

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_HEDGE 1-27 PAD**

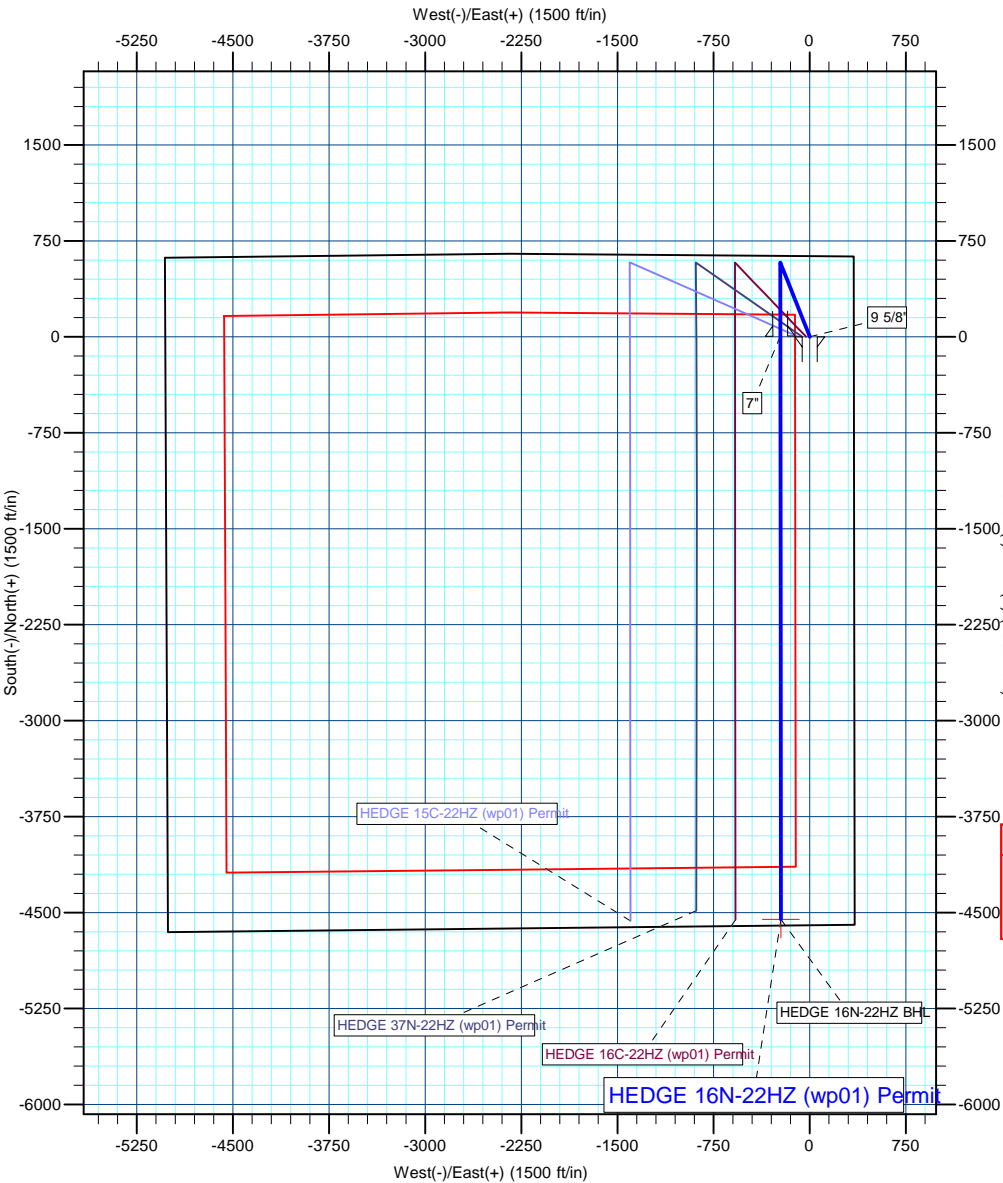
**HEDGE 16N-22HZ**

**HEDGE 16N-22HZ**

**Plan: HEDGE 16N-22HZ (wp01) Permit**

## **Standard Planning Report**

**20 September, 2012**



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Azimuths to True North

Magnetic North: 8.67°

Magnetic Field

Strength: 52902.0snT

Dip Angle: 66.86°

Date: 9/19/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD\_HEDGE 1-27 PAD

