

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-67W-23 Puma 13-23HZ Pad  
PUMA FED 13N-35HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**05 August, 2015**

Project: WELD-NAD83-UTMFT13N

Site: 1N-67W-23 Puma 13-23HZ Pad

Well: PUMA FED 13N-35HZ

Wellbore: Plan A

Design: Permit Rev-1

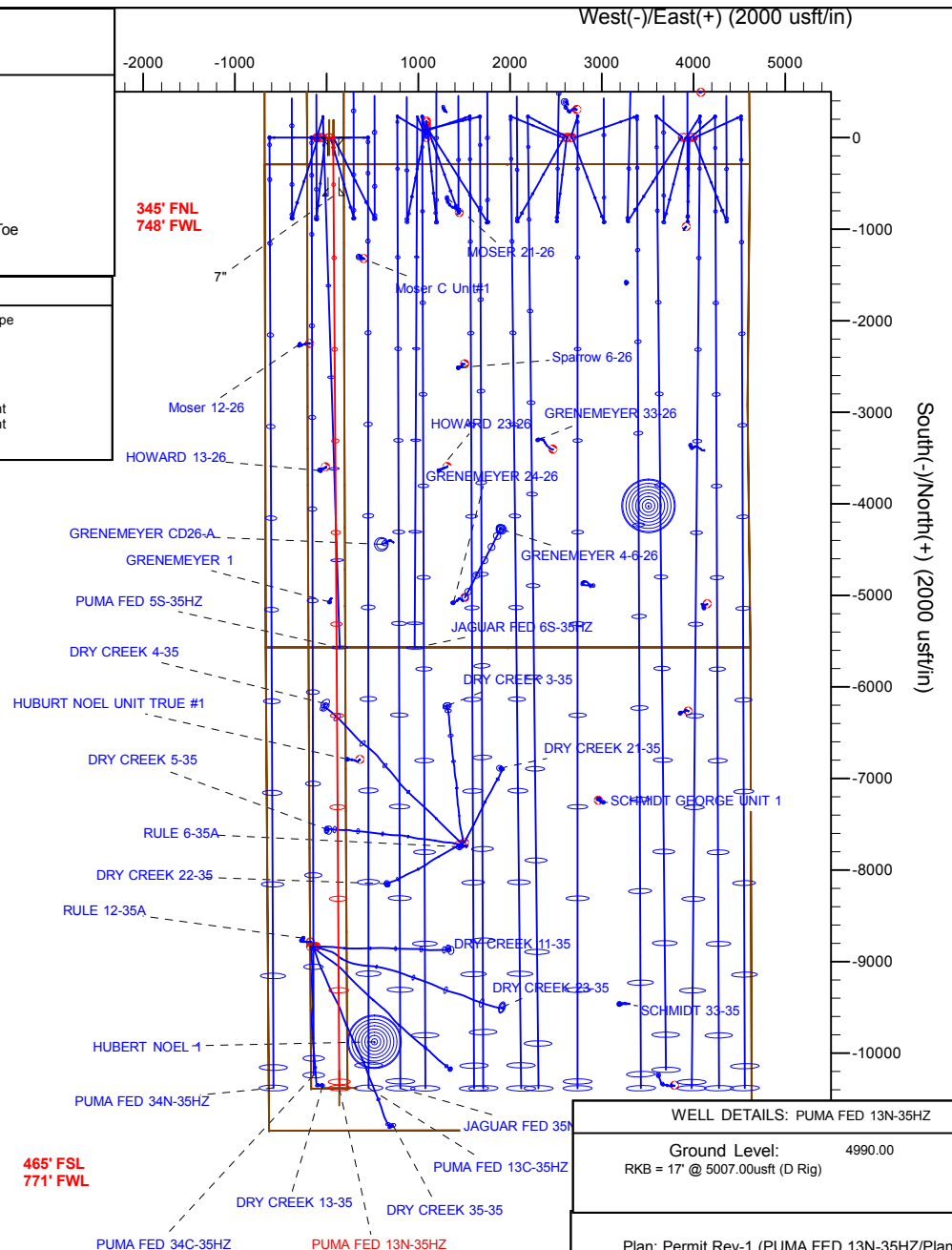
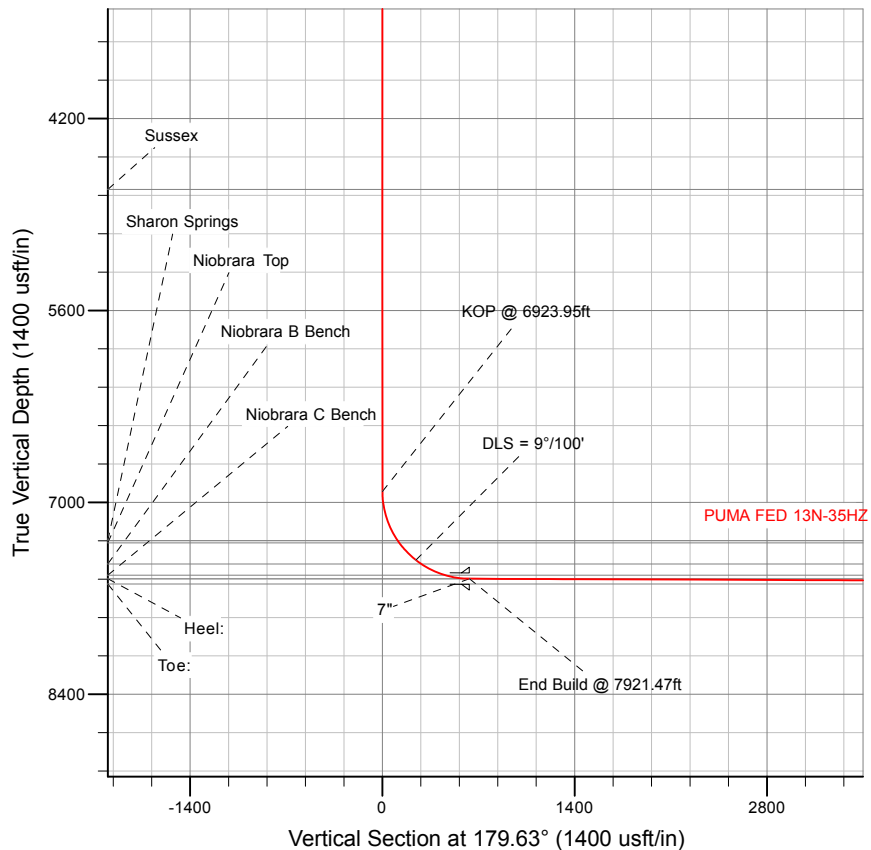
# US ROCKIES WATTENBERG PLANNING

