

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 13-13HZ
AZUL 13-1HZ**

Plan A

Plan: Permit Rev-2

Standard Planning Report

05 July, 2017



Azimuths to True North
Magnetic North: 8.01°

Magnetic Field
Strength: 52317.9snT
Dip Angle: 66.56°
Date: 6/8/2017
Model: IGRF2010

SITE: 1N-66W-13 AZUL 13-13HZ

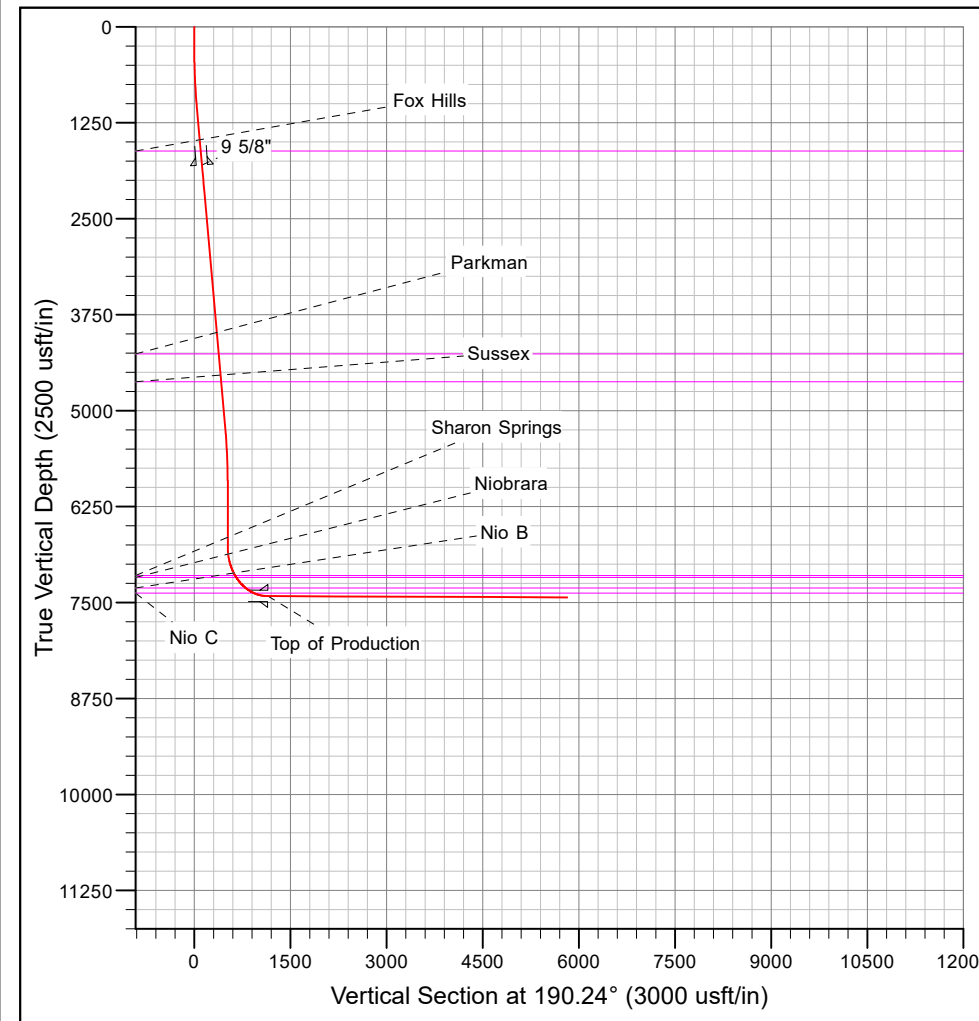
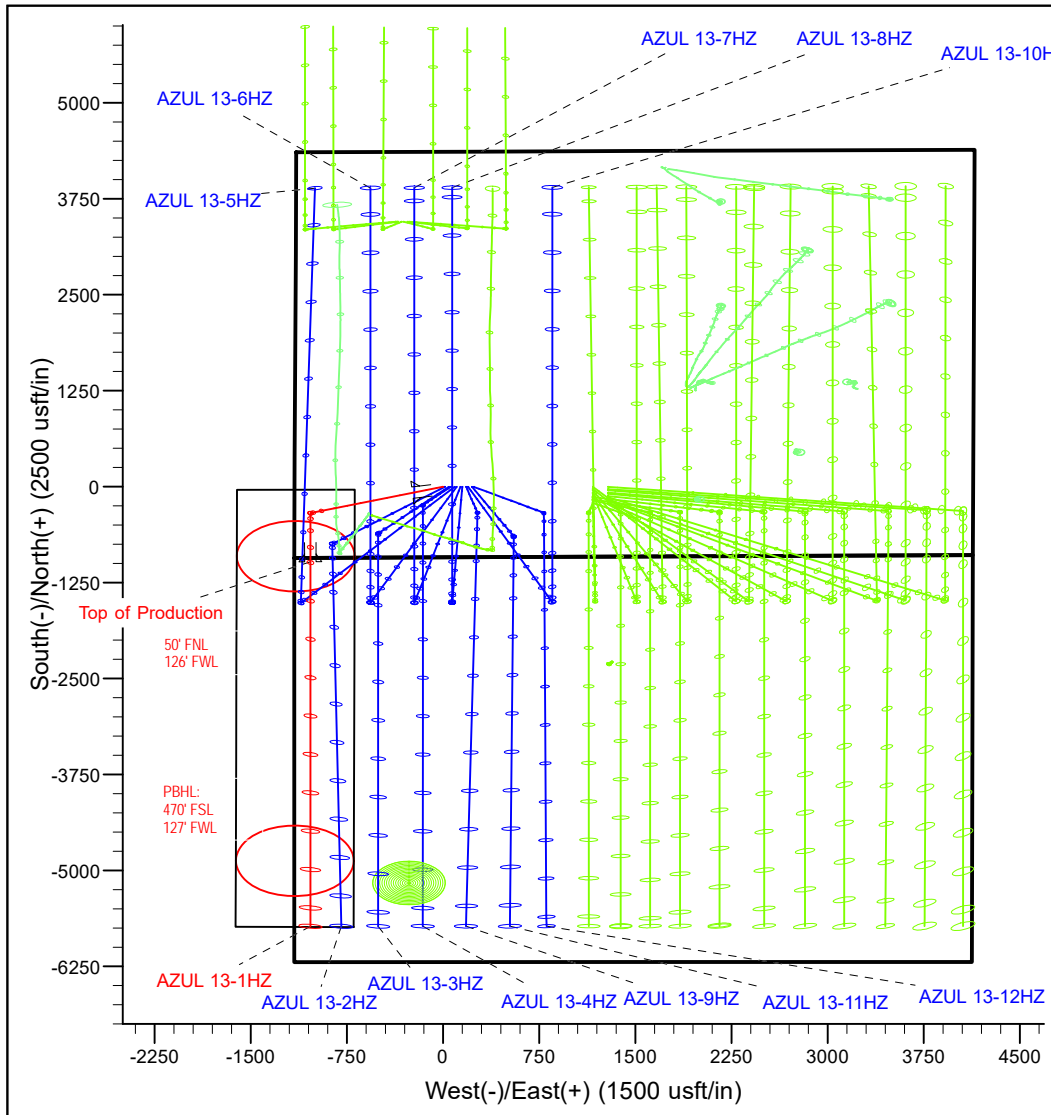
Well: AZUL 13-1HZ
Wellbore: Plan A
Design: Permit Rev-2

