

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_UNDERHILL 16-17HZ PAD

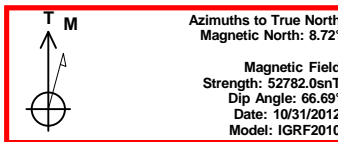
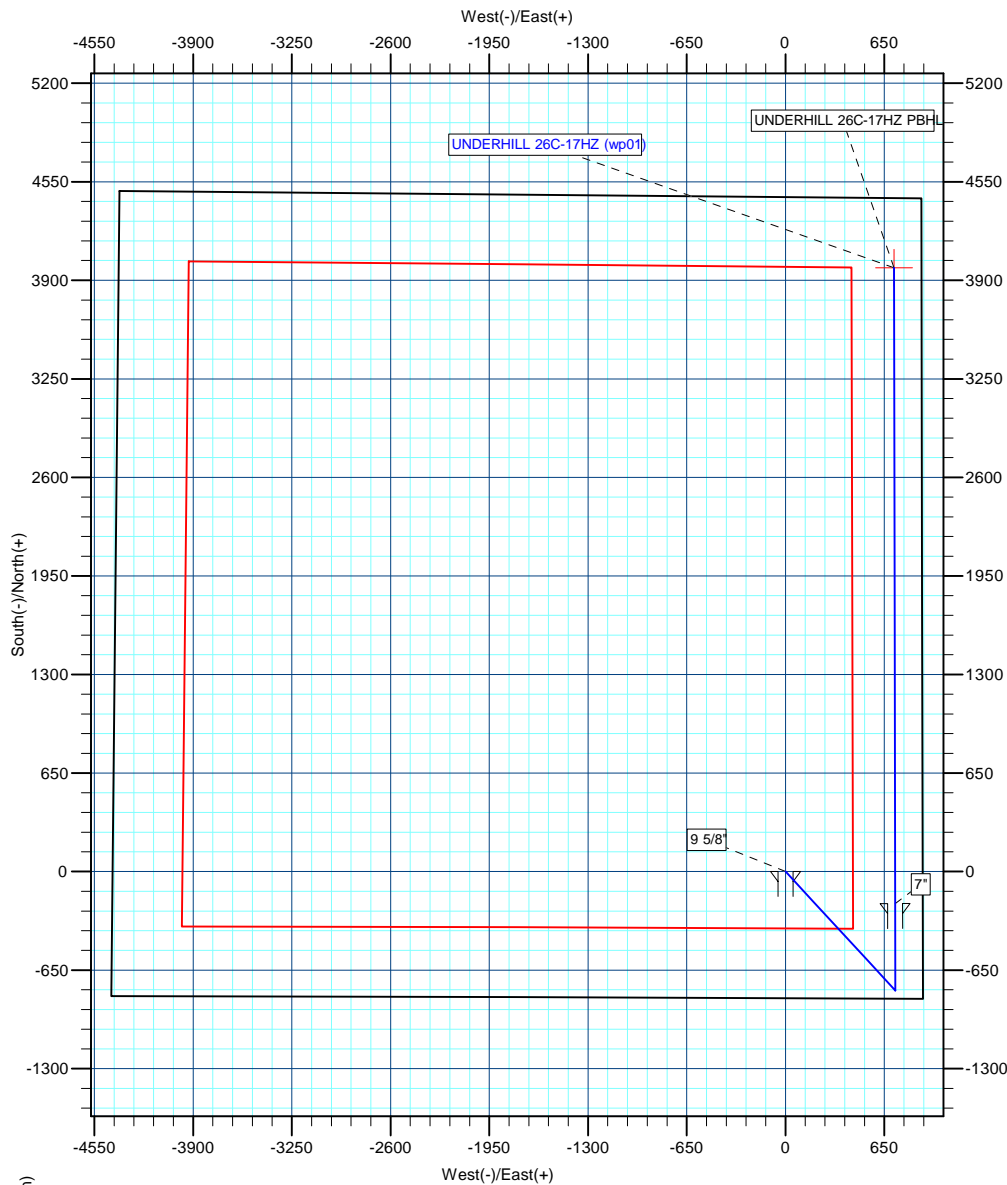
UNDERHILL 26C-17HZ

UNDERHILL 26C-17HZ

Plan: UNDERHILL 26C-17HZ (wp01)

