

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_POWERS 13-27HZ PAD

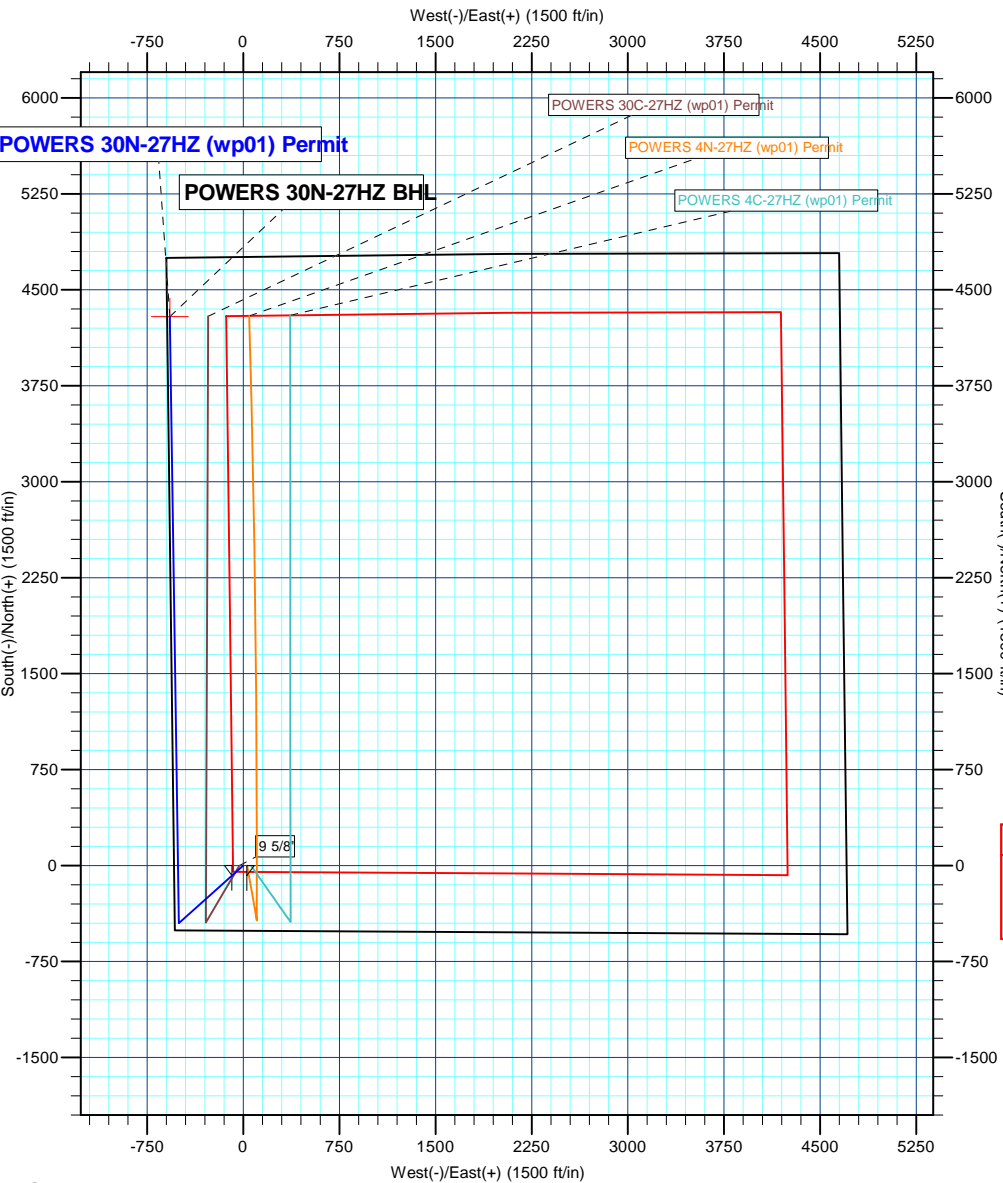
POWERS 30N-27HZ

POWERS 30N-27HZ

Plan: POWERS 30N-27HZ (wp01) Permit

Standard Planning Report

03 August, 2012



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Azimuths to True North

Magnetic North: 8.63°

Magnetic Field

Strength: 52866.8snT

Dip Angle: 66.79°

Date: 8/2/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD POWERS 13-27HZ PAD

