

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

PUMA FED 34N-35HZ

Plan A

Plan: Permit Rev-3

Standard Planning Report

06 August, 2015

Project: WELD-NAD83-UTMFT13N

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

Well: PUMA FED 34N-35HZ

Wellbore: Plan A

Design: Permit Rev-3

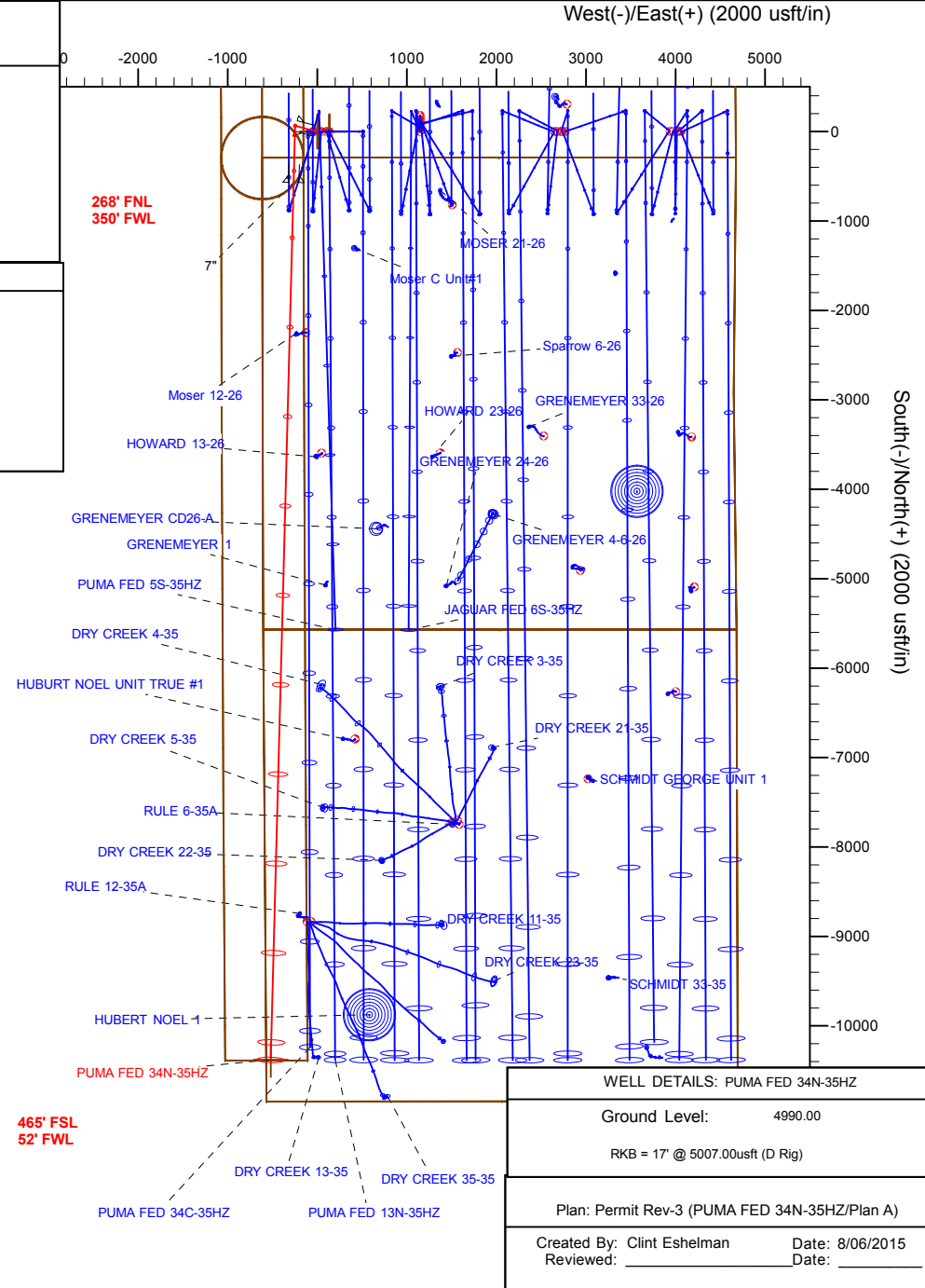
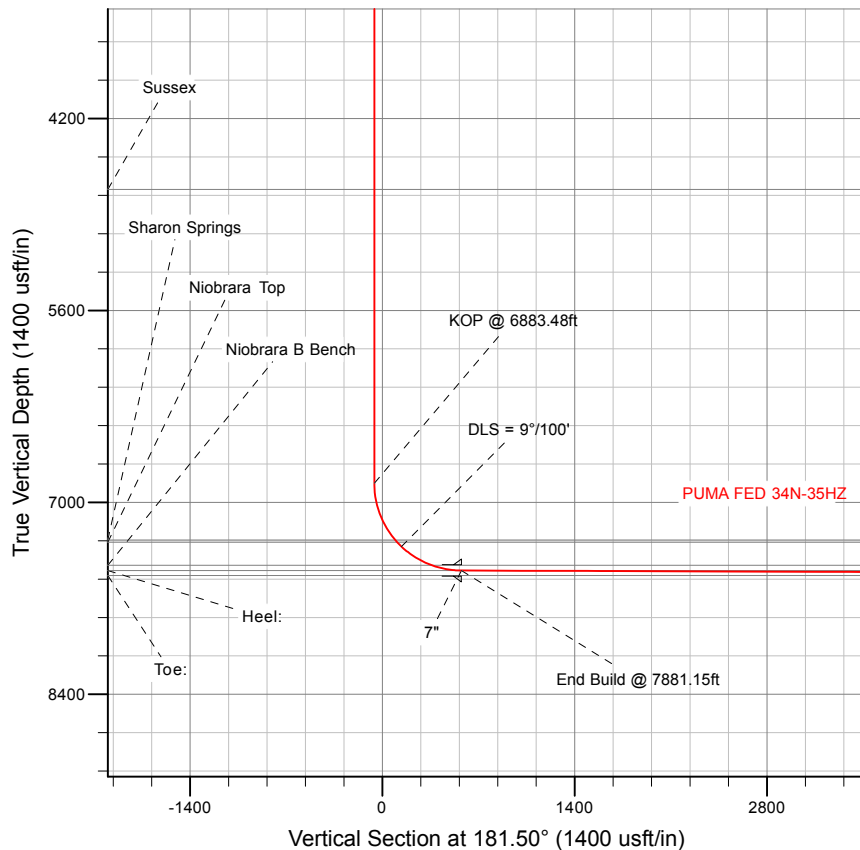
US ROCKIES WATTENBERG PLANNING

