

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NORTON 5 PAD

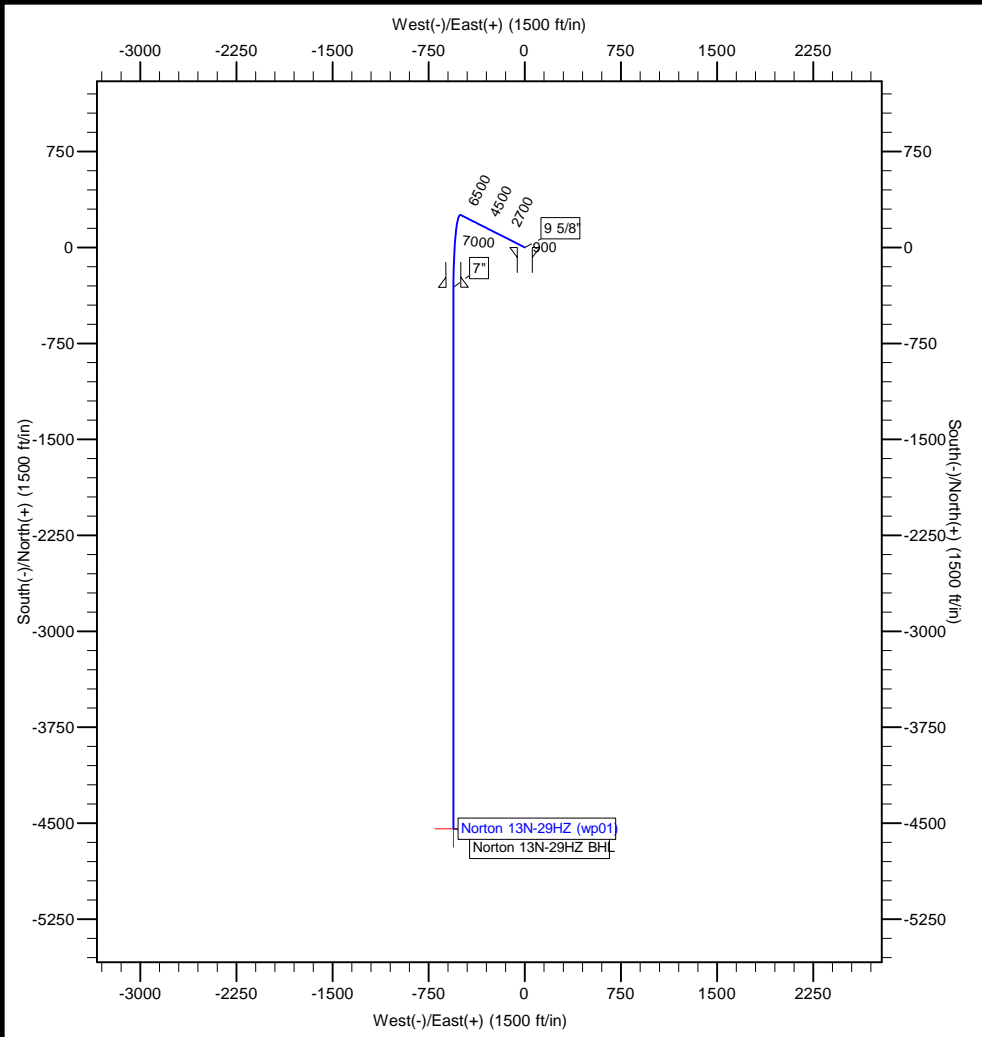
Norton 13N-29HZ

Norton 13N-29HZ

Plan: Norton 13N-29HZ (wp01)

Standard Planning Report

05 December, 2011



Azimuths to True North
 Magnetic North: 8.80°
 Magnetic Field
 Strength: 52972.4snT
 Dip Angle: 66.87°
 Date: 12/5/2011
 Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_NORTON 5 PAD
Well: Norton 13N-29HZ
Wellbore: Norton 13N-29HZ
Section:
SHL:
Design: Norton 13N-29HZ (wp01)
Latitude: 40.202172
Longitude: -104.805958
GL: 4896.00
KB: gl + rkb @ 4913.00ft