Standard Planning Report

05 November, 2012



Project: COLORADO NORTHERN ZONE - 83
Site: WELD UNDERHILL 16-17HZ PAD
Well: UNDERHILL 26C-17HZ
Wellbore: UNDERHILL 26C-17HZ
Section: Sec. 17 T1N R67W
SHL: 835' FSL 903' FEL
Design: UNDERHILL 26C-17HZ (wp01)
Latitude: 40.046075
Longitude: -104.908285
GL: 5103.00
KB: 17' RKB + 5103' GL @ 5120.00ft

WELL DETAILS: UNDERHILL 26C-17HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	5103.00 Latitude	40.046075 Longitude	Slot
0.00	0.00	1260183.48	3165657.86			

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
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00
1775.55	14.51	137.32	1767.81	-67.18	61.95	2.00	137.32	-55.18
5302.42	14.51	137.32	5182.19	-716.82	661.05	0.00	0.00	-588.80
6027.97	0.00	0.00	5900.00	-784.00	723.00	2.00	180.00	-643.98
7027.97	0.00	0.00	6900.00	-784.00	723.00	0.00	0.00	-643.98
7330.01	0.00	0.00	7202.04	-784.00	723.00	0.00	0.00	-643.98
8229.31	89.93	359.90	7775.00	-211.74	722.00	10.00	359.90	-80.90
2423.72	89.93	359.90	7780.00	3982.66	714.64	0.00	-20.08	4046.27

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

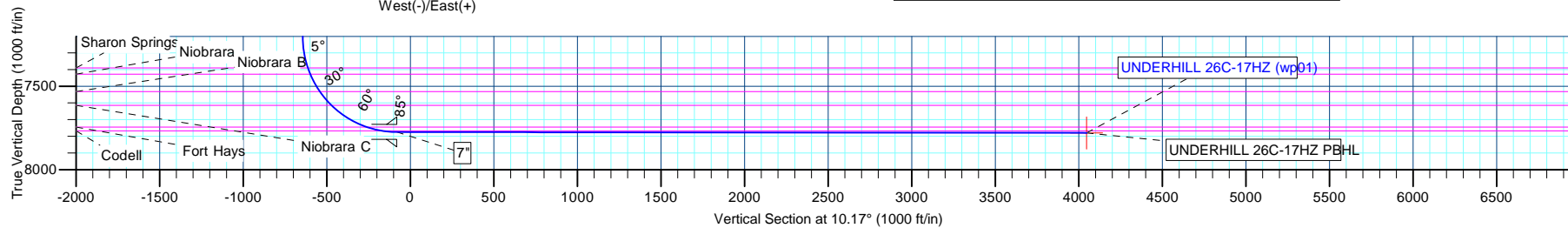
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
UNDERHILL 26C-17HZ PBHL	7780.00	3982.66	714.64	40.057008	-104.905732	Point

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4645.00	4747.54	Sussex
5254.00	5376.37	Shannon
7390.00	7521.52	Sharon Springs
7428.00	7562.28	Niobrara
7532.00	7681.63	Niobrara B
7615.00	7791.18	Niobrara C
7745.00	8043.78	Fort Hays
7767.00	8134.16	Codell

CASING DETAILS

TVD	MD	Name	Size
917.00	917.00	9 5/8"	9-5/8
7775.00	8229.31	7"	7



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well UNDERHILL 26C-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5103' GL @ 5120.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5103' GL @ 5120.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 26C-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 26C-17HZ		
Design:	UNDERHILL 26C-17HZ (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_UNDERHILL 16-17HZ PAD, Sec. 17 T1N R67W			
Site Position:		Northing:	1,260,179.32 usft	Latitude:	40.046063
From:	Lat/Long	Easting:	3,165,687.56 usft	Longitude:	-104.908179
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	UNDERHILL 26C-17HZ					
Well Position	+N/-S	4.36 ft	Northing:	1,260,183.48 usft	Latitude:	40.046075
	+E/-W	-29.68 ft	Easting:	3,165,657.86 usft	Longitude:	-104.908285
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,103.00 ft

Wellbore	UNDERHILL 26C-17HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/31/2012	8.72	66.69	52,782

Design	UNDERHILL 26C-17HZ (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	10.17

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	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,775.55	14.51	137.32	1,767.81	-67.18	61.95	2.00	2.00	0.00	137.32	
5,302.42	14.51	137.32	5,182.19	-716.82	661.05	0.00	0.00	0.00	0.00	
6,027.97	0.00	0.00	5,900.00	-784.00	723.00	2.00	-2.00	0.00	180.00	
7,027.97	0.00	0.00	6,900.00	-784.00	723.00	0.00	0.00	0.00	0.00	
7,330.01	0.00	0.00	7,202.04	-784.00	723.00	0.00	0.00	0.00	0.00	
8,229.31	89.93	359.90	7,775.00	-211.74	722.00	10.00	10.00	0.00	359.90	
12,423.72	89.93	359.90	7,780.00	3,982.66	714.64	0.00	0.00	0.00	-20.08	UNDERHILL 26C-17H