Well: HEDGE 16N-22HZ

Wellbore: HEDGE 16N-22HZ

Section:

SHL:

Design: HEDGE 16N-22HZ (wp01) Permit

Latitude: 40.216080

Longitude: -104.755034

GL: 4905.00

KB: 16' RKB + 4905' GL @ 4921.00ft

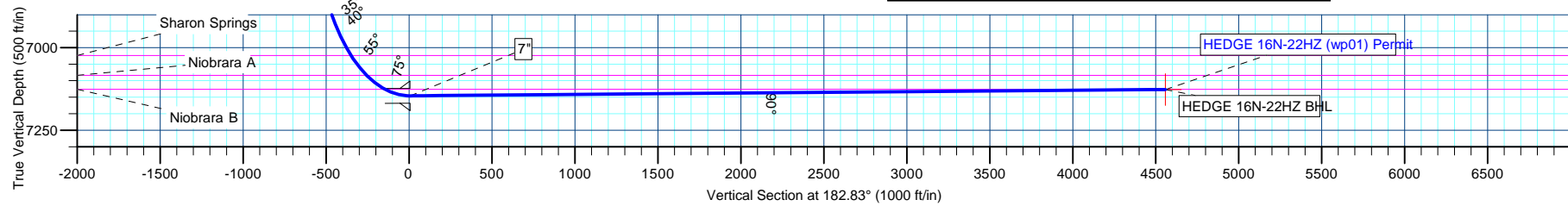
WELL DETAILS: HEDGE 16N-22HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4905.00 Latitude	40.216080 Longitude	Slot
0.00	0.00	1322434.03	3208041.17	40.216080	-104.755034	

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
1504.12	8.08	338.34	1502.78	26.45	-10.50	2.00	338.34	-25.90
5541.44	8.08	338.34	5500.00	554.00	-220.00	0.00	0.00	-542.46
5945.56	0.00	0.00	5902.78	580.45	-230.50	2.00	180.00	-568.35
6615.83	0.00	0.00	6573.05	580.45	-230.50	0.00	0.00	-568.35
7518.23	90.24	179.94	7146.00	5.09	-229.90	10.00	179.94	6.27
7538.33	90.24	179.94	7145.92	-15.02	-229.88	0.00	0.00	26.35
12076.18	90.24	179.94	7127.00	-4552.82	-225.13	0.00	0.00	4558.38

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
HEDGE 16N-22HZ BHL	7127.00	-4552.82	-225.13	40.203582	-104.755840	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
691.00	691.00	Fox Hills
3941.00	3966.80	Parkman
4472.00	4503.13	Sussex
7024.00	7134.94	Sharon Springs
7084.00	7246.81	Niobrara A
7126.00	7363.98	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
937.00	937.00	9 5/8"	9-5/8
7146.00	7518.23	7"	7



# Andarko Petroleum Corporation

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well HEDGE 16N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Site:</b>	WELD_HEDGE 1-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	HEDGE 16N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HEDGE 16N-22HZ		
<b>Design:</b>	HEDGE 16N-22HZ (wp01) Permit		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		WELD_HEDGE 1-27 PAD			
Site Position:		Northing:	1,322,434.03 usft	Latitude:	40.216080
From:	Lat/Long	Easting:	3,208,041.18 usft	Longitude:	-104.755034
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.48 °