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1619.00	1638.79	Fox Hills
4260.00	4344.08	Parkman
4624.00	4716.94	Sussex
7148.00	7285.13	Sharon Springs
7174.00	7317.57	Niobrara
7311.00	7520.40	Nio B
7378.00	7668.80	Nio C

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-1HZ_PBHL	7433.00	-5726.13	-1034.74	14538066.00	1714735.00	40.030817	-104.734506

WELL DETAILS: AZUL 13-1HZ					
	GL: 5071.00	RKB @ 5088.00usft (D Rig)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14543795.23	1715752.42	40.046542	-104.730810

SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00
1084.37	12.52	251.61	1077.75	-28.63	-86.13	1.50	43.49
5278.54	12.52	251.61	5172.25	-315.37	-948.61	0.00	479.03
6112.90	0.00	0.00	6000.00	-344.00	-1034.74	1.50	522.52
6893.54	0.00	0.00	6780.64	-344.00	-1034.74	0.00	522.52
7891.43	89.81	180.00	7417.26	-978.51	-1034.74	9.00	1146.92
12639.08	89.81	180.00	7433.00	-5726.13	-1034.74	0.00	5818.87



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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-66W-13 AZUL 13-13HZ				
Site Position:		Northing:	14,543,795.23 usft	Latitude:	40.046542
From:	Lat/Long	Easting:	1,715,752.42 usft	Longitude:	-104.730810
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well	AZUL 13-1HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,543,795.23 usft	Latitude:	40.046542
	+E/-W	0.00 usft	Easting:	1,715,752.42 usft	Longitude:	-104.730810
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,071.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/8/2017	8.01	66.56	52,317.90598744

Design	Permit Rev-2			
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	190.24

Plan Survey Tool Program	Date	7/5/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,639.08	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declination

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,084.37	12.52	251.61	1,077.75	-28.63	-86.13	1.50	1.50	0.00	251.61	
5,278.54	12.52	251.61	5,172.25	-315.37	-948.61	0.00	0.00	0.00	0.00	
6,112.90	0.00	0.00	6,000.00	-344.00	-1,034.74	1.50	-1.50	0.00	180.00	
6,893.54	0.00	0.00	6,780.64	-344.00	-1,034.74	0.00	0.00	0.00	0.00	
7,891.43	89.81	180.00	7,417.26	-978.51	-1,034.74	9.00	9.00	0.00	180.00	
12,639.08	89.81	180.00	7,433.00	-5,726.13	-1,034.74	0.00	0.00	0.00	0.00	AZUL 13-1HZ_PBHL