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	1133.33	14.00	285.00	1124.07	29.37	-109.60	1.50	285.00	-26.49	
4	1365.33	14.00	285.00	1349.18	43.89	-163.81	0.00	0.00	-39.59	
5	2065.33	0.00	0.00	2042.24	65.92	-246.01	2.00	180.00	-59.45	
6	6883.48	0.00	0.00	6860.39	65.92	-246.01	0.00	0.00	-59.45	
7	7881.15	89.79	181.50	7497.00	-568.15	-262.56	9.00	181.50	574.83	
8	17696.28	89.79	181.50	7533.00	-10379.87	-518.80	0.00	0.00	10389.89	Puma Fed 34N-35HZ_Bhl

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Puma Fed 34N-35HZ_SHL	0.00	0.00	0.00	40.030157	-104.865071	Point
Puma Fed 34N-35HZ_Bhl	7533.00	-10379.87	-518.80	40.001652	-104.866924	Point



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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 34N-35HZ					
Well Position	+N/-S	0.36 usft	Northing:	14,537,743.50 usft	Latitude:	40.030157
	+E/-W	44.79 usft	Easting:	1,678,187.04 usft	Longitude:	-104.865071
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,990.00 usft

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

Design	Permit Rev-3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	181.50

Plan Sections										
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	
1,133.33	14.00	285.00	1,124.07	29.37	-109.60	1.50	1.50	0.00	285.00	
1,365.33	14.00	285.00	1,349.18	43.89	-163.81	0.00	0.00	0.00	0.00	
2,065.33	0.00	0.00	2,042.24	65.92	-246.01	2.00	-2.00	0.00	180.00	
6,883.48	0.00	0.00	6,860.39	65.92	-246.01	0.00	0.00	0.00	0.00	
7,881.15	89.79	181.50	7,497.00	-568.15	-262.57	9.00	9.00	-17.89	181.50	
17,696.28	89.79	181.50	7,533.00	-10,379.87	-518.80	0.00	0.00	0.00	0.00	Puma Fed 34N-35HZ

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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
Puma Fed 34N-35HZ_460 Radii1 - Puma Fed 34N-35HZ_Drilling Window - 1N-R67W-Sec. 14_Section lines - 1N-R67W-Sec. 35_Section line									
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
Begin Nudge @ 200.00ft									
300.00	1.50	285.00	299.99	0.34	-1.26	-0.31	1.50	1.50	0.00
400.00	3.00	285.00	399.91	1.35	-5.06	-1.22	1.50	1.50	0.00
500.00	4.50	285.00	499.69	3.05	-11.37	-2.75	1.50	1.50	0.00
600.00	6.00	285.00	599.27	5.42	-20.21	-4.88	1.50	1.50	0.00
700.00	7.50	285.00	698.57	8.46	-31.56	-7.63	1.50	1.50	0.00
800.00	9.00	285.00	797.54	12.17	-45.42	-10.98	1.50	1.50	0.00
900.00	10.50	285.00	896.09	16.55	-61.78	-14.93	1.50	1.50	0.00
1,000.00	12.00	285.00	994.16	21.60	-80.63	-19.49	1.50	1.50	0.00
1,100.00	13.50	285.00	1,091.70	27.32	-101.94	-24.64	1.50	1.50	0.00
1,133.33	14.00	285.00	1,124.07	29.37	-109.60	-26.49	1.50	1.50	0.00
End Nudge @ 1133.33ft									
1,200.00	14.00	285.00	1,188.76	33.54	-125.17	-30.25	0.00	0.00	0.00
1,300.00	14.00	285.00	1,285.79	39.80	-148.54	-35.90	0.00	0.00	0.00
1,365.33	14.00	285.00	1,349.18	43.89	-163.81	-39.59	0.00	0.00	0.00
Begin Drop @ 1365.33ft									
1,400.00	13.31	285.00	1,382.87	46.01	-171.71	-41.50	2.00	-2.00	0.00
1,461.64	12.07	285.00	1,443.00	49.51	-184.79	-44.66	2.00	-2.00	0.00
Fox Hills									
1,500.00	11.31	285.00	1,480.57	51.53	-192.30	-46.48	2.00	-2.00	0.00
1,600.00	9.31	285.00	1,578.95	56.16	-209.58	-50.65	2.00	-2.00	0.00
1,700.00	7.31	285.00	1,677.89	59.90	-223.54	-54.02	2.00	-2.00	0.00
1,800.00	5.31	285.00	1,777.28	62.74	-234.15	-56.59	2.00	-2.00	0.00
1,822.81	4.85	285.00	1,800.00	63.26	-236.10	-57.06	2.00	-2.00	0.00
9 5/8"									
1,900.00	3.31	285.00	1,877.00	64.68	-241.40	-58.34	2.00	-2.00	0.00
2,000.00	1.31	285.00	1,976.91	65.72	-245.29	-59.28	2.00	-2.00	0.00
2,065.33	0.00	285.00	2,042.23	65.92	-246.01	-59.45	2.00	-2.00	0.00
End Drop @ 2065.33ft									
2,100.00	0.00	0.00	2,076.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,200.00	0.00	0.00	2,176.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,300.00	0.00	0.00	2,276.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,400.00	0.00	0.00	2,376.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,500.00	0.00	0.00	2,476.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,600.00	0.00	0.00	2,576.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,700.00	0.00	0.00	2,676.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,800.00	0.00	0.00	2,776.90	65.92	-246.01	-59.45	0.00	0.00	0.00
2,900.00	0.00	0.00	2,876.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,000.00	0.00	0.00	2,976.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,100.00	0.00	0.00	3,076.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,200.00	0.00	0.00	3,176.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,300.00	0.00	0.00	3,276.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,400.00	0.00	0.00	3,376.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,500.00	0.00	0.00	3,476.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,600.00	0.00	0.00	3,576.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,700.00	0.00	0.00	3,676.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,800.00	0.00	0.00	3,776.90	65.92	-246.01	-59.45	0.00	0.00	0.00
3,900.00	0.00	0.00	3,876.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,000.00	0.00	0.00	3,976.90	65.92	-246.01	-59.45	0.00	0.00	0.00

