

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Thomason 13N-15HZ

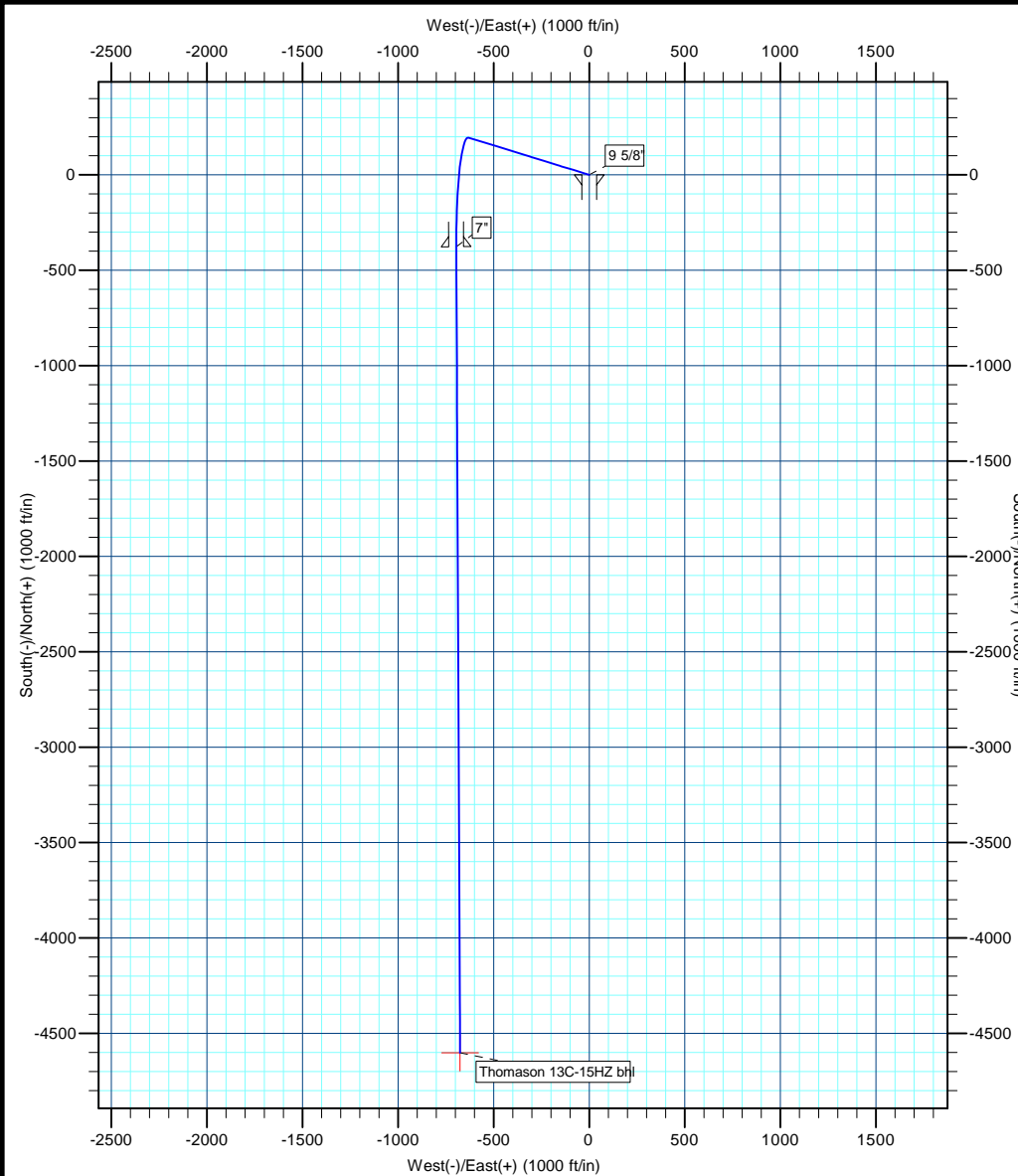
Thomason 13C-15HZ

Thomason 13C-15HZ

Plan: Thomason 13C-15HZ

Standard Planning Report

02 April, 2012



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Azimuths to True North

Magnetic North: 8.68°

Magnetic Field

Strength: 52924.7snT

Dip Angle: 66.84°

Date: 4/2/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD Thomason 13N-15HZ