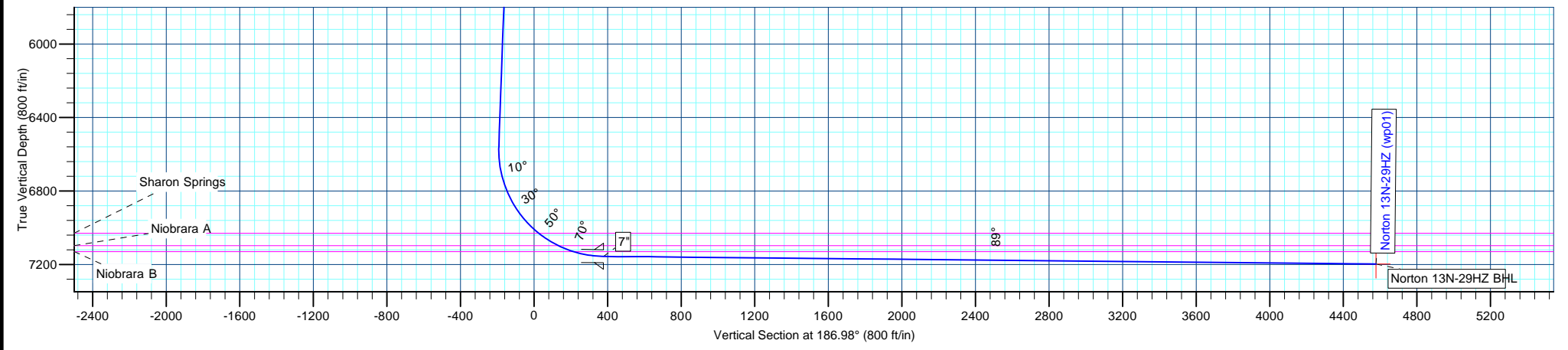
WELL DETAILS: Norton 13N-29HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4896.00 Latitude	Longitude	Slot
0.00	0.00	1317252.33	3193859.96	40.202172	-104.805958	

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	
1296.99	5.94	296.83	1296.46	6.94	-13.72	2.00	296.83	-5.22	
6587.74	5.94	296.83	6558.80	254.08	-502.28	0.00	0.00	-191.17	
7509.26	89.47	179.98	7156.00	-313.00	-557.00	10.00	-116.78	378.36	
7513.30	89.43	179.99	7156.04	-317.04	-557.00	1.00	166.17	382.36	
11740.52	89.43	179.99	7198.00	-4544.06	-556.24	0.00	0.00	4577.97	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)							
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	Point
Norton 13N-29HZ BHL	7198.00	-4544.06	-556.24	40.189698	-104.807949		

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3383.00	3394.79	Parkman
4309.00	4325.79	Sussex
7031.00	7127.97	Sharon Springs
7098.00	7253.92	Niobrara A
7131.00	7344.25	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7156.00	7509.26	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Norton 13N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4913.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4913.00ft
Site:	WELD_NORTON 5 PAD	North Reference:	True
Well:	Norton 13N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Norton 13N-29HZ		
Design:	Norton 13N-29HZ (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_NORTON 5 PAD				
Site Position:		Northing:	1,317,192.24 usft	Latitude:	40.202007
From:	Lat/Long	Easting:	3,193,861.27 usft	Longitude:	-104.805955
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	Norton 13N-29HZ					
Well Position	+N/-S	60.09 ft	Northing:	1,317,252.33 usft	Latitude:	40.202172
	+E/-W	-0.84 ft	Easting:	3,193,859.96 usft	Longitude:	-104.805958
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,896.00 ft

Wellbore	Norton 13N-29HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/5/2011	8.81	66.87	52,972

Design	Norton 13N-29HZ (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	186.98

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	
1,296.99	5.94	296.83	1,296.46	6.94	-13.72	2.00	2.00	0.00	296.83	
6,587.74	5.94	296.83	6,558.80	254.08	-502.28	0.00	0.00	0.00	0.00	
7,509.26	89.47	179.98	7,156.00	-313.00	-557.00	10.00	9.06	-12.68	-116.78	
7,513.30	89.43	179.99	7,156.04	-317.04	-557.00	1.00	-0.97	0.24	166.17	
11,740.52	89.43	179.99	7,198.00	-4,544.06	-556.24	0.00	0.00	0.00	0.00	Norton 13N-29HZ BH