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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
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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	251.61	300.00	-0.10	-0.31	0.16	1.50	1.50	0.00
400.00	2.25	251.61	399.96	-0.93	-2.79	1.41	1.50	1.50	0.00
500.00	3.75	251.61	499.82	-2.58	-7.76	3.92	1.50	1.50	0.00
600.00	5.25	251.61	599.51	-5.06	-15.21	7.68	1.50	1.50	0.00
700.00	6.75	251.61	698.96	-8.35	-25.12	12.69	1.50	1.50	0.00
800.00	8.25	251.61	798.10	-12.47	-37.51	18.94	1.50	1.50	0.00
900.00	9.75	251.61	896.87	-17.41	-52.35	26.44	1.50	1.50	0.00
1,000.00	11.25	251.61	995.19	-23.15	-69.65	35.17	1.50	1.50	0.00
1,084.37	12.52	251.61	1,077.75	-28.63	-86.13	43.49	1.50	1.50	0.00
1,100.00	12.52	251.61	1,093.01	-29.70	-89.35	45.12	0.00	0.00	0.00
1,200.00	12.52	251.61	1,190.63	-36.54	-109.91	55.50	0.00	0.00	0.00
1,300.00	12.52	251.61	1,288.26	-43.38	-130.47	65.89	0.00	0.00	0.00
1,400.00	12.52	251.61	1,385.88	-50.21	-151.04	76.27	0.00	0.00	0.00
1,500.00	12.52	251.61	1,483.50	-57.05	-171.60	86.65	0.00	0.00	0.00
1,600.00	12.52	251.61	1,581.13	-63.89	-192.16	97.04	0.00	0.00	0.00
1,638.79	12.52	251.61	1,619.00	-66.54	-200.14	101.07	0.00	0.00	0.00
Fox Hills									
1,700.00	12.52	251.61	1,678.75	-70.72	-212.73	107.42	0.00	0.00	0.00
1,800.00	12.52	251.61	1,776.38	-77.56	-233.29	117.81	0.00	0.00	0.00
1,824.20	12.52	251.61	1,800.00	-79.21	-238.27	120.32	0.00	0.00	0.00
9 5/8"									
1,900.00	12.52	251.61	1,874.00	-84.39	-253.86	128.19	0.00	0.00	0.00
2,000.00	12.52	251.61	1,971.62	-91.23	-274.42	138.58	0.00	0.00	0.00
2,100.00	12.52	251.61	2,069.25	-98.07	-294.98	148.96	0.00	0.00	0.00
2,200.00	12.52	251.61	2,166.87	-104.90	-315.55	159.34	0.00	0.00	0.00
2,300.00	12.52	251.61	2,264.49	-111.74	-336.11	169.73	0.00	0.00	0.00
2,400.00	12.52	251.61	2,362.12	-118.58	-356.67	180.11	0.00	0.00	0.00
2,500.00	12.52	251.61	2,459.74	-125.41	-377.24	190.50	0.00	0.00	0.00
2,600.00	12.52	251.61	2,557.37	-132.25	-397.80	200.88	0.00	0.00	0.00
2,700.00	12.52	251.61	2,654.99	-139.09	-418.37	211.26	0.00	0.00	0.00
2,800.00	12.52	251.61	2,752.61	-145.92	-438.93	221.65	0.00	0.00	0.00
2,900.00	12.52	251.61	2,850.24	-152.76	-459.49	232.03	0.00	0.00	0.00
3,000.00	12.52	251.61	2,947.86	-159.60	-480.06	242.42	0.00	0.00	0.00
3,100.00	12.52	251.61	3,045.48	-166.43	-500.62	252.80	0.00	0.00	0.00
3,200.00	12.52	251.61	3,143.11	-173.27	-521.18	263.19	0.00	0.00	0.00
3,300.00	12.52	251.61	3,240.73	-180.10	-541.75	273.57	0.00	0.00	0.00
3,400.00	12.52	251.61	3,338.36	-186.94	-562.31	283.95	0.00	0.00	0.00
3,500.00	12.52	251.61	3,435.98	-193.78	-582.88	294.34	0.00	0.00	0.00
3,600.00	12.52	251.61	3,533.60	-200.61	-603.44	304.72	0.00	0.00	0.00
3,700.00	12.52	251.61	3,631.23	-207.45	-624.00	315.11	0.00	0.00	0.00
3,800.00	12.52	251.61	3,728.85	-214.29	-644.57	325.49	0.00	0.00	0.00