Well: POWERS 30N-27HZ

Wellbore: POWERS 30N-27HZ

Section:

SHL:

Design: POWERS 30N-27HZ (wp01) Permit

Latitude: 40.103720

Longitude: -104.657345

GL: 4934.00

KB: 17' RKB + 4934' GL @ 4951.00ft

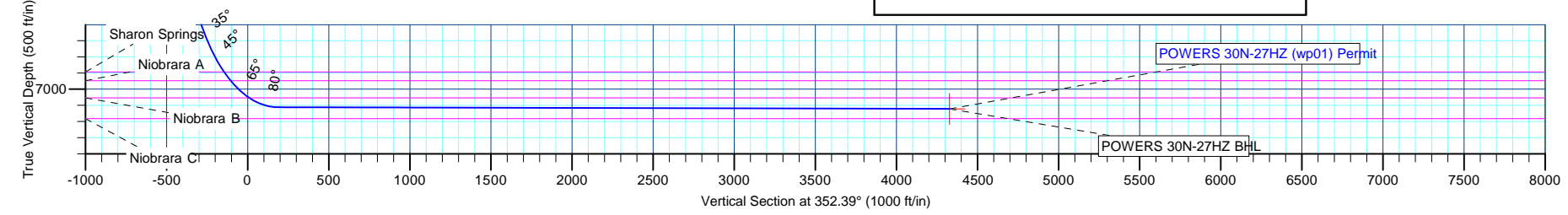
WELL DETAILS: POWERS 30N-27HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4934.00 Latitude	Longitude	Slot
0.00	0.00	1281749.48	3235710.24	40.103720	-104.657345	

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
1467.00	0.00	0.00	1467.00	0.00	0.00	0.00	0.00	0.00
1467.00	0.00	228.10	1467.00	0.00	0.00	2.00	0.00	0.00
2217.12	15.00	228.10	2208.58	-65.21	-72.68	2.00	-131.90	-55.01
4071.76	15.00	228.10	4000.00	-385.85	-430.00	0.00	0.00	-325.49
4821.88	0.00	228.10	4741.58	-451.06	-502.68	2.00	180.00	-380.50
6039.13	0.00	228.10	5958.83	-451.06	-502.68	0.00	228.10	-380.50
6563.34	0.00	359.15	6483.04	-451.06	-502.68	0.00	0.00	-380.50
7462.64	89.93	359.15	7056.00	121.13	-511.17	10.00	0.00	187.78
11631.38	89.93	359.14	7061.00	4289.40	-573.34	0.00	-74.59	4327.55

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
POWERS 30N-27HZ BHL	7061.00	4289.40	-573.34	40.115495	-104.659395	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1414.00	1391.00	FFox Hills
Fox Hills		
5124.00	5181.30	Sussex
6970.00	7104.07	Sharon Springs
6997.00	7153.03	Niobrara A
7050.00	7280.27	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
1317.00	1317.00	9 5/8"	9-5/8"



Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well POWERS 30N-27HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4934' GL @ 4951.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4934' GL @ 4951.00ft
Site:	WELD_POWERS 13-27HZ PAD	North Reference:	True
Well:	POWERS 30N-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 30N-27HZ		
Design:	POWERS 30N-27HZ (wp01) Permit		

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_POWERS 13-27HZ PAD			
Site Position:		Northing:	1,281,749.56 usft	Latitude:	40.103721
From:	Lat/Long	Easting:	3,235,680.31 usft	Longitude:	-104.657452
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	POWERS 30N-27HZ					
Well Position	+N/-S	-0.37 ft	Northing:	1,281,749.47 usft	Latitude:	40.103720
	+E/-W	29.93 ft	Easting:	3,235,710.24 usft	Longitude:	-104.657345
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,934.00 ft

Wellbore	POWERS 30N-27HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/2/2012	8.63	66.79	52,867

Design	POWERS 30N-27HZ (wp01) Permit			
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	352.39

