

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 13-13HZ
AZUL 13-2HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

12 June, 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 13-2HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1619.00	1644.27	Fox Hills
4260.00	4381.77	Parkman
4624.00	4758.47	Sussex
7120.00	7266.42	Sharon Springs
7146.00	7294.21	Niobrara
7279.00	7446.25	Nio B
7337.00	7520.86	Nio C
7487.00	7776.54	Fort Hayes
7509.00	7835.14	Codell

WELL DETAILS: AZUL 13-2HZ

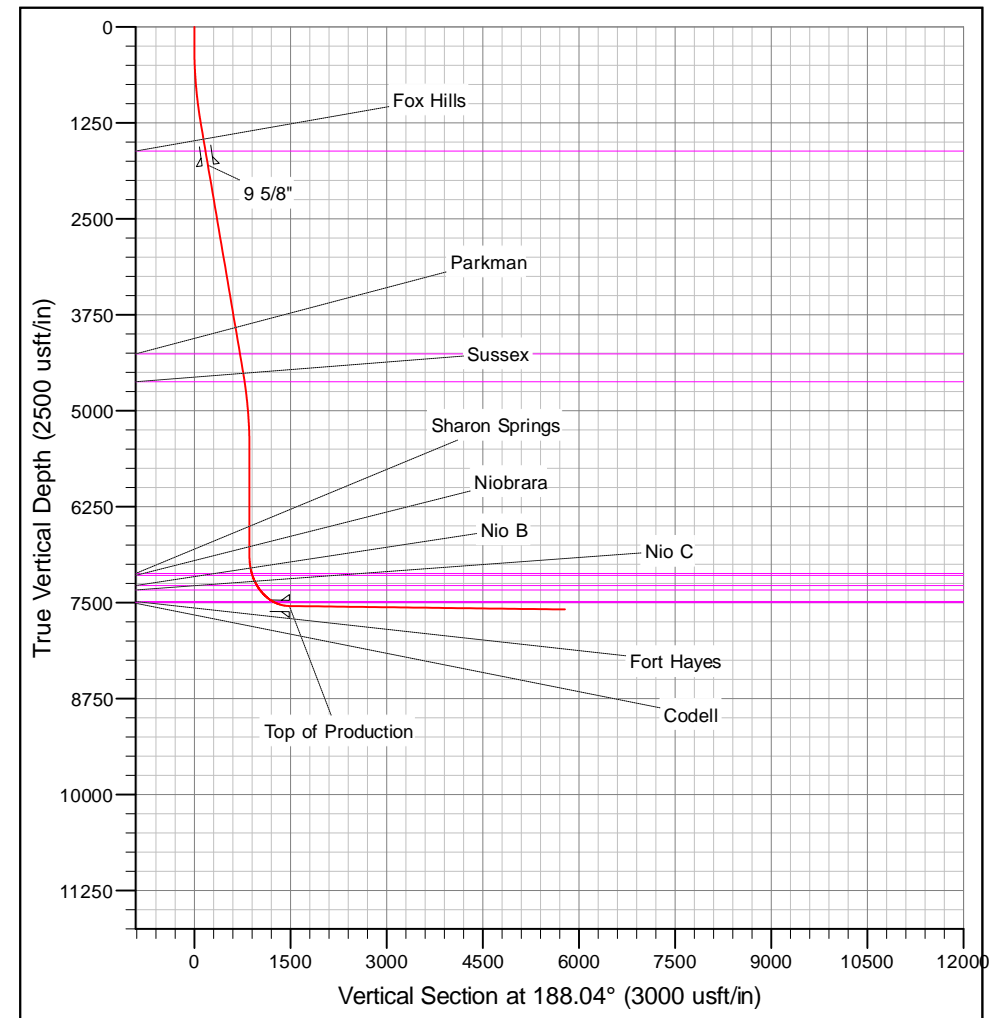
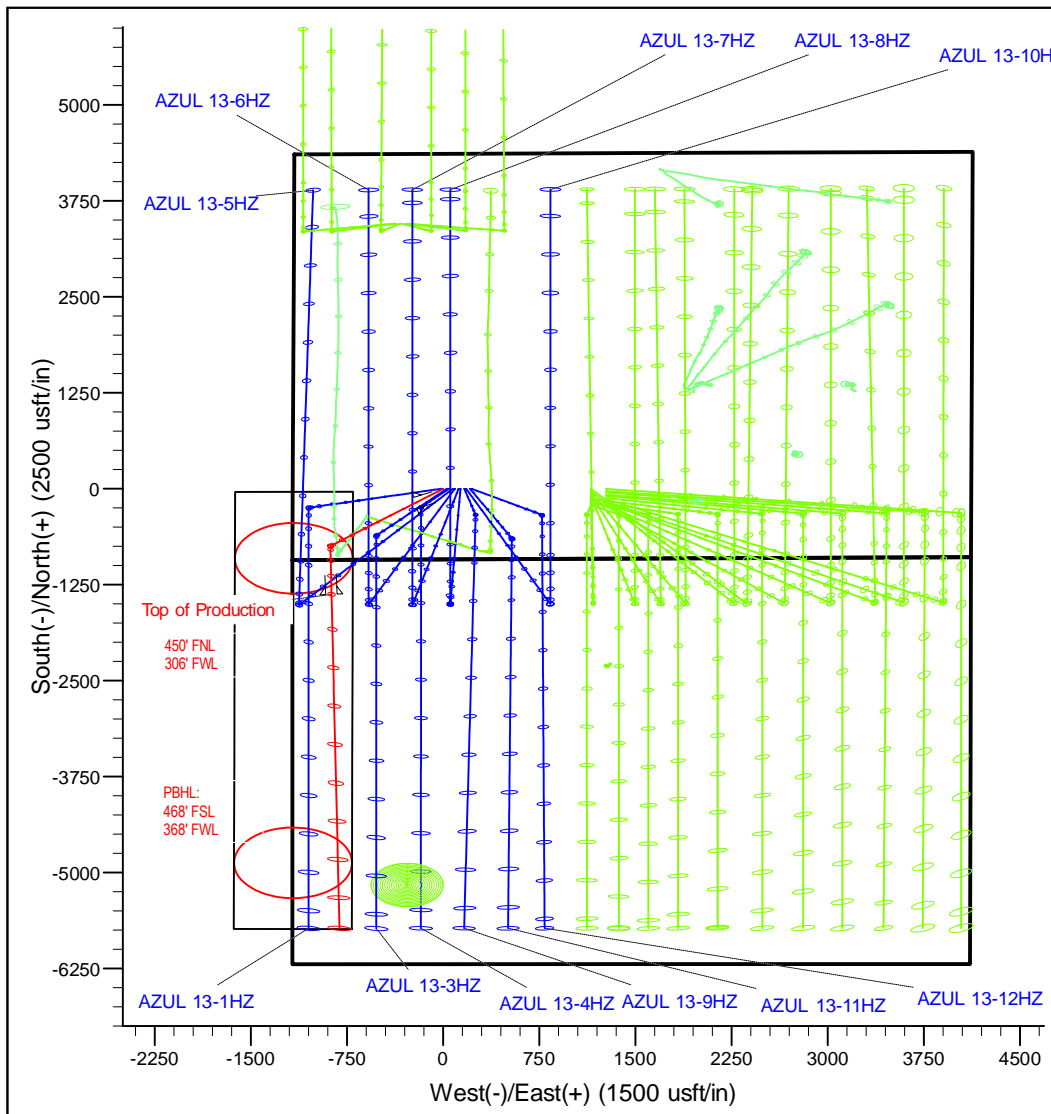
+N/-S	+E/-W	GL: 5071.00	RKB @ 5088.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northing 14543794.91	Easting 1715767.54	Latitude 40.046541	-104.730756