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	693.33	7.40	90.00	691.96	0.00	31.81	1.50	90.00	0.21	
4	833.33	7.40	90.00	830.80	0.00	49.85	0.00	0.00	0.32	
5	1203.33	0.00	0.00	1199.77	0.00	73.71	2.00	180.00	0.48	
6	6923.95	0.00	0.00	6920.39	0.00	73.71	0.00	0.00	0.48	
7	7921.47	89.78	179.63	7557.00	-634.12	77.75	9.00	179.63	634.61	
8	17667.12	89.78	179.63	7595.00	-10379.50	139.96	0.00	0.00	10380.19	Puma Fed 13N-35HZ_Toe

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Puma Fed 13N-35HZ_SHL	0.00	0.00	0.00	40.030157	-104.864856	Point
Puma Fed 13N-35HZ_Toe	7595.00	-10379.50	139.96	40.001653	-104.864356	Point



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		1N-67W-23 Puma 13-23HZ Pad			
Site Position:		Northing:	14,537,743.06 usft	Latitude:	40.030156
From:	Lat/Long	Easting:	1,678,142.25 usft	Longitude:	-104.865231
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	PUMA FED 13N-35HZ					
Well Position	+N/-S	0.36 usft	Northing:	14,537,743.59 usft	Latitude:	40.030157
	+E/-W	104.97 usft	Easting:	1,678,247.22 usft	Longitude:	-104.864856
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,990.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/3/2015	8.33	66.59	52,490

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.63

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
693.33	7.40	90.00	691.96	0.00	31.81	1.50	1.50	0.00	90.00	
833.33	7.40	90.00	830.80	0.00	49.85	0.00	0.00	0.00	0.00	
1,203.33	0.00	0.00	1,199.77	0.00	73.71	2.00	-2.00	0.00	180.00	
6,923.95	0.00	0.00	6,920.39	0.00	73.71	0.00	0.00	0.00	0.00	
7,921.47	89.78	179.63	7,557.00	-634.12	77.75	9.00	9.00	18.01	179.63	
17,667.12	89.78	179.63	7,595.00	-10,379.50	139.96	0.00	0.00	0.00	0.00	Puma Fed 13N-35HZ

