

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_THOMASON 29-15HZ

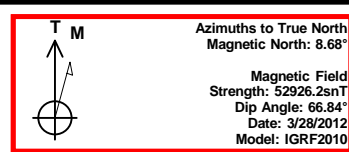
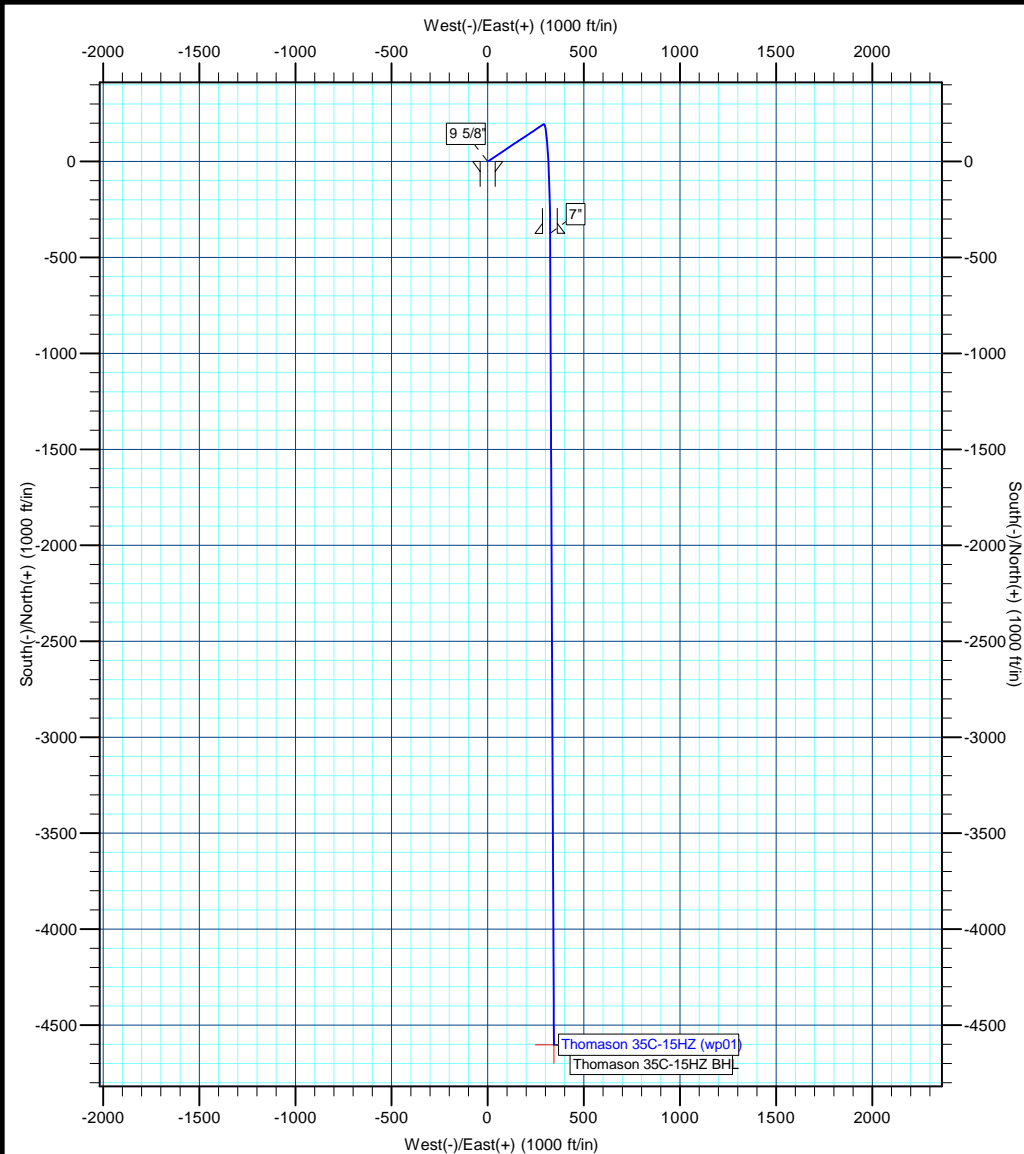
Thomason 35C-15HZ