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Planning Report

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Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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	4,076.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,200.00	0.00	0.00	4,176.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,300.00	0.00	0.00	4,276.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,400.00	0.00	0.00	4,376.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,500.00	0.00	0.00	4,476.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,600.00	0.00	0.00	4,576.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,700.00	0.00	0.00	4,676.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,739.10	0.00	0.00	4,716.00	65.92	-246.01	-59.45	0.00	0.00	0.00
Sussex									
4,800.00	0.00	0.00	4,776.90	65.92	-246.01	-59.45	0.00	0.00	0.00
4,900.00	0.00	0.00	4,876.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,000.00	0.00	0.00	4,976.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,100.00	0.00	0.00	5,076.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,200.00	0.00	0.00	5,176.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,300.00	0.00	0.00	5,276.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,400.00	0.00	0.00	5,376.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,500.00	0.00	0.00	5,476.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,600.00	0.00	0.00	5,576.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,700.00	0.00	0.00	5,676.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,800.00	0.00	0.00	5,776.90	65.92	-246.01	-59.45	0.00	0.00	0.00
5,900.00	0.00	0.00	5,876.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,000.00	0.00	0.00	5,976.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,100.00	0.00	0.00	6,076.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,200.00	0.00	0.00	6,176.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,300.00	0.00	0.00	6,276.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,400.00	0.00	0.00	6,376.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,500.00	0.00	0.00	6,476.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,600.00	0.00	0.00	6,576.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,700.00	0.00	0.00	6,676.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,800.00	0.00	0.00	6,776.90	65.92	-246.01	-59.45	0.00	0.00	0.00
6,883.48	0.00	0.00	6,860.38	65.92	-246.01	-59.45	0.00	0.00	0.00
KOP @ 6883.48ft									
6,900.00	1.49	181.50	6,876.90	65.70	-246.01	-59.24	9.00	9.00	0.00
7,000.00	10.49	181.50	6,976.25	55.29	-246.28	-48.82	9.00	9.00	0.00
7,100.00	19.49	181.50	7,072.75	29.46	-246.96	-22.99	9.00	9.00	0.00
7,200.00	28.49	181.50	7,164.02	-11.13	-248.02	17.62	9.00	9.00	0.00
7,300.00	37.49	181.50	7,247.82	-65.50	-249.44	72.01	9.00	9.00	0.00
7,334.32	40.58	181.50	7,274.48	-87.11	-250.00	93.62	9.00	9.00	0.00
Sharon Springs									
7,357.06	42.62	181.50	7,291.48	-102.19	-250.40	108.71	9.00	9.00	0.00
Niobrara Top									
7,400.00	46.49	181.50	7,322.07	-132.31	-251.18	138.84	9.00	9.00	0.00
DLS = 9°/100'									
7,500.00	55.49	181.50	7,384.96	-209.90	-253.21	216.46	9.00	9.00	0.00
7,600.00	64.49	181.50	7,434.93	-296.37	-255.47	302.96	9.00	9.00	0.00
7,661.56	70.03	181.50	7,458.72	-353.11	-256.95	359.71	9.00	9.00	0.00
Niobrara B Bench									
7,700.00	73.49	181.50	7,470.75	-389.59	-257.90	396.21	9.00	9.00	0.00
7,800.00	82.49	181.50	7,491.54	-487.27	-260.45	493.92	9.00	9.00	0.00
7,881.15	89.79	181.50	7,497.00	-568.15	-262.57	574.83	9.00	9.00	0.00
End Build @ 7881.15ft - Heel: - 7"									
7,900.00	89.79	181.50	7,497.07	-587.00	-263.06	593.68	0.00	0.00	0.00
8,000.00	89.79	181.50	7,497.44	-686.96	-265.67	693.68	0.00	0.00	0.00