Well		HEDGE 16N-22HZ				
Well Position	+N/-S	0.00 ft	Northing:	1,322,434.03 usft	Latitude:	40.216080
	+E/-W	0.00 ft	Easting:	3,208,041.18 usft	Longitude:	-104.755034
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,905.00 ft

<b>Wellbore</b>	HEDGE 16N-22HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/19/2012	8.67	66.86	52,902

<b>Design</b>	HEDGE 16N-22HZ (wp01) Permit			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	182.83

<b>Plan Sections</b>										
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	
1,504.12	8.08	338.34	1,502.78	26.45	-10.50	2.00	2.00	-5.36	338.34	
5,541.44	8.08	338.34	5,500.00	554.00	-220.00	0.00	0.00	0.00	0.00	
5,945.56	0.00	0.00	5,902.78	580.45	-230.50	2.00	-2.00	5.36	180.00	
6,615.83	0.00	0.00	6,573.05	580.45	-230.50	0.00	0.00	0.00	0.00	
7,518.23	90.24	179.94	7,146.00	5.09	-229.90	10.00	10.00	0.00	179.94	
7,538.33	90.24	179.94	7,145.92	-15.02	-229.88	0.00	0.00	0.00	0.00	
12,076.18	90.24	179.94	7,127.00	-4,552.82	-225.13	0.00	0.00	0.00	0.00	HEDGE 16N-22HZ BI

# Andarko Petroleum Corporation

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well HEDGE 16N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Site:</b>	WELD_HEDGE 1-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	HEDGE 16N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HEDGE 16N-22HZ		
<b>Design:</b>	HEDGE 16N-22HZ (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
691.00	0.00	0.00	691.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills</b>									
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
937.00	0.00	0.00	937.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
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
<b>Start DLS 2.00 TFO 338.34</b>									
1,200.00	2.00	338.34	1,199.98	1.62	-0.64	-1.59	2.00	2.00	0.00
1,300.00	4.00	338.34	1,299.84	6.49	-2.58	-6.35	2.00	2.00	0.00
1,400.00	6.00	338.34	1,399.45	14.59	-5.79	-14.28	2.00	2.00	0.00
1,504.12	8.08	338.34	1,502.78	26.45	-10.50	-25.90	2.00	2.00	0.00
<b>Start 4037.33 hold at 1504.12 MD</b>									
1,600.00	8.08	338.34	1,597.71	38.98	-15.48	-38.16	0.00	0.00	0.00
1,700.00	8.08	338.34	1,696.72	52.04	-20.67	-50.96	0.00	0.00	0.00
1,800.00	8.08	338.34	1,795.72	65.11	-25.86	-63.75	0.00	0.00	0.00
1,900.00	8.08	338.34	1,894.73	78.18	-31.04	-76.55	0.00	0.00	0.00
2,000.00	8.08	338.34	1,993.74	91.24	-36.23	-89.34	0.00	0.00	0.00
2,100.00	8.08	338.34	2,092.74	104.31	-41.42	-102.14	0.00	0.00	0.00
2,200.00	8.08	338.34	2,191.75	117.38	-46.61	-114.93	0.00	0.00	0.00
2,300.00	8.08	338.34	2,290.76	130.44	-51.80	-127.73	0.00	0.00	0.00
2,400.00	8.08	338.34	2,389.76	143.51	-56.99	-140.52	0.00	0.00	0.00
2,500.00	8.08	338.34	2,488.77	156.58	-62.18	-153.32	0.00	0.00	0.00
2,600.00	8.08	338.34	2,587.78	169.64	-67.37	-166.11	0.00	0.00	0.00
2,700.00	8.08	338.34	2,686.78	182.71	-72.56	-178.91	0.00	0.00	0.00
2,800.00	8.08	338.34	2,785.79	195.78	-77.75	-191.70	0.00	0.00	0.00
2,900.00	8.08	338.34	2,884.80	208.85	-82.94	-204.49	0.00	0.00	0.00
3,000.00	8.08	338.34	2,983.80	221.91	-88.12	-217.29	0.00	0.00	0.00
3,100.00	8.08	338.34	3,082.81	234.98	-93.31	-230.08	0.00	0.00	0.00
3,200.00	8.08	338.34	3,181.82	248.05	-98.50	-242.88	0.00	0.00	0.00
3,300.00	8.08	338.34	3,280.82	261.11	-103.69	-255.67	0.00	0.00	0.00
3,400.00	8.08	338.34	3,379.83	274.18	-108.88	-268.47	0.00	0.00	0.00
3,500.00	8.08	338.34	3,478.84	287.25	-114.07	-281.26	0.00	0.00	0.00
3,600.00	8.08	338.34	3,577.84	300.31	-119.26	-294.06	0.00	0.00	0.00
3,700.00	8.08	338.34	3,676.85	313.38	-124.45	-306.85	0.00	0.00	0.00
3,800.00	8.08	338.34	3,775.86	326.45	-129.64	-319.65	0.00	0.00	0.00
3,900.00	8.08	338.34	3,874.86	339.51	-134.83	-332.44	0.00	0.00	0.00
3,966.80	8.08	338.34	3,941.00	348.24	-138.29	-340.99	0.00	0.00	0.00
<b>Parkman</b>									
4,000.00	8.08	338.34	3,973.87	352.58	-140.01	-345.24	0.00	0.00	0.00
4,100.00	8.08	338.34	4,072.88	365.65	-145.20	-358.03	0.00	0.00	0.00
4,200.00	8.08	338.34	4,171.88	378.72	-150.39	-370.83	0.00	0.00	0.00
4,300.00	8.08	338.34	4,270.89	391.78	-155.58	-383.62	0.00	0.00	0.00
4,400.00	8.08	338.34	4,369.90	404.85	-160.77	-396.41	0.00	0.00	0.00
4,500.00	8.08	338.34	4,468.90	417.92	-165.96	-409.21	0.00	0.00	0.00