Thomason 35C-15HZ

Plan: Thomason 35C-15HZ (wp01)

Standard Planning Report

28 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_THOMASON 29-15HZ
Well: Thomason 35C-15HZ
Wellbore: Thomason 35C-15HZ
Section:
SHL:
Design: Thomason 35C-15HZ (wp01)
Latitude: 40.145290
Longitude: -104.654674
GL: 4863.00
KB: GL + RKB @ 4880.00ft

WELL DETAILS: Thomason 35C-15HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4863.00 Latitude	Longitude	Slot
0.00	0.00	1296898.99	3236313.00	40.145290	-104.654674	

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
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00
1028.29	3.57	56.19	1028.17	3.09	4.61	2.00	56.19	-2.73
6569.98	3.57	56.19	6559.13	194.87	290.98	0.00	0.00	-172.67
7487.08	89.74	179.76	7151.00	-375.00	324.00	10.00	123.53	398.08
7490.25	89.72	179.73	7151.02	-378.18	324.01	1.00	-136.92	401.25
11715.22	89.72	179.73	7172.00	-4603.04	343.64	0.00	0.00	4615.85

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

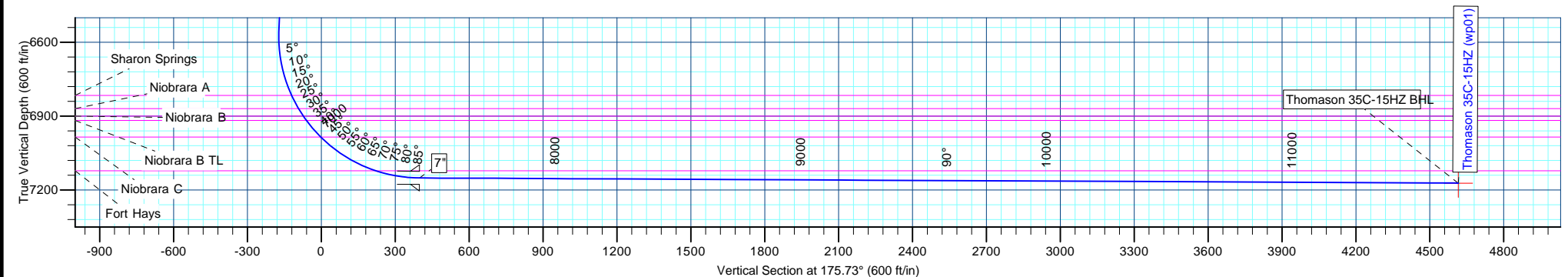
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason 35C-15HZ BHL	7172.00	-4603.04	343.64	40.132654	-104.653445	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3885.00	3890.66	Parkman
4479.00	4485.81	Sussex
6816.00	6834.58	Sharon Springs
6869.00	6894.43	Niobrara A
6900.00	6931.17	Niobrara B
6917.00	6952.00	Niobrara B TL
6985.00	7041.94	Niobrara C
7122.00	7306.48	Fort Hays

CASING DETAILS

TVD	MD	Name	Size
700.00	700.00	9 5/8"	9-5/8
7151.00	7487.08	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 35C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 35C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 35C-15HZ		
Design:	Thomason 35C-15HZ (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_THOMASON 29-15HZ			
Site Position:		Northing:	1,296,898.99 usft	Latitude:	40.145290
From:	Lat/Long	Easting:	3,236,313.00 usft	Longitude:	-104.654674
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Thomason 35C-15HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,296,898.99 usft	Latitude:	40.145290
	+E/-W	0.00 ft	Easting:	3,236,313.00 usft	Longitude:	-104.654674
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,863.00 ft

Wellbore	Thomason 35C-15HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/28/2012	8.68	66.84	52,926

Design	Thomason 35C-15HZ (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	175.73

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	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,028.29	3.57	56.19	1,028.17	3.09	4.61	2.00	2.00	0.00	56.19	
6,569.98	3.57	56.19	6,559.13	194.87	290.98	0.00	0.00	0.00	0.00	
7,487.08	89.74	179.76	7,151.00	-375.00	324.00	10.00	9.40	13.47	123.53	
7,490.25	89.72	179.73	7,151.02	-378.18	324.01	1.00	-0.73	-0.68	-136.92	
11,715.22	89.72	179.73	7,172.00	-4,603.04	343.64	0.00	0.00	0.00	0.00	Thomason 35C-15HZ