Anadarko Petroleum Corp

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Well:	UNDERHILL 26C-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 26C-17HZ		
Design:	UNDERHILL 26C-17HZ (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
917.00	0.00	0.00	917.00	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
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,100.00	1.00	137.32	1,100.00	-0.32	0.30	-0.26	2.00	2.00	0.00
1,200.00	3.00	137.32	1,199.93	-2.89	2.66	-2.37	2.00	2.00	0.00
1,300.00	5.00	137.32	1,299.68	-8.01	7.39	-6.58	2.00	2.00	0.00
1,400.00	7.00	137.32	1,399.13	-15.70	14.48	-12.89	2.00	2.00	0.00
1,500.00	9.00	137.32	1,498.15	-25.93	23.91	-21.30	2.00	2.00	0.00
1,600.00	11.00	137.32	1,596.63	-38.69	35.68	-31.78	2.00	2.00	0.00
1,700.00	13.00	137.32	1,694.44	-53.98	49.78	-44.34	2.00	2.00	0.00
1,775.55	14.51	137.32	1,767.81	-67.18	61.95	-55.18	2.00	2.00	0.00
Start 3526.88 hold at 1775.55 MD									
1,800.00	14.51	137.32	1,791.49	-71.69	66.11	-58.88	0.00	0.00	0.00
1,900.00	14.51	137.32	1,888.30	-90.10	83.09	-74.01	0.00	0.00	0.00
2,000.00	14.51	137.32	1,985.11	-108.52	100.08	-89.14	0.00	0.00	0.00
2,100.00	14.51	137.32	2,081.92	-126.94	117.07	-104.27	0.00	0.00	0.00
2,200.00	14.51	137.32	2,178.73	-145.36	134.05	-119.40	0.00	0.00	0.00
2,300.00	14.51	137.32	2,275.54	-163.78	151.04	-134.53	0.00	0.00	0.00
2,400.00	14.51	137.32	2,372.35	-182.20	168.03	-149.66	0.00	0.00	0.00
2,500.00	14.51	137.32	2,469.16	-200.62	185.01	-164.79	0.00	0.00	0.00
2,600.00	14.51	137.32	2,565.97	-219.04	202.00	-179.92	0.00	0.00	0.00
2,700.00	14.51	137.32	2,662.78	-237.46	218.99	-195.05	0.00	0.00	0.00
2,800.00	14.51	137.32	2,759.59	-255.88	235.97	-210.18	0.00	0.00	0.00
2,900.00	14.51	137.32	2,856.40	-274.30	252.96	-225.31	0.00	0.00	0.00
3,000.00	14.51	137.32	2,953.21	-292.72	269.95	-240.44	0.00	0.00	0.00
3,100.00	14.51	137.32	3,050.02	-311.14	286.93	-255.57	0.00	0.00	0.00
3,200.00	14.51	137.32	3,146.83	-329.56	303.92	-270.70	0.00	0.00	0.00
3,300.00	14.51	137.32	3,243.64	-347.98	320.90	-285.83	0.00	0.00	0.00
3,400.00	14.51	137.32	3,340.45	-366.40	337.89	-300.96	0.00	0.00	0.00
3,500.00	14.51	137.32	3,437.26	-384.82	354.88	-316.09	0.00	0.00	0.00
3,600.00	14.51	137.32	3,534.07	-403.24	371.86	-331.22	0.00	0.00	0.00
3,700.00	14.51	137.32	3,630.88	-421.66	388.85	-346.35	0.00	0.00	0.00
3,800.00	14.51	137.32	3,727.69	-440.08	405.84	-361.48	0.00	0.00	0.00
3,900.00	14.51	137.32	3,824.50	-458.50	422.82	-376.61	0.00	0.00	0.00
4,000.00	14.51	137.32	3,921.31	-476.92	439.81	-391.74	0.00	0.00	0.00
4,100.00	14.51	137.32	4,018.12	-495.34	456.80	-406.87	0.00	0.00	0.00
4,200.00	14.51	137.32	4,114.93	-513.76	473.78	-422.00	0.00	0.00	0.00
4,300.00	14.51	137.32	4,211.74	-532.18	490.77	-437.13	0.00	0.00	0.00
4,400.00	14.51	137.32	4,308.55	-550.60	507.76	-452.26	0.00	0.00	0.00
4,500.00	14.51	137.32	4,405.36	-569.02	524.74	-467.39	0.00	0.00	0.00
4,600.00	14.51	137.32	4,502.17	-587.44	541.73	-482.52	0.00	0.00	0.00