Anadarko Petroleum Corp

Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4913.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4913.00ft
Site:	WELD_NORTON 5 PAD	North Reference:	True
Well:	Norton 13N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Norton 13N-29HZ		
Design:	Norton 13N-29HZ (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	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
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	296.83	1,099.98	0.79	-1.56	-0.59	2.00	2.00	2.00	0.00
1,200.00	4.00	296.83	1,199.84	3.15	-6.23	-2.37	2.00	2.00	2.00	0.00
1,296.99	5.94	296.83	1,296.46	6.94	-13.72	-5.22	2.00	2.00	2.00	0.00
1,300.00	5.94	296.83	1,299.45	7.08	-14.00	-5.33	0.00	0.00	0.00	0.00
1,400.00	5.94	296.83	1,398.92	11.75	-23.24	-8.84	0.00	0.00	0.00	0.00
1,500.00	5.94	296.83	1,498.38	16.43	-32.47	-12.36	0.00	0.00	0.00	0.00
1,600.00	5.94	296.83	1,597.84	21.10	-41.70	-15.87	0.00	0.00	0.00	0.00
1,700.00	5.94	296.83	1,697.30	25.77	-50.94	-19.39	0.00	0.00	0.00	0.00
1,800.00	5.94	296.83	1,796.77	30.44	-60.17	-22.90	0.00	0.00	0.00	0.00
1,900.00	5.94	296.83	1,896.23	35.11	-69.41	-26.42	0.00	0.00	0.00	0.00
2,000.00	5.94	296.83	1,995.69	39.78	-78.64	-29.93	0.00	0.00	0.00	0.00
2,100.00	5.94	296.83	2,095.16	44.45	-87.87	-33.45	0.00	0.00	0.00	0.00
2,200.00	5.94	296.83	2,194.62	49.12	-97.11	-36.96	0.00	0.00	0.00	0.00
2,300.00	5.94	296.83	2,294.08	53.79	-106.34	-40.47	0.00	0.00	0.00	0.00
2,400.00	5.94	296.83	2,393.55	58.47	-115.58	-43.99	0.00	0.00	0.00	0.00
2,500.00	5.94	296.83	2,493.01	63.14	-124.81	-47.50	0.00	0.00	0.00	0.00
2,600.00	5.94	296.83	2,592.47	67.81	-134.05	-51.02	0.00	0.00	0.00	0.00
2,700.00	5.94	296.83	2,691.94	72.48	-143.28	-54.53	0.00	0.00	0.00	0.00
2,800.00	5.94	296.83	2,791.40	77.15	-152.51	-58.05	0.00	0.00	0.00	0.00
2,900.00	5.94	296.83	2,890.86	81.82	-161.75	-61.56	0.00	0.00	0.00	0.00
3,000.00	5.94	296.83	2,990.33	86.49	-170.98	-65.08	0.00	0.00	0.00	0.00
3,100.00	5.94	296.83	3,089.79	91.16	-180.22	-68.59	0.00	0.00	0.00	0.00
3,200.00	5.94	296.83	3,189.25	95.83	-189.45	-72.11	0.00	0.00	0.00	0.00
3,300.00	5.94	296.83	3,288.71	100.51	-198.68	-75.62	0.00	0.00	0.00	0.00
3,394.79	5.94	296.83	3,383.00	104.93	-207.44	-78.95	0.00	0.00	0.00	0.00
Parkman										
3,400.00	5.94	296.83	3,388.18	105.18	-207.92	-79.13	0.00	0.00	0.00	0.00
3,500.00	5.94	296.83	3,487.64	109.85	-217.15	-82.65	0.00	0.00	0.00	0.00
3,600.00	5.94	296.83	3,587.10	114.52	-226.39	-86.16	0.00	0.00	0.00	0.00
3,700.00	5.94	296.83	3,686.57	119.19	-235.62	-89.68	0.00	0.00	0.00	0.00
3,800.00	5.94	296.83	3,786.03	123.86	-244.85	-93.19	0.00	0.00	0.00	0.00
3,900.00	5.94	296.83	3,885.49	128.53	-254.09	-96.71	0.00	0.00	0.00	0.00
4,000.00	5.94	296.83	3,984.96	133.20	-263.32	-100.22	0.00	0.00	0.00	0.00
4,100.00	5.94	296.83	4,084.42	137.87	-272.56	-103.74	0.00	0.00	0.00	0.00
4,200.00	5.94	296.83	4,183.88	142.55	-281.79	-107.25	0.00	0.00	0.00	0.00
4,300.00	5.94	296.83	4,283.35	147.22	-291.02	-110.77	0.00	0.00	0.00	0.00
4,325.79	5.94	296.83	4,309.00	148.42	-293.41	-111.67	0.00	0.00	0.00	0.00
Sussex										
4,400.00	5.94	296.83	4,382.81	151.89	-300.26	-114.28	0.00	0.00	0.00	0.00
4,500.00	5.94	296.83	4,482.27	156.56	-309.49	-117.79	0.00	0.00	0.00	0.00
4,600.00	5.94	296.83	4,581.74	161.23	-318.73	-121.31	0.00	0.00	0.00	0.00