3,900.00	12.52	251.61	3,826.47	-221.12	-665.13	335.88	0.00	0.00	0.00
4,000.00	12.52	251.61	3,924.10	-227.96	-685.69	346.26	0.00	0.00	0.00
4,100.00	12.52	251.61	4,021.72	-234.80	-706.26	356.64	0.00	0.00	0.00
4,200.00	12.52	251.61	4,119.35	-241.63	-726.82	367.03	0.00	0.00	0.00
4,300.00	12.52	251.61	4,216.97	-248.47	-747.39	377.41	0.00	0.00	0.00
4,344.08	12.52	251.61	4,260.00	-251.48	-756.45	381.99	0.00	0.00	0.00
Parkman									
4,400.00	12.52	251.61	4,314.59	-255.31	-767.95	387.80	0.00	0.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
4,500.00	12.52	251.61	4,412.22	-262.14	-788.51	398.18	0.00	0.00	0.00
4,600.00	12.52	251.61	4,509.84	-268.98	-809.08	408.56	0.00	0.00	0.00
4,700.00	12.52	251.61	4,607.46	-275.81	-829.64	418.95	0.00	0.00	0.00
4,716.94	12.52	251.61	4,624.00	-276.97	-833.12	420.71	0.00	0.00	0.00
Sussex									
4,800.00	12.52	251.61	4,705.09	-282.65	-850.20	429.33	0.00	0.00	0.00
4,900.00	12.52	251.61	4,802.71	-289.49	-870.77	439.72	0.00	0.00	0.00
5,000.00	12.52	251.61	4,900.34	-296.32	-891.33	450.10	0.00	0.00	0.00
5,100.00	12.52	251.61	4,997.96	-303.16	-911.90	460.49	0.00	0.00	0.00
5,200.00	12.52	251.61	5,095.58	-310.00	-932.46	470.87	0.00	0.00	0.00
5,278.54	12.52	251.61	5,172.25	-315.37	-948.61	479.03	0.00	0.00	0.00
5,300.00	12.19	251.61	5,193.22	-316.81	-952.97	481.23	1.50	-1.50	0.00
5,400.00	10.69	251.61	5,291.23	-323.07	-971.79	490.73	1.50	-1.50	0.00
5,500.00	9.19	251.61	5,389.72	-328.52	-988.18	499.01	1.50	-1.50	0.00
5,600.00	7.69	251.61	5,488.64	-333.15	-1,002.11	506.04	1.50	-1.50	0.00
5,700.00	6.19	251.61	5,587.90	-336.97	-1,013.58	511.84	1.50	-1.50	0.00
5,800.00	4.69	251.61	5,687.45	-339.96	-1,022.59	516.38	1.50	-1.50	0.00
5,900.00	3.19	251.61	5,787.21	-342.13	-1,029.11	519.68	1.50	-1.50	0.00
6,000.00	1.69	251.61	5,887.11	-343.47	-1,033.16	521.72	1.50	-1.50	0.00
6,100.00	0.19	251.61	5,987.10	-343.99	-1,034.72	522.51	1.50	-1.50	0.00
6,112.90	0.00	0.00	6,000.00	-344.00	-1,034.74	522.52	1.50	-1.50	0.00
6,200.00	0.00	0.00	6,087.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,300.00	0.00	0.00	6,187.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,400.00	0.00	0.00	6,287.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,500.00	0.00	0.00	6,387.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,600.00	0.00	0.00	6,487.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,700.00	0.00	0.00	6,587.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,800.00	0.00	0.00	6,687.10	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,893.54	0.00	0.00	6,780.64	-344.00	-1,034.74	522.52	0.00	0.00	0.00
6,900.00	0.58	180.00	6,787.10	-344.03	-1,034.74	522.55	9.00	9.00	0.00
7,000.00	9.58	180.00	6,886.60	-352.88	-1,034.74	531.26	9.00	9.00	0.00
7,100.00	18.58	180.00	6,983.50	-377.18	-1,034.74	555.18	9.00	9.00	0.00
7,200.00	27.58	180.00	7,075.40	-416.35	-1,034.74	593.71	9.00	9.00	0.00