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	
1,467.00	0.00	0.00	1,467.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,467.00	0.00	228.10	1,467.00	0.00	0.00	2.00	2.00	15.00	0.00	
2,217.12	15.00	228.10	2,208.58	-65.21	-72.68	2.00	2.00	0.00	-131.90	
4,071.76	15.00	228.10	4,000.00	-385.85	-430.00	0.00	0.00	0.00	0.00	
4,821.88	0.00	228.10	4,741.58	-451.06	-502.68	2.00	-2.00	0.00	180.00	
6,039.13	0.00	228.10	5,958.83	-451.06	-502.68	0.00	0.00	0.00	228.10	
6,563.34	0.00	359.15	6,483.04	-451.06	-502.68	0.00	0.00	25.00	0.00	
7,462.64	89.93	359.15	7,056.00	121.13	-511.17	10.00	10.00	0.00	0.00	
11,631.38	89.93	359.14	7,061.00	4,289.40	-573.34	0.00	0.00	0.00	-74.59	POWERS 30N-27HZ

Anadarko Petroleum Corp

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4934' GL @ 4951.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4934' GL @ 4951.00ft
Site:	WELD_POWERS 13-27HZ PAD	North Reference:	True
Well:	POWERS 30N-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 30N-27HZ		
Design:	POWERS 30N-27HZ (wp01) Permit		

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
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	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,317.00	0.00	0.00	1,317.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,391.00	0.00	0.00	1,391.00	0.00	0.00	0.00	0.00	0.00	0.00
FFox Hills									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,467.00	0.00	0.00	1,467.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.66	228.10	1,500.00	-0.13	-0.14	-0.11	2.00	2.00	0.00
1,600.00	2.66	228.10	1,599.95	-2.06	-2.30	-1.74	2.00	2.00	0.00
1,700.00	4.66	228.10	1,699.74	-6.32	-7.05	-5.34	2.00	2.00	0.00
1,800.00	6.66	228.10	1,799.25	-12.91	-14.39	-10.89	2.00	2.00	0.00
1,900.00	8.66	228.10	1,898.35	-21.81	-24.31	-18.40	2.00	2.00	0.00
2,000.00	10.66	228.10	1,996.93	-33.02	-36.80	-27.85	2.00	2.00	0.00
2,100.00	12.66	228.10	2,094.86	-46.52	-51.84	-39.24	2.00	2.00	0.00
2,200.00	14.66	228.10	2,192.03	-62.29	-69.41	-52.54	2.00	2.00	0.00
2,217.12	15.00	228.10	2,208.58	-65.21	-72.68	-55.01	2.00	2.00	0.00
Start 1854.64 hold at 2217.12 MD									
2,300.00	15.00	228.10	2,288.63	-79.54	-88.64	-67.10	0.00	0.00	0.00
2,400.00	15.00	228.10	2,385.22	-96.83	-107.91	-81.68	0.00	0.00	0.00
2,500.00	15.00	228.10	2,481.82	-114.12	-127.18	-96.27	0.00	0.00	0.00
2,600.00	15.00	228.10	2,578.41	-131.41	-146.44	-110.85	0.00	0.00	0.00
2,700.00	15.00	228.10	2,675.00	-148.70	-165.71	-125.43	0.00	0.00	0.00
2,800.00	15.00	228.10	2,771.59	-165.98	-184.98	-140.02	0.00	0.00	0.00
2,900.00	15.00	228.10	2,868.18	-183.27	-204.24	-154.60	0.00	0.00	0.00
3,000.00	15.00	228.10	2,964.77	-200.56	-223.51	-169.19	0.00	0.00	0.00
3,100.00	15.00	228.10	3,061.36	-217.85	-242.78	-183.77	0.00	0.00	0.00
3,200.00	15.00	228.10	3,157.96	-235.14	-262.04	-198.35	0.00	0.00	0.00
3,300.00	15.00	228.10	3,254.55	-252.43	-281.31	-212.94	0.00	0.00	0.00
3,400.00	15.00	228.10	3,351.14	-269.71	-300.58	-227.52	0.00	0.00	0.00
3,500.00	15.00	228.10	3,447.73	-287.00	-319.84	-242.10	0.00	0.00	0.00
3,600.00	15.00	228.10	3,544.32	-304.29	-339.11	-256.69	0.00	0.00	0.00
3,700.00	15.00	228.10	3,640.91	-321.58	-358.38	-271.27	0.00	0.00	0.00
3,800.00	15.00	228.10	3,737.51	-338.87	-377.64	-285.85	0.00	0.00	0.00
3,900.00	15.00	228.10	3,834.10	-356.16	-396.91	-300.44	0.00	0.00	0.00
4,000.00	15.00	228.10	3,930.69	-373.44	-416.17	-315.02	0.00	0.00	0.00
4,071.76	15.00	228.10	4,000.00	-385.85	-430.00	-325.49	0.00	0.00	0.00
Start Drop -2.00									
4,100.00	14.44	228.10	4,027.32	-390.64	-435.34	-329.53	2.00	-2.00	0.00
4,200.00	12.44	228.10	4,124.57	-406.16	-452.64	-342.62	2.00	-2.00	0.00
4,300.00	10.44	228.10	4,222.58	-419.41	-467.39	-353.79	2.00	-2.00	0.00

