

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_NILES 14-28HZ PAD

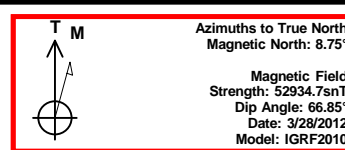
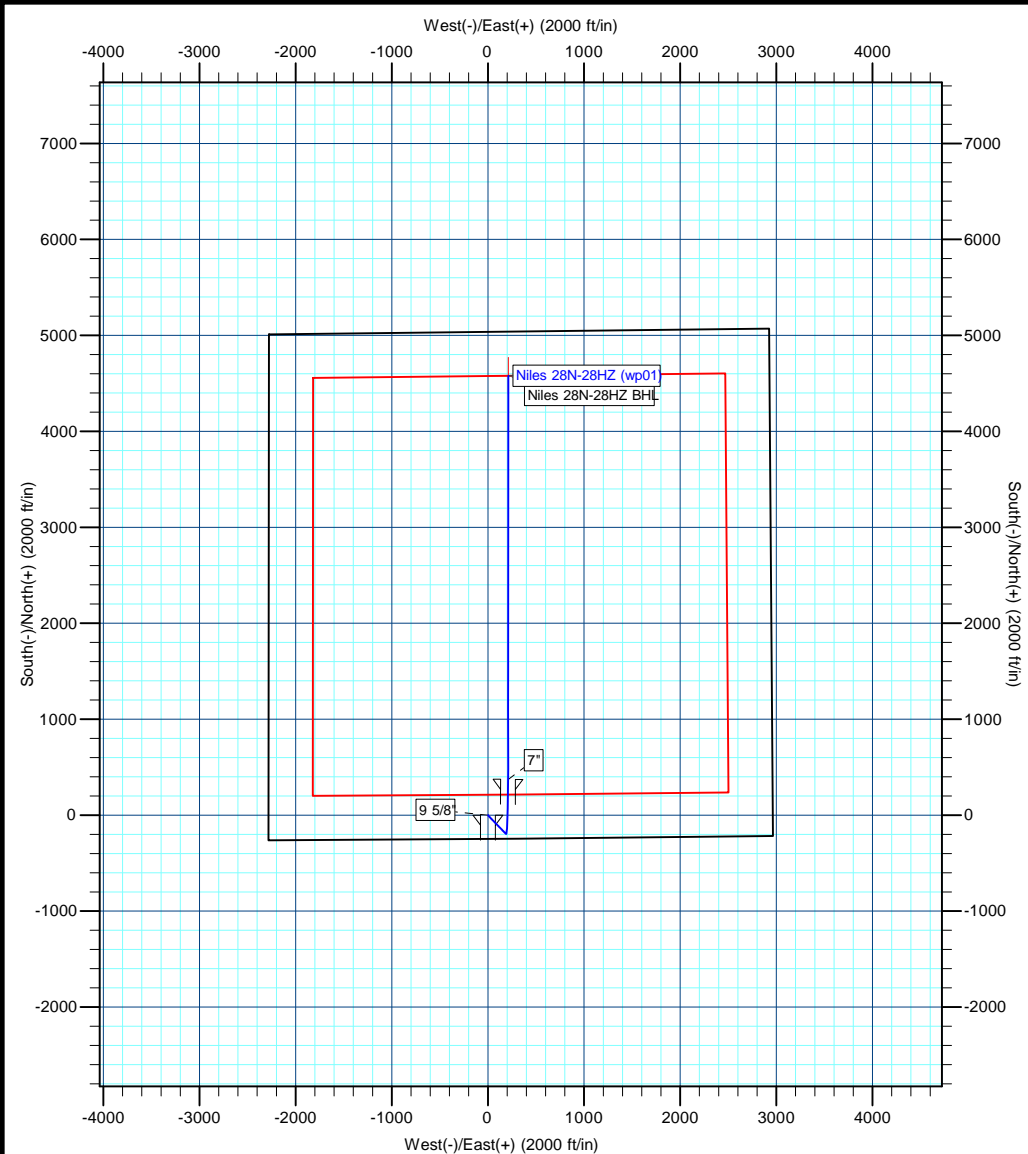
Niles 28N-28HZ