Anadarko

Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)
8,100.00	89.79	181.50	7,497.81	-786.93	-268.28	793.68	0.00	0.00	0.00
8,200.00	89.79	181.50	7,498.17	-886.89	-270.89	893.68	0.00	0.00	0.00
8,300.00	89.79	181.50	7,498.54	-986.86	-273.50	993.68	0.00	0.00	0.00
8,400.00	89.79	181.50	7,498.91	-1,086.82	-276.11	1,093.68	0.00	0.00	0.00
8,500.00	89.79	181.50	7,499.27	-1,186.79	-278.72	1,193.68	0.00	0.00	0.00
8,600.00	89.79	181.50	7,499.64	-1,286.75	-281.33	1,293.68	0.00	0.00	0.00
8,700.00	89.79	181.50	7,500.01	-1,386.72	-283.94	1,393.68	0.00	0.00	0.00
8,800.00	89.79	181.50	7,500.37	-1,486.68	-286.55	1,493.68	0.00	0.00	0.00
8,900.00	89.79	181.50	7,500.74	-1,586.65	-289.16	1,593.67	0.00	0.00	0.00
9,000.00	89.79	181.50	7,501.11	-1,686.61	-291.77	1,693.67	0.00	0.00	0.00
9,100.00	89.79	181.50	7,501.47	-1,786.58	-294.38	1,793.67	0.00	0.00	0.00
9,200.00	89.79	181.50	7,501.84	-1,886.54	-297.00	1,893.67	0.00	0.00	0.00
9,300.00	89.79	181.50	7,502.21	-1,986.51	-299.61	1,993.67	0.00	0.00	0.00
9,400.00	89.79	181.50	7,502.57	-2,086.48	-302.22	2,093.67	0.00	0.00	0.00
9,500.00	89.79	181.50	7,502.94	-2,186.44	-304.83	2,193.67	0.00	0.00	0.00
9,600.00	89.79	181.50	7,503.31	-2,286.41	-307.44	2,293.67	0.00	0.00	0.00
9,700.00	89.79	181.50	7,503.67	-2,386.37	-310.05	2,393.67	0.00	0.00	0.00
9,800.00	89.79	181.50	7,504.04	-2,486.34	-312.66	2,493.67	0.00	0.00	0.00
9,900.00	89.79	181.50	7,504.41	-2,586.30	-315.27	2,593.67	0.00	0.00	0.00
10,000.00	89.79	181.50	7,504.77	-2,686.27	-317.88	2,693.67	0.00	0.00	0.00
10,100.00	89.79	181.50	7,505.14	-2,786.23	-320.49	2,793.67	0.00	0.00	0.00
10,200.00	89.79	181.50	7,505.51	-2,886.20	-323.10	2,893.67	0.00	0.00	0.00
10,300.00	89.79	181.50	7,505.87	-2,986.16	-325.71	2,993.67	0.00	0.00	0.00
10,400.00	89.79	181.50	7,506.24	-3,086.13	-328.32	3,093.66	0.00	0.00	0.00
10,500.00	89.79	181.50	7,506.61	-3,186.09	-330.93	3,193.66	0.00	0.00	0.00
10,600.00	89.79	181.50	7,506.97	-3,286.06	-333.54	3,293.66	0.00	0.00	0.00
10,700.00	89.79	181.50	7,507.34	-3,386.02	-336.15	3,393.66	0.00	0.00	0.00
10,800.00	89.79	181.50	7,507.71	-3,485.99	-338.76	3,493.66	0.00	0.00	0.00
10,900.00	89.79	181.50	7,508.07	-3,585.95	-341.38	3,593.66	0.00	0.00	0.00
11,000.00	89.79	181.50	7,508.44	-3,685.92	-343.99	3,693.66	0.00	0.00	0.00
11,100.00	89.79	181.50	7,508.81	-3,785.88	-346.60	3,793.66	0.00	0.00	0.00
11,200.00	89.79	181.50	7,509.17	-3,885.85	-349.21	3,893.66	0.00	0.00	0.00
11,300.00	89.79	181.50	7,509.54	-3,985.81	-351.82	3,993.66	0.00	0.00	0.00
11,400.00	89.79	181.50	7,509.91	-4,085.78	-354.43	4,093.66	0.00	0.00	0.00
11,500.00	89.79	181.50	7,510.28	-4,185.75	-357.04	4,193.66	0.00	0.00	0.00
11,600.00	89.79	181.50	7,510.64	-4,285.71	-359.65	4,293.66	0.00	0.00	0.00
11,700.00	89.79	181.50	7,511.01	-4,385.68	-362.26	4,393.66	0.00	0.00	0.00
11,800.00	89.79	181.50	7,511.38	-4,485.64	-364.87	4,493.66	0.00	0.00	0.00
11,900.00	89.79	181.50	7,511.74	-4,585.61	-367.48	4,593.65	0.00	0.00	0.00
12,000.00	89.79	181.50	7,512.11	-4,685.57	-370.09	4,693.65	0.00	0.00	0.00
12,100.00	89.79	181.50	7,512.48	-4,785.54	-372.70	4,793.65	0.00	0.00	0.00
12,200.00	89.79	181.50	7,512.84	-4,885.50	-375.31	4,893.65	0.00	0.00	0.00
12,300.00	89.79	181.50	7,513.21	-4,985.47	-377.92	4,993.65	0.00	0.00	0.00
12,400.00	89.79	181.50	7,513.58	-5,085.43	-380.53	5,093.65	0.00	0.00	0.00
12,500.00	89.79	181.50	7,513.94	-5,185.40	-383.15	5,193.65	0.00	0.00	0.00
12,600.00	89.79	181.50	7,514.31	-5,285.36	-385.76	5,293.65	0.00	0.00	0.00
12,700.00	89.79	181.50	7,514.68	-5,385.33	-388.37	5,393.65	0.00	0.00	0.00
12,800.00	89.79	181.50	7,515.04	-5,485.29	-390.98	5,493.65	0.00	0.00	0.00
12,900.00	89.79	181.50	7,515.41	-5,585.26	-393.59	5,593.65	0.00	0.00	0.00
13,000.00	89.79	181.50	7,515.78	-5,685.22	-396.20	5,693.65	0.00	0.00	0.00
13,100.00	89.79	181.50	7,516.14	-5,785.19	-398.81	5,793.65	0.00	0.00	0.00
13,200.00	89.79	181.50	7,516.51	-5,885.15	-401.42	5,893.65	0.00	0.00	0.00
13,300.00	89.79	181.50	7,516.88	-5,985.12	-404.03	5,993.65	0.00	0.00	0.00
13,400.00	89.79	181.50	7,517.24	-6,085.09	-406.64	6,093.64	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)
13,500.00	89.79	181.50	7,517.61	-6,185.05	-409.25	6,193.64	0.00	0.00	0.00
13,600.00	89.79	181.50	7,517.98	-6,285.02	-411.86	6,293.64	0.00	0.00	0.00
13,700.00	89.79	181.50	7,518.34	-6,384.98	-414.47	6,393.64	0.00	0.00	0.00
13,800.00	89.79	181.50	7,518.71	-6,484.95	-417.08	6,493.64	0.00	0.00	0.00
13,900.00	89.79	181.50	7,519.08	-6,584.91	-419.69	6,593.64	0.00	0.00	0.00
14,000.00	89.79	181.50	7,519.44	-6,684.88	-422.30	6,693.64	0.00	0.00	0.00
14,100.00	89.79	181.50	7,519.81	-6,784.84	-424.92	6,793.64	0.00	0.00	0.00
14,200.00	89.79	181.50	7,520.18	-6,884.81	-427.53	6,893.64	0.00	0.00	0.00
14,300.00	89.79	181.50	7,520.54	-6,984.77	-430.14	6,993.64	0.00	0.00	0.00
14,400.00	89.79	181.50	7,520.91	-7,084.74	-432.75	7,093.64	0.00	0.00	0.00
14,500.00	89.79	181.50	7,521.28	-7,184.70	-435.36	7,193.64	0.00	0.00	0.00