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-2HZ_PBHL	7590.00	-5725.49	-808.85	14538067.00	1714976.00	40.030818	-104.733645

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
1267.23	15.26	229.75	1255.25	-87.00	-102.77	1.50	100.52
4625.10	15.26	229.75	4494.75	-658.00	-777.23	0.00	760.25
5642.33	0.00	0.00	5500.00	-745.00	-880.00	1.50	860.77
7050.94	0.00	0.00	6908.61	-745.00	-880.00	0.00	860.77
8044.39	89.41	179.18	7545.19	-1375.00	-871.00	9.00	483.32
12395.56	89.41	179.18	7590.00	-5725.49	-808.85	0.00	782.35



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-2HZ
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 13-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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 13-2HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,543,794.91 usft	Latitude:	40.046541
	+E/-W	15.11 usft	Easting:	1,715,767.53 usft	Longitude:	-104.730756
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	52,317.91096033

Design	Permit Rev-1			
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	188.04

Plan Survey Tool Program	Date	6/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,395.56	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat

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	
1,267.23	15.26	229.75	1,255.25	-87.00	-102.77	1.50	1.50	0.00	229.75	
4,625.10	15.26	229.75	4,494.75	-658.00	-777.23	0.00	0.00	0.00	0.00	
5,642.33	0.00	0.00	5,500.00	-745.00	-880.00	1.50	-1.50	0.00	180.00	
7,050.94	0.00	0.00	6,908.61	-745.00	-880.00	0.00	0.00	0.00	0.00	
8,044.39	89.41	179.18	7,545.20	-1,375.00	-871.00	9.00	9.00	0.00	179.18	
12,395.56	89.41	179.18	7,590.00	-5,725.49	-808.85	0.00	0.00	0.00	0.00	AZUL 13-2HZ_PBH