Niles 28N-28HZ

Plan: Niles 28N-28HZ (wp01)

Standard Planning Report

28 March, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD NILES 14-28HZ PAD
Well: Niles 28N-28HZ
Wellbore: Niles 28N-28HZ
Section:
SHL:
Design: Niles 28N-28HZ (wp01)
Latitude: 40.189389
Longitude: -104.783436
GL: 4959.00
KB: rkb + gl @ 4984.00ft

WELL DETAILS: Niles 28N-28HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4959.00 Latitude	Longitude	Slot
0.00	0.00	1312645.89	3200188.30	40.189389	-104.783436	

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
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00
1243.38	2.87	136.09	1243.32	-2.58	2.49	2.00	136.09	-2.47
6622.56	2.87	136.09	6615.77	-196.45	189.14	0.00	0.00	-187.45
7540.08	89.69	0.04	7209.00	373.00	210.00	10.00	-136.03	382.35
7542.87	89.66	0.04	7209.02	375.79	210.00	1.00	173.51	385.14
11745.12	89.66	0.04	7234.00	4577.96	212.85	0.00	0.00	4582.91

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

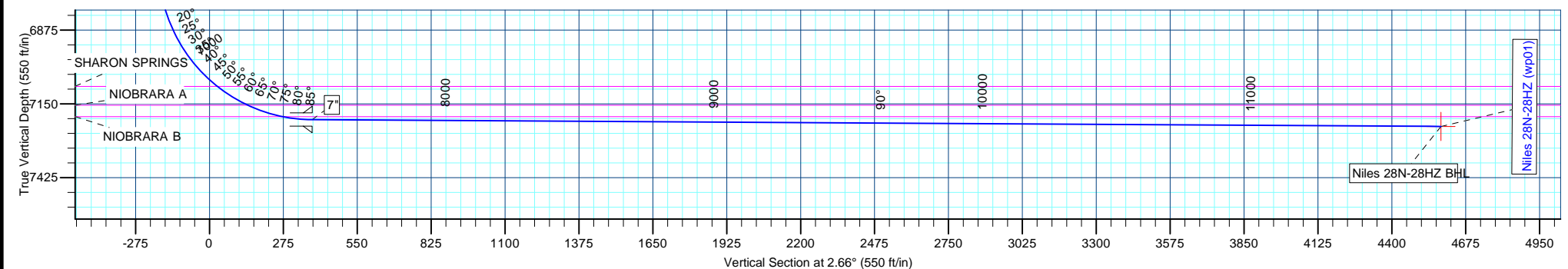
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Niles 28N-28HZ BHL	7234.00	4577.96	212.85	40.201956	-104.782674	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3979.00	3982.49	PARKMAN
4403.00	4407.02	SUSSEX
7085.00	7158.97	SHARON SPRINGS
7155.00	7292.36	NIOBRARA A
7198.00	7430.68	NIOBRARA B

CASING DETAILS

TVD	MD	Name	Size
900.00	900.00	9 5/8"	9-5/8
7209.00	7540.08	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 28N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4984.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	North Reference:	True
Well:	Niles 28N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 28N-28HZ		
Design:	Niles 28N-28HZ (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_NILES 14-28HZ PAD			
Site Position:		Northing:	1,312,646.02 usft	Latitude:	40.189390
From:	Lat/Long	Easting:	3,200,158.13 usft	Longitude:	-104.783544
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.46 °

Well	Niles 28N-28HZ					
Well Position	+N/-S	-0.37 ft	Northing:	1,312,645.89 usft	Latitude:	40.189389
	+E/-W	30.17 ft	Easting:	3,200,188.30 usft	Longitude:	-104.783436
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,959.00 ft