Well: Thomason 13C-15HZ

Wellbore: Thomason 13C-15HZ

Section:

SHL:

Design: Thomason 13C-15HZ

Latitude: 40.145293

Longitude: -104.655426

GL: 4863.00

KB: gl + rkb @ 4880.00ft

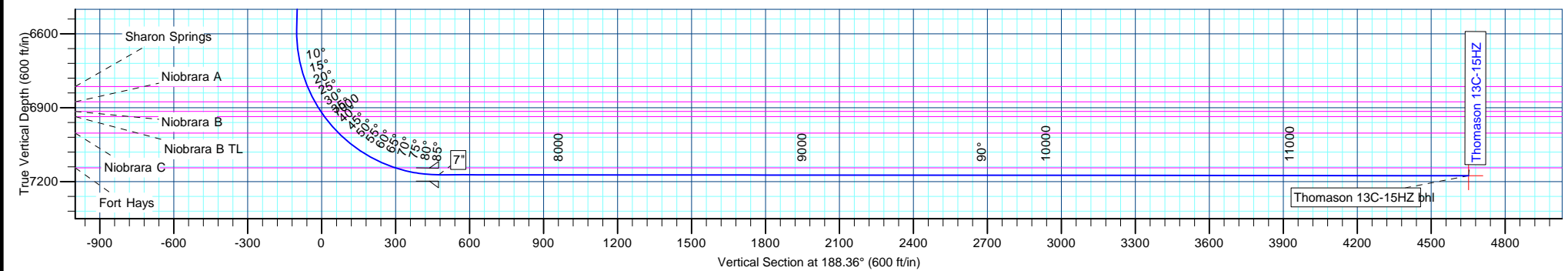
WELL DETAILS: Thomason 13C-15HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4863.00 Latitude	Longitude	Slot
0.00	0.00	1296898.07	3236102.77	40.145293	-104.655426	

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
1188.93	6.78	287.19	1188.14	5.92	-19.13	2.00	287.19	-3.07
6621.31	6.78	287.19	6582.55	195.39	-631.69	0.00	0.00	-101.50
7541.09	89.95	179.75	7172.00	-377.00	-696.00	10.00	-107.33	474.16
7772.99	89.95	179.73	7172.21	-608.90	-694.95	0.01	-101.36	703.44
11766.44	89.95	179.73	7176.00	-4602.30	-676.10	0.00	0.00	4651.69

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Thomason 13C-15HZ bhl	7176.00	-4602.30	-676.10	40.132659	-104.657844	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3877.00	3896.72	Parkman
4460.00	4483.82	Sussex
6814.00	6859.46	Sharon Springs
6876.00	6928.49	Niobrara A
6915.00	6974.28	Niobrara B
6936.00	6999.94	Niobrara B TL
7003.00	7088.39	Niobrara C
7144.00	7361.14	Fort Hays

CASING DETAILS			
TVD	MD	Name	Size
700.00	700.00	9 5/8"	9-5/8
7172.00	7541.09	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 13C-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 13N-15HZ	North Reference:	True
Well:	Thomason 13C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 13C-15HZ		
Design:	Thomason 13C-15HZ		

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 13N-15HZ			
Site Position:		Northing:	1,296,898.00 usft	Latitude:	40.145292
From:	Lat/Long	Easting:	3,236,132.97 usft	Longitude:	-104.655318
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Thomason 13C-15HZ					
Well Position	+N/-S	0.35 ft	Northing:	1,296,898.07 usft	Latitude:	40.145293
	+E/-W	-30.19 ft	Easting:	3,236,102.78 usft	Longitude:	-104.655426
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,863.00 ft

Wellbore	Thomason 13C-15HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/2/2012	8.68	66.84	52,925

Design	Thomason 13C-15HZ			
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	188.36

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	
1,188.93	6.78	287.19	1,188.14	5.92	-19.13	2.00	2.00	0.00	287.19	
6,621.31	6.78	287.19	6,582.55	195.39	-631.69	0.00	0.00	0.00	0.00	
7,541.09	89.95	179.75	7,172.00	-377.00	-696.00	10.00	9.04	-11.68	-107.33	
7,772.99	89.95	179.73	7,172.21	-608.90	-694.95	0.01	0.00	-0.01	-101.36	
11,766.44	89.95	179.73	7,176.00	-4,602.30	-676.10	0.00	0.00	0.00	0.00	Thomason 13C-15HZ