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 13-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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
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	229.75	300.00	-0.21	-0.25	0.24	1.50	1.50	0.00
400.00	2.25	229.75	399.96	-1.90	-2.25	2.20	1.50	1.50	0.00
500.00	3.75	229.75	499.82	-5.28	-6.24	6.11	1.50	1.50	0.00
600.00	5.25	229.75	599.51	-10.35	-12.23	11.96	1.50	1.50	0.00
700.00	6.75	229.75	698.96	-17.11	-20.21	19.77	1.50	1.50	0.00
800.00	8.25	229.75	798.10	-25.54	-30.17	29.51	1.50	1.50	0.00
900.00	9.75	229.75	896.87	-35.65	-42.11	41.19	1.50	1.50	0.00
1,000.00	11.25	229.75	995.19	-47.42	-56.02	54.79	1.50	1.50	0.00
1,100.00	12.75	229.75	1,093.00	-60.86	-71.88	70.31	1.50	1.50	0.00
1,200.00	14.25	229.75	1,190.24	-75.94	-89.70	87.74	1.50	1.50	0.00
1,267.23	15.26	229.75	1,255.25	-87.00	-102.77	100.52	1.50	1.50	0.00
1,300.00	15.26	229.75	1,286.86	-92.58	-109.35	106.96	0.00	0.00	0.00
1,400.00	15.26	229.75	1,383.34	-109.58	-129.44	126.61	0.00	0.00	0.00
1,500.00	15.26	229.75	1,479.81	-126.58	-149.52	146.26	0.00	0.00	0.00
1,600.00	15.26	229.75	1,576.29	-143.59	-169.61	165.90	0.00	0.00	0.00
1,644.27	15.26	229.75	1,619.00	-151.12	-178.50	174.60	0.00	0.00	0.00
Fox Hills									
1,700.00	15.26	229.75	1,672.76	-160.59	-189.69	185.55	0.00	0.00	0.00
1,800.00	15.26	229.75	1,769.24	-177.60	-209.78	205.20	0.00	0.00	0.00
1,831.89	15.26	229.75	1,800.00	-183.02	-216.19	211.46	0.00	0.00	0.00
9 5/8"									
1,900.00	15.26	229.75	1,865.71	-194.60	-229.87	224.84	0.00	0.00	0.00
2,000.00	15.26	229.75	1,962.19	-211.61	-249.95	244.49	0.00	0.00	0.00
2,100.00	15.26	229.75	2,058.66	-228.61	-270.04	264.14	0.00	0.00	0.00
2,200.00	15.26	229.75	2,155.14	-245.62	-290.12	283.79	0.00	0.00	0.00
2,300.00	15.26	229.75	2,251.61	-262.62	-310.21	303.43	0.00	0.00	0.00
2,400.00	15.26	229.75	2,348.09	-279.63	-330.30	323.08	0.00	0.00	0.00
2,500.00	15.26	229.75	2,444.56	-296.63	-350.38	342.73	0.00	0.00	0.00
2,600.00	15.26	229.75	2,541.04	-313.64	-370.47	362.37	0.00	0.00	0.00
2,700.00	15.26	229.75	2,637.51	-330.64	-390.55	382.02	0.00	0.00	0.00
2,800.00	15.26	229.75	2,733.99	-347.64	-410.64	401.67	0.00	0.00	0.00
2,900.00	15.26	229.75	2,830.46	-364.65	-430.73	421.32	0.00	0.00	0.00
3,000.00	15.26	229.75	2,926.94	-381.65	-450.81	440.96	0.00	0.00	0.00
3,100.00	15.26	229.75	3,023.41	-398.66	-470.90	460.61	0.00	0.00	0.00
3,200.00	15.26	229.75	3,119.89	-415.66	-490.99	480.26	0.00	0.00	0.00
3,300.00	15.26	229.75	3,216.36	-432.67	-511.07	499.90	0.00	0.00	0.00
3,400.00	15.26	229.75	3,312.84	-449.67	-531.16	519.55	0.00	0.00	0.00
3,500.00	15.26	229.75	3,409.31	-466.68	-551.24	539.20	0.00	0.00	0.00
3,600.00	15.26	229.75	3,505.78	-483.68	-571.33	558.85	0.00	0.00	0.00
3,700.00	15.26	229.75	3,602.26	-500.69	-591.42	578.49	0.00	0.00	0.00
3,800.00	15.26	229.75	3,698.73	-517.69	-611.50	598.14	0.00	0.00	0.00
3,900.00	15.26	229.75	3,795.21	-534.70	-631.59	617.79	0.00	0.00	0.00
4,000.00	15.26	229.75	3,891.68	-551.70	-651.67	637.43	0.00	0.00	0.00
4,100.00	15.26	229.75	3,988.16	-568.71	-671.76	657.08	0.00	0.00	0.00
4,200.00	15.26	229.75	4,084.63	-585.71	-691.85	676.73	0.00	0.00	0.00
4,300.00	15.26	229.75	4,181.11	-602.71	-711.93	696.38	0.00	0.00	0.00
4,381.77	15.26	229.75	4,260.00	-616.62	-728.36	712.44	0.00	0.00	0.00
Parkman									
4,400.00	15.26	229.75	4,277.58	-619.72	-732.02	716.02	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 13-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
4,500.00	15.26	229.75	4,374.06	-636.72	-752.10	735.67	0.00	0.00	0.00
4,600.00	15.26	229.75	4,470.53	-653.73	-772.19	755.32	0.00	0.00	0.00