Wellbore	Niles 28N-28HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/28/2012	8.75	66.85	52,935

Design	Niles 28N-28HZ (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	2.66

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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,243.38	2.87	136.09	1,243.32	-2.58	2.49	2.00	2.00	0.00	136.09	
6,622.56	2.87	136.09	6,615.77	-196.45	189.14	0.00	0.00	0.00	0.00	
7,540.08	89.69	0.04	7,209.00	373.00	210.00	10.00	9.46	-14.83	-136.03	
7,542.87	89.66	0.04	7,209.02	375.79	210.00	1.00	-0.99	0.11	173.51	
11,745.12	89.66	0.04	7,234.00	4,577.96	212.85	0.00	0.00	0.00	0.00	Niles 28N-28HZ BHL

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 28N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4984.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	North Reference:	True
Well:	Niles 28N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 28N-28HZ		
Design:	Niles 28N-28HZ (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
900.00	0.00	0.00	900.00	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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	2.00	136.09	1,199.98	-1.26	1.21	-1.20	2.00	2.00	0.00
1,243.38	2.87	136.09	1,243.32	-2.58	2.49	-2.47	2.00	2.00	0.00
1,300.00	2.87	136.09	1,299.87	-4.62	4.45	-4.41	0.00	0.00	0.00
1,400.00	2.87	136.09	1,399.74	-8.23	7.92	-7.85	0.00	0.00	0.00
1,500.00	2.87	136.09	1,499.62	-11.83	11.39	-11.29	0.00	0.00	0.00
1,600.00	2.87	136.09	1,599.49	-15.44	14.86	-14.73	0.00	0.00	0.00
1,700.00	2.87	136.09	1,699.37	-19.04	18.33	-18.17	0.00	0.00	0.00
1,800.00	2.87	136.09	1,799.24	-22.64	21.80	-21.61	0.00	0.00	0.00
1,900.00	2.87	136.09	1,899.12	-26.25	25.27	-25.05	0.00	0.00	0.00
2,000.00	2.87	136.09	1,998.99	-29.85	28.74	-28.49	0.00	0.00	0.00
2,100.00	2.87	136.09	2,098.87	-33.46	32.21	-31.92	0.00	0.00	0.00
2,200.00	2.87	136.09	2,198.74	-37.06	35.68	-35.36	0.00	0.00	0.00
2,300.00	2.87	136.09	2,298.62	-40.66	39.15	-38.80	0.00	0.00	0.00
2,400.00	2.87	136.09	2,398.49	-44.27	42.62	-42.24	0.00	0.00	0.00
2,500.00	2.87	136.09	2,498.37	-47.87	46.09	-45.68	0.00	0.00	0.00
2,600.00	2.87	136.09	2,598.24	-51.48	49.56	-49.12	0.00	0.00	0.00
2,700.00	2.87	136.09	2,698.12	-55.08	53.03	-52.56	0.00	0.00	0.00
2,800.00	2.87	136.09	2,797.99	-58.68	56.50	-56.00	0.00	0.00	0.00
2,900.00	2.87	136.09	2,897.87	-62.29	59.97	-59.44	0.00	0.00	0.00
3,000.00	2.87	136.09	2,997.74	-65.89	63.44	-62.87	0.00	0.00	0.00
3,100.00	2.87	136.09	3,097.62	-69.50	66.91	-66.31	0.00	0.00	0.00
3,200.00	2.87	136.09	3,197.49	-73.10	70.38	-69.75	0.00	0.00	0.00
3,300.00	2.87	136.09	3,297.36	-76.70	73.85	-73.19	0.00	0.00	0.00
3,400.00	2.87	136.09	3,397.24	-80.31	77.32	-76.63	0.00	0.00	0.00