Anadarko Petroleum Corp

Planning Report

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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 13N-15HZ	North Reference:	True
Well:	Thomason 13C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 13C-15HZ		
Design:	Thomason 13C-15HZ		

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	287.19	900.00	0.13	-0.42	-0.07	2.00	2.00	0.00
1,000.00	3.00	287.19	999.93	1.16	-3.75	-0.60	2.00	2.00	0.00
1,100.00	5.00	287.19	1,099.68	3.22	-10.41	-1.67	2.00	2.00	0.00
1,188.93	6.78	287.19	1,188.14	5.92	-19.13	-3.07	2.00	2.00	0.00
Start 5432.39 hold at 1188.93 MD									
1,200.00	6.78	287.19	1,199.13	6.30	-20.38	-3.27	0.00	0.00	0.00
1,300.00	6.78	287.19	1,298.43	9.79	-31.66	-5.09	0.00	0.00	0.00
1,400.00	6.78	287.19	1,397.73	13.28	-42.93	-6.90	0.00	0.00	0.00
1,500.00	6.78	287.19	1,497.04	16.77	-54.21	-8.71	0.00	0.00	0.00
1,600.00	6.78	287.19	1,596.34	20.25	-65.48	-10.52	0.00	0.00	0.00
1,700.00	6.78	287.19	1,695.64	23.74	-76.76	-12.33	0.00	0.00	0.00
1,800.00	6.78	287.19	1,794.94	27.23	-88.04	-14.15	0.00	0.00	0.00
1,900.00	6.78	287.19	1,894.24	30.72	-99.31	-15.96	0.00	0.00	0.00
2,000.00	6.78	287.19	1,993.54	34.21	-110.59	-17.77	0.00	0.00	0.00
2,100.00	6.78	287.19	2,092.84	37.69	-121.86	-19.58	0.00	0.00	0.00
2,200.00	6.78	287.19	2,192.14	41.18	-133.14	-21.39	0.00	0.00	0.00
2,300.00	6.78	287.19	2,291.44	44.67	-144.42	-23.21	0.00	0.00	0.00
2,400.00	6.78	287.19	2,390.74	48.16	-155.69	-25.02	0.00	0.00	0.00
2,500.00	6.78	287.19	2,490.05	51.65	-166.97	-26.83	0.00	0.00	0.00
2,600.00	6.78	287.19	2,589.35	55.13	-178.24	-28.64	0.00	0.00	0.00
2,700.00	6.78	287.19	2,688.65	58.62	-189.52	-30.45	0.00	0.00	0.00
2,800.00	6.78	287.19	2,787.95	62.11	-200.80	-32.26	0.00	0.00	0.00
2,900.00	6.78	287.19	2,887.25	65.60	-212.07	-34.08	0.00	0.00	0.00
3,000.00	6.78	287.19	2,986.55	69.08	-223.35	-35.89	0.00	0.00	0.00
3,100.00	6.78	287.19	3,085.85	72.57	-234.62	-37.70	0.00	0.00	0.00
3,200.00	6.78	287.19	3,185.15	76.06	-245.90	-39.51	0.00	0.00	0.00
3,300.00	6.78	287.19	3,284.45	79.55	-257.18	-41.32	0.00	0.00	0.00
3,400.00	6.78	287.19	3,383.75	83.04	-268.45	-43.14	0.00	0.00	0.00
3,500.00	6.78	287.19	3,483.06	86.52	-279.73	-44.95	0.00	0.00	0.00
3,600.00	6.78	287.19	3,582.36	90.01	-291.00	-46.76	0.00	0.00	0.00
3,700.00	6.78	287.19	3,681.66	93.50	-302.28	-48.57	0.00	0.00	0.00
3,800.00	6.78	287.19	3,780.96	96.99	-313.56	-50.38	0.00	0.00	0.00
3,896.72	6.78	287.19	3,877.00	100.36	-324.46	-52.14	0.00	0.00	0.00
Parkman									
3,900.00	6.78	287.19	3,880.26	100.47	-324.83	-52.20	0.00	0.00	0.00
4,000.00	6.78	287.19	3,979.56	103.96	-336.11	-54.01	0.00	0.00	0.00
4,100.00	6.78	287.19	4,078.86	107.45	-347.38	-55.82	0.00	0.00	0.00
4,200.00	6.78	287.19	4,178.16	110.94	-358.66	-57.63	0.00	0.00	0.00
4,300.00	6.78	287.19	4,277.46	114.43	-369.94	-59.44	0.00	0.00	0.00
4,400.00	6.78	287.19	4,376.76	117.91	-381.21	-61.25	0.00	0.00	0.00
4,483.82	6.78	287.19	4,460.00	120.84	-390.66	-62.77	0.00	0.00	0.00
Sussex									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 13C-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 13N-15HZ	North Reference:	True
Well:	Thomason 13C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 13C-15HZ		
Design:	Thomason 13C-15HZ		