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Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 26C-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 26C-17HZ		
Design:	UNDERHILL 26C-17HZ (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	14.51	137.32	4,598.98	-605.85	558.72	-497.65	0.00	0.00	0.00	
4,747.54	14.51	137.32	4,645.00	-614.61	566.79	-504.84	0.00	0.00	0.00	
Sussex										
4,800.00	14.51	137.32	4,695.79	-624.27	575.70	-512.78	0.00	0.00	0.00	
4,900.00	14.51	137.32	4,792.60	-642.69	592.69	-527.91	0.00	0.00	0.00	
5,000.00	14.51	137.32	4,889.41	-661.11	609.67	-543.04	0.00	0.00	0.00	
5,100.00	14.51	137.32	4,986.22	-679.53	626.66	-558.17	0.00	0.00	0.00	
5,200.00	14.51	137.32	5,083.03	-697.95	643.65	-573.30	0.00	0.00	0.00	
5,302.42	14.51	137.32	5,182.19	-716.82	661.05	-588.80	0.00	0.00	0.00	
Start Drop -2.00										
5,376.37	13.03	137.32	5,254.00	-729.76	672.98	-599.43	2.00	-2.00	0.00	
Shannon										
5,400.00	12.56	137.32	5,277.05	-733.61	676.53	-602.59	2.00	-2.00	0.00	
5,500.00	10.56	137.32	5,375.01	-748.34	690.11	-614.69	2.00	-2.00	0.00	
5,600.00	8.56	137.32	5,473.62	-760.54	701.37	-624.71	2.00	-2.00	0.00	
5,700.00	6.56	137.32	5,572.75	-770.21	710.29	-632.66	2.00	-2.00	0.00	
5,800.00	4.56	137.32	5,672.27	-777.34	716.85	-638.51	2.00	-2.00	0.00	
5,900.00	2.56	137.32	5,772.07	-781.90	721.06	-642.26	2.00	-2.00	0.00	
6,000.00	0.56	137.32	5,872.03	-783.90	722.91	-643.90	2.00	-2.00	0.00	
6,027.97	0.00	0.00	5,900.00	-784.00	723.00	-643.98	2.00	-2.00	0.00	
Start 1000.00 hold at 6027.97 MD										
6,100.00	0.00	0.00	5,972.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,072.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,172.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,272.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,372.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,472.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,572.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,672.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,772.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,872.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
7,027.97	0.00	0.00	6,900.00	-784.00	723.00	-643.98	0.00	0.00	0.00	
Start 302.04 hold at 7027.97 MD										
7,100.00	0.00	0.00	6,972.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,072.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,172.03	-784.00	723.00	-643.98	0.00	0.00	0.00	
7,330.01	0.00	0.00	7,202.04	-784.00	723.00	-643.98	0.00	0.00	0.00	
Start Build 10.00										
7,350.00	2.00	359.90	7,222.03	-783.65	723.00	-643.64	10.00	10.00	0.00	
7,400.00	7.00	359.90	7,271.86	-779.73	722.99	-639.78	10.00	10.00	0.00	
7,450.00	12.00	359.90	7,321.15	-771.48	722.98	-631.66	10.00	10.00	0.00	
7,500.00	17.00	359.90	7,369.55	-758.97	722.96	-619.35	10.00	10.00	0.00	
7,521.52	19.15	359.90	7,390.00	-752.29	722.94	-612.78	10.00	10.00	0.00	
Sharon Springs										
7,550.00	22.00	359.90	7,416.66	-742.28	722.93	-602.93	10.00	10.00	0.00	
7,562.28	23.23	359.90	7,428.00	-737.56	722.92	-598.29	10.00	10.00	0.00	
Niobrara										
7,600.00	27.00	359.90	7,462.15	-721.56	722.89	-582.54	10.00	10.00	0.00	
7,650.00	32.00	359.90	7,505.65	-696.94	722.85	-558.32	10.00	10.00	0.00	
7,681.63	35.16	359.90	7,532.00	-679.45	722.82	-541.11	10.00	10.00	0.00	
Niobrara B										
7,700.00	37.00	359.90	7,546.85	-668.63	722.80	-530.46	10.00	10.00	0.00	
7,750.00	42.00	359.90	7,585.42	-636.84	722.74	-499.18	10.00	10.00	0.00	