3,500.00	2.87	136.09	3,497.11	-83.91	80.79	-80.07	0.00	0.00	0.00
3,600.00	2.87	136.09	3,596.99	-87.52	84.26	-83.51	0.00	0.00	0.00
3,700.00	2.87	136.09	3,696.86	-91.12	87.73	-86.95	0.00	0.00	0.00
3,800.00	2.87	136.09	3,796.74	-94.72	91.20	-90.39	0.00	0.00	0.00
3,900.00	2.87	136.09	3,896.61	-98.33	94.67	-93.82	0.00	0.00	0.00
3,982.49	2.87	136.09	3,979.00	-101.30	97.53	-96.66	0.00	0.00	0.00
PARKMAN									
4,000.00	2.87	136.09	3,996.49	-101.93	98.14	-97.26	0.00	0.00	0.00
4,100.00	2.87	136.09	4,096.36	-105.54	101.61	-100.70	0.00	0.00	0.00
4,200.00	2.87	136.09	4,196.24	-109.14	105.08	-104.14	0.00	0.00	0.00
4,300.00	2.87	136.09	4,296.11	-112.74	108.55	-107.58	0.00	0.00	0.00
4,400.00	2.87	136.09	4,395.99	-116.35	112.02	-111.02	0.00	0.00	0.00
4,407.02	2.87	136.09	4,403.00	-116.60	112.26	-111.26	0.00	0.00	0.00
SUSSEX									
4,500.00	2.87	136.09	4,495.86	-119.95	115.49	-114.46	0.00	0.00	0.00
4,600.00	2.87	136.09	4,595.74	-123.56	118.96	-117.90	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 28N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4984.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	North Reference:	True
Well:	Niles 28N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 28N-28HZ		
Design:	Niles 28N-28HZ (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	2.87	136.09	4,695.61	-127.16	122.43	-121.34	0.00	0.00	0.00
4,800.00	2.87	136.09	4,795.49	-130.76	125.90	-124.77	0.00	0.00	0.00
4,900.00	2.87	136.09	4,895.36	-134.37	129.37	-128.21	0.00	0.00	0.00
5,000.00	2.87	136.09	4,995.24	-137.97	132.84	-131.65	0.00	0.00	0.00
5,100.00	2.87	136.09	5,095.11	-141.57	136.31	-135.09	0.00	0.00	0.00
5,200.00	2.87	136.09	5,194.99	-145.18	139.77	-138.53	0.00	0.00	0.00
5,300.00	2.87	136.09	5,294.86	-148.78	143.24	-141.97	0.00	0.00	0.00
5,400.00	2.87	136.09	5,394.74	-152.39	146.71	-145.41	0.00	0.00	0.00
5,500.00	2.87	136.09	5,494.61	-155.99	150.18	-148.85	0.00	0.00	0.00
5,600.00	2.87	136.09	5,594.48	-159.59	153.65	-152.29	0.00	0.00	0.00
5,700.00	2.87	136.09	5,694.36	-163.20	157.12	-155.73	0.00	0.00	0.00
5,800.00	2.87	136.09	5,794.23	-166.80	160.59	-159.16	0.00	0.00	0.00
5,900.00	2.87	136.09	5,894.11	-170.41	164.06	-162.60	0.00	0.00	0.00
6,000.00	2.87	136.09	5,993.98	-174.01	167.53	-166.04	0.00	0.00	0.00
6,100.00	2.87	136.09	6,093.86	-177.61	171.00	-169.48	0.00	0.00	0.00
6,200.00	2.87	136.09	6,193.73	-181.22	174.47	-172.92	0.00	0.00	0.00
6,300.00	2.87	136.09	6,293.61	-184.82	177.94	-176.36	0.00	0.00	0.00
6,400.00	2.87	136.09	6,393.48	-188.43	181.41	-179.80	0.00	0.00	0.00
6,500.00	2.87	136.09	6,493.36	-192.03	184.88	-183.24	0.00	0.00	0.00