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	6.78	287.19	4,476.07	121.40	-392.49	-63.07	0.00	0.00	0.00
4,600.00	6.78	287.19	4,575.37	124.89	-403.77	-64.88	0.00	0.00	0.00
4,700.00	6.78	287.19	4,674.67	128.38	-415.04	-66.69	0.00	0.00	0.00
4,800.00	6.78	287.19	4,773.97	131.87	-426.32	-68.50	0.00	0.00	0.00
4,900.00	6.78	287.19	4,873.27	135.35	-437.59	-70.31	0.00	0.00	0.00
5,000.00	6.78	287.19	4,972.57	138.84	-448.87	-72.13	0.00	0.00	0.00
5,100.00	6.78	287.19	5,071.87	142.33	-460.15	-73.94	0.00	0.00	0.00
5,200.00	6.78	287.19	5,171.17	145.82	-471.42	-75.75	0.00	0.00	0.00
5,300.00	6.78	287.19	5,270.47	149.30	-482.70	-77.56	0.00	0.00	0.00
5,400.00	6.78	287.19	5,369.77	152.79	-493.97	-79.37	0.00	0.00	0.00
5,500.00	6.78	287.19	5,469.08	156.28	-505.25	-81.19	0.00	0.00	0.00
5,600.00	6.78	287.19	5,568.38	159.77	-516.53	-83.00	0.00	0.00	0.00
5,700.00	6.78	287.19	5,667.68	163.26	-527.80	-84.81	0.00	0.00	0.00
5,800.00	6.78	287.19	5,766.98	166.74	-539.08	-86.62	0.00	0.00	0.00
5,900.00	6.78	287.19	5,866.28	170.23	-550.35	-88.43	0.00	0.00	0.00
6,000.00	6.78	287.19	5,965.58	173.72	-561.63	-90.24	0.00	0.00	0.00
6,100.00	6.78	287.19	6,064.88	177.21	-572.91	-92.06	0.00	0.00	0.00
6,200.00	6.78	287.19	6,164.18	180.69	-584.18	-93.87	0.00	0.00	0.00
6,300.00	6.78	287.19	6,263.48	184.18	-595.46	-95.68	0.00	0.00	0.00
6,400.00	6.78	287.19	6,362.78	187.67	-606.73	-97.49	0.00	0.00	0.00
6,500.00	6.78	287.19	6,462.08	191.16	-618.01	-99.30	0.00	0.00	0.00
6,600.00	6.78	287.19	6,561.39	194.65	-629.29	-101.12	0.00	0.00	0.00
6,621.31	6.78	287.19	6,582.55	195.39	-631.69	-101.50	0.00	0.00	0.00
Start DLS 10.00 TFO -107.33									
6,700.00	8.71	227.51	6,660.63	192.73	-640.53	-97.59	10.00	2.45	-75.84
6,800.00	17.08	201.40	6,758.10	173.90	-651.50	-77.36	10.00	8.37	-26.10
6,859.46	22.68	195.49	6,814.00	154.70	-657.76	-57.46	10.00	9.42	-9.95
Sharon Springs									
6,900.00	26.58	192.84	6,850.84	138.32	-661.86	-40.65	10.00	9.63	-6.53
6,928.49	29.35	191.38	6,876.00	125.26	-664.66	-27.32	10.00	9.71	-5.14
Niobrara A									
6,974.28	33.82	189.49	6,915.00	101.67	-668.97	-3.36	10.00	9.76	-4.13
Niobrara B									
6,999.94	36.34	188.61	6,936.00	87.11	-671.29	11.38	10.00	9.81	-3.42
Niobrara B TL									
7,000.00	36.34	188.61	6,936.05	87.08	-671.30	11.42	10.00	9.82	-3.21
7,088.39	45.05	186.25	7,003.00	29.98	-678.64	68.98	10.00	9.85	-2.68
Niobrara C									
7,100.00	46.19	185.99	7,011.12	21.73	-679.52	77.27	10.00	9.87	-2.21
7,200.00	56.09	184.12	7,073.79	-55.75	-686.28	154.90	10.00	9.89	-1.87
7,300.00	66.00	182.64	7,122.14	-142.99	-691.38	241.96	10.00	9.92	-1.48
7,361.15	72.07	181.85	7,144.00	-200.01	-693.61	298.70	10.00	9.93	-1.29
Fort Hays									
7,400.00	75.93	181.37	7,154.71	-237.34	-694.66	335.79	10.00	9.93	-1.22
7,500.00	85.87	180.22	7,170.50	-335.95	-696.01	433.54	10.00	9.93	-1.16
7,541.09	89.95	179.75	7,172.00	-377.00	-696.00	474.16	10.00	9.94	-1.13
Start DLS 0.01 TFO -101.36 - 7"									
7,600.00	89.95	179.75	7,172.05	-435.91	-695.74	532.41	0.01	0.00	-0.01
7,700.00	89.95	179.74	7,172.14	-535.91	-695.29	631.28	0.01	0.00	-0.01
7,772.99	89.95	179.73	7,172.21	-608.90	-694.95	703.44	0.01	0.00	-0.01
Start 3993.45 hold at 7772.99 MD									
7,800.00	89.95	179.73	7,172.24	-635.91	-694.82	730.15	0.00	0.00	0.00
7,900.00	89.95	179.73	7,172.33	-735.91	-694.35	829.01	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4880.00ft
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Well:	Thomason 13C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 13C-15HZ		
Design:	Thomason 13C-15HZ		