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well POWERS 30N-27HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4934' GL @ 4951.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4934' GL @ 4951.00ft
Site:	WELD_POWERS 13-27HZ PAD	North Reference:	True
Well:	POWERS 30N-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 30N-27HZ		
Design:	POWERS 30N-27HZ (wp01) Permit		

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)
4,400.00	8.44	228.10	4,321.22	-430.36	-479.60	-363.03	2.00	-2.00	0.00
4,500.00	6.44	228.10	4,420.38	-439.00	-489.23	-370.32	2.00	-2.00	0.00
4,600.00	4.44	228.10	4,519.92	-445.33	-496.28	-375.66	2.00	-2.00	0.00
4,700.00	2.44	228.10	4,619.74	-449.33	-500.75	-379.04	2.00	-2.00	0.00
4,800.00	0.44	228.10	4,719.70	-451.01	-502.61	-380.45	2.00	-2.00	0.00
4,821.88	0.00	228.10	4,741.58	-451.06	-502.68	-380.50	2.00	-2.00	0.00
Start 1217.25 hold at 4821.88 MD									
4,900.00	0.00	228.10	4,819.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,000.00	0.00	228.10	4,919.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,100.00	0.00	228.10	5,019.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,181.30	0.00	228.10	5,101.00	-451.06	-502.68	-380.50	0.00	0.00	0.00
Sussex									
5,200.00	0.00	228.10	5,119.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,300.00	0.00	228.10	5,219.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,400.00	0.00	228.10	5,319.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,500.00	0.00	228.10	5,419.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,600.00	0.00	228.10	5,519.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,700.00	0.00	228.10	5,619.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,800.00	0.00	228.10	5,719.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
5,900.00	0.00	228.10	5,819.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,000.00	0.00	228.10	5,919.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,039.13	0.00	228.10	5,958.83	-451.06	-502.68	-380.50	0.00	0.00	0.00
Start Turn 25.00									
6,100.00	0.00	359.15	6,019.70	-451.06	-502.68	-380.50	0.00	0.00	215.30
6,200.00	0.00	359.15	6,119.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,300.00	0.00	359.15	6,219.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,400.00	0.00	359.15	6,319.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,500.00	0.00	359.15	6,419.70	-451.06	-502.68	-380.50	0.00	0.00	0.00
6,563.34	0.00	359.15	6,483.04	-451.06	-502.68	-380.50	0.00	0.00	0.00
Start Build 10.00									
6,600.00	3.67	359.15	6,519.68	-449.89	-502.69	-379.34	10.00	10.00	0.00
6,650.00	8.67	359.15	6,569.37	-444.52	-502.77	-374.00	10.00	10.00	0.00
6,700.00	13.67	359.15	6,618.41	-434.85	-502.92	-364.39	10.00	10.00	0.00
6,750.00	18.67	359.15	6,666.42	-420.93	-503.12	-350.57	10.00	10.00	0.00
6,800.00	23.67	359.15	6,713.03	-402.89	-503.39	-332.65	10.00	10.00	0.00
6,850.00	28.67	359.15	6,757.89	-380.85	-503.72	-310.76	10.00	10.00	0.00
6,900.00	33.67	359.15	6,800.66	-354.98	-504.10	-285.07	10.00	10.00	0.00
6,950.00	38.67	359.15	6,841.01	-325.49	-504.54	-255.78	10.00	10.00	0.00
7,000.00	43.67	359.15	6,878.64	-292.59	-505.03	-223.11	10.00	10.00	0.00
7,050.00	48.67	359.15	6,913.26	-256.54	-505.56	-187.30	10.00	10.00	0.00
7,100.00	53.67	359.15	6,944.60	-217.61	-506.14	-148.64	10.00	10.00	0.00
7,104.07	54.07	359.15	6,947.00	-214.32	-506.19	-145.38	10.00	10.00	0.00
Sharon Springs									
7,150.00	58.67	359.15	6,972.43	-176.09	-506.76	-107.41	10.00	10.00	0.00
7,153.03	58.97	359.15	6,974.00	-173.50	-506.79	-104.84	10.00	10.00	0.00
Niobrara A									
7,200.00	63.67	359.15	6,996.54	-132.31	-507.41	-63.93	10.00	10.00	0.00
7,250.00	68.67	359.15	7,016.74	-86.59	-508.08	-18.52	10.00	10.00	0.00
7,280.27	71.69	359.15	7,027.00	-58.12	-508.51	9.75	10.00	10.00	0.00
Niobrara B									
7,300.00	73.67	359.15	7,032.87	-39.29	-508.79	28.46	10.00	10.00	0.00
7,350.00	78.67	359.15	7,044.83	9.24	-509.51	76.65	10.00	10.00	0.00
7,400.00	83.67	359.15	7,052.50	58.62	-510.24	125.70	10.00	10.00	0.00

