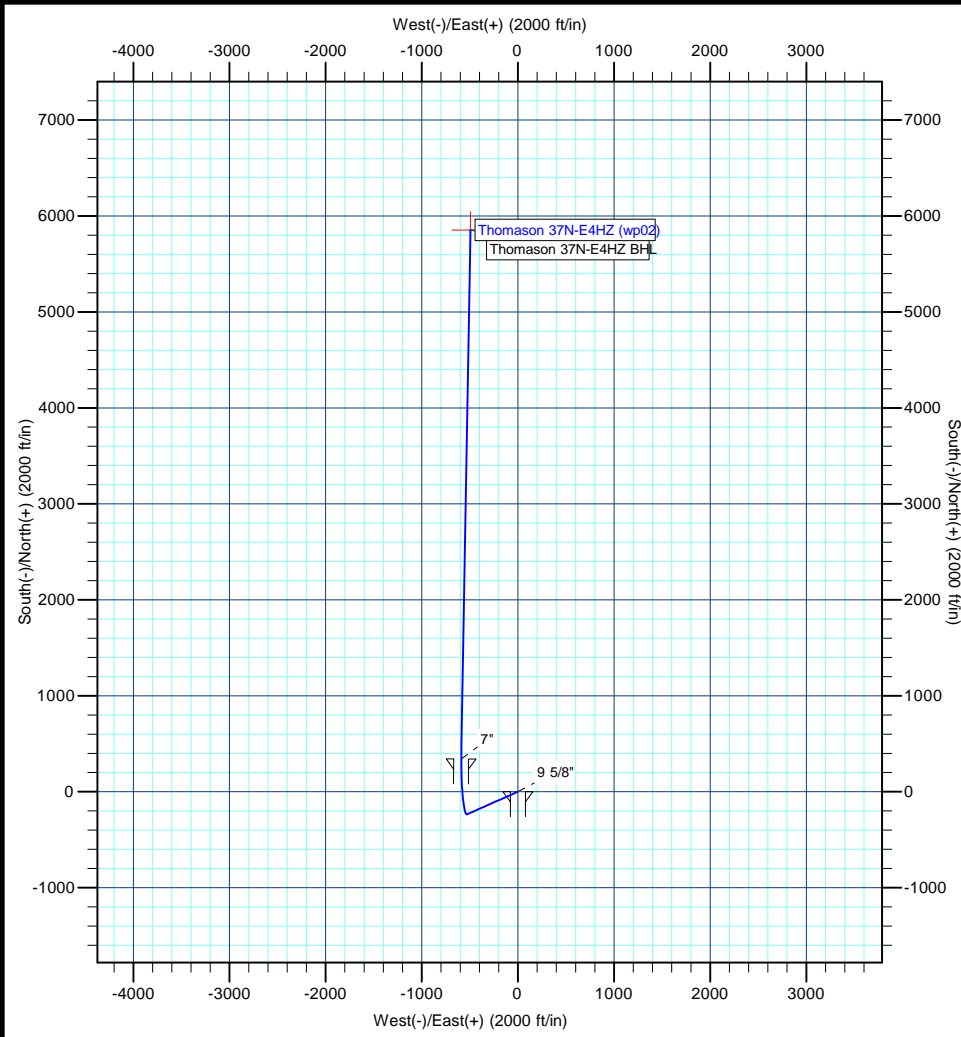
Thomason 37N-E4HZ

Thomason 37N-E4HZ

Plan: Thomason 37N-E4HZ (wp02)

Standard Planning Report

27 February, 2012



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Azimuths to True North
 Magnetic North: 8.69°

Magnetic Field
 Strength: 52935.8snT
 Dip Angle: 66.84°
 Date: 2/24/2012
 Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_Thomason 16-9HZ Pad
Well: Thomason 37N-E4HZ
Wellbore: Thomason 37N-E4HZ
Section:
SHL:
Design: Thomason 37N-E4HZ (wp02)
Latitude: 40.146790
Longitude: -104.660771
GL: 4870.00
KB: GL + RKB @ 4886.00ft