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5103' GL @ 5120.00ft
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Wellbore:	UNDERHILL 26C-17HZ		
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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)
7,791.18	46.12	359.90	7,615.00	-608.21	722.69	-471.01	10.00	10.00	0.00
Niobrara C									
7,800.00	47.00	359.90	7,621.07	-601.81	722.68	-464.71	10.00	10.00	0.00
7,850.00	52.00	359.90	7,653.53	-563.80	722.62	-427.31	10.00	10.00	0.00
7,900.00	57.00	359.90	7,682.56	-523.11	722.54	-387.27	10.00	10.00	0.00
7,950.00	62.00	359.90	7,707.93	-480.04	722.47	-344.89	10.00	10.00	0.00
8,000.00	67.00	359.90	7,729.45	-434.93	722.39	-300.50	10.00	10.00	0.00
8,043.79	71.38	359.90	7,745.00	-394.01	722.32	-260.24	10.00	10.00	0.00
Fort Hays									
8,050.00	72.00	359.90	7,746.95	-388.11	722.31	-254.43	10.00	10.00	0.00
8,100.00	77.00	359.90	7,760.31	-339.94	722.22	-207.04	10.00	10.00	0.00
8,134.16	80.41	359.90	7,767.00	-306.45	722.17	-174.08	10.00	10.00	0.00
Codell									
8,150.00	82.00	359.90	7,769.42	-290.79	722.14	-158.68	10.00	10.00	0.00
8,200.00	87.00	359.90	7,774.21	-241.04	722.05	-109.73	10.00	10.00	0.00
8,229.31	89.93	359.90	7,775.00	-211.74	722.00	-80.90	10.00	10.00	0.00
Start DLS 0.00 TFO -20.08 - 7"									
8,300.00	89.93	359.90	7,775.09	-141.05	721.88	-11.34	0.00	0.00	0.00
8,400.00	89.93	359.90	7,775.21	-41.05	721.70	87.06	0.00	0.00	0.00
8,500.00	89.93	359.90	7,775.33	58.95	721.53	185.45	0.00	0.00	0.00
8,600.00	89.93	359.90	7,775.45	158.95	721.35	283.85	0.00	0.00	0.00
8,700.00	89.93	359.90	7,775.57	258.94	721.18	382.25	0.00	0.00	0.00
8,800.00	89.93	359.90	7,775.69	358.94	721.00	480.64	0.00	0.00	0.00
8,900.00	89.93	359.90	7,775.81	458.94	720.83	579.04	0.00	0.00	0.00
9,000.00	89.93	359.90	7,775.94	558.94	720.65	677.44	0.00	0.00	0.00
9,100.00	89.93	359.90	7,776.06	658.94	720.48	775.83	0.00	0.00	0.00
9,200.00	89.93	359.90	7,776.18	758.94	720.30	874.23	0.00	0.00	0.00
9,300.00	89.93	359.90	7,776.30	858.94	720.13	972.63	0.00	0.00	0.00
9,400.00	89.93	359.90	7,776.42	958.94	719.95	1,071.02	0.00	0.00	0.00
9,500.00	89.93	359.90	7,776.54	1,058.94	719.78	1,169.42	0.00	0.00	0.00
9,600.00	89.93	359.90	7,776.66	1,158.94	719.60	1,267.82	0.00	0.00	0.00
9,700.00	89.93	359.90	7,776.78	1,258.94	719.43	1,366.21	0.00	0.00	0.00
9,800.00	89.93	359.90	7,776.90	1,358.94	719.25	1,464.61	0.00	0.00	0.00
9,900.00	89.93	359.90	7,777.02	1,458.94	719.08	1,563.01	0.00	0.00	0.00
10,000.00	89.93	359.90	7,777.14	1,558.94	718.90	1,661.40	0.00	0.00	0.00
10,100.00	89.93	359.90	7,777.26	1,658.94	718.73	1,759.80	0.00	0.00	0.00
10,200.00	89.93	359.90	7,777.38	1,758.94	718.55	1,858.20	0.00	0.00	0.00
10,300.00	89.93	359.90	7,777.50	1,858.94	718.38	1,956.60	0.00	0.00	0.00
10,400.00	89.93	359.90	7,777.62	1,958.94	718.20	2,054.99	0.00	0.00	0.00
10,500.00	89.93	359.90	7,777.74	2,058.94	718.02	2,153.39	0.00	0.00	0.00
10,600.00	89.93	359.90	7,777.86	2,158.94	717.85	2,251.79	0.00	0.00	0.00
10,700.00	89.93	359.90	7,777.97	2,258.94	717.67	2,350.18	0.00	0.00	0.00
10,800.00	89.93	359.90	7,778.09	2,358.94	717.50	2,448.58	0.00	0.00	0.00