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Wellbore:	POWERS 30N-27HZ		
Design:	POWERS 30N-27HZ (wp01) Permit		

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)
7,450.00	88.67	359.15	7,055.84	108.49	-510.98	175.23	10.00	10.00	0.00
7,462.64	89.93	359.15	7,056.00	121.13	-511.17	187.78	10.00	10.00	0.00
Start DLS 0.00 TFO -74.59									
7,500.00	89.93	359.15	7,056.05	158.48	-511.72	224.88	0.00	0.00	0.00
7,600.00	89.93	359.15	7,056.17	258.47	-513.20	324.18	0.00	0.00	0.00
7,700.00	89.93	359.15	7,056.29	358.46	-514.69	423.48	0.00	0.00	0.00
7,800.00	89.93	359.15	7,056.41	458.45	-516.17	522.79	0.00	0.00	0.00
7,900.00	89.93	359.15	7,056.53	558.44	-517.66	622.09	0.00	0.00	0.00
8,000.00	89.93	359.15	7,056.65	658.43	-519.14	721.40	0.00	0.00	0.00
8,100.00	89.93	359.15	7,056.78	758.42	-520.63	820.70	0.00	0.00	0.00
8,200.00	89.93	359.15	7,056.90	858.41	-522.12	920.01	0.00	0.00	0.00
8,300.00	89.93	359.15	7,057.02	958.40	-523.60	1,019.31	0.00	0.00	0.00
8,400.00	89.93	359.15	7,057.14	1,058.38	-525.09	1,118.62	0.00	0.00	0.00
8,500.00	89.93	359.15	7,057.26	1,158.37	-526.58	1,217.92	0.00	0.00	0.00
8,600.00	89.93	359.15	7,057.38	1,258.36	-528.06	1,317.23	0.00	0.00	0.00
8,700.00	89.93	359.15	7,057.50	1,358.35	-529.55	1,416.53	0.00	0.00	0.00
8,800.00	89.93	359.15	7,057.62	1,458.34	-531.04	1,515.84	0.00	0.00	0.00
8,900.00	89.93	359.15	7,057.74	1,558.33	-532.53	1,615.14	0.00	0.00	0.00
9,000.00	89.93	359.15	7,057.87	1,658.32	-534.02	1,714.44	0.00	0.00	0.00
9,100.00	89.93	359.15	7,057.99	1,758.31	-535.51	1,813.75	0.00	0.00	0.00
9,200.00	89.93	359.15	7,058.11	1,858.30	-537.00	1,913.05	0.00	0.00	0.00
9,300.00	89.93	359.15	7,058.23	1,958.28	-538.49	2,012.36	0.00	0.00	0.00
9,400.00	89.93	359.15	7,058.35	2,058.27	-539.98	2,111.66	0.00	0.00	0.00
9,500.00	89.93	359.15	7,058.47	2,158.26	-541.47	2,210.97	0.00	0.00	0.00
9,600.00	89.93	359.15	7,058.59	2,258.25	-542.96	2,310.28	0.00	0.00	0.00
9,700.00	89.93	359.15	7,058.71	2,358.24	-544.45	2,409.58	0.00	0.00	0.00
9,800.00	89.93	359.14	7,058.83	2,458.23	-545.95	2,508.89	0.00	0.00	0.00
9,900.00	89.93	359.14	7,058.95	2,558.22	-547.44	2,608.19	0.00	0.00	0.00
10,000.00	89.93	359.14	7,059.07	2,658.21	-548.93	2,707.50	0.00	0.00	0.00
10,100.00	89.93	359.14	7,059.18	2,758.19	-550.42	2,806.80	0.00	0.00	0.00
10,200.00	89.93	359.14	7,059.30	2,858.18	-551.92	2,906.11	0.00	0.00	0.00
10,300.00	89.93	359.14	7,059.42	2,958.17	-553.41	3,005.41	0.00	0.00	0.00
10,400.00	89.93	359.14	7,059.54	3,058.16	-554.91	3,104.72	0.00	0.00	0.00
10,500.00	89.93	359.14	7,059.66	3,158.15	-556.40	3,204.02	0.00	0.00	0.00
10,600.00	89.93	359.14	7,059.78	3,258.14	-557.90	3,303.33	0.00	0.00	0.00
10,700.00	89.93	359.14	7,059.90	3,358.13	-559.39	3,402.64	0.00	0.00	0.00
10,800.00	89.93	359.14	7,060.02	3,458.12	-560.89	3,501.94	0.00	0.00	0.00
10,900.00	89.93	359.14	7,060.14	3,558.10	-562.39	3,601.25	0.00	0.00	0.00
11,000.00	89.93	359.14	7,060.25	3,658.09	-563.88	3,700.55	0.00	0.00	0.00
11,100.00	89.93	359.14	7,060.37	3,758.08	-565.38	3,799.86	0.00	0.00	0.00
11,200.00	89.93	359.14	7,060.49	3,858.07	-566.88	3,899.16	0.00	0.00	0.00
11,300.00	89.93	359.14	7,060.61	3,958.06	-568.38	3,998.47	0.00	0.00	0.00
11,400.00	89.93	359.14	7,060.73	4,058.05	-569.87	4,097.78	0.00	0.00	0.00
11,500.00	89.93	359.14	7,060.85	4,158.04	-571.37	4,197.08	0.00	0.00	0.00
11,600.00	89.93	359.14	7,060.96	4,258.03	-572.87	4,296.39	0.00	0.00	0.00
11,631.38	89.93	359.14	7,061.00	4,289.40	-573.34	4,327.55	0.00	0.00	0.00
TD at 11631.38 - POWERS 30N-27HZ BHL									