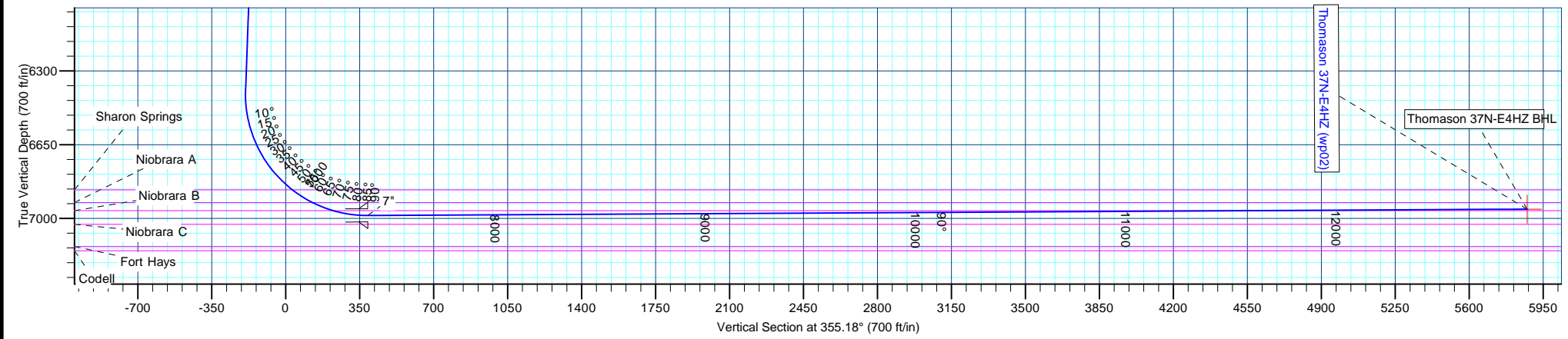
WELL DETAILS: Thomason 37N-E4HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4870.00 Latitude	Longitude	Slot
0.00	0.00	1297429.19	3234603.45	40.146790	-104.660771	

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
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
1315.53	6.31	246.00	1314.90	-7.06	-15.86	2.00	246.00	-5.71
6422.06	6.31	246.00	6390.48	-235.40	-528.62	0.00	0.00	-190.18
7350.71	90.30	0.01	6986.00	340.00	-589.00	10.00	113.85	388.26
7450.06	90.31	1.00	6985.47	439.35	-588.12	1.00	89.45	487.18
12864.91	90.31	1.00	6956.00	5853.28	-493.29	0.00	0.00	5874.03

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason 37N-E4HZ BHL	6956.00	5853.28	-493.29	40.162858	-104.662536	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3869.00	3885.21	Parkman
4248.00	4266.52	Sussex
6864.00	6965.78	Sharon Springs
6924.00	7077.95	Niobrara A
6963.00	7184.33	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
890.00	890.00	9 5/8"	9-5/8
6986.00	7350.71	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 37N-E4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 37N-E4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 37N-E4HZ		
Design:	Thomason 37N-E4HZ (wp02)		

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_Thomason 16-9HZ Pad				
Site Position:		Northing:	1,297,429.20 usft	Latitude:	40.146790
From:	Lat/Long	Easting:	3,234,603.45 usft	Longitude:	-104.660771
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Thomason 37N-E4HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,297,429.19 usft	Latitude:	40.146790
	+E/-W	0.00 ft	Easting:	3,234,603.45 usft	Longitude:	-104.660771
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,870.00 ft

Wellbore	Thomason 37N-E4HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2012	8.69	66.84	52,936

Design	Thomason 37N-E4HZ (wp02)			
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	355.18

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,315.53	6.31	246.00	1,314.90	-7.06	-15.86	2.00	2.00	0.00	246.00	
6,422.06	6.31	246.00	6,390.48	-235.40	-528.62	0.00	0.00	0.00	0.00	
7,350.71	90.30	0.01	6,986.00	340.00	-589.00	10.00	9.04	12.28	113.85	
7,450.06	90.31	1.00	6,985.47	439.35	-588.12	1.00	0.01	1.00	89.45	
12,864.91	90.31	1.00	6,956.00	5,853.28	-493.29	0.00	0.00	0.00	0.00	Thomason 37N-E4HZ

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 37N-E4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 37N-E4HZ		
Design:	Thomason 37N-E4HZ (wp02)		