6,600.00	2.87	136.09	6,593.23	-195.63	188.35	-186.68	0.00	0.00	0.00
6,622.56	2.87	136.09	6,615.77	-196.45	189.14	-187.45	0.00	0.00	0.00
6,700.00	6.02	19.28	6,693.06	-194.01	191.82	-184.89	10.00	4.07	-150.84
6,800.00	15.80	7.08	6,791.14	-175.50	195.24	-166.25	10.00	9.79	-12.20
6,900.00	25.75	4.16	6,884.53	-140.23	198.50	-130.86	10.00	9.95	-2.92
7,000.00	35.73	2.79	6,970.37	-89.28	201.51	-79.82	10.00	9.98	-1.36
7,100.00	45.71	1.97	7,046.06	-24.18	204.17	-14.67	10.00	9.99	-0.83
7,158.97	51.60	1.60	7,085.00	20.05	205.54	29.58	10.00	9.99	-0.62
SHARON SPRINGS									
7,200.00	55.70	1.38	7,109.31	53.08	206.40	62.61	10.00	9.99	-0.54
7,292.36	64.93	0.96	7,155.00	133.22	208.02	142.74	10.00	9.99	-0.46
NIOBRARA A									
7,300.00	65.69	0.92	7,158.19	140.16	208.13	149.68	10.00	9.99	-0.42
7,400.00	75.69	0.53	7,191.21	234.41	209.32	243.88	10.00	9.99	-0.39
7,430.68	78.75	0.42	7,198.00	264.32	209.57	273.77	10.00	9.99	-0.37
NIOBRARA B									
7,500.00	85.68	0.18	7,207.38	332.96	209.93	342.35	10.00	9.99	-0.35
7,540.08	89.69	0.04	7,209.00	373.00	210.00	382.35	10.00	9.99	-0.35
7"									
7,542.87	89.66	0.04	7,209.02	375.79	210.00	385.14	1.00	-0.99	0.11
7,600.00	89.66	0.04	7,209.36	432.92	210.04	442.21	0.00	0.00	0.00
7,700.00	89.66	0.04	7,209.95	532.92	210.11	542.10	0.00	0.00	0.00
7,800.00	89.66	0.04	7,210.54	632.92	210.18	641.99	0.00	0.00	0.00
7,900.00	89.66	0.04	7,211.14	732.91	210.24	741.89	0.00	0.00	0.00
8,000.00	89.66	0.04	7,211.73	832.91	210.31	841.78	0.00	0.00	0.00
8,100.00	89.66	0.04	7,212.33	932.91	210.38	941.68	0.00	0.00	0.00
8,200.00	89.66	0.04	7,212.92	1,032.91	210.45	1,041.57	0.00	0.00	0.00
8,300.00	89.66	0.04	7,213.52	1,132.91	210.51	1,141.46	0.00	0.00	0.00
8,400.00	89.66	0.04	7,214.11	1,232.91	210.58	1,241.36	0.00	0.00	0.00
8,500.00	89.66	0.04	7,214.71	1,332.90	210.65	1,341.25	0.00	0.00	0.00
8,600.00	89.66	0.04	7,215.30	1,432.90	210.72	1,441.14	0.00	0.00	0.00
8,700.00	89.66	0.04	7,215.90	1,532.90	210.78	1,541.04	0.00	0.00	0.00
8,800.00	89.66	0.04	7,216.49	1,632.90	210.85	1,640.93	0.00	0.00	0.00
8,900.00	89.66	0.04	7,217.08	1,732.90	210.92	1,740.82	0.00	0.00	0.00
9,000.00	89.66	0.04	7,217.68	1,832.89	210.99	1,840.72	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 28N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4984.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	North Reference:	True
Well:	Niles 28N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 28N-28HZ		
Design:	Niles 28N-28HZ (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	89.66	0.04	7,218.27	1,932.89	211.06	1,940.61	0.00	0.00	0.00
9,200.00	89.66	0.04	7,218.87	2,032.89	211.12	2,040.50	0.00	0.00	0.00
9,300.00	89.66	0.04	7,219.46	2,132.89	211.19	2,140.40	0.00	0.00	0.00