Anadarko Petroleum Corp

Planning Report

Database:	edmp	Local Co-ordinate Reference:	Well POWERS 30N-27HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	17' RKB + 4934' GL @ 4951.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	17' RKB + 4934' GL @ 4951.00ft
Site:	WELD_POWERS 13-27HZ PAD	North Reference:	True
Well:	POWERS 30N-27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	POWERS 30N-27HZ		
Design:	POWERS 30N-27HZ (wp01) Permit		

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									
POWERS 30N-27HZ BH- - plan hits target center - Point	0.00	0.00	7,061.00	4,289.40	-573.34	1,286,033.23	3,235,096.16	40.115495	-104.659395

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,317.00	1,317.00	9 5/8"	9-5/8	12-1/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,391.00	1,391.00	FFox Hills			
5,181.30	5,101.00	Sussex			
7,104.07	6,947.00	Sharon Springs			
7,153.03	6,974.00	Niobrara A			
7,280.27	7,027.00	Niobrara B			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,467.00	1,467.00	0.00	0.00	Start Build 2.00
2,217.12	2,208.58	-65.21	-72.68	Start 1854.64 hold at 2217.12 MD
4,071.76	4,000.00	-385.85	-430.00	Start Drop -2.00
4,821.88	4,741.58	-451.06	-502.68	Start 1217.25 hold at 4821.88 MD
6,039.13	5,958.83	-451.06	-502.68	Start Turn 25.00
6,563.34	6,483.04	-451.06	-502.68	Start Build 10.00
7,462.64	7,056.00	121.13	-511.17	Start DLS 0.00 TFO -74.59
11,631.38	7,061.00	4,289.40	-573.34	TD at 11631.38