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
<b>Puma Fed 13N-35HZ_Drilling Window - Puma Fed 13N-35HZ_SHL - 1N-R67W-Sec. 14_Section lines - 1N-R67W-Sec. 35_Section lines - 1N.</b>									
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
<b>Begin Nudge @ 200.00ft</b>									
300.00	1.50	90.00	299.99	0.00	1.31	0.01	1.50	1.50	0.00
400.00	3.00	90.00	399.91	0.00	5.23	0.03	1.50	1.50	0.00
500.00	4.50	90.00	499.69	0.00	11.77	0.08	1.50	1.50	0.00
600.00	6.00	90.00	599.27	0.00	20.92	0.14	1.50	1.50	0.00
693.33	7.40	90.00	691.96	0.00	31.81	0.21	1.50	1.50	0.00
<b>End Nudge @ 693.33ft</b>									
700.00	7.40	90.00	698.57	0.00	32.67	0.21	0.00	0.00	0.00
800.00	7.40	90.00	797.74	0.00	45.55	0.29	0.00	0.00	0.00
833.33	7.40	90.00	830.79	0.00	49.84	0.32	0.00	0.00	0.00
<b>Begin Drop @ 833.33ft</b>									
900.00	6.07	90.00	897.00	0.00	57.66	0.37	2.00	-2.00	0.00
1,000.00	4.07	90.00	996.61	0.00	66.49	0.43	2.00	-2.00	0.00
1,100.00	2.07	90.00	1,096.46	0.00	71.84	0.46	2.00	-2.00	0.00
1,200.00	0.07	90.00	1,196.44	0.00	73.70	0.48	2.00	-2.00	0.00
1,203.33	0.00	90.00	1,199.77	0.00	73.71	0.48	2.00	-2.00	0.00
<b>End Drop @ 1203.33ft</b>									
1,300.00	0.00	0.00	1,296.44	0.00	73.71	0.48	0.00	0.00	0.00
1,400.00	0.00	0.00	1,396.44	0.00	73.71	0.48	0.00	0.00	0.00
1,446.56	0.00	0.00	1,443.00	0.00	73.71	0.48	0.00	0.00	0.00
<b>Fox Hills</b>									
1,500.00	0.00	0.00	1,496.44	0.00	73.71	0.48	0.00	0.00	0.00
1,600.00	0.00	0.00	1,596.44	0.00	73.71	0.48	0.00	0.00	0.00
1,700.00	0.00	0.00	1,696.44	0.00	73.71	0.48	0.00	0.00	0.00
1,800.00	0.00	0.00	1,796.44	0.00	73.71	0.48	0.00	0.00	0.00
1,803.56	0.00	0.00	1,800.00	0.00	73.71	0.48	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	0.00	0.00	1,896.44	0.00	73.71	0.48	0.00	0.00	0.00
2,000.00	0.00	0.00	1,996.44	0.00	73.71	0.48	0.00	0.00	0.00
2,100.00	0.00	0.00	2,096.44	0.00	73.71	0.48	0.00	0.00	0.00
2,200.00	0.00	0.00	2,196.44	0.00	73.71	0.48	0.00	0.00	0.00
2,300.00	0.00	0.00	2,296.44	0.00	73.71	0.48	0.00	0.00	0.00
2,400.00	0.00	0.00	2,396.44	0.00	73.71	0.48	0.00	0.00	0.00
2,500.00	0.00	0.00	2,496.44	0.00	73.71	0.48	0.00	0.00	0.00
2,600.00	0.00	0.00	2,596.44	0.00	73.71	0.48	0.00	0.00	0.00
2,700.00	0.00	0.00	2,696.44	0.00	73.71	0.48	0.00	0.00	0.00
2,800.00	0.00	0.00	2,796.44	0.00	73.71	0.48	0.00	0.00	0.00
2,900.00	0.00	0.00	2,896.44	0.00	73.71	0.48	0.00	0.00	0.00
3,000.00	0.00	0.00	2,996.44	0.00	73.71	0.48	0.00	0.00	0.00
3,100.00	0.00	0.00	3,096.44	0.00	73.71	0.48	0.00	0.00	0.00
3,200.00	0.00	0.00	3,196.44	0.00	73.71	0.48	0.00	0.00	0.00
3,300.00	0.00	0.00	3,296.44	0.00	73.71	0.48	0.00	0.00	0.00
3,400.00	0.00	0.00	3,396.44	0.00	73.71	0.48	0.00	0.00	0.00
3,500.00	0.00	0.00	3,496.44	0.00	73.71	0.48	0.00	0.00	0.00
3,600.00	0.00	0.00	3,596.44	0.00	73.71	0.48	0.00	0.00	0.00
3,700.00	0.00	0.00	3,696.44	0.00	73.71	0.48	0.00	0.00	0.00
3,800.00	0.00	0.00	3,796.44	0.00	73.71	0.48	0.00	0.00	0.00
3,900.00	0.00	0.00	3,896.44	0.00	73.71	0.48	0.00	0.00	0.00
4,000.00	0.00	0.00	3,996.44	0.00	73.71	0.48	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.00	0.00	0.00	4,096.44	0.00	73.71	0.48	0.00	0.00	0.00
4,200.00	0.00	0.00	4,196.44	0.00	73.71	0.48	0.00	0.00	0.00
4,300.00	0.00	0.00	4,296.44	0.00	73.71	0.48	0.00	0.00	0.00
4,400.00	0.00	0.00	4,396.44	0.00	73.71	0.48	0.00	0.00	0.00
4,500.00	0.00	0.00	4,496.44	0.00	73.71	0.48	0.00	0.00	0.00
4,600.00	0.00	0.00	4,596.44	0.00	73.71	0.48	0.00	0.00	0.00