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Planning Report

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4913.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4913.00ft
Site:	WELD_NORTON 5 PAD	North Reference:	True
Well:	Norton 13N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Norton 13N-29HZ		
Design:	Norton 13N-29HZ (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)
4,700.00	5.94	296.83	4,681.20	165.90	-327.96	-124.82	0.00	0.00	0.00
4,800.00	5.94	296.83	4,780.66	170.57	-337.19	-128.34	0.00	0.00	0.00
4,900.00	5.94	296.83	4,880.12	175.24	-346.43	-131.85	0.00	0.00	0.00
5,000.00	5.94	296.83	4,979.59	179.91	-355.66	-135.37	0.00	0.00	0.00
5,100.00	5.94	296.83	5,079.05	184.58	-364.90	-138.88	0.00	0.00	0.00
5,200.00	5.94	296.83	5,178.51	189.26	-374.13	-142.40	0.00	0.00	0.00
5,300.00	5.94	296.83	5,277.98	193.93	-383.36	-145.91	0.00	0.00	0.00
5,400.00	5.94	296.83	5,377.44	198.60	-392.60	-149.43	0.00	0.00	0.00
5,500.00	5.94	296.83	5,476.90	203.27	-401.83	-152.94	0.00	0.00	0.00
5,600.00	5.94	296.83	5,576.37	207.94	-411.07	-156.45	0.00	0.00	0.00
5,700.00	5.94	296.83	5,675.83	212.61	-420.30	-159.97	0.00	0.00	0.00
5,800.00	5.94	296.83	5,775.29	217.28	-429.53	-163.48	0.00	0.00	0.00
5,900.00	5.94	296.83	5,874.76	221.95	-438.77	-167.00	0.00	0.00	0.00
6,000.00	5.94	296.83	5,974.22	226.62	-448.00	-170.51	0.00	0.00	0.00
6,100.00	5.94	296.83	6,073.68	231.30	-457.24	-174.03	0.00	0.00	0.00
6,200.00	5.94	296.83	6,173.15	235.97	-466.47	-177.54	0.00	0.00	0.00
6,300.00	5.94	296.83	6,272.61	240.64	-475.70	-181.06	0.00	0.00	0.00
6,400.00	5.94	296.83	6,372.07	245.31	-484.94	-184.57	0.00	0.00	0.00
6,500.00	5.94	296.83	6,471.53	249.98	-494.17	-188.08	0.00	0.00	0.00
6,587.74	5.94	296.83	6,558.80	254.08	-502.28	-191.17	0.00	0.00	0.00
6,600.00	5.50	285.33	6,571.00	254.52	-503.41	-191.47	10.00	-3.61	-93.82
6,700.00	10.04	211.52	6,670.26	248.34	-512.61	-184.22	10.00	4.55	-73.81
6,800.00	19.26	195.33	6,766.94	224.94	-521.55	-159.90	10.00	9.22	-16.19