4,625.10	15.26	229.75	4,494.75	-658.00	-777.23	760.25	0.00	0.00	0.00
4,700.00	14.13	229.75	4,567.20	-670.27	-791.73	774.43	1.50	-1.50	0.00
4,758.47	13.26	229.75	4,624.00	-679.22	-802.30	784.77	1.50	-1.50	0.00
Sussex									
4,800.00	12.63	229.75	4,664.48	-685.23	-809.40	791.72	1.50	-1.50	0.00
4,900.00	11.13	229.75	4,762.33	-698.54	-825.12	807.09	1.50	-1.50	0.00
5,000.00	9.63	229.75	4,860.69	-710.19	-838.88	820.55	1.50	-1.50	0.00
5,100.00	8.13	229.75	4,959.49	-720.16	-850.66	832.08	1.50	-1.50	0.00
5,200.00	6.63	229.75	5,058.65	-728.47	-860.47	841.67	1.50	-1.50	0.00
5,300.00	5.13	229.75	5,158.13	-735.09	-868.30	849.33	1.50	-1.50	0.00
5,400.00	3.63	229.75	5,257.83	-740.03	-874.13	855.04	1.50	-1.50	0.00
5,500.00	2.13	229.75	5,357.70	-743.29	-877.98	858.79	1.50	-1.50	0.00
5,600.00	0.63	229.75	5,457.67	-744.85	-879.82	860.60	1.50	-1.50	0.00
5,642.33	0.00	0.00	5,500.00	-745.00	-880.00	860.77	1.50	-1.50	0.00
5,700.00	0.00	0.00	5,557.67	-745.00	-880.00	860.77	0.00	0.00	0.00
5,800.00	0.00	0.00	5,657.67	-745.00	-880.00	860.77	0.00	0.00	0.00
5,900.00	0.00	0.00	5,757.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,000.00	0.00	0.00	5,857.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,100.00	0.00	0.00	5,957.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,200.00	0.00	0.00	6,057.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,300.00	0.00	0.00	6,157.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,400.00	0.00	0.00	6,257.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,500.00	0.00	0.00	6,357.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,600.00	0.00	0.00	6,457.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,700.00	0.00	0.00	6,557.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,800.00	0.00	0.00	6,657.67	-745.00	-880.00	860.77	0.00	0.00	0.00
6,900.00	0.00	0.00	6,757.67	-745.00	-880.00	860.77	0.00	0.00	0.00
7,000.00	0.00	0.00	6,857.67	-745.00	-880.00	860.77	0.00	0.00	0.00
7,050.94	0.00	0.00	6,908.61	-745.00	-880.00	860.77	0.00	0.00	0.00
7,100.00	4.42	179.18	6,957.62	-746.89	-879.97	862.64	9.00	9.00	0.00
7,200.00	13.42	179.18	7,056.31	-762.37	-879.75	877.94	9.00	9.00	0.00
7,266.42	19.39	179.18	7,120.00	-781.12	-879.48	896.46	9.00	9.00	0.00
Sharon Springs									
7,294.21	21.89	179.18	7,146.00	-790.91	-879.34	906.14	9.00	9.00	0.00
Niobrara									
7,300.00	22.42	179.18	7,151.36	-793.10	-879.31	908.30	9.00	9.00	0.00
7,400.00	31.42	179.18	7,240.44	-838.31	-878.67	952.98	9.00	9.00	0.00
7,446.25	35.58	179.18	7,279.00	-863.83	-878.30	978.20	9.00	9.00	0.00
Nio B									
7,500.00	40.42	179.18	7,321.34	-896.90	-877.83	1,010.88	9.00	9.00	0.00
7,520.86	42.29	179.18	7,337.00	-910.68	-877.63	1,024.49	9.00	9.00	0.00
Nio C									
7,600.00	49.42	179.18	7,392.09	-967.43	-876.82	1,080.57	9.00	9.00	0.00
7,700.00	58.42	179.18	7,450.92	-1,048.15	-875.67	1,160.34	9.00	9.00	0.00
7,776.54	65.30	179.18	7,487.00	-1,115.60	-874.71	1,226.98	9.00	9.00	0.00
Fort Hayes									
7,800.00	67.42	179.18	7,496.41	-1,137.09	-874.40	1,248.22	9.00	9.00	0.00
7,835.14	70.58	179.18	7,509.00	-1,169.88	-873.93	1,280.63	9.00	9.00	0.00
Codell									
7,900.00	76.42	179.18	7,527.42	-1,232.04	-873.04	1,342.05	9.00	9.00	0.00
8,000.00	85.42	179.18	7,543.19	-1,330.67	-871.63	1,439.52	9.00	9.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-2HZ
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 13-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
8,044.39	89.41	179.18	7,545.20	-1,375.00	-871.00	1,483.32	9.00	9.00	0.00
Top of Production - AZUL 13-2HZ_PHL									
8,100.00	89.41	179.18	7,545.77	-1,430.60	-870.21	1,538.27	0.00	0.00	0.00
8,200.00	89.41	179.18	7,546.80	-1,530.59	-868.78	1,637.07	0.00	0.00	0.00