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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
890.00	0.00	0.00	890.00	0.00	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	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,100.00	2.00	246.00	1,099.98	-0.71	-1.59	-0.57	2.00	2.00	0.00	0.00
1,200.00	4.00	246.00	1,199.84	-2.84	-6.37	-2.29	2.00	2.00	0.00	0.00
1,300.00	6.00	246.00	1,299.45	-6.38	-14.34	-5.16	2.00	2.00	0.00	0.00
1,315.53	6.31	246.00	1,314.90	-7.06	-15.86	-5.71	2.00	2.00	0.00	0.00
Start 5106.53 hold at 1315.53 MD										
1,400.00	6.31	246.00	1,398.85	-10.84	-24.34	-8.76	0.00	0.00	0.00	0.00
1,500.00	6.31	246.00	1,498.24	-15.31	-34.38	-12.37	0.00	0.00	0.00	0.00
1,600.00	6.31	246.00	1,597.64	-19.78	-44.42	-15.98	0.00	0.00	0.00	0.00
1,700.00	6.31	246.00	1,697.03	-24.25	-54.46	-19.59	0.00	0.00	0.00	0.00
1,800.00	6.31	246.00	1,796.43	-28.72	-64.50	-23.21	0.00	0.00	0.00	0.00
1,900.00	6.31	246.00	1,895.82	-33.20	-74.55	-26.82	0.00	0.00	0.00	0.00
2,000.00	6.31	246.00	1,995.21	-37.67	-84.59	-30.43	0.00	0.00	0.00	0.00
2,100.00	6.31	246.00	2,094.61	-42.14	-94.63	-34.04	0.00	0.00	0.00	0.00
2,200.00	6.31	246.00	2,194.00	-46.61	-104.67	-37.66	0.00	0.00	0.00	0.00
2,300.00	6.31	246.00	2,293.40	-51.08	-114.71	-41.27	0.00	0.00	0.00	0.00
2,400.00	6.31	246.00	2,392.79	-55.55	-124.75	-44.88	0.00	0.00	0.00	0.00
2,500.00	6.31	246.00	2,492.19	-60.03	-134.79	-48.49	0.00	0.00	0.00	0.00
2,600.00	6.31	246.00	2,591.58	-64.50	-144.84	-52.11	0.00	0.00	0.00	0.00
2,700.00	6.31	246.00	2,690.97	-68.97	-154.88	-55.72	0.00	0.00	0.00	0.00
2,800.00	6.31	246.00	2,790.37	-73.44	-164.92	-59.33	0.00	0.00	0.00	0.00
2,900.00	6.31	246.00	2,889.76	-77.91	-174.96	-62.94	0.00	0.00	0.00	0.00
3,000.00	6.31	246.00	2,989.16	-82.38	-185.00	-66.56	0.00	0.00	0.00	0.00
3,100.00	6.31	246.00	3,088.55	-86.86	-195.04	-70.17	0.00	0.00	0.00	0.00
3,200.00	6.31	246.00	3,187.94	-91.33	-205.08	-73.78	0.00	0.00	0.00	0.00
3,300.00	6.31	246.00	3,287.34	-95.80	-215.12	-77.39	0.00	0.00	0.00	0.00
3,400.00	6.31	246.00	3,386.73	-100.27	-225.17	-81.01	0.00	0.00	0.00	0.00
3,500.00	6.31	246.00	3,486.13	-104.74	-235.21	-84.62	0.00	0.00	0.00	0.00
3,600.00	6.31	246.00	3,585.52	-109.21	-245.25	-88.23	0.00	0.00	0.00	0.00
3,700.00	6.31	246.00	3,684.91	-113.68	-255.29	-91.84	0.00	0.00	0.00	0.00
3,800.00	6.31	246.00	3,784.31	-118.16	-265.33	-95.46	0.00	0.00	0.00	0.00
3,885.21	6.31	246.00	3,869.00	-121.97	-273.89	-98.53	0.00	0.00	0.00	0.00
Parkman										
3,900.00	6.31	246.00	3,883.70	-122.63	-275.37	-99.07	0.00	0.00	0.00	0.00
4,000.00	6.31	246.00	3,983.10	-127.10	-285.41	-102.68	0.00	0.00	0.00	0.00
4,100.00	6.31	246.00	4,082.49	-131.57	-295.46	-106.29	0.00	0.00	0.00	0.00
4,200.00	6.31	246.00	4,181.88	-136.04	-305.50	-109.91	0.00	0.00	0.00	0.00
4,266.52	6.31	246.00	4,248.00	-139.02	-312.18	-112.31	0.00	0.00	0.00	0.00
Sussex										
4,300.00	6.31	246.00	4,281.28	-140.51	-315.54	-113.52	0.00	0.00	0.00	0.00
4,400.00	6.31	246.00	4,380.67	-144.99	-325.58	-117.13	0.00	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 37N-E4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 37N-E4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 37N-E4HZ		
Design:	Thomason 37N-E4HZ (wp02)		