7,285.13	35.24	180.00	7,148.00	-460.69	-1,034.74	637.35	9.00	9.00	0.00
Sharon Springs									
7,300.00	36.58	180.00	7,160.04	-469.41	-1,034.74	645.93	9.00	9.00	0.00
7,317.57	38.16	180.00	7,174.00	-480.07	-1,034.74	656.42	9.00	9.00	0.00
Niobrara									
7,400.00	45.58	180.00	7,235.34	-535.05	-1,034.74	710.53	9.00	9.00	0.00
7,500.00	54.58	180.00	7,299.45	-611.67	-1,034.74	785.92	9.00	9.00	0.00
7,520.40	56.42	180.00	7,311.00	-628.48	-1,034.74	802.46	9.00	9.00	0.00
Nio B									
7,600.00	63.58	180.00	7,350.77	-697.37	-1,034.74	870.26	9.00	9.00	0.00
7,668.80	69.77	180.00	7,378.00	-760.52	-1,034.74	932.40	9.00	9.00	0.00
Nio C									
7,700.00	72.58	180.00	7,388.07	-790.04	-1,034.74	961.46	9.00	9.00	0.00
7,800.00	81.58	180.00	7,410.40	-887.41	-1,034.74	1,057.27	9.00	9.00	0.00
7,891.43	89.81	180.00	7,417.26	-978.51	-1,034.74	1,146.91	9.00	9.00	0.00
Top of Production									
7,900.00	89.81	180.00	7,417.28	-987.08	-1,034.74	1,155.35	0.00	0.00	0.00
8,000.00	89.81	180.00	7,417.62	-1,087.08	-1,034.74	1,253.75	0.00	0.00	0.00
8,100.00	89.81	180.00	7,417.95	-1,187.08	-1,034.74	1,352.16	0.00	0.00	0.00
8,200.00	89.81	180.00	7,418.28	-1,287.08	-1,034.74	1,450.56	0.00	0.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)	
8,300.00	89.81	180.00	7,418.61	-1,387.07	-1,034.74	1,548.97	0.00	0.00	0.00	
8,400.00	89.81	180.00	7,418.94	-1,487.07	-1,034.74	1,647.38	0.00	0.00	0.00	
8,500.00	89.81	180.00	7,419.27	-1,587.07	-1,034.74	1,745.78	0.00	0.00	0.00	
8,600.00	89.81	180.00	7,419.61	-1,687.07	-1,034.74	1,844.19	0.00	0.00	0.00	
8,700.00	89.81	180.00	7,419.94	-1,787.07	-1,034.74	1,942.59	0.00	0.00	0.00	
8,800.00	89.81	180.00	7,420.27	-1,887.07	-1,034.74	2,041.00	0.00	0.00	0.00	
8,900.00	89.81	180.00	7,420.60	-1,987.07	-1,034.74	2,139.40	0.00	0.00	0.00	
9,000.00	89.81	180.00	7,420.93	-2,087.07	-1,034.74	2,237.81	0.00	0.00	0.00	
9,100.00	89.81	180.00	7,421.26	-2,187.07	-1,034.74	2,336.22	0.00	0.00	0.00	
9,200.00	89.81	180.00	7,421.60	-2,287.07	-1,034.74	2,434.62	0.00	0.00	0.00	
9,300.00	89.81	180.00	7,421.93	-2,387.07	-1,034.74	2,533.03	0.00	0.00	0.00	
9,400.00	89.81	180.00	7,422.26	-2,487.07	-1,034.74	2,631.43	0.00	0.00	0.00	
9,500.00	89.81	180.00	7,422.59	-2,587.07	-1,034.74	2,729.84	0.00	0.00	0.00	
9,600.00	89.81	180.00	7,422.92	-2,687.07	-1,034.74	2,828.24	0.00	0.00	0.00	
9,700.00	89.81	180.00	7,423.25	-2,787.07	-1,034.74	2,926.65	0.00	0.00	0.00	
9,800.00	89.81	180.00	7,423.59	-2,887.07	-1,034.74	3,025.06	0.00	0.00	0.00	
9,900.00	89.81	180.00	7,423.92	-2,987.07	-1,034.74	3,123.46	0.00	0.00	0.00	
10,000.00	89.81	180.00	7,424.25	-3,087.07	-1,034.74	3,221.87	0.00	0.00	0.00	
10,100.00	89.81	180.00	7,424.58	-3,187.06	-1,034.74	3,320.27	0.00	0.00	0.00	
10,200.00	89.81	180.00	7,424.91	-3,287.06	-1,034.74	3,418.68	0.00	0.00	0.00	
10,300.00	89.81	180.00	7,425.24	-3,387.06	-1,034.74	3,517.08	0.00	0.00	0.00	