14,600.00	89.79	181.50	7,521.64	-7,284.67	-437.97	7,293.64	0.00	0.00	0.00
14,700.00	89.79	181.50	7,522.01	-7,384.63	-440.58	7,393.64	0.00	0.00	0.00
14,800.00	89.79	181.50	7,522.38	-7,484.60	-443.19	7,493.64	0.00	0.00	0.00
14,900.00	89.79	181.50	7,522.74	-7,584.56	-445.80	7,593.63	0.00	0.00	0.00
15,000.00	89.79	181.50	7,523.11	-7,684.53	-448.41	7,693.63	0.00	0.00	0.00
15,100.00	89.79	181.50	7,523.48	-7,784.49	-451.02	7,793.63	0.00	0.00	0.00
15,200.00	89.79	181.50	7,523.85	-7,884.46	-453.63	7,893.63	0.00	0.00	0.00
15,300.00	89.79	181.50	7,524.21	-7,984.42	-456.24	7,993.63	0.00	0.00	0.00
15,400.00	89.79	181.50	7,524.58	-8,084.39	-458.85	8,093.63	0.00	0.00	0.00
15,500.00	89.79	181.50	7,524.95	-8,184.36	-461.46	8,193.63	0.00	0.00	0.00
15,600.00	89.79	181.50	7,525.31	-8,284.32	-464.07	8,293.63	0.00	0.00	0.00
15,700.00	89.79	181.50	7,525.68	-8,384.29	-466.68	8,393.63	0.00	0.00	0.00
15,800.00	89.79	181.50	7,526.05	-8,484.25	-469.30	8,493.63	0.00	0.00	0.00
15,900.00	89.79	181.50	7,526.41	-8,584.22	-471.91	8,593.63	0.00	0.00	0.00
16,000.00	89.79	181.50	7,526.78	-8,684.18	-474.52	8,693.63	0.00	0.00	0.00
16,100.00	89.79	181.50	7,527.15	-8,784.15	-477.13	8,793.63	0.00	0.00	0.00
16,200.00	89.79	181.50	7,527.51	-8,884.11	-479.74	8,893.63	0.00	0.00	0.00
16,300.00	89.79	181.50	7,527.88	-8,984.08	-482.35	8,993.63	0.00	0.00	0.00
16,400.00	89.79	181.50	7,528.25	-9,084.04	-484.96	9,093.62	0.00	0.00	0.00
16,500.00	89.79	181.50	7,528.61	-9,184.01	-487.57	9,193.62	0.00	0.00	0.00
16,600.00	89.79	181.50	7,528.98	-9,283.97	-490.18	9,293.62	0.00	0.00	0.00
16,700.00	89.79	181.50	7,529.35	-9,383.94	-492.79	9,393.62	0.00	0.00	0.00
16,800.00	89.79	181.50	7,529.71	-9,483.90	-495.40	9,493.62	0.00	0.00	0.00
16,900.00	89.79	181.50	7,530.08	-9,583.87	-498.01	9,593.62	0.00	0.00	0.00
17,000.00	89.79	181.50	7,530.45	-9,683.83	-500.62	9,693.62	0.00	0.00	0.00
17,100.00	89.79	181.50	7,530.81	-9,783.80	-503.23	9,793.62	0.00	0.00	0.00
17,200.00	89.79	181.50	7,531.18	-9,883.76	-505.84	9,893.62	0.00	0.00	0.00
17,300.00	89.79	181.50	7,531.55	-9,983.73	-508.45	9,993.62	0.00	0.00	0.00
17,400.00	89.79	181.50	7,531.91	-10,083.70	-511.07	10,093.62	0.00	0.00	0.00
17,500.00	89.79	181.50	7,532.28	-10,183.66	-513.68	10,193.62	0.00	0.00	0.00
17,600.00	89.79	181.50	7,532.65	-10,283.63	-516.29	10,293.62	0.00	0.00	0.00
17,696.27	89.79	181.50	7,533.00	-10,379.86	-518.80	10,389.89	0.00	0.00	0.00
Toe:									
17,696.28	89.79	181.50	7,533.00	-10,379.87	-518.80	10,389.89	0.00	0.00	0.00
TD Well @ 17696.28ft - Puma Fed 34N-35HZ_Bhl									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)		
1N-R67W-Sec. 35_Secti	0.00	0.00	0.00	0.00	134.93	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 134.93usft 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	1,677,592.71		
Point 2			0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.61		
Point 3			0.00	-5,567.85	4,548.01	14,532,182.75	1,682,878.40		
Point 4			0.00	-10,841.76	4,559.90	14,526,908.86	1,682,898.28		
Point 5			0.00	-10,843.80	1,928.43	14,526,902.83	1,680,266.82		
Point 6			0.00	-10,844.86	-702.65	14,526,897.79	1,677,635.74		
Point 7			0.00	-8,206.73	-719.46	14,529,535.89	1,677,614.93		
Puma Fed 34N-35HZ_4f	0.00	0.00	0.00	0.00	15.12	14,537,743.52	1,678,202.15	40.030157	-104.865017
- plan misses target center by 15.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	167.43	-627.05	14,537,910.00	1,677,574.85		
Point 2			0.00	167.00	-607.92	14,537,909.60	1,677,593.98		
Point 3			0.00	165.78	-588.81	14,537,908.41	1,677,613.09		
Point 4			0.00	163.76	-569.79	14,537,906.42	1,677,632.11		
Point 5			0.00	160.95	-550.85	14,537,903.63	1,677,651.06		
Point 6			0.00	157.36	-532.06	14,537,900.07	1,677,669.85		
Point 7			0.00	152.99	-513.42	14,537,895.73	1,677,688.50		
Point 8			0.00	147.85	-494.98	14,537,890.62	1,677,706.95		
Point 9			0.00	141.95	-476.78	14,537,884.75	1,677,725.16		
Point 10			0.00	135.29	-458.83	14,537,878.11	1,677,743.12		
Point 11			0.00	127.89	-441.18	14,537,870.74	1,677,760.78		
Point 12			0.00	119.77	-423.85	14,537,862.65	1,677,778.12		
Point 13			0.00	110.92	-406.88	14,537,853.82	1,677,795.10		
Point 14			0.00	101.39	-390.28	14,537,844.32	1,677,811.72		
Point 15			0.00	91.17	-374.10	14,537,834.12	1,677,827.91		
Point 16			0.00	80.29	-358.35	14,537,823.27	1,677,843.68		
Point 17			0.00	68.76	-343.08	14,537,811.76	1,677,858.97		
Point 18			0.00	56.60	-328.29	14,537,799.62	1,677,873.78		
Point 19			0.00	43.84	-314.03	14,537,786.88	1,677,888.06		
Point 20			0.00	30.50	-300.30	14,537,773.56	1,677,901.81		
Point 21			0.00	16.60	-287.15	14,537,759.68	1,677,914.98		
Point 22			0.00	2.16	-274.58	14,537,745.26	1,677,927.57		
Point 23			0.00	-12.79	-262.62	14,537,730.33	1,677,939.55		
Point 24			0.00	-28.21	-251.30	14,537,714.93	1,677,950.90		
Point 25			0.00	-44.10	-240.63	14,537,699.05	1,677,961.59		