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	6.31	246.00	4,480.07	-149.46	-335.62	-120.74	0.00	0.00	0.00
4,600.00	6.31	246.00	4,579.46	-153.93	-345.66	-124.36	0.00	0.00	0.00
4,700.00	6.31	246.00	4,678.85	-158.40	-355.70	-127.97	0.00	0.00	0.00
4,800.00	6.31	246.00	4,778.25	-162.87	-365.74	-131.58	0.00	0.00	0.00
4,900.00	6.31	246.00	4,877.64	-167.34	-375.79	-135.19	0.00	0.00	0.00
5,000.00	6.31	246.00	4,977.04	-171.81	-385.83	-138.81	0.00	0.00	0.00
5,100.00	6.31	246.00	5,076.43	-176.29	-395.87	-142.42	0.00	0.00	0.00
5,200.00	6.31	246.00	5,175.82	-180.76	-405.91	-146.03	0.00	0.00	0.00
5,300.00	6.31	246.00	5,275.22	-185.23	-415.95	-149.64	0.00	0.00	0.00
5,400.00	6.31	246.00	5,374.61	-189.70	-425.99	-153.26	0.00	0.00	0.00
5,500.00	6.31	246.00	5,474.01	-194.17	-436.03	-156.87	0.00	0.00	0.00
5,600.00	6.31	246.00	5,573.40	-198.64	-446.08	-160.48	0.00	0.00	0.00
5,700.00	6.31	246.00	5,672.79	-203.12	-456.12	-164.09	0.00	0.00	0.00
5,800.00	6.31	246.00	5,772.19	-207.59	-466.16	-167.71	0.00	0.00	0.00
5,900.00	6.31	246.00	5,871.58	-212.06	-476.20	-171.32	0.00	0.00	0.00
6,000.00	6.31	246.00	5,970.98	-216.53	-486.24	-174.93	0.00	0.00	0.00
6,100.00	6.31	246.00	6,070.37	-221.00	-496.28	-178.54	0.00	0.00	0.00
6,200.00	6.31	246.00	6,169.77	-225.47	-506.32	-182.16	0.00	0.00	0.00
6,300.00	6.31	246.00	6,269.16	-229.94	-516.36	-185.77	0.00	0.00	0.00
6,400.00	6.31	246.00	6,368.55	-234.42	-526.41	-189.38	0.00	0.00	0.00
6,422.06	6.31	246.00	6,390.48	-235.40	-528.62	-190.18	0.00	0.00	0.00
Start DLS 10.00 TFO 113.85									
6,500.00	7.78	312.31	6,467.94	-233.59	-536.45	-187.71	10.00	1.89	85.09
6,600.00	16.26	339.72	6,565.73	-215.85	-546.34	-169.21	10.00	8.48	27.40
6,700.00	25.84	347.94	6,658.97	-181.31	-555.77	-134.00	10.00	9.58	8.22
6,800.00	35.64	351.88	6,744.82	-131.03	-564.46	-83.16	10.00	9.80	3.94
6,900.00	45.52	354.28	6,820.68	-66.52	-572.15	-18.24	10.00	9.88	2.41
6,965.78	52.04	355.46	6,864.00	-17.27	-576.54	31.21	10.00	9.91	1.78
Sharon Springs									
7,000.00	55.43	355.99	6,884.24	10.24	-578.60	58.79	10.00	9.92	1.55
7,077.95	63.18	357.05	6,924.00	77.09	-582.64	125.75	10.00	9.93	1.36
Niobrara A									
7,100.00	65.37	357.32	6,933.57	96.93	-583.62	145.60	10.00	9.94	1.24
7,184.33	73.75	358.29	6,963.00	175.83	-586.62	224.47	10.00	9.94	1.15
Niobrara B									
7,200.00	75.31	358.46	6,967.18	190.92	-587.04	239.54	10.00	9.95	1.08
7,300.00	85.26	359.50	6,984.04	289.34	-588.78	337.77	10.00	9.95	1.04
7,350.71	90.30	0.01	6,986.00	340.00	-589.00	388.26	10.00	9.95	1.01
Start DLS 1.00 TFO 89.45 - 7"									
7,400.00	90.31	0.50	6,985.74	389.29	-588.78	437.36	1.00	0.01	1.00
7,450.06	90.31	1.00	6,985.47	439.35	-588.12	487.18	1.00	0.01	1.00
Start 5414.85 hold at 7450.06 MD									
7,500.00	90.31	1.00	6,985.20	489.27	-587.25	536.86	0.00	0.00	0.00
7,600.00	90.31	1.00	6,984.65	589.26	-585.50	636.35	0.00	0.00	0.00
7,700.00	90.31	1.00	6,984.11	689.24	-583.74	735.83	0.00	0.00	0.00
7,800.00	90.31	1.00	6,983.56	789.22	-581.99	835.31	0.00	0.00	0.00
7,900.00	90.31	1.00	6,983.02	889.21	-580.24	934.79	0.00	0.00	0.00
8,000.00	90.31	1.00	6,982.48	989.19	-578.49	1,034.28	0.00	0.00	0.00
8,100.00	90.31	1.00	6,981.93	1,089.17	-576.74	1,133.76	0.00	0.00	0.00
8,200.00	90.31	1.00	6,981.39	1,189.16	-574.99	1,233.24	0.00	0.00	0.00
8,300.00	90.31	1.00	6,980.84	1,289.14	-573.24	1,332.73	0.00	0.00	0.00
8,400.00	90.31	1.00	6,980.30	1,389.12	-571.49	1,432.21	0.00	0.00	0.00
8,500.00	90.31	1.00	6,979.75	1,489.11	-569.73	1,531.69	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4886.00ft
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Well:	Thomason 37N-E4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 37N-E4HZ		
Design:	Thomason 37N-E4HZ (wp02)		