10,400.00	89.81	180.00	7,425.58	-3,487.06	-1,034.74	3,615.49	0.00	0.00	0.00	
10,500.00	89.81	180.00	7,425.91	-3,587.06	-1,034.74	3,713.89	0.00	0.00	0.00	
10,600.00	89.81	180.00	7,426.24	-3,687.06	-1,034.74	3,812.30	0.00	0.00	0.00	
10,700.00	89.81	180.00	7,426.57	-3,787.06	-1,034.74	3,910.71	0.00	0.00	0.00	
10,800.00	89.81	180.00	7,426.90	-3,887.06	-1,034.74	4,009.11	0.00	0.00	0.00	
10,900.00	89.81	180.00	7,427.23	-3,987.06	-1,034.74	4,107.52	0.00	0.00	0.00	
11,000.00	89.81	180.00	7,427.56	-4,087.06	-1,034.74	4,205.92	0.00	0.00	0.00	
11,100.00	89.81	180.00	7,427.90	-4,187.06	-1,034.74	4,304.33	0.00	0.00	0.00	
11,200.00	89.81	180.00	7,428.23	-4,287.06	-1,034.74	4,402.73	0.00	0.00	0.00	
11,300.00	89.81	180.00	7,428.56	-4,387.06	-1,034.74	4,501.14	0.00	0.00	0.00	
11,400.00	89.81	180.00	7,428.89	-4,487.06	-1,034.74	4,599.55	0.00	0.00	0.00	
11,500.00	89.81	180.00	7,429.22	-4,587.06	-1,034.74	4,697.95	0.00	0.00	0.00	
11,600.00	89.81	180.00	7,429.55	-4,687.06	-1,034.74	4,796.36	0.00	0.00	0.00	
11,700.00	89.81	180.00	7,429.89	-4,787.06	-1,034.74	4,894.76	0.00	0.00	0.00	
11,800.00	89.81	180.00	7,430.22	-4,887.06	-1,034.74	4,993.17	0.00	0.00	0.00	
11,900.00	89.81	180.00	7,430.55	-4,987.06	-1,034.74	5,091.57	0.00	0.00	0.00	
12,000.00	89.81	180.00	7,430.88	-5,087.05	-1,034.74	5,189.98	0.00	0.00	0.00	
12,100.00	89.81	180.00	7,431.21	-5,187.05	-1,034.74	5,288.39	0.00	0.00	0.00	
12,200.00	89.81	180.00	7,431.54	-5,287.05	-1,034.74	5,386.79	0.00	0.00	0.00	
12,300.00	89.81	180.00	7,431.88	-5,387.05	-1,034.74	5,485.20	0.00	0.00	0.00	
12,400.00	89.81	180.00	7,432.21	-5,487.05	-1,034.74	5,583.60	0.00	0.00	0.00	
12,500.00	89.81	180.00	7,432.54	-5,587.05	-1,034.74	5,682.01	0.00	0.00	0.00	
12,600.00	89.81	180.00	7,432.87	-5,687.05	-1,034.74	5,780.41	0.00	0.00	0.00	
12,639.08	89.81	180.00	7,433.00	-5,726.13	-1,034.74	5,818.87	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
AZUL 13-1HZ_PHL	0.00	0.00	7,416.93	-881.51	-1,034.74	14,542,910.60	1,714,720.35	40.044121	-104.734507
- plan misses target center by 7.37usft at 7795.70usft MD (7409.76 TVD, -883.16 N, -1034.74 E)									
- Point									
AZUL 13-1HZ_PHL FNL	0.00	0.00	7,417.00	-981.51	-1,034.74	14,542,810.59	1,714,720.65	40.043847	-104.734507
- plan misses target center by 0.27usft at 7894.43usft MD (7417.27 TVD, -981.51 N, -1034.74 E)									
- Point									
AZUL 13-1HZ_PBHL	0.00	0.00	7,433.00	-5,726.13	-1,034.74	14,538,066.00	1,714,735.00	40.030817	-104.734507
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
1,824.20	1,800.00	9 5/8"		9-5/8	13-1/2
7,891.43	7,417.26	Top of Production		5-1/2	7-7/8

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(usft)	(usft)				(°)	(°)
1,638.79	1,619.00	Fox Hills				
4,344.08	4,260.00	Parkman				
4,716.94	4,624.00	Sussex				
7,285.13	7,148.00	Sharon Springs				
7,317.57	7,174.00	Niobrara				
7,520.40	7,311.00	Nio B				
7,668.80	7,378.00	Nio C				