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## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Site:</b>	WELD_HEDGE 1-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	HEDGE 16N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HEDGE 16N-22HZ		
<b>Design:</b>	HEDGE 16N-22HZ (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)
4,503.13	8.08	338.34	4,472.00	418.32	-166.12	-409.61	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	8.08	338.34	4,567.91	430.98	-171.15	-422.00	0.00	0.00	0.00
4,700.00	8.08	338.34	4,666.92	444.05	-176.34	-434.80	0.00	0.00	0.00
4,800.00	8.08	338.34	4,765.92	457.12	-181.53	-447.59	0.00	0.00	0.00
4,900.00	8.08	338.34	4,864.93	470.18	-186.72	-460.39	0.00	0.00	0.00
5,000.00	8.08	338.34	4,963.94	483.25	-191.90	-473.18	0.00	0.00	0.00
5,100.00	8.08	338.34	5,062.94	496.32	-197.09	-485.98	0.00	0.00	0.00
5,200.00	8.08	338.34	5,161.95	509.38	-202.28	-498.77	0.00	0.00	0.00
5,300.00	8.08	338.34	5,260.96	522.45	-207.47	-511.57	0.00	0.00	0.00
5,400.00	8.08	338.34	5,359.96	535.52	-212.66	-524.36	0.00	0.00	0.00
5,500.00	8.08	338.34	5,458.97	548.58	-217.85	-537.16	0.00	0.00	0.00
5,541.44	8.08	338.34	5,500.00	554.00	-220.00	-542.46	0.00	0.00	0.00
<b>Start DLS 2.00 TFO 180.00</b>									
5,600.00	6.91	338.34	5,558.06	561.10	-222.82	-549.41	2.00	-2.00	0.00
5,700.00	4.91	338.34	5,657.52	570.67	-226.62	-558.78	2.00	-2.00	0.00
5,800.00	2.91	338.34	5,757.28	577.01	-229.14	-564.99	2.00	-2.00	0.00
5,900.00	0.91	338.34	5,857.22	580.11	-230.37	-568.02	2.00	-2.00	0.00
5,945.56	0.00	0.00	5,902.78	580.45	-230.50	-568.35	2.00	-2.00	47.54
<b>Start 670.27 hold at 5945.56 MD</b>									
6,000.00	0.00	0.00	5,957.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,100.00	0.00	0.00	6,057.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,200.00	0.00	0.00	6,157.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,300.00	0.00	0.00	6,257.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,400.00	0.00	0.00	6,357.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,500.00	0.00	0.00	6,457.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,600.00	0.00	0.00	6,557.22	580.45	-230.50	-568.35	0.00	0.00	0.00
6,615.83	0.00	0.00	6,573.05	580.45	-230.50	-568.35	0.00	0.00	0.00
<b>Start Build 10.00</b>									
6,650.00	3.42	179.94	6,607.20	579.43	-230.50	-567.34	10.00	10.00	526.54
6,700.00	8.42	179.94	6,656.92	574.27	-230.50	-562.19	10.00	10.00	0.00
6,750.00	13.42	179.94	6,706.00	564.81	-230.49	-552.74	10.00	10.00	0.00
6,800.00	18.42	179.94	6,754.06	551.10	-230.47	-539.04	10.00	10.00	0.00
6,850.00	23.42	179.94	6,800.75	533.25	-230.45	-521.22	10.00	10.00	0.00
6,900.00	28.42	179.94	6,845.71	511.41	-230.43	-499.40	10.00	10.00	0.00
6,950.00	33.42	179.94	6,888.59	485.73	-230.40	-473.75	10.00	10.00	0.00
7,000.00	38.42	179.94	6,929.07	456.40	-230.37	-444.47	10.00	10.00	0.00
7,050.00	43.42	179.94	6,966.85	423.67	-230.34	-411.77	10.00	10.00	0.00
7,100.00	48.42	179.94	7,001.62	387.76	-230.30	-375.91	10.00	10.00	0.00
7,134.94	51.91	179.94	7,024.00	360.93	-230.27	-349.12	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,150.00	53.42	179.94	7,033.13	348.96	-230.26	-337.16	10.00	10.00	0.00
7,200.00	58.42	179.94	7,061.14	307.56	-230.22	-295.82	10.00	10.00	0.00
7,246.81	63.10	179.94	7,084.00	266.73	-230.17	-255.04	10.00	10.00	0.00
<b>Niobrara A</b>									
7,250.00	63.42	179.94	7,085.44	263.88	-230.17	-252.19	10.00	10.00	0.00
7,300.00	68.42	179.94	7,105.83	218.25	-230.12	-206.62	10.00	10.00	0.00
7,350.00	73.42	179.94	7,122.18	171.01	-230.07	-159.44	10.00	10.00	0.00
7,363.98	74.81	179.94	7,126.00	157.57	-230.06	-146.01	10.00	10.00	0.00
<b>Niobrara B</b>									
7,400.00	78.42	179.94	7,134.34	122.53	-230.02	-111.02	10.00	10.00	0.00
7,450.00	83.42	179.94	7,142.23	73.17	-229.97	-61.72	10.00	10.00	0.00
7,500.00	88.42	179.94	7,145.79	23.31	-229.92	-11.93	10.00	10.00	0.00