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)	
8,600.00	90.31	1.00	6,979.21	1,589.09	-567.98	1,631.17	0.00	0.00	0.00	
8,700.00	90.31	1.00	6,978.67	1,689.07	-566.23	1,730.66	0.00	0.00	0.00	
8,800.00	90.31	1.00	6,978.12	1,789.06	-564.48	1,830.14	0.00	0.00	0.00	
8,900.00	90.31	1.00	6,977.58	1,889.04	-562.73	1,929.62	0.00	0.00	0.00	
9,000.00	90.31	1.00	6,977.03	1,989.02	-560.98	2,029.11	0.00	0.00	0.00	
9,100.00	90.31	1.00	6,976.49	2,089.01	-559.23	2,128.59	0.00	0.00	0.00	
9,200.00	90.31	1.00	6,975.94	2,188.99	-557.47	2,228.07	0.00	0.00	0.00	
9,300.00	90.31	1.00	6,975.40	2,288.97	-555.72	2,327.56	0.00	0.00	0.00	
9,400.00	90.31	1.00	6,974.86	2,388.96	-553.97	2,427.04	0.00	0.00	0.00	
9,500.00	90.31	1.00	6,974.31	2,488.94	-552.22	2,526.52	0.00	0.00	0.00	
9,600.00	90.31	1.00	6,973.77	2,588.92	-550.47	2,626.00	0.00	0.00	0.00	
9,700.00	90.31	1.00	6,973.22	2,688.91	-548.72	2,725.49	0.00	0.00	0.00	
9,800.00	90.31	1.00	6,972.68	2,788.89	-546.97	2,824.97	0.00	0.00	0.00	
9,900.00	90.31	1.00	6,972.14	2,888.87	-545.22	2,924.45	0.00	0.00	0.00	
10,000.00	90.31	1.00	6,971.59	2,988.85	-543.46	3,023.94	0.00	0.00	0.00	
10,100.00	90.31	1.00	6,971.05	3,088.84	-541.71	3,123.42	0.00	0.00	0.00	
10,200.00	90.31	1.00	6,970.50	3,188.82	-539.96	3,222.90	0.00	0.00	0.00	
10,300.00	90.31	1.00	6,969.96	3,288.80	-538.21	3,322.38	0.00	0.00	0.00	
10,400.00	90.31	1.00	6,969.41	3,388.79	-536.46	3,421.87	0.00	0.00	0.00	
10,500.00	90.31	1.00	6,968.87	3,488.77	-534.71	3,521.35	0.00	0.00	0.00	
10,600.00	90.31	1.00	6,968.33	3,588.75	-532.96	3,620.83	0.00	0.00	0.00	
10,700.00	90.31	1.00	6,967.78	3,688.74	-531.21	3,720.32	0.00	0.00	0.00	
10,800.00	90.31	1.00	6,967.24	3,788.72	-529.45	3,819.80	0.00	0.00	0.00	
10,900.00	90.31	1.00	6,966.69	3,888.70	-527.70	3,919.28	0.00	0.00	0.00	
11,000.00	90.31	1.00	6,966.15	3,988.69	-525.95	4,018.77	0.00	0.00	0.00	
11,100.00	90.31	1.00	6,965.60	4,088.67	-524.20	4,118.25	0.00	0.00	0.00	
11,200.00	90.31	1.00	6,965.06	4,188.65	-522.45	4,217.73	0.00	0.00	0.00	
11,300.00	90.31	1.00	6,964.52	4,288.64	-520.70	4,317.21	0.00	0.00	0.00	
11,400.00	90.31	1.00	6,963.97	4,388.62	-518.95	4,416.70	0.00	0.00	0.00	
11,500.00	90.31	1.00	6,963.43	4,488.60	-517.19	4,516.18	0.00	0.00	0.00	