9,400.00	89.66	0.04	7,220.06	2,232.89	211.26	2,240.29	0.00	0.00	0.00
9,500.00	89.66	0.04	7,220.65	2,332.89	211.33	2,340.18	0.00	0.00	0.00
9,600.00	89.66	0.04	7,221.25	2,432.88	211.39	2,440.08	0.00	0.00	0.00
9,700.00	89.66	0.04	7,221.84	2,532.88	211.46	2,539.97	0.00	0.00	0.00
9,800.00	89.66	0.04	7,222.44	2,632.88	211.53	2,639.86	0.00	0.00	0.00
9,900.00	89.66	0.04	7,223.03	2,732.88	211.60	2,739.76	0.00	0.00	0.00
10,000.00	89.66	0.04	7,223.62	2,832.88	211.66	2,839.65	0.00	0.00	0.00
10,100.00	89.66	0.04	7,224.22	2,932.88	211.73	2,939.54	0.00	0.00	0.00
10,200.00	89.66	0.04	7,224.81	3,032.87	211.80	3,039.44	0.00	0.00	0.00
10,300.00	89.66	0.04	7,225.41	3,132.87	211.87	3,139.33	0.00	0.00	0.00
10,400.00	89.66	0.04	7,226.00	3,232.87	211.94	3,239.22	0.00	0.00	0.00
10,500.00	89.66	0.04	7,226.60	3,332.87	212.00	3,339.12	0.00	0.00	0.00
10,600.00	89.66	0.04	7,227.19	3,432.87	212.07	3,439.01	0.00	0.00	0.00
10,700.00	89.66	0.04	7,227.79	3,532.86	212.14	3,538.90	0.00	0.00	0.00
10,800.00	89.66	0.04	7,228.38	3,632.86	212.21	3,638.80	0.00	0.00	0.00
10,900.00	89.66	0.04	7,228.98	3,732.86	212.27	3,738.69	0.00	0.00	0.00
11,000.00	89.66	0.04	7,229.57	3,832.86	212.34	3,838.59	0.00	0.00	0.00
11,100.00	89.66	0.04	7,230.16	3,932.86	212.41	3,938.48	0.00	0.00	0.00
11,200.00	89.66	0.04	7,230.76	4,032.86	212.48	4,038.37	0.00	0.00	0.00
11,300.00	89.66	0.04	7,231.35	4,132.85	212.54	4,138.27	0.00	0.00	0.00
11,400.00	89.66	0.04	7,231.95	4,232.85	212.61	4,238.16	0.00	0.00	0.00
11,500.00	89.66	0.04	7,232.54	4,332.85	212.68	4,338.05	0.00	0.00	0.00
11,600.00	89.66	0.04	7,233.14	4,432.85	212.75	4,437.95	0.00	0.00	0.00
11,700.00	89.66	0.04	7,233.73	4,532.85	212.81	4,537.84	0.00	0.00	0.00
11,745.12	89.66	0.04	7,234.00	4,577.96	212.85	4,582.91	0.00	0.00	0.00
Niles 28N-28HZ BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Niles 28N-28HZ BHL	0.00	0.00	7,234.00	4,577.96	212.85	1,317,225.42	3,200,364.15	40.201956	-104.782674
- 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	
7,540.08	7,209.00	7"	7	8-3/4	

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well Niles 28N-28HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	rkb + gl @ 4984.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	rkb + gl @ 4984.00ft
Site:	WELD_NILES 14-28HZ PAD	North Reference:	True
Well:	Niles 28N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Niles 28N-28HZ		
Design:	Niles 28N-28HZ (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,982.49	3,979.00	PARKMAN		0.00		
4,407.02	4,403.00	SUSSEX		0.00		
7,158.97	7,085.00	SHARON SPRINGS		0.00		
7,292.36	7,155.00	NIOBRARA A		0.00		
7,430.68	7,198.00	NIOBRARA B		0.00		