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## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Site:</b>	WELD_HEDGE 1-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	HEDGE 16N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HEDGE 16N-22HZ		
<b>Design:</b>	HEDGE 16N-22HZ (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)	
7,518.23	90.24	179.94	7,146.00	5.09	-229.90	6.27	10.00	10.00	0.00	
Start 20.11 hold at 7518.23 MD - 7"										
7,538.33	90.24	179.94	7,145.92	-15.02	-229.88	26.35	0.00	0.00	0.00	
Start 4537.85 hold at 7538.33 MD										
7,600.00	90.24	179.94	7,145.66	-76.68	-229.81	87.94	0.00	0.00	0.00	
7,700.00	90.24	179.94	7,145.24	-176.68	-229.71	187.81	0.00	0.00	0.00	
7,800.00	90.24	179.94	7,144.82	-276.68	-229.60	287.68	0.00	0.00	0.00	
7,900.00	90.24	179.94	7,144.40	-376.68	-229.50	387.56	0.00	0.00	0.00	
8,000.00	90.24	179.94	7,143.98	-476.68	-229.40	487.43	0.00	0.00	0.00	
8,100.00	90.24	179.94	7,143.56	-576.68	-229.29	587.30	0.00	0.00	0.00	
8,200.00	90.24	179.94	7,143.14	-676.68	-229.19	687.17	0.00	0.00	0.00	
8,300.00	90.24	179.94	7,142.73	-776.68	-229.08	787.04	0.00	0.00	0.00	
8,400.00	90.24	179.94	7,142.31	-876.68	-228.98	886.91	0.00	0.00	0.00	
8,500.00	90.24	179.94	7,141.89	-976.68	-228.87	986.79	0.00	0.00	0.00	
8,600.00	90.24	179.94	7,141.47	-1,076.67	-228.77	1,086.66	0.00	0.00	0.00	
8,700.00	90.24	179.94	7,141.05	-1,176.67	-228.66	1,186.53	0.00	0.00	0.00	
8,800.00	90.24	179.94	7,140.63	-1,276.67	-228.56	1,286.40	0.00	0.00	0.00	
8,900.00	90.24	179.94	7,140.21	-1,376.67	-228.45	1,386.27	0.00	0.00	0.00	
9,000.00	90.24	179.94	7,139.79	-1,476.67	-228.35	1,486.15	0.00	0.00	0.00	
9,100.00	90.24	179.94	7,139.37	-1,576.67	-228.24	1,586.02	0.00	0.00	0.00	
9,200.00	90.24	179.94	7,138.96	-1,676.67	-228.14	1,685.89	0.00	0.00	0.00	
9,300.00	90.24	179.94	7,138.54	-1,776.67	-228.03	1,785.76	0.00	0.00	0.00	
9,400.00	90.24	179.94	7,138.12	-1,876.67	-227.93	1,885.63	0.00	0.00	0.00	
9,500.00	90.24	179.94	7,137.70	-1,976.67	-227.82	1,985.51	0.00	0.00	0.00	