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	89.95	179.73	7,172.43	-835.91	-693.88	927.88	0.00	0.00	0.00	
8,100.00	89.95	179.73	7,172.52	-935.91	-693.41	1,026.75	0.00	0.00	0.00	
8,200.00	89.95	179.73	7,172.62	-1,035.91	-692.93	1,125.62	0.00	0.00	0.00	
8,300.00	89.95	179.73	7,172.71	-1,135.90	-692.46	1,224.49	0.00	0.00	0.00	
8,400.00	89.95	179.73	7,172.81	-1,235.90	-691.99	1,323.36	0.00	0.00	0.00	
8,500.00	89.95	179.73	7,172.90	-1,335.90	-691.52	1,422.22	0.00	0.00	0.00	
8,600.00	89.95	179.73	7,173.00	-1,435.90	-691.05	1,521.09	0.00	0.00	0.00	
8,700.00	89.95	179.73	7,173.09	-1,535.90	-690.57	1,619.96	0.00	0.00	0.00	
8,800.00	89.95	179.73	7,173.19	-1,635.90	-690.10	1,718.83	0.00	0.00	0.00	
8,900.00	89.95	179.73	7,173.28	-1,735.90	-689.63	1,817.70	0.00	0.00	0.00	
9,000.00	89.95	179.73	7,173.38	-1,835.90	-689.16	1,916.57	0.00	0.00	0.00	
9,100.00	89.95	179.73	7,173.47	-1,935.90	-688.69	2,015.43	0.00	0.00	0.00	
9,200.00	89.95	179.73	7,173.56	-2,035.89	-688.21	2,114.30	0.00	0.00	0.00	
9,300.00	89.95	179.73	7,173.66	-2,135.89	-687.74	2,213.17	0.00	0.00	0.00	
9,400.00	89.95	179.73	7,173.75	-2,235.89	-687.27	2,312.04	0.00	0.00	0.00	
9,500.00	89.95	179.73	7,173.85	-2,335.89	-686.80	2,410.91	0.00	0.00	0.00	
9,600.00	89.95	179.73	7,173.94	-2,435.89	-686.32	2,509.78	0.00	0.00	0.00	
9,700.00	89.95	179.73	7,174.04	-2,535.89	-685.85	2,608.64	0.00	0.00	0.00	
9,800.00	89.95	179.73	7,174.13	-2,635.89	-685.38	2,707.51	0.00	0.00	0.00	
9,900.00	89.95	179.73	7,174.23	-2,735.89	-684.91	2,806.38	0.00	0.00	0.00	
10,000.00	89.95	179.73	7,174.32	-2,835.88	-684.44	2,905.25	0.00	0.00	0.00	
10,100.00	89.95	179.73	7,174.42	-2,935.88	-683.96	3,004.12	0.00	0.00	0.00	
10,200.00	89.95	179.73	7,174.51	-3,035.88	-683.49	3,102.99	0.00	0.00	0.00	
10,300.00	89.95	179.73	7,174.61	-3,135.88	-683.02	3,201.85	0.00	0.00	0.00	
10,400.00	89.95	179.73	7,174.70	-3,235.88	-682.55	3,300.72	0.00	0.00	0.00	
10,500.00	89.95	179.73	7,174.80	-3,335.88	-682.07	3,399.59	0.00	0.00	0.00	
10,600.00	89.95	179.73	7,174.89	-3,435.88	-681.60	3,498.46	0.00	0.00	0.00	
10,700.00	89.95	179.73	7,174.99	-3,535.88	-681.13	3,597.33	0.00	0.00	0.00	