4,700.00	0.00	0.00	4,696.44	0.00	73.71	0.48	0.00	0.00	0.00
4,719.56	0.00	0.00	4,716.00	0.00	73.71	0.48	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	0.00	0.00	4,796.44	0.00	73.71	0.48	0.00	0.00	0.00
4,900.00	0.00	0.00	4,896.44	0.00	73.71	0.48	0.00	0.00	0.00
5,000.00	0.00	0.00	4,996.44	0.00	73.71	0.48	0.00	0.00	0.00
5,100.00	0.00	0.00	5,096.44	0.00	73.71	0.48	0.00	0.00	0.00
5,200.00	0.00	0.00	5,196.44	0.00	73.71	0.48	0.00	0.00	0.00
5,300.00	0.00	0.00	5,296.44	0.00	73.71	0.48	0.00	0.00	0.00
5,400.00	0.00	0.00	5,396.44	0.00	73.71	0.48	0.00	0.00	0.00
5,500.00	0.00	0.00	5,496.44	0.00	73.71	0.48	0.00	0.00	0.00
5,600.00	0.00	0.00	5,596.44	0.00	73.71	0.48	0.00	0.00	0.00
5,700.00	0.00	0.00	5,696.44	0.00	73.71	0.48	0.00	0.00	0.00
5,800.00	0.00	0.00	5,796.44	0.00	73.71	0.48	0.00	0.00	0.00
5,900.00	0.00	0.00	5,896.44	0.00	73.71	0.48	0.00	0.00	0.00
6,000.00	0.00	0.00	5,996.44	0.00	73.71	0.48	0.00	0.00	0.00
6,100.00	0.00	0.00	6,096.44	0.00	73.71	0.48	0.00	0.00	0.00
6,200.00	0.00	0.00	6,196.44	0.00	73.71	0.48	0.00	0.00	0.00
6,300.00	0.00	0.00	6,296.44	0.00	73.71	0.48	0.00	0.00	0.00
6,400.00	0.00	0.00	6,396.44	0.00	73.71	0.48	0.00	0.00	0.00
6,500.00	0.00	0.00	6,496.44	0.00	73.71	0.48	0.00	0.00	0.00
6,600.00	0.00	0.00	6,596.44	0.00	73.71	0.48	0.00	0.00	0.00
6,700.00	0.00	0.00	6,696.44	0.00	73.71	0.48	0.00	0.00	0.00
6,800.00	0.00	0.00	6,796.44	0.00	73.71	0.48	0.00	0.00	0.00
6,900.00	0.00	0.00	6,896.44	0.00	73.71	0.48	0.00	0.00	0.00
6,923.95	0.00	0.00	6,920.39	0.00	73.71	0.48	0.00	0.00	0.00
<b>KOP @ 6923.95ft</b>									
7,000.00	6.84	179.63	6,996.26	-4.54	73.73	5.01	9.00	9.00	0.00
7,100.00	15.84	179.63	7,094.20	-24.19	73.86	24.66	9.00	9.00	0.00
7,200.00	24.84	179.63	7,187.87	-58.92	74.08	59.39	9.00	9.00	0.00
7,300.00	33.84	179.63	7,274.95	-107.87	74.39	108.35	9.00	9.00	0.00
7,304.39	34.24	179.63	7,278.59	-110.33	74.41	110.81	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,325.19	36.11	179.63	7,295.59	-122.31	74.49	122.79	9.00	9.00	0.00
<b>Niobrara Top</b>									
7,400.00	42.84	179.63	7,353.30	-169.84	74.79	170.32	9.00	9.00	0.00
7,500.00	51.84	179.63	7,420.98	-243.31	75.26	243.79	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									
7,549.73	56.32	179.63	7,450.15	-283.57	75.52	284.05	9.00	9.00	0.00
<b>Niobrara B Bench</b>									
7,600.00	60.84	179.63	7,476.35	-326.46	75.79	326.94	9.00	9.00	0.00
7,700.00	69.84	179.63	7,518.02	-417.25	76.37	417.73	9.00	9.00	0.00
7,741.48	73.58	179.63	7,531.04	-456.63	76.62	457.11	9.00	9.00	0.00
<b>Niobrara C Bench</b>									
7,800.00	78.84	179.63	7,544.98	-513.44	76.98	513.92	9.00	9.00	0.00
7,900.00	87.84	179.63	7,556.56	-612.66	77.62	613.15	9.00	9.00	0.00
7,921.47	89.78	179.63	7,557.00	-634.12	77.75	634.61	9.00	9.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
End Build @ 7921.47ft - Heel: - 7"									
8,000.00	89.78	179.63	7,557.31	-712.65	78.25	713.14	0.00	0.00	0.00
8,100.00	89.78	179.63	7,557.70	-812.65	78.89	813.14	0.00	0.00	0.00
8,200.00	89.78	179.63	7,558.09	-912.65	79.53	913.14	0.00	0.00	0.00
8,300.00	89.78	179.63	7,558.48	-1,012.64	80.17	1,013.14	0.00	0.00	0.00
8,400.00	89.78	179.63	7,558.87	-1,112.64	80.81	1,113.14	0.00	0.00	0.00
8,500.00	89.78	179.63	7,559.26	-1,212.64	81.45	1,213.14	0.00	0.00	0.00
8,600.00	89.78	179.63	7,559.65	-1,312.63	82.08	1,313.14	0.00	0.00	0.00
8,700.00	89.78	179.63	7,560.04	-1,412.63	82.72	1,413.14	0.00	0.00	0.00