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 35C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 35C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 35C-15HZ		
Design:	Thomason 35C-15HZ (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
9 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	1.00	56.19	900.00	0.24	0.36	-0.22	2.00	2.00	0.00
1,000.00	3.00	56.19	999.93	2.18	3.26	-1.94	2.00	2.00	0.00
1,028.29	3.57	56.19	1,028.17	3.09	4.61	-2.73	2.00	2.00	0.00
Start 5541.69 hold at 1028.29 MD									
1,100.00	3.57	56.19	1,099.75	5.57	8.31	-4.93	0.00	0.00	0.00
1,200.00	3.57	56.19	1,199.55	9.03	13.48	-8.00	0.00	0.00	0.00
1,300.00	3.57	56.19	1,299.36	12.49	18.65	-11.07	0.00	0.00	0.00
1,400.00	3.57	56.19	1,399.17	15.95	23.82	-14.13	0.00	0.00	0.00
1,500.00	3.57	56.19	1,498.97	19.41	28.98	-17.20	0.00	0.00	0.00
1,600.00	3.57	56.19	1,598.78	22.87	34.15	-20.27	0.00	0.00	0.00
1,700.00	3.57	56.19	1,698.58	26.33	39.32	-23.33	0.00	0.00	0.00
1,800.00	3.57	56.19	1,798.39	29.79	44.49	-26.40	0.00	0.00	0.00
1,900.00	3.57	56.19	1,898.20	33.25	49.65	-29.47	0.00	0.00	0.00
2,000.00	3.57	56.19	1,998.00	36.72	54.82	-32.53	0.00	0.00	0.00
2,100.00	3.57	56.19	2,097.81	40.18	59.99	-35.60	0.00	0.00	0.00
2,200.00	3.57	56.19	2,197.62	43.64	65.16	-38.67	0.00	0.00	0.00
2,300.00	3.57	56.19	2,297.42	47.10	70.32	-41.73	0.00	0.00	0.00
2,400.00	3.57	56.19	2,397.23	50.56	75.49	-44.80	0.00	0.00	0.00
2,500.00	3.57	56.19	2,497.04	54.02	80.66	-47.86	0.00	0.00	0.00
2,600.00	3.57	56.19	2,596.84	57.48	85.83	-50.93	0.00	0.00	0.00
2,700.00	3.57	56.19	2,696.65	60.94	90.99	-54.00	0.00	0.00	0.00
2,800.00	3.57	56.19	2,796.46	64.40	96.16	-57.06	0.00	0.00	0.00
2,900.00	3.57	56.19	2,896.26	67.86	101.33	-60.13	0.00	0.00	0.00
3,000.00	3.57	56.19	2,996.07	71.32	106.50	-63.20	0.00	0.00	0.00
3,100.00	3.57	56.19	3,095.87	74.78	111.66	-66.26	0.00	0.00	0.00
3,200.00	3.57	56.19	3,195.68	78.25	116.83	-69.33	0.00	0.00	0.00
3,300.00	3.57	56.19	3,295.49	81.71	122.00	-72.40	0.00	0.00	0.00
3,400.00	3.57	56.19	3,395.29	85.17	127.17	-75.46	0.00	0.00	0.00
3,500.00	3.57	56.19	3,495.10	88.63	132.33	-78.53	0.00	0.00	0.00
3,600.00	3.57	56.19	3,594.91	92.09	137.50	-81.60	0.00	0.00	0.00
3,700.00	3.57	56.19	3,694.71	95.55	142.67	-84.66	0.00	0.00	0.00
3,800.00	3.57	56.19	3,794.52	99.01	147.84	-87.73	0.00	0.00	0.00
3,890.66	3.57	56.19	3,885.00	102.15	152.52	-90.51	0.00	0.00	0.00
Parkman									
3,900.00	3.57	56.19	3,894.33	102.47	153.00	-90.80	0.00	0.00	0.00
4,000.00	3.57	56.19	3,994.13	105.93	158.17	-93.86	0.00	0.00	0.00
4,100.00	3.57	56.19	4,093.94	109.39	163.34	-96.93	0.00	0.00	0.00
4,200.00	3.57	56.19	4,193.74	112.85	168.51	-100.00	0.00	0.00	0.00
4,300.00	3.57	56.19	4,293.55	116.31	173.67	-103.06	0.00	0.00	0.00