6,900.00	28.99	189.57	6,858.11	185.04	-529.96	-119.28	10.00	9.73	-5.76
7,000.00	38.85	186.55	6,940.99	129.84	-537.59	-63.56	10.00	9.86	-3.02
7,100.00	48.76	184.60	7,013.08	61.04	-544.19	5.54	10.00	9.91	-1.95
7,127.97	51.53	184.16	7,031.00	39.63	-545.83	26.98	10.00	9.93	-1.57
Sharon Springs									
7,200.00	58.69	183.17	7,072.17	-19.30	-549.58	85.93	10.00	9.94	-1.38
7,253.92	64.05	182.52	7,098.00	-66.56	-551.92	133.12	10.00	9.94	-1.20
Niobrara A									
7,300.00	68.64	182.01	7,116.48	-108.72	-553.58	175.17	10.00	9.95	-1.10
7,344.25	73.04	181.55	7,131.00	-150.48	-554.88	216.79	10.00	9.95	-1.04
Niobrara B									
7,400.00	78.59	181.00	7,144.66	-204.50	-556.08	270.55	10.00	9.95	-0.98
7,500.00	88.55	180.07	7,155.84	-303.74	-557.00	369.17	10.00	9.96	-0.94
7,509.26	89.47	179.98	7,156.00	-313.00	-557.00	378.36	10.00	9.96	-0.92
7"									
7,513.30	89.43	179.99	7,156.04	-317.04	-557.00	382.36	1.00	-0.97	0.24
7,600.00	89.43	179.99	7,156.90	-403.74	-556.98	468.42	0.00	0.00	0.00
7,700.00	89.43	179.99	7,157.89	-503.73	-556.97	567.67	0.00	0.00	0.00
7,800.00	89.43	179.99	7,158.88	-603.73	-556.95	666.92	0.00	0.00	0.00
7,900.00	89.43	179.99	7,159.88	-703.72	-556.93	766.17	0.00	0.00	0.00
8,000.00	89.43	179.99	7,160.87	-803.72	-556.91	865.43	0.00	0.00	0.00
8,100.00	89.43	179.99	7,161.86	-903.71	-556.89	964.68	0.00	0.00	0.00
8,200.00	89.43	179.99	7,162.86	-1,003.71	-556.87	1,063.93	0.00	0.00	0.00
8,300.00	89.43	179.99	7,163.85	-1,103.70	-556.86	1,163.18	0.00	0.00	0.00
8,400.00	89.43	179.99	7,164.84	-1,203.70	-556.84	1,262.43	0.00	0.00	0.00
8,500.00	89.43	179.99	7,165.83	-1,303.69	-556.82	1,361.69	0.00	0.00	0.00
8,600.00	89.43	179.99	7,166.83	-1,403.69	-556.80	1,460.94	0.00	0.00	0.00
8,700.00	89.43	179.99	7,167.82	-1,503.68	-556.78	1,560.19	0.00	0.00	0.00
8,800.00	89.43	179.99	7,168.81	-1,603.68	-556.77	1,659.44	0.00	0.00	0.00
8,900.00	89.43	179.99	7,169.80	-1,703.67	-556.75	1,758.70	0.00	0.00	0.00
9,000.00	89.43	179.99	7,170.80	-1,803.67	-556.73	1,857.95	0.00	0.00	0.00