8,800.00	89.78	179.63	7,560.43	-1,512.63	83.36	1,513.14	0.00	0.00	0.00
8,900.00	89.78	179.63	7,560.82	-1,612.63	84.00	1,613.14	0.00	0.00	0.00
9,000.00	89.78	179.63	7,561.21	-1,712.62	84.64	1,713.13	0.00	0.00	0.00
9,100.00	89.78	179.63	7,561.60	-1,812.62	85.28	1,813.13	0.00	0.00	0.00
9,200.00	89.78	179.63	7,561.99	-1,912.62	85.92	1,913.13	0.00	0.00	0.00
9,300.00	89.78	179.63	7,562.38	-2,012.62	86.55	2,013.13	0.00	0.00	0.00
9,400.00	89.78	179.63	7,562.77	-2,112.61	87.19	2,113.13	0.00	0.00	0.00
9,500.00	89.78	179.63	7,563.16	-2,212.61	87.83	2,213.13	0.00	0.00	0.00
9,600.00	89.78	179.63	7,563.55	-2,312.61	88.47	2,313.13	0.00	0.00	0.00
9,700.00	89.78	179.63	7,563.94	-2,412.60	89.11	2,413.13	0.00	0.00	0.00
9,800.00	89.78	179.63	7,564.33	-2,512.60	89.75	2,513.13	0.00	0.00	0.00
9,900.00	89.78	179.63	7,564.72	-2,612.60	90.38	2,613.13	0.00	0.00	0.00
10,000.00	89.78	179.63	7,565.11	-2,712.60	91.02	2,713.13	0.00	0.00	0.00
10,100.00	89.78	179.63	7,565.50	-2,812.59	91.66	2,813.13	0.00	0.00	0.00
10,200.00	89.78	179.63	7,565.89	-2,912.59	92.30	2,913.13	0.00	0.00	0.00
10,300.00	89.78	179.63	7,566.28	-3,012.59	92.94	3,013.12	0.00	0.00	0.00
10,400.00	89.78	179.63	7,566.67	-3,112.58	93.58	3,113.12	0.00	0.00	0.00
10,500.00	89.78	179.63	7,567.06	-3,212.58	94.21	3,213.12	0.00	0.00	0.00
10,600.00	89.78	179.63	7,567.45	-3,312.58	94.85	3,313.12	0.00	0.00	0.00
10,700.00	89.78	179.63	7,567.84	-3,412.58	95.49	3,413.12	0.00	0.00	0.00
10,800.00	89.78	179.63	7,568.23	-3,512.57	96.13	3,513.12	0.00	0.00	0.00
10,900.00	89.78	179.63	7,568.62	-3,612.57	96.77	3,613.12	0.00	0.00	0.00
11,000.00	89.78	179.63	7,569.01	-3,712.57	97.41	3,713.12	0.00	0.00	0.00
11,100.00	89.78	179.63	7,569.40	-3,812.56	98.04	3,813.12	0.00	0.00	0.00
11,200.00	89.78	179.63	7,569.79	-3,912.56	98.68	3,913.12	0.00	0.00	0.00
11,300.00	89.78	179.63	7,570.18	-4,012.56	99.32	4,013.12	0.00	0.00	0.00
11,400.00	89.78	179.63	7,570.57	-4,112.56	99.96	4,113.12	0.00	0.00	0.00
11,500.00	89.78	179.63	7,570.96	-4,212.55	100.60	4,213.12	0.00	0.00	0.00
11,600.00	89.78	179.63	7,571.35	-4,312.55	101.24	4,313.11	0.00	0.00	0.00
11,700.00	89.78	179.63	7,571.74	-4,412.55	101.87	4,413.11	0.00	0.00	0.00
11,800.00	89.78	179.63	7,572.13	-4,512.55	102.51	4,513.11	0.00	0.00	0.00
11,900.00	89.78	179.63	7,572.52	-4,612.54	103.15	4,613.11	0.00	0.00	0.00
12,000.00	89.78	179.63	7,572.91	-4,712.54	103.79	4,713.11	0.00	0.00	0.00
12,100.00	89.78	179.63	7,573.30	-4,812.54	104.43	4,813.11	0.00	0.00	0.00
12,200.00	89.78	179.63	7,573.69	-4,912.53	105.07	4,913.11	0.00	0.00	0.00
12,300.00	89.78	179.63	7,574.08	-5,012.53	105.70	5,013.11	0.00	0.00	0.00
12,400.00	89.78	179.63	7,574.46	-5,112.53	106.34	5,113.11	0.00	0.00	0.00
12,500.00	89.78	179.63	7,574.85	-5,212.53	106.98	5,213.11	0.00	0.00	0.00
12,600.00	89.78	179.63	7,575.24	-5,312.52	107.62	5,313.11	0.00	0.00	0.00
12,700.00	89.78	179.63	7,575.63	-5,412.52	108.26	5,413.11	0.00	0.00	0.00
12,800.00	89.78	179.63	7,576.02	-5,512.52	108.90	5,513.11	0.00	0.00	0.00
12,900.00	89.78	179.63	7,576.41	-5,612.51	109.53	5,613.10	0.00	0.00	0.00
13,000.00	89.78	179.63	7,576.80	-5,712.51	110.17	5,713.10	0.00	0.00	0.00
13,100.00	89.78	179.63	7,577.19	-5,812.51	110.81	5,813.10	0.00	0.00	0.00
13,200.00	89.78	179.63	7,577.58	-5,912.51	111.45	5,913.10	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,300.00	89.78	179.63	7,577.97	-6,012.50	112.09	6,013.10	0.00	0.00	0.00