10,900.00	89.93	359.90	7,778.21	2,458.94	717.32	2,546.98	0.00	0.00	0.00
11,000.00	89.93	359.90	7,778.33	2,558.94	717.15	2,645.37	0.00	0.00	0.00
11,100.00	89.93	359.90	7,778.45	2,658.94	716.97	2,743.77	0.00	0.00	0.00
11,200.00	89.93	359.90	7,778.57	2,758.94	716.79	2,842.17	0.00	0.00	0.00
11,300.00	89.93	359.90	7,778.68	2,858.94	716.62	2,940.56	0.00	0.00	0.00
11,400.00	89.93	359.90	7,778.80	2,958.94	716.44	3,038.96	0.00	0.00	0.00
11,500.00	89.93	359.90	7,778.92	3,058.94	716.27	3,137.36	0.00	0.00	0.00
11,600.00	89.93	359.90	7,779.04	3,158.94	716.09	3,235.75	0.00	0.00	0.00
11,700.00	89.93	359.90	7,779.15	3,258.94	715.91	3,334.15	0.00	0.00	0.00
11,800.00	89.93	359.90	7,779.27	3,358.94	715.74	3,432.55	0.00	0.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well UNDERHILL 26C-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5103' GL @ 5120.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5103' GL @ 5120.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 26C-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 26C-17HZ		
Design:	UNDERHILL 26C-17HZ (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)
11,900.00	89.93	359.90	7,779.39	3,458.94	715.56	3,530.94	0.00	0.00	0.00
12,000.00	89.93	359.90	7,779.51	3,558.94	715.38	3,629.34	0.00	0.00	0.00
12,100.00	89.93	359.90	7,779.62	3,658.94	715.21	3,727.74	0.00	0.00	0.00
12,200.00	89.93	359.90	7,779.74	3,758.94	715.03	3,826.13	0.00	0.00	0.00
12,300.00	89.93	359.90	7,779.86	3,858.94	714.85	3,924.53	0.00	0.00	0.00
12,400.00	89.93	359.90	7,779.97	3,958.94	714.68	4,022.92	0.00	0.00	0.00
12,423.72	89.93	359.90	7,780.00	3,982.66	714.64	4,046.27	0.00	0.00	0.00
TD at 12423.72 - UNDERHILL 26C-17HZ PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
UNDERHILL 26C-17HZ	0.00	0.00	7,780.00	3,982.66	714.64	1,264,170.81	3,166,345.90	40.057008	-104.905732
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
917.00	917.00	9 5/8"	9-5/8	12-1/4	
8,229.31	7,775.00	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,747.54	4,645.00	Sussex				
5,376.37	5,254.00	Shannon				
7,521.52	7,390.00	Sharon Springs				
7,562.28	7,428.00	Niobrara				
7,681.63	7,532.00	Niobrara B				
7,791.18	7,615.00	Niobrara C				
8,043.79	7,745.00	Fort Hays				
8,134.16	7,767.00	Codell				

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well UNDERHILL 26C-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 5103' GL @ 5120.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 5103' GL @ 5120.00ft
Site:	WELD_UNDERHILL 16-17HZ PAD	North Reference:	True
Well:	UNDERHILL 26C-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	UNDERHILL 26C-17HZ		
Design:	UNDERHILL 26C-17HZ (wp01)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00
1,775.55	1,767.81	-67.18	61.95	Start 3526.88 hold at 1775.55 MD
5,302.42	5,182.19	-716.82	661.05	Start Drop -2.00
6,027.97	5,900.00	-784.00	723.00	Start 1000.00 hold at 6027.97 MD
7,027.97	6,900.00	-784.00	723.00	Start 302.04 hold at 7027.97 MD
7,330.01	7,202.04	-784.00	723.00	Start Build 10.00
8,229.31	7,775.00	-211.74	722.00	Start DLS 0.00 TFO -20.08
12,423.72	7,780.00	3,982.66	714.64	TD at 12423.72