11,600.00	90.31	1.00	6,962.88	4,588.59	-515.44	4,615.66	0.00	0.00	0.00	
11,700.00	90.31	1.00	6,962.34	4,688.57	-513.69	4,715.15	0.00	0.00	0.00	
11,800.00	90.31	1.00	6,961.80	4,788.55	-511.94	4,814.63	0.00	0.00	0.00	
11,900.00	90.31	1.00	6,961.25	4,888.54	-510.19	4,914.11	0.00	0.00	0.00	
12,000.00	90.31	1.00	6,960.71	4,988.52	-508.44	5,013.59	0.00	0.00	0.00	
12,100.00	90.31	1.00	6,960.16	5,088.50	-506.69	5,113.08	0.00	0.00	0.00	
12,200.00	90.31	1.00	6,959.62	5,188.48	-504.94	5,212.56	0.00	0.00	0.00	
12,300.00	90.31	1.00	6,959.07	5,288.47	-503.18	5,312.04	0.00	0.00	0.00	
12,400.00	90.31	1.00	6,958.53	5,388.45	-501.43	5,411.53	0.00	0.00	0.00	
12,500.00	90.31	1.00	6,957.99	5,488.43	-499.68	5,511.01	0.00	0.00	0.00	
12,600.00	90.31	1.00	6,957.44	5,588.42	-497.93	5,610.49	0.00	0.00	0.00	
12,700.00	90.31	1.00	6,956.90	5,688.40	-496.18	5,709.98	0.00	0.00	0.00	
12,800.00	90.31	1.00	6,956.35	5,788.38	-494.43	5,809.46	0.00	0.00	0.00	
12,864.91	90.31	1.00	6,956.00	5,853.28	-493.29	5,874.03	0.00	0.00	0.00	
TD at 12864.91 - Thomason 37N-E4HZ BHL										

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 37N-E4HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4886.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4886.00ft
Site:	WELD_Thomason 16-9HZ Pad	North Reference:	True
Well:	Thomason 37N-E4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 37N-E4HZ		
Design:	Thomason 37N-E4HZ (wp02)		

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-E4HZ B	0.00	0.00	6,956.00	5,853.28	-493.29	1,303,277.53	3,234,054.79	40.162858	-104.662536
- 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	12-1/4	
7,350.71	6,986.00	7"	7	8-3/4	

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,885.21	3,869.00	Parkman			
4,266.52	4,248.00	Sussex			
6,965.78	6,864.00	Sharon Springs			
7,077.95	6,924.00	Niobrara A			
7,184.33	6,963.00	Niobrara B			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,315.53	1,314.90	-7.06	-15.86	Start 5106.53 hold at 1315.53 MD	
6,422.06	6,390.48	-235.40	-528.62	Start DLS 10.00 TFO 113.85	
7,350.71	6,986.00	340.00	-589.00	Start DLS 1.00 TFO 89.45	
7,450.06	6,985.47	439.35	-588.12	Start 5414.85 hold at 7450.06 MD	
12,864.91	6,956.00	5,853.28	-493.29	TD at 12864.91	