9,600.00	90.24	179.94	7,137.28	-2,076.66	-227.72	2,085.38	0.00	0.00	0.00	
9,700.00	90.24	179.94	7,136.86	-2,176.66	-227.62	2,185.25	0.00	0.00	0.00	
9,800.00	90.24	179.94	7,136.44	-2,276.66	-227.51	2,285.12	0.00	0.00	0.00	
9,900.00	90.24	179.94	7,136.02	-2,376.66	-227.41	2,384.99	0.00	0.00	0.00	
10,000.00	90.24	179.94	7,135.60	-2,476.66	-227.30	2,484.86	0.00	0.00	0.00	
10,100.00	90.24	179.94	7,135.19	-2,576.66	-227.20	2,584.74	0.00	0.00	0.00	
10,200.00	90.24	179.94	7,134.77	-2,676.66	-227.09	2,684.61	0.00	0.00	0.00	
10,300.00	90.24	179.94	7,134.35	-2,776.66	-226.99	2,784.48	0.00	0.00	0.00	
10,400.00	90.24	179.94	7,133.93	-2,876.66	-226.88	2,884.35	0.00	0.00	0.00	
10,500.00	90.24	179.94	7,133.51	-2,976.66	-226.78	2,984.22	0.00	0.00	0.00	
10,600.00	90.24	179.94	7,133.09	-3,076.66	-226.67	3,084.10	0.00	0.00	0.00	
10,700.00	90.24	179.94	7,132.67	-3,176.65	-226.57	3,183.97	0.00	0.00	0.00	
10,800.00	90.24	179.94	7,132.25	-3,276.65	-226.46	3,283.84	0.00	0.00	0.00	
10,900.00	90.24	179.94	7,131.83	-3,376.65	-226.36	3,383.71	0.00	0.00	0.00	
11,000.00	90.24	179.94	7,131.42	-3,476.65	-226.25	3,483.58	0.00	0.00	0.00	
11,100.00	90.24	179.94	7,131.00	-3,576.65	-226.15	3,583.46	0.00	0.00	0.00	
11,200.00	90.24	179.94	7,130.58	-3,676.65	-226.04	3,683.33	0.00	0.00	0.00	
11,300.00	90.24	179.94	7,130.16	-3,776.65	-225.94	3,783.20	0.00	0.00	0.00	
11,400.00	90.24	179.94	7,129.74	-3,876.65	-225.83	3,883.07	0.00	0.00	0.00	
11,500.00	90.24	179.94	7,129.32	-3,976.65	-225.73	3,982.94	0.00	0.00	0.00	
11,600.00	90.24	179.94	7,128.90	-4,076.65	-225.63	4,082.81	0.00	0.00	0.00	
11,700.00	90.24	179.94	7,128.48	-4,176.65	-225.52	4,182.69	0.00	0.00	0.00	
11,800.00	90.24	179.94	7,128.07	-4,276.64	-225.42	4,282.56	0.00	0.00	0.00	
11,900.00	90.24	179.94	7,127.65	-4,376.64	-225.31	4,382.43	0.00	0.00	0.00	
12,000.00	90.24	179.94	7,127.23	-4,476.64	-225.21	4,482.30	0.00	0.00	0.00	
12,076.18	90.24	179.94	7,126.91	-4,552.82	-225.13	4,558.38	0.00	0.00	0.00	
TD at 12076.18 - HEDGE 16N-22HZ BHL										