4,400.00	3.57	56.19	4,393.36	119.77	178.84	-106.13	0.00	0.00	0.00
4,485.81	3.57	56.19	4,479.00	122.74	183.28	-108.76	0.00	0.00	0.00
Sussex									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 35C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 35C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 35C-15HZ		
Design:	Thomason 35C-15HZ (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	3.57	56.19	4,493.16	123.24	184.01	-109.19	0.00	0.00	0.00
4,600.00	3.57	56.19	4,592.97	126.70	189.18	-112.26	0.00	0.00	0.00
4,700.00	3.57	56.19	4,692.78	130.16	194.34	-115.33	0.00	0.00	0.00
4,800.00	3.57	56.19	4,792.58	133.62	199.51	-118.39	0.00	0.00	0.00
4,900.00	3.57	56.19	4,892.39	137.08	204.68	-121.46	0.00	0.00	0.00
5,000.00	3.57	56.19	4,992.20	140.54	209.85	-124.53	0.00	0.00	0.00
5,100.00	3.57	56.19	5,092.00	144.00	215.02	-127.59	0.00	0.00	0.00
5,200.00	3.57	56.19	5,191.81	147.46	220.18	-130.66	0.00	0.00	0.00
5,300.00	3.57	56.19	5,291.62	150.92	225.35	-133.73	0.00	0.00	0.00
5,400.00	3.57	56.19	5,391.42	154.38	230.52	-136.79	0.00	0.00	0.00
5,500.00	3.57	56.19	5,491.23	157.84	235.69	-139.86	0.00	0.00	0.00
5,600.00	3.57	56.19	5,591.03	161.30	240.85	-142.93	0.00	0.00	0.00
5,700.00	3.57	56.19	5,690.84	164.77	246.02	-145.99	0.00	0.00	0.00
5,800.00	3.57	56.19	5,790.65	168.23	251.19	-149.06	0.00	0.00	0.00
5,900.00	3.57	56.19	5,890.45	171.69	256.36	-152.13	0.00	0.00	0.00
6,000.00	3.57	56.19	5,990.26	175.15	261.52	-155.19	0.00	0.00	0.00
6,100.00	3.57	56.19	6,090.07	178.61	266.69	-158.26	0.00	0.00	0.00
6,200.00	3.57	56.19	6,189.87	182.07	271.86	-161.33	0.00	0.00	0.00
6,300.00	3.57	56.19	6,289.68	185.53	277.03	-164.39	0.00	0.00	0.00
6,400.00	3.57	56.19	6,389.49	188.99	282.19	-167.46	0.00	0.00	0.00
6,500.00	3.57	56.19	6,489.29	192.45	287.36	-170.52	0.00	0.00	0.00
6,569.98	3.57	56.19	6,559.13	194.87	290.98	-172.67	0.00	0.00	0.00
Start DLS 10.00 TFO 123.53									
6,600.00	3.15	108.91	6,589.11	195.13	292.53	-172.81	10.00	-1.40	175.61
6,700.00	11.42	164.88	6,688.30	184.65	297.72	-161.98	10.00	8.27	55.97
6,800.00	21.23	172.09	6,784.16	157.09	302.81	-134.11	10.00	9.81	7.21
6,834.58	24.66	173.28	6,816.00	143.72	304.52	-120.65	10.00	9.91	3.43
Sharon Springs									
6,894.43	30.60	174.73	6,869.00	116.13	307.38	-92.92	10.00	9.94	2.44
Niobrara A									
6,900.00	31.16	174.84	6,873.78	113.28	307.64	-90.07	10.00	9.95	1.97
6,931.17	34.26	175.40	6,900.00	96.51	309.07	-73.23	10.00	9.95	1.78
Niobrara B									
6,952.00	36.34	175.72	6,917.00	84.51	310.00	-61.19	10.00	9.96	1.55
Niobrara B TL									
7,000.00	41.12	176.36	6,954.44	54.55	312.06	-31.17	10.00	9.97	1.33
7,041.94	45.30	176.82	6,985.00	25.90	313.77	-2.46	10.00	9.97	1.11
Niobrara C									