10,800.00	89.95	179.73	7,175.08	-3,635.88	-680.66	3,696.20	0.00	0.00	0.00	
10,900.00	89.95	179.73	7,175.18	-3,735.87	-680.19	3,795.06	0.00	0.00	0.00	
11,000.00	89.95	179.73	7,175.27	-3,835.87	-679.71	3,893.93	0.00	0.00	0.00	
11,100.00	89.95	179.73	7,175.37	-3,935.87	-679.24	3,992.80	0.00	0.00	0.00	
11,200.00	89.95	179.73	7,175.46	-4,035.87	-678.77	4,091.67	0.00	0.00	0.00	
11,300.00	89.95	179.73	7,175.56	-4,135.87	-678.30	4,190.54	0.00	0.00	0.00	
11,400.00	89.95	179.73	7,175.65	-4,235.87	-677.83	4,289.41	0.00	0.00	0.00	
11,500.00	89.95	179.73	7,175.75	-4,335.87	-677.35	4,388.27	0.00	0.00	0.00	
11,600.00	89.95	179.73	7,175.84	-4,435.87	-676.88	4,487.14	0.00	0.00	0.00	
11,700.00	89.95	179.73	7,175.94	-4,535.86	-676.41	4,586.01	0.00	0.00	0.00	
11,766.44	89.95	179.73	7,176.00	-4,602.30	-676.10	4,651.69	0.00	0.00	0.00	
TD at 11766.44 - Thomason 13C-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 13C-15HZ btl	0.00	0.00	7,176.00	-4,602.30	-676.10	1,292,289.55	3,235,470.55	40.132659	-104.657844	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Thomason 13C-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 13N-15HZ	North Reference:	True
Well:	Thomason 13C-15HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Thomason 13C-15HZ		
Design:	Thomason 13C-15HZ		

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	
7,541.09	7,172.00	7"	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,896.72	3,877.00	Parkman				
4,483.82	4,460.00	Sussex				
6,859.46	6,814.00	Sharon Springs				
6,928.49	6,876.00	Niobrara A				
6,974.28	6,915.00	Niobrara B				
6,999.94	6,936.00	Niobrara B TL				
7,088.39	7,003.00	Niobrara C				
7,361.15	7,144.00	Fort Hays				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
850.00	850.00	0.00	0.00	Start Build 2.00	
1,188.93	1,188.14	5.92	-19.13	Start 5432.39 hold at 1188.93 MD	
6,621.31	6,582.55	195.39	-631.69	Start DLS 10.00 TFO -107.33	
7,541.09	7,172.00	-377.00	-696.00	Start DLS 0.01 TFO -101.36	
7,772.99	7,172.21	-608.90	-694.95	Start 3993.45 hold at 7772.99 MD	
11,766.44	7,176.00	-4,602.30	-676.10	TD at 11766.44	