13,400.00	89.78	179.63	7,578.36	-6,112.50	112.73	6,113.10	0.00	0.00	0.00
13,500.00	89.78	179.63	7,578.75	-6,212.50	113.36	6,213.10	0.00	0.00	0.00
13,600.00	89.78	179.63	7,579.14	-6,312.49	114.00	6,313.10	0.00	0.00	0.00
13,700.00	89.78	179.63	7,579.53	-6,412.49	114.64	6,413.10	0.00	0.00	0.00
13,800.00	89.78	179.63	7,579.92	-6,512.49	115.28	6,513.10	0.00	0.00	0.00
13,900.00	89.78	179.63	7,580.31	-6,612.49	115.92	6,613.10	0.00	0.00	0.00
14,000.00	89.78	179.63	7,580.70	-6,712.48	116.56	6,713.10	0.00	0.00	0.00
14,100.00	89.78	179.63	7,581.09	-6,812.48	117.19	6,813.10	0.00	0.00	0.00
14,200.00	89.78	179.63	7,581.48	-6,912.48	117.83	6,913.09	0.00	0.00	0.00
14,300.00	89.78	179.63	7,581.87	-7,012.48	118.47	7,013.09	0.00	0.00	0.00
14,400.00	89.78	179.63	7,582.26	-7,112.47	119.11	7,113.09	0.00	0.00	0.00
14,500.00	89.78	179.63	7,582.65	-7,212.47	119.75	7,213.09	0.00	0.00	0.00
14,600.00	89.78	179.63	7,583.04	-7,312.47	120.39	7,313.09	0.00	0.00	0.00
14,700.00	89.78	179.63	7,583.43	-7,412.46	121.02	7,413.09	0.00	0.00	0.00
14,800.00	89.78	179.63	7,583.82	-7,512.46	121.66	7,513.09	0.00	0.00	0.00
14,900.00	89.78	179.63	7,584.21	-7,612.46	122.30	7,613.09	0.00	0.00	0.00
15,000.00	89.78	179.63	7,584.60	-7,712.46	122.94	7,713.09	0.00	0.00	0.00
15,100.00	89.78	179.63	7,584.99	-7,812.45	123.58	7,813.09	0.00	0.00	0.00
15,200.00	89.78	179.63	7,585.38	-7,912.45	124.22	7,913.09	0.00	0.00	0.00
15,300.00	89.78	179.63	7,585.77	-8,012.45	124.85	8,013.09	0.00	0.00	0.00
15,400.00	89.78	179.63	7,586.16	-8,112.44	125.49	8,113.09	0.00	0.00	0.00
15,500.00	89.78	179.63	7,586.55	-8,212.44	126.13	8,213.08	0.00	0.00	0.00
15,600.00	89.78	179.63	7,586.94	-8,312.44	126.77	8,313.08	0.00	0.00	0.00
15,700.00	89.78	179.63	7,587.33	-8,412.44	127.41	8,413.08	0.00	0.00	0.00
15,800.00	89.78	179.63	7,587.72	-8,512.43	128.05	8,513.08	0.00	0.00	0.00
15,900.00	89.78	179.63	7,588.11	-8,612.43	128.68	8,613.08	0.00	0.00	0.00
16,000.00	89.78	179.63	7,588.50	-8,712.43	129.32	8,713.08	0.00	0.00	0.00
16,100.00	89.78	179.63	7,588.89	-8,812.42	129.96	8,813.08	0.00	0.00	0.00
16,200.00	89.78	179.63	7,589.28	-8,912.42	130.60	8,913.08	0.00	0.00	0.00
16,300.00	89.78	179.63	7,589.67	-9,012.42	131.24	9,013.08	0.00	0.00	0.00
16,400.00	89.78	179.63	7,590.06	-9,112.42	131.88	9,113.08	0.00	0.00	0.00
16,500.00	89.78	179.63	7,590.45	-9,212.41	132.51	9,213.08	0.00	0.00	0.00
16,600.00	89.78	179.63	7,590.84	-9,312.41	133.15	9,313.08	0.00	0.00	0.00
16,700.00	89.78	179.63	7,591.23	-9,412.41	133.79	9,413.08	0.00	0.00	0.00
16,800.00	89.78	179.63	7,591.62	-9,512.41	134.43	9,513.08	0.00	0.00	0.00
16,900.00	89.78	179.63	7,592.01	-9,612.40	135.07	9,613.07	0.00	0.00	0.00
17,000.00	89.78	179.63	7,592.40	-9,712.40	135.71	9,713.07	0.00	0.00	0.00
17,100.00	89.78	179.63	7,592.79	-9,812.40	136.34	9,813.07	0.00	0.00	0.00
17,200.00	89.78	179.63	7,593.18	-9,912.39	136.98	9,913.07	0.00	0.00	0.00
17,300.00	89.78	179.63	7,593.57	-10,012.39	137.62	10,013.07	0.00	0.00	0.00
17,400.00	89.78	179.63	7,593.96	-10,112.39	138.26	10,113.07	0.00	0.00	0.00
17,500.00	89.78	179.63	7,594.35	-10,212.39	138.90	10,213.07	0.00	0.00	0.00
17,600.00	89.78	179.63	7,594.74	-10,312.38	139.54	10,313.07	0.00	0.00	0.00
17,667.11	89.78	179.63	7,595.00	-10,379.49	139.96	10,380.18	0.00	0.00	0.00
Toe:									
17,667.12	89.78	179.63	7,595.00	-10,379.50	139.96	10,380.19	0.00	0.00	0.00
TD Well @ 17667.12ft - Puma Fed 13N-35HZ_Toe									