7,100.00	51.09	177.37	7,023.68	-17.31	315.95	40.79	10.00	9.98	0.94
7,200.00	61.07	178.13	7,079.41	-100.13	319.18	123.61	10.00	9.98	0.76
7,300.00	71.06	178.75	7,119.93	-191.38	321.65	214.79	10.00	9.98	0.62
7,306.48	71.70	178.79	7,122.00	-197.51	321.78	220.92	10.00	9.99	0.58
Fort Hays									
7,400.00	81.04	179.30	7,144.01	-288.29	323.29	311.56	10.00	9.99	0.55
7,487.08	89.74	179.76	7,151.00	-375.00	324.00	398.08	10.00	9.99	0.52
Start DLS 1.00 TFO -136.92 - 7"									
7,490.25	89.72	179.73	7,151.02	-378.18	324.01	401.25	1.00	-0.73	-0.68
Start 4224.97 hold at 7490.25 MD									
7,500.00	89.72	179.73	7,151.06	-387.92	324.06	410.97	0.00	0.00	0.00
7,600.00	89.72	179.73	7,151.56	-487.92	324.52	510.73	0.00	0.00	0.00
7,700.00	89.72	179.73	7,152.06	-587.92	324.99	610.48	0.00	0.00	0.00
7,800.00	89.72	179.73	7,152.55	-687.92	325.45	710.24	0.00	0.00	0.00
7,900.00	89.72	179.73	7,153.05	-787.91	325.92	809.99	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 35C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 35C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 35C-15HZ		
Design:	Thomason 35C-15HZ (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)
8,000.00	89.72	179.73	7,153.55	-887.91	326.38	909.75	0.00	0.00	0.00
8,100.00	89.72	179.73	7,154.04	-987.91	326.85	1,009.50	0.00	0.00	0.00
8,200.00	89.72	179.73	7,154.54	-1,087.91	327.31	1,109.26	0.00	0.00	0.00
8,300.00	89.72	179.73	7,155.04	-1,187.91	327.78	1,209.01	0.00	0.00	0.00
8,400.00	89.72	179.73	7,155.53	-1,287.90	328.24	1,308.77	0.00	0.00	0.00
8,500.00	89.72	179.73	7,156.03	-1,387.90	328.70	1,408.52	0.00	0.00	0.00
8,600.00	89.72	179.73	7,156.53	-1,487.90	329.17	1,508.28	0.00	0.00	0.00
8,700.00	89.72	179.73	7,157.02	-1,587.90	329.63	1,608.03	0.00	0.00	0.00
8,800.00	89.72	179.73	7,157.52	-1,687.89	330.10	1,707.79	0.00	0.00	0.00
8,900.00	89.72	179.73	7,158.02	-1,787.89	330.56	1,807.54	0.00	0.00	0.00
9,000.00	89.72	179.73	7,158.51	-1,887.89	331.03	1,907.29	0.00	0.00	0.00
9,100.00	89.72	179.73	7,159.01	-1,987.89	331.49	2,007.05	0.00	0.00	0.00
9,200.00	89.72	179.73	7,159.51	-2,087.88	331.96	2,106.80	0.00	0.00	0.00
9,300.00	89.72	179.73	7,160.00	-2,187.88	332.42	2,206.56	0.00	0.00	0.00
9,400.00	89.72	179.73	7,160.50	-2,287.88	332.89	2,306.31	0.00	0.00	0.00
9,500.00	89.72	179.73	7,161.00	-2,387.88	333.35	2,406.07	0.00	0.00	0.00
9,600.00	89.72	179.73	7,161.49	-2,487.88	333.81	2,505.82	0.00	0.00	0.00
9,700.00	89.72	179.73	7,161.99	-2,587.87	334.28	2,605.58	0.00	0.00	0.00
9,800.00	89.72	179.73	7,162.49	-2,687.87	334.74	2,705.33	0.00	0.00	0.00
9,900.00	89.72	179.73	7,162.98	-2,787.87	335.21	2,805.09	0.00	0.00	0.00
10,000.00	89.72	179.73	7,163.48	-2,887.87	335.67	2,904.84	0.00	0.00	0.00