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Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Norton 13N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4913.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4913.00ft
Site:	WELD_NORTON 5 PAD	North Reference:	True
Well:	Norton 13N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Norton 13N-29HZ		
Design:	Norton 13N-29HZ (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)	
9,100.00	89.43	179.99	7,171.79	-1,903.66	-556.71	1,957.20	0.00	0.00	0.00	
9,200.00	89.43	179.99	7,172.78	-2,003.66	-556.69	2,056.45	0.00	0.00	0.00	
9,300.00	89.43	179.99	7,173.77	-2,103.65	-556.68	2,155.70	0.00	0.00	0.00	
9,400.00	89.43	179.99	7,174.77	-2,203.65	-556.66	2,254.96	0.00	0.00	0.00	
9,500.00	89.43	179.99	7,175.76	-2,303.64	-556.64	2,354.21	0.00	0.00	0.00	
9,600.00	89.43	179.99	7,176.75	-2,403.64	-556.62	2,453.46	0.00	0.00	0.00	
9,700.00	89.43	179.99	7,177.75	-2,503.63	-556.60	2,552.71	0.00	0.00	0.00	
9,800.00	89.43	179.99	7,178.74	-2,603.63	-556.59	2,651.96	0.00	0.00	0.00	
9,900.00	89.43	179.99	7,179.73	-2,703.62	-556.57	2,751.22	0.00	0.00	0.00	
10,000.00	89.43	179.99	7,180.72	-2,803.62	-556.55	2,850.47	0.00	0.00	0.00	
10,100.00	89.43	179.99	7,181.72	-2,903.61	-556.53	2,949.72	0.00	0.00	0.00	
10,200.00	89.43	179.99	7,182.71	-3,003.61	-556.51	3,048.97	0.00	0.00	0.00	
10,300.00	89.43	179.99	7,183.70	-3,103.60	-556.50	3,148.22	0.00	0.00	0.00	
10,400.00	89.43	179.99	7,184.69	-3,203.60	-556.48	3,247.48	0.00	0.00	0.00	
10,500.00	89.43	179.99	7,185.69	-3,303.59	-556.46	3,346.73	0.00	0.00	0.00	
10,600.00	89.43	179.99	7,186.68	-3,403.59	-556.44	3,445.98	0.00	0.00	0.00	
10,700.00	89.43	179.99	7,187.67	-3,503.58	-556.42	3,545.23	0.00	0.00	0.00	
10,800.00	89.43	179.99	7,188.66	-3,603.58	-556.41	3,644.48	0.00	0.00	0.00	
10,900.00	89.43	179.99	7,189.66	-3,703.57	-556.39	3,743.74	0.00	0.00	0.00	
11,000.00	89.43	179.99	7,190.65	-3,803.57	-556.37	3,842.99	0.00	0.00	0.00	
11,100.00	89.43	179.99	7,191.64	-3,903.56	-556.35	3,942.24	0.00	0.00	0.00	
11,200.00	89.43	179.99	7,192.63	-4,003.56	-556.33	4,041.49	0.00	0.00	0.00	
11,300.00	89.43	179.99	7,193.63	-4,103.55	-556.31	4,140.74	0.00	0.00	0.00	
11,400.00	89.43	179.99	7,194.62	-4,203.55	-556.30	4,240.00	0.00	0.00	0.00	
11,500.00	89.43	179.99	7,195.61	-4,303.54	-556.28	4,339.25	0.00	0.00	0.00	
11,600.00	89.43	179.99	7,196.61	-4,403.54	-556.26	4,438.50	0.00	0.00	0.00	
11,700.00	89.43	179.99	7,197.60	-4,503.53	-556.24	4,537.75	0.00	0.00	0.00	
11,740.52	89.43	179.99	7,198.00	-4,544.06	-556.24	4,577.97	0.00	0.00	0.00	
Norton 13N-29HZ BHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Norton 13N-29HZ BHL	0.00	0.00	7,198.00	-4,544.06	-556.24	1,312,704.07	3,193,339.31	40.189698	-104.807949
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
900.00	900.00	9 5/8"	9-5/8	12-1/4	
7,509.26	7,156.00	7"	7	8-3/4	

Anadarko Petroleum Corp
Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Norton 13N-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	gl + rkb @ 4913.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	gl + rkb @ 4913.00ft
Site:	WELD_NORTON 5 PAD	North Reference:	True
Well:	Norton 13N-29HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Norton 13N-29HZ		
Design:	Norton 13N-29HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,394.79	3,383.00	Parkman				
4,325.79	4,309.00	Sussex				
7,127.97	7,031.00	Sharon Springs				
7,253.92	7,098.00	Niobrara A				
7,344.25	7,131.00	Niobrara B				