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Puma Fed 13N-35HZ_D	0.00	0.00	0.00	0.00	29.95	14,537,743.63	1,678,277.17	40.030157	-104.864749
- plan misses target center by 29.95usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	565.51	-244.19	14,538,308.77	1,678,032.13		
Point 2			0.00	564.57	156.05	14,538,308.44	1,678,432.37		
Point 3			0.00	168.53	157.18	14,537,912.40	1,678,434.10		
Point 4			0.00	-291.46	158.50	14,537,452.41	1,678,436.12		
Point 5			0.00	-751.46	159.51	14,536,992.42	1,678,437.82		
Point 6			0.00	-1,151.98	160.39	14,536,591.90	1,678,439.31		
Point 7			0.00	-1,611.98	161.40	14,536,131.90	1,678,441.02		
Point 8			0.00	-2,071.99	162.41	14,535,671.89	1,678,442.73		
Point 9			0.00	-2,472.51	163.29	14,535,271.37	1,678,444.21		
Point 10			0.00	-2,932.50	164.30	14,534,811.39	1,678,445.92		
Point 11			0.00	-3,392.50	165.32	14,534,351.39	1,678,447.64		
Point 12			0.00	-3,790.95	166.21	14,533,952.94	1,678,449.13		
Point 13			0.00	-4,250.95	167.23	14,533,492.94	1,678,450.85		
Point 14			0.00	-4,710.95	168.72	14,533,032.94	1,678,453.04		
Point 15			0.00	-5,110.13	170.02	14,532,633.77	1,678,454.95		
Point 16			0.00	-5,570.12	171.51	14,532,173.78	1,678,457.13		
Point 17			0.00	-6,030.13	174.09	14,531,713.77	1,678,460.41		
Point 18			0.00	-6,429.62	176.34	14,531,314.29	1,678,463.27		
Point 19			0.00	-6,889.63	178.93	14,530,854.28	1,678,466.56		
Point 20			0.00	-7,349.63	181.53	14,530,394.29	1,678,469.85		
Point 21			0.00	-7,749.13	183.77	14,529,994.79	1,678,472.70		
Point 22			0.00	-8,209.13	186.36	14,529,534.79	1,678,475.99		
Point 23			0.00	-8,669.12	188.85	14,529,074.81	1,678,479.18		
Point 24			0.00	-9,067.71	191.01	14,528,676.22	1,678,481.94		
Point 25			0.00	-9,527.70	193.50	14,528,216.24	1,678,485.13		
Point 26			0.00	-9,987.71	195.99	14,527,756.23	1,678,488.32		
Point 27			0.00	-10,386.74	198.14	14,527,357.20	1,678,491.07		
Point 28			0.00	-10,386.91	-197.88	14,527,356.43	1,678,095.05		
Point 29			0.00	-9,987.91	-200.44	14,527,755.43	1,678,091.89		
Point 30			0.00	-9,527.92	-203.39	14,528,215.41	1,678,088.24		
Point 31			0.00	-9,067.91	-206.34	14,528,675.42	1,678,084.59		
Point 32			0.00	-8,669.12	-208.90	14,529,074.21	1,678,081.43		
Point 33			0.00	-8,209.13	-211.85	14,529,534.19	1,678,077.78		
Point 34			0.00	-7,749.12	-214.97	14,529,994.20	1,678,073.96		
Point 35			0.00	-7,349.68	-217.69	14,530,393.63	1,678,070.63		
Point 36			0.00	-6,889.67	-220.82	14,530,853.64	1,678,066.81		
Point 37			0.00	-6,429.67	-223.94	14,531,313.63	1,678,062.99		
Point 38			0.00	-6,030.23	-226.65	14,531,713.07	1,678,059.67		
Point 39			0.00	-5,570.23	-229.77	14,532,173.06	1,678,055.85		
Point 40			0.00	-5,110.23	-230.92	14,532,633.06	1,678,054.01		
Point 41			0.00	-4,711.06	-231.89	14,533,032.23	1,678,052.43		
Point 42			0.00	-4,251.06	-233.02	14,533,492.22	1,678,050.60		
Point 43			0.00	-3,791.07	-234.17	14,533,952.21	1,678,048.76		
Point 44			0.00	-3,392.28	-235.17	14,534,351.00	1,678,047.15		
Point 45			0.00	-2,932.28	-236.32	14,534,811.00	1,678,045.30		
Point 46			0.00	-2,472.28	-237.44	14,535,271.00	1,678,043.48		
Point 47			0.00	-2,072.13	-238.42	14,535,671.14	1,678,041.90		
Point 48			0.00	-1,612.14	-239.54	14,536,131.13	1,678,040.08		
Point 49			0.00	-1,170.17	-240.48	14,536,573.10	1,678,038.47		
Point 50			0.00	-751.98	-241.65	14,536,991.29	1,678,036.66		
Point 51			0.00	-270.99	-242.41	14,537,472.28	1,678,035.17		
Point 52			0.00	-291.98	-242.77	14,537,451.28	1,678,034.85		
Point 53			0.00	154.25	-243.51	14,537,897.51	1,678,033.43		
Point 54			0.00	565.51	-244.19	14,538,308.77	1,678,032.13		