10,100.00	89.72	179.73	7,163.98	-2,987.86	336.14	3,004.60	0.00	0.00	0.00
10,200.00	89.72	179.73	7,164.47	-3,087.86	336.60	3,104.35	0.00	0.00	0.00
10,300.00	89.72	179.73	7,164.97	-3,187.86	337.07	3,204.11	0.00	0.00	0.00
10,400.00	89.72	179.73	7,165.47	-3,287.86	337.53	3,303.86	0.00	0.00	0.00
10,500.00	89.72	179.73	7,165.96	-3,387.85	337.99	3,403.62	0.00	0.00	0.00
10,600.00	89.72	179.73	7,166.46	-3,487.85	338.46	3,503.37	0.00	0.00	0.00
10,700.00	89.72	179.73	7,166.96	-3,587.85	338.92	3,603.13	0.00	0.00	0.00
10,800.00	89.72	179.73	7,167.45	-3,687.85	339.39	3,702.88	0.00	0.00	0.00
10,900.00	89.72	179.73	7,167.95	-3,787.85	339.85	3,802.64	0.00	0.00	0.00
11,000.00	89.72	179.73	7,168.45	-3,887.84	340.32	3,902.39	0.00	0.00	0.00
11,100.00	89.72	179.73	7,168.94	-3,987.84	340.78	4,002.14	0.00	0.00	0.00
11,200.00	89.72	179.73	7,169.44	-4,087.84	341.25	4,101.90	0.00	0.00	0.00
11,300.00	89.72	179.73	7,169.94	-4,187.84	341.71	4,201.65	0.00	0.00	0.00
11,400.00	89.72	179.73	7,170.43	-4,287.83	342.18	4,301.41	0.00	0.00	0.00
11,500.00	89.72	179.73	7,170.93	-4,387.83	342.64	4,401.16	0.00	0.00	0.00
11,600.00	89.72	179.73	7,171.43	-4,487.83	343.10	4,500.92	0.00	0.00	0.00
11,700.00	89.72	179.73	7,171.92	-4,587.83	343.57	4,600.67	0.00	0.00	0.00
11,715.22	89.72	179.73	7,172.00	-4,603.04	343.64	4,615.85	0.00	0.00	0.00
TD at 11715.22 - Thomason 35C-15HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Thomason 35C-15HZ BI	0.00	0.00	7,172.00	-4,603.04	343.64	1,292,299.44	3,236,700.51	40.132654	-104.653445
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 35C-15HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL + RKB @ 4880.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL + RKB @ 4880.00ft
Site:	WELD_THOMASON 29-15HZ	North Reference:	True
Well:	Thomason 35C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 35C-15HZ		
Design:	Thomason 35C-15HZ (wp01)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
700.00	700.00	9 5/8"	9-5/8	12-1/4	
7,487.08	7,151.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction	
3,890.66	3,885.00	Parkman				
4,485.81	4,479.00	Sussex				
6,834.58	6,816.00	Sharon Springs				
6,894.43	6,869.00	Niobrara A				
6,931.17	6,900.00	Niobrara B				
6,952.00	6,917.00	Niobrara B TL				
7,041.94	6,985.00	Niobrara C				
7,306.48	7,122.00	Fort Hays				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
850.00	850.00	0.00	0.00	Start Build 2.00	
1,028.29	1,028.17	3.09	4.61	Start 5541.69 hold at 1028.29 MD	
6,569.98	6,559.13	194.87	290.98	Start DLS 10.00 TFO 123.53	
7,487.08	7,151.00	-375.00	324.00	Start DLS 1.00 TFO -136.92	
7,490.25	7,151.02	-378.18	324.01	Start 4224.97 hold at 7490.25 MD	
11,715.22	7,172.00	-4,603.04	343.64	TD at 11715.22	