# Andarko Petroleum Corporation

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well HEDGE 16N-22HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	16' RKB + 4905' GL @ 4921.00ft
<b>Site:</b>	WELD_HEDGE 1-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	HEDGE 16N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HEDGE 16N-22HZ		
<b>Design:</b>	HEDGE 16N-22HZ (wp01) Permit		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
HEDGE 16N-22HZ BHL	0.00	0.00	7,127.00	-4,552.82	-225.13	1,317,879.49	3,207,854.30	40.203582	-104.755840
- plan misses target center by 0.09ft at 12076.18ft MD (7126.91 TVD, -4552.82 N, -225.13 E)									
- Point									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)		Name	(")	(")
937.00	937.00	9 5/8"		9-5/8	12-1/4
7,518.23	7,146.00	7"		7	7-1/2

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
691.00	691.00		Fox Hills			
3,966.80	3,941.00		Parkman			
4,503.13	4,472.00		Sussex			
7,134.94	7,024.00		Sharon Springs			
7,246.81	7,084.00		Niobrara A			
7,363.98	7,126.00		Niobrara B			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
1,100.00	1,100.00	0.00	0.00	Start DLS 2.00 TFO 338.34	
1,504.12	1,502.78	26.45	-10.50	Start 4037.33 hold at 1504.12 MD	
5,541.44	5,500.00	554.00	-220.00	Start DLS 2.00 TFO 180.00	
5,945.56	5,902.78	580.45	-230.50	Start 670.27 hold at 5945.56 MD	
6,615.83	6,573.05	580.45	-230.50	Start Build 10.00	
7,518.23	7,146.00	5.09	-229.90	Start 20.11 hold at 7518.23 MD	
7,538.33	7,145.92	-15.02	-229.88	Start 4537.85 hold at 7538.33 MD	
12,076.18	7,126.91	-4,552.82	-225.13	TD at 12076.18	