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

1N-R67W-Sec. 35_Secti	0.00	0.00	0.00	0.00	74.74	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 74.74usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.72			
Point 2		0.00	-5,567.35	1,905.22	14,532,179.25	1,680,235.63			
Point 3		0.00	-5,567.85	4,548.01	14,532,182.76	1,682,878.41			
Point 4		0.00	-10,841.76	4,559.90	14,526,908.87	1,682,898.31			
Point 5		0.00	-10,843.80	1,928.43	14,526,902.84	1,680,266.84			
Point 6		0.00	-10,844.86	-702.65	14,526,897.79	1,677,635.77			
Point 7		0.00	-8,206.73	-719.46	14,529,535.89	1,677,614.95			
1N-R67W-Sec. 23_Secti	0.00	0.00	0.00	0.00	74.74	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 74.74usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	4,981.70	-753.18	14,542,724.24	1,677,561.22			
Point 2		0.00	4,948.86	1,873.61	14,542,695.39	1,680,188.06			
Point 3		0.00	4,901.92	4,512.15	14,542,652.45	1,682,826.67			
Point 4		0.00	-288.13	4,540.16	14,537,462.46	1,682,862.55			
Point 5		0.00	-289.24	1,894.92	14,537,457.34	1,680,217.32			
Point 6		0.00	-290.30	-750.41	14,537,452.26	1,677,571.99			
Point 7		0.00	2,345.83	-751.96	14,540,088.39	1,677,566.44			
1N-R67W-Sec. 26_Secti	0.00	0.00	0.00	0.00	74.74	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 74.74usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	-290.30	-750.41	14,537,452.26	1,677,571.99			
Point 2		0.00	-289.24	1,894.92	14,537,457.34	1,680,217.32			
Point 3		0.00	-288.13	4,540.16	14,537,462.46	1,682,862.55			
Point 4		0.00	-2,913.10	4,515.39	14,534,837.45	1,682,841.77			
Point 5		0.00	-5,567.85	4,548.01	14,532,182.76	1,682,878.41			
Point 6		0.00	-5,567.35	1,905.22	14,532,179.25	1,680,235.63			
Point 7		0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.72			
Point 8		0.00	-2,929.65	-743.92	14,534,812.93	1,677,582.49			
Puma Fed 13N-35HZ_S	0.00	0.00	0.00	0.00	29.95	14,537,743.63	1,678,277.17	40.030157	-104.864749
- plan misses target center by 29.95usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
1N-R67W-Sec. 14_Secti	0.00	0.00	0.00	0.00	74.74	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 74.74usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	10,240.97	-771.13	14,547,983.48	1,677,535.29			
Point 2		0.00	10,241.68	1,854.89	14,547,988.17	1,680,161.31			
Point 3		0.00	10,251.55	4,492.80	14,548,002.05	1,682,799.20			
Point 4		0.00	4,901.92	4,512.15	14,542,652.45	1,682,826.67			
Point 5		0.00	4,948.86	1,873.61	14,542,695.39	1,680,188.06			
Point 6		0.00	4,981.70	-753.18	14,542,724.24	1,677,561.22			
Point 7		0.00	7,611.26	-762.09	14,545,353.79	1,677,548.32			
Puma Fed 13N-35HZ_Tr	0.00	0.00	7,595.00	-10,379.50	139.96	14,527,364.31	1,678,402.93	40.001653	-104.864356
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,803.56	1,800.00	9 5/8"		9-5/8	13-1/2
7,921.47	7,557.00	7"		7	8-3/4

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well PUMA FED 13N-35HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5007.00usft (D Rig)
<b>Site:</b>	1N-67W-23 Puma 13-23HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	PUMA FED 13N-35HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,446.56	1,443.00	Fox Hills		0.00		
4,719.56	4,716.00	Sussex		0.00		
7,304.39	7,278.59	Sharon Springs		0.00		
7,325.19	7,295.59	Niobrara Top		0.00		
7,549.73	7,450.15	Niobrara B Bench		0.00		
7,741.48	7,531.04	Niobrara C Bench		0.00		
7,921.47	7,557.00	Heel:		0.00		
17,667.11	7,595.00	Toe:		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
693.33	691.96	0.00	31.81	End Nudge @ 693.33ft	
833.33	830.79	0.00	49.84	Begin Drop @ 833.33ft	
1,203.33	1,199.77	0.00	73.71	End Drop @ 1203.33ft	
6,923.95	6,920.39	0.00	73.71	KOP @ 6923.95ft	
7,500.00	7,420.98	-243.31	75.26	DLS = 9°/100'	
7,921.47	7,557.00	-634.12	77.75	End Build @ 7921.47ft	
17,667.12	7,595.00	-10,379.50	139.96	TD Well @ 17667.12ft	