Point 26			0.00	-60.42	-230.63	14,537,682.75	1,677,971.61		
Point 27			0.00	-77.14	-221.31	14,537,666.04	1,677,980.96		
Point 28			0.00	-94.23	-212.71	14,537,648.97	1,677,989.59		
Point 29			0.00	-111.67	-204.81	14,537,631.54	1,677,997.51		
Point 30			0.00	-129.42	-197.65	14,537,613.80	1,678,004.70		
Point 31			0.00	-147.45	-191.24	14,537,595.78	1,678,011.14		
Point 32			0.00	-165.73	-185.59	14,537,577.51	1,678,016.81		
Point 33			0.00	-184.24	-180.68	14,537,559.01	1,678,021.75		
Point 34			0.00	-202.93	-176.57	14,537,540.32	1,678,025.89		
Point 35			0.00	-221.78	-173.23	14,537,521.48	1,678,029.26		
Point 36			0.00	-240.75	-170.68	14,537,502.51	1,678,031.84		
Point 37			0.00	-259.81	-168.92	14,537,483.45	1,678,033.63		
Point 38			0.00	-278.92	-167.95	14,537,464.34	1,678,034.63		
Point 39			0.00	-298.06	-167.79	14,537,445.20	1,678,034.81		
Point 40			0.00	-317.19	-168.41	14,537,426.07	1,678,034.22		
Point 41			0.00	-336.28	-169.83	14,537,406.98	1,678,032.83		
Point 42			0.00	-355.28	-172.04	14,537,387.98	1,678,030.65		
Point 43			0.00	-374.19	-175.04	14,537,369.06	1,678,027.68		
Point 44			0.00	-392.94	-178.83	14,537,350.31	1,678,023.92		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Point 45	0.00	-411.54	-183.40	14,537,331.70	1,678,019.38
Point 46	0.00	-429.92	-188.73	14,537,313.31	1,678,014.07
Point 47	0.00	-448.06	-194.82	14,537,295.16	1,678,008.01
Point 48	0.00	-465.94	-201.67	14,537,277.27	1,678,001.19
Point 49	0.00	-483.51	-209.25	14,537,259.69	1,677,993.64
Point 50	0.00	-500.75	-217.55	14,537,242.44	1,677,985.36
Point 51	0.00	-517.63	-226.57	14,537,225.55	1,677,976.37
Point 52	0.00	-534.13	-236.27	14,537,209.03	1,677,966.69
Point 53	0.00	-550.20	-246.66	14,537,192.95	1,677,956.33
Point 54	0.00	-565.83	-257.71	14,537,177.30	1,677,945.30
Point 55	0.00	-581.00	-269.40	14,537,162.11	1,677,933.63
Point 56	0.00	-595.65	-281.71	14,537,147.44	1,677,921.34
Point 57	0.00	-609.78	-294.61	14,537,133.29	1,677,908.47
Point 58	0.00	-623.37	-308.10	14,537,119.68	1,677,895.00
Point 59	0.00	-636.38	-322.13	14,537,106.65	1,677,880.99
Point 60	0.00	-648.79	-336.70	14,537,094.22	1,677,866.44
Point 61	0.00	-660.59	-351.77	14,537,082.40	1,677,851.38
Point 62	0.00	-671.75	-367.31	14,537,071.21	1,677,835.86
Point 63	0.00	-682.25	-383.32	14,537,060.69	1,677,819.87
Point 64	0.00	-692.09	-399.73	14,537,050.82	1,677,803.47
Point 65	0.00	-701.22	-416.56	14,537,041.67	1,677,786.66
Point 66	0.00	-709.66	-433.74	14,537,033.20	1,677,769.49
Point 67	0.00	-717.37	-451.25	14,537,025.47	1,677,751.99
Point 68	0.00	-724.34	-469.07	14,537,018.47	1,677,734.18
Point 69	0.00	-730.57	-487.17	14,537,012.21	1,677,716.09
Point 70	0.00	-736.04	-505.52	14,537,006.71	1,677,697.75
Point 71	0.00	-740.74	-524.07	14,537,001.99	1,677,679.21
Point 72	0.00	-744.66	-542.80	14,536,998.04	1,677,660.48
Point 73	0.00	-747.80	-561.68	14,536,994.87	1,677,641.61
Point 74	0.00	-750.17	-580.67	14,536,992.47	1,677,622.62
Point 75	0.00	-751.73	-599.75	14,536,990.88	1,677,603.54
Point 76	0.00	-752.49	-618.88	14,536,990.09	1,677,584.41
Point 77	0.00	-752.46	-638.02	14,536,990.09	1,677,565.27
Point 78	0.00	-751.64	-657.13	14,536,990.88	1,677,546.16
Point 79	0.00	-750.02	-676.21	14,536,992.48	1,677,527.08
Point 80	0.00	-747.60	-695.20	14,536,994.87	1,677,508.09
Point 81	0.00	-744.40	-714.06	14,536,998.04	1,677,489.22
Point 82	0.00	-740.42	-732.79	14,537,001.99	1,677,470.48
Point 83	0.00	-735.67	-751.32	14,537,006.71	1,677,451.95
Point 84	0.00	-730.14	-769.65	14,537,012.21	1,677,433.61
Point 85	0.00	-723.86	-787.73	14,537,018.47	1,677,415.52
Point 86	0.00	-716.83	-805.53	14,537,025.47	1,677,397.71
Point 87	0.00	-709.07	-823.03	14,537,033.20	1,677,380.20
Point 88	0.00	-700.58	-840.19	14,537,041.67	1,677,363.02
Point 89	0.00	-691.40	-856.97	14,537,050.82	1,677,346.23
Point 90	0.00	-681.51	-873.36	14,537,060.69	1,677,329.83
Point 91	0.00	-670.96	-889.33	14,537,071.21	1,677,313.84
Point 92	0.00	-659.75	-904.85	14,537,082.40	1,677,298.30
Point 93	0.00	-647.91	-919.88	14,537,094.22	1,677,283.25
Point 94	0.00	-635.45	-934.41	14,537,106.65	1,677,268.71
Point 95	0.00	-622.40	-948.40	14,537,119.68	1,677,254.70
Point 96	0.00	-608.77	-961.85	14,537,133.29	1,677,241.23
Point 97	0.00	-594.60	-974.71	14,537,147.44	1,677,228.34
Point 98	0.00	-579.91	-986.97	14,537,162.11	1,677,216.06
Point 99	0.00	-564.71	-998.61	14,537,177.30	1,677,204.40
Point 100	0.00	-549.05	-1,009.62	14,537,192.94	1,677,193.37
Point 101	0.00	-532.94	-1,019.95	14,537,209.03	1,677,183.01
Point 102	0.00	-516.41	-1,029.61	14,537,225.55	1,677,173.33
Point 103	0.00	-499.51	-1,038.57	14,537,242.44	1,677,164.34
Point 104	0.00	-482.24	-1,046.83	14,537,259.69	1,677,156.05
Point 105	0.00	-464.65	-1,054.36	14,537,277.27	1,677,148.50
Point 106	0.00	-446.75	-1,061.14	14,537,295.16	1,677,141.69
Point 107	0.00	-428.59	-1,067.19	14,537,313.31	1,677,135.61
Point 108	0.00	-410.19	-1,072.46	14,537,331.70	1,677,130.31

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Point 109	0.00	-391.58	-1,076.97	14,537,350.31	1,677,125.78		
Point 110	0.00	-372.82	-1,080.70	14,537,369.06	1,677,122.02		
Point 111	0.00	-353.90	-1,083.64	14,537,387.98	1,677,119.05		
Point 112	0.00	-334.89	-1,085.80	14,537,406.98	1,677,116.86		
Point 113	0.00	-315.80	-1,087.16	14,537,426.07	1,677,115.47		
Point 114	0.00	-296.67	-1,087.74	14,537,445.20	1,677,114.86		
Point 115	0.00	-277.53	-1,087.51	14,537,464.34	1,677,115.06		
Point 116	0.00	-258.42	-1,086.48	14,537,483.45	1,677,116.07		
Point 117	0.00	-239.36	-1,084.66	14,537,502.52	1,677,117.86		
Point 118	0.00	-220.40	-1,082.05	14,537,521.48	1,677,120.44		
Point 119	0.00	-201.56	-1,078.65	14,537,540.33	1,677,123.81		
Point 120	0.00	-182.89	-1,074.48	14,537,559.00	1,677,127.95		
Point 121	0.00	-164.39	-1,069.54	14,537,577.51	1,677,132.86		
Point 122	0.00	-146.13	-1,063.82	14,537,595.78	1,677,138.55		
Point 123	0.00	-128.12	-1,057.35	14,537,613.80	1,677,145.00		
Point 124	0.00	-110.39	-1,050.13	14,537,631.54	1,677,152.19		
Point 125	0.00	-92.98	-1,042.19	14,537,648.96	1,677,160.10		
Point 126	0.00	-75.91	-1,033.53	14,537,666.04	1,677,168.74		
Point 127	0.00	-59.22	-1,024.17	14,537,682.75	1,677,178.07		
Point 128	0.00	-42.93	-1,014.11	14,537,699.05	1,677,188.11		
Point 129	0.00	-27.07	-1,003.40	14,537,714.93	1,677,198.79		
Point 130	0.00	-11.68	-992.02	14,537,730.34	1,677,210.15		
Point 131	0.00	3.23	-980.02	14,537,745.26	1,677,222.13		
Point 132	0.00	17.63	-967.41	14,537,759.68	1,677,234.72		
Point 133	0.00	31.49	-954.22	14,537,773.56	1,677,247.89		
Point 134	0.00	44.79	-940.45	14,537,786.88	1,677,261.64		
Point 135	0.00	57.51	-926.15	14,537,799.63	1,677,275.92		
Point 136	0.00	69.62	-911.33	14,537,811.76	1,677,290.72		
Point 137	0.00	81.10	-896.01	14,537,823.26	1,677,306.02		
Point 138	0.00	91.94	-880.24	14,537,834.13	1,677,321.77		
Point 139	0.00	102.11	-864.02	14,537,844.32	1,677,337.98		
Point 140	0.00	111.59	-847.40	14,537,853.82	1,677,354.58		
Point 141	0.00	120.38	-830.39	14,537,862.64	1,677,371.58		
Point 142	0.00	128.46	-813.04	14,537,870.75	1,677,388.92		
Point 143	0.00	135.80	-795.37	14,537,878.11	1,677,406.58		
Point 144	0.00	142.40	-777.40	14,537,884.74	1,677,424.54		
Point 145	0.00	148.25	-759.18	14,537,890.62	1,677,442.75		
Point 146	0.00	153.34	-740.73	14,537,895.74	1,677,461.19		
Point 147	0.00	157.65	-722.09	14,537,900.07	1,677,479.82		
Point 148	0.00	161.18	-703.27	14,537,903.63	1,677,498.64		
Point 149	0.00	163.93	-684.33	14,537,906.41	1,677,517.57		
Point 150	0.00	165.89	-665.29	14,537,908.40	1,677,536.61		
Point 151	0.00	167.06	-646.19	14,537,909.60	1,677,555.71		
Point 152	0.00	167.43	-627.05	14,537,910.00	1,677,574.85		
1N-R67W-Sec. 23_Secti	0.00	0.00	0.00	134.93	14,537,743.70	1,678,321.96	40.030157 -104.864589
- plan misses target center by 134.93usft 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	1,677,561.24		
Point 2	0.00	4,948.86	1,873.61	14,542,695.38	1,680,188.07		
Point 3	0.00	4,901.92	4,512.15	14,542,652.44	1,682,826.68		
Point 4	0.00	-288.13	4,540.16	14,537,462.45	1,682,862.55		
Point 5	0.00	-289.24	1,894.92	14,537,457.33	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	1,677,566.45		
1N-R67W-Sec. 26_Secti	0.00	0.00	0.00	134.93	14,537,743.70	1,678,321.96	40.030157 -104.864589
- plan misses target center by 134.93usft 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	14,537,457.33	1,680,217.32		
Point 3	0.00	-288.13	4,540.16	14,537,462.45	1,682,862.55		
Point 4	0.00	-2,913.10	4,515.39	14,534,837.44	1,682,841.76		
Point 5	0.00	-5,567.85	4,548.01	14,532,182.75	1,682,878.40		
Point 6	0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.61		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Point 7	0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.71		
Point 8	0.00	-2,929.65	-743.92	14,534,812.93	1,677,582.48		
Puma Fed 34N-35HZ_D	0.00	0.00	0.00	15.12	14,537,743.52	1,678,202.15	40.030157 -104.865017
- plan misses target center by 15.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Polygon							
Point 1	0.00	-10,387.46	-1,042.85	14,527,354.49	1,677,175.04		
Point 2	0.00	-9,988.43	-1,045.40	14,527,753.52	1,677,171.88		
Point 3	0.00	-9,528.43	-1,048.36	14,528,213.51	1,677,168.23		
Point 4	0.00	-9,068.43	-1,051.31	14,528,673.51	1,677,164.58		
Point 5	0.00	-8,669.41	-1,053.87	14,529,072.52	1,677,161.42		
Point 6	0.00	-8,209.41	-1,056.83	14,529,532.52	1,677,157.76		
Point 7	0.00	-7,749.42	-1,059.95	14,529,992.50	1,677,153.94		
Point 8	0.00	-7,350.51	-1,062.66	14,530,391.41	1,677,150.63		
Point 9	0.00	-6,890.52	-1,065.79	14,530,851.39	1,677,146.80		
Point 10	0.00	-6,430.52	-1,068.91	14,531,311.39	1,677,142.98		
Point 11	0.00	-6,031.63	-1,071.63	14,531,710.27	1,677,139.66		
Point 12	0.00	-5,571.63	-1,074.75	14,532,170.27	1,677,135.84		
Point 13	0.00	-5,111.63	-1,075.87	14,532,630.26	1,677,134.03		
Point 14	0.00	-4,712.52	-1,076.86	14,533,029.37	1,677,132.43		
Point 15	0.00	-4,252.53	-1,077.98	14,533,489.36	1,677,130.62		
Point 16	0.00	-3,792.52	-1,079.13	14,533,949.37	1,677,128.77		
Point 17	0.00	-3,393.41	-1,080.14	14,534,348.48	1,677,127.15		
Point 18	0.00	-2,933.41	-1,081.29	14,534,808.47	1,677,125.31		
Point 19	0.00	-2,473.41	-1,082.41	14,535,268.47	1,677,123.49		
Point 20	0.00	-2,073.46	-1,083.39	14,535,668.42	1,677,121.90		
Point 21	0.00	-1,613.47	-1,084.52	14,536,128.41	1,677,120.08		
Point 22	0.00	-1,153.47	-1,085.64	14,536,588.41	1,677,118.26		
Point 23	0.00	-753.53	-1,086.62	14,536,988.34	1,677,116.68		
Point 24	0.00	-293.54	-1,087.75	14,537,448.33	1,677,114.85		
Point 25	0.00	166.47	-1,088.51	14,537,908.34	1,677,113.39		
Point 26	0.00	565.30	-1,089.17	14,538,307.17	1,677,112.13		
Point 27	0.00	566.60	-629.18	14,538,309.17	1,677,572.11		
Point 28	0.00	565.51	-169.17	14,538,308.77	1,678,032.13		
Point 29	0.00	168.02	-168.51	14,537,911.28	1,678,033.39		
Point 30	0.00	-291.98	-167.75	14,537,451.28	1,678,034.84		
Point 31	0.00	-751.98	-166.62	14,536,991.29	1,678,036.67		
Point 32	0.00	-1,152.13	-165.64	14,536,591.14	1,678,038.26		
Point 33	0.00	-1,612.14	-164.52	14,536,131.13	1,678,040.07		
Point 34	0.00	-2,072.13	-163.40	14,535,671.14	1,678,041.89		
Point 35	0.00	-2,472.28	-162.41	14,535,271.00	1,678,043.49		
Point 36	0.00	-2,932.28	-161.29	14,534,811.00	1,678,045.30		
Point 37	0.00	-3,392.29	-160.14	14,534,350.99	1,678,047.15		
Point 38	0.00	-3,791.07	-159.14	14,533,952.21	1,678,048.76		
Point 39	0.00	-4,251.06	-157.99	14,533,492.22	1,678,050.60		
Point 40	0.00	-4,711.06	-156.85	14,533,032.23	1,678,052.44		
Point 41	0.00	-5,110.23	-155.88	14,532,633.06	1,678,054.01		
Point 42	0.00	-5,570.23	-154.74	14,532,173.06	1,678,055.85		
Point 43	0.00	-6,030.23	-151.61	14,531,713.07	1,678,059.68		
Point 44	0.00	-6,429.68	-148.90	14,531,313.62	1,678,062.99		
Point 45	0.00	-6,889.67	-145.78	14,530,853.64	1,678,066.81		
Point 46	0.00	-7,349.68	-142.64	14,530,393.63	1,678,070.65		
Point 47	0.00	-7,749.12	-139.93	14,529,994.20	1,678,073.96		
Point 48	0.00	-8,209.13	-136.81	14,529,534.19	1,678,077.78		
Point 49	0.00	-8,669.12	-133.85	14,529,074.21	1,678,081.43		
Point 50	0.00	-9,067.92	-131.30	14,528,675.41	1,678,084.59		
Point 51	0.00	-9,527.92	-128.34	14,528,215.42	1,678,088.25		
Point 52	0.00	-9,987.92	-125.39	14,527,755.42	1,678,091.89		
Point 53	0.00	-10,386.91	-122.83	14,527,356.43	1,678,095.06		
Point 54	0.00	-10,387.21	-582.84	14,527,355.44	1,677,635.05		
Point 55	0.00	-10,387.46	-1,042.85	14,527,354.49	1,677,175.04		
1N-R67W-Sec. 14_Secti	0.00	0.00	0.00	134.93	14,537,743.70	1,678,321.96	40.030157 -104.864589
- plan misses target center by 134.93usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Polygon							

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34N-35HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA FED 34N-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

Point 1			0.00	10,240.97	-771.13	14,547,983.48	1,677,535.32		
Point 2			0.00	10,241.68	1,854.89	14,547,988.17	1,680,161.34		
Point 3			0.00	10,251.55	4,492.80	14,548,002.03	1,682,799.23		
Point 4			0.00	4,901.92	4,512.15	14,542,652.44	1,682,826.68		
Point 5			0.00	4,948.86	1,873.61	14,542,695.38	1,680,188.07		
Point 6			0.00	4,981.70	-753.18	14,542,724.24	1,677,561.24		
Point 7			0.00	7,611.26	-762.09	14,545,353.79	1,677,548.34		
Puma Fed 34N-35HZ_S	0.00	0.00	0.00	0.00	0.00	14,537,743.50	1,678,187.04	40.030157	-104.865071
- plan hits target center									
- Point									
Puma Fed 34N-35HZ_B	0.00	0.00	7,533.00	-10,379.87	-518.80	14,527,362.85	1,677,683.96	40.001652	-104.866924
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,822.81	1,800.00	9 5/8"		9-5/8	13-1/2
7,881.15	7,497.00	7"		7	8-3/4

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,461.64	-3,564.00	Fox Hills		0.00	
4,739.10	-291.00	Sussex		0.00	
7,334.32	2,267.48	Sharon Springs		0.00	
7,357.06	2,284.48	Niobrara Top		0.00	
7,661.56	2,451.72	Niobrara B Bench		0.00	
7,881.15	2,490.00	Heel:		0.00	
17,696.27	2,526.00	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	
1,133.33	1,124.07	29.37	-109.60	End Nudge @ 1133.33ft	
1,365.33	1,349.18	43.89	-163.81	Begin Drop @ 1365.33ft	
2,065.33	2,042.23	65.92	-246.01	End Drop @ 2065.33ft	
6,883.48	6,860.38	65.92	-246.01	KOP @ 6883.48ft	
7,400.00	7,322.07	-132.31	-251.18	DLS = 9°/100'	
7,881.15	7,497.00	-568.15	-262.57	End Build @ 7881.15ft	
17,696.28	7,533.00	-10,379.87	-518.80	TD Well @ 17696.28ft	