8,300.00	89.41	179.18	7,547.83	-1,630.57	-867.35	1,735.87	0.00	0.00	0.00
8,400.00	89.41	179.18	7,548.86	-1,730.56	-865.92	1,834.67	0.00	0.00	0.00
8,500.00	89.41	179.18	7,549.89	-1,830.54	-864.49	1,933.47	0.00	0.00	0.00
8,600.00	89.41	179.18	7,550.92	-1,930.53	-863.06	2,032.27	0.00	0.00	0.00
8,700.00	89.41	179.18	7,551.95	-2,030.51	-861.64	2,131.08	0.00	0.00	0.00
8,800.00	89.41	179.18	7,552.98	-2,130.50	-860.21	2,229.88	0.00	0.00	0.00
8,900.00	89.41	179.18	7,554.01	-2,230.48	-858.78	2,328.68	0.00	0.00	0.00
9,000.00	89.41	179.18	7,555.04	-2,330.47	-857.35	2,427.48	0.00	0.00	0.00
9,100.00	89.41	179.18	7,556.06	-2,430.45	-855.92	2,526.28	0.00	0.00	0.00
9,200.00	89.41	179.18	7,557.09	-2,530.43	-854.49	2,625.08	0.00	0.00	0.00
9,300.00	89.41	179.18	7,558.12	-2,630.42	-853.07	2,723.89	0.00	0.00	0.00
9,400.00	89.41	179.18	7,559.15	-2,730.40	-851.64	2,822.69	0.00	0.00	0.00
9,500.00	89.41	179.18	7,560.18	-2,830.39	-850.21	2,921.49	0.00	0.00	0.00
9,600.00	89.41	179.18	7,561.21	-2,930.37	-848.78	3,020.29	0.00	0.00	0.00
9,700.00	89.41	179.18	7,562.24	-3,030.36	-847.35	3,119.09	0.00	0.00	0.00
9,800.00	89.41	179.18	7,563.27	-3,130.34	-845.92	3,217.89	0.00	0.00	0.00
9,900.00	89.41	179.18	7,564.30	-3,230.33	-844.50	3,316.70	0.00	0.00	0.00
10,000.00	89.41	179.18	7,565.33	-3,330.31	-843.07	3,415.50	0.00	0.00	0.00
10,100.00	89.41	179.18	7,566.36	-3,430.29	-841.64	3,514.30	0.00	0.00	0.00
10,200.00	89.41	179.18	7,567.39	-3,530.28	-840.21	3,613.10	0.00	0.00	0.00
10,300.00	89.41	179.18	7,568.42	-3,630.26	-838.78	3,711.90	0.00	0.00	0.00
10,400.00	89.41	179.18	7,569.45	-3,730.25	-837.35	3,810.70	0.00	0.00	0.00
10,500.00	89.41	179.18	7,570.48	-3,830.23	-835.93	3,909.51	0.00	0.00	0.00
10,600.00	89.41	179.18	7,571.51	-3,930.22	-834.50	4,008.31	0.00	0.00	0.00
10,700.00	89.41	179.18	7,572.54	-4,030.20	-833.07	4,107.11	0.00	0.00	0.00
10,800.00	89.41	179.18	7,573.57	-4,130.19	-831.64	4,205.91	0.00	0.00	0.00
10,900.00	89.41	179.18	7,574.60	-4,230.17	-830.21	4,304.71	0.00	0.00	0.00
11,000.00	89.41	179.18	7,575.63	-4,330.16	-828.78	4,403.51	0.00	0.00	0.00
11,100.00	89.41	179.18	7,576.66	-4,430.14	-827.36	4,502.32	0.00	0.00	0.00
11,200.00	89.41	179.18	7,577.69	-4,530.12	-825.93	4,601.12	0.00	0.00	0.00
11,300.00	89.41	179.18	7,578.72	-4,630.11	-824.50	4,699.92	0.00	0.00	0.00
11,400.00	89.41	179.18	7,579.75	-4,730.09	-823.07	4,798.72	0.00	0.00	0.00
11,500.00	89.41	179.18	7,580.78	-4,830.08	-821.64	4,897.52	0.00	0.00	0.00
11,600.00	89.41	179.18	7,581.81	-4,930.06	-820.21	4,996.32	0.00	0.00	0.00
11,700.00	89.41	179.18	7,582.84	-5,030.05	-818.79	5,095.13	0.00	0.00	0.00
11,800.00	89.41	179.18	7,583.87	-5,130.03	-817.36	5,193.93	0.00	0.00	0.00
11,900.00	89.41	179.18	7,584.90	-5,230.02	-815.93	5,292.73	0.00	0.00	0.00
12,000.00	89.41	179.18	7,585.93	-5,330.00	-814.50	5,391.53	0.00	0.00	0.00
12,100.00	89.41	179.18	7,586.96	-5,429.98	-813.07	5,490.33	0.00	0.00	0.00
12,200.00	89.41	179.18	7,587.99	-5,529.97	-811.64	5,589.13	0.00	0.00	0.00
12,300.00	89.41	179.18	7,589.02	-5,629.95	-810.22	5,687.94	0.00	0.00	0.00
12,395.56	89.41	179.18	7,590.00	-5,725.49	-808.85	5,782.35	0.00	0.00	0.00
AZUL 13-2HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-2HZ
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 13-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)		
AZUL 13-2HZ_PHL	0.00	0.00	7,545.20	-1,375.00	-871.00	14,542,417.28	1,714,900.70	40.042765	-104.733868
- plan hits target center									
- Point									
AZUL 13-2HZ_PBHL	0.00	0.00	7,590.00	-5,725.49	-808.85	14,538,067.00	1,714,976.00	40.030818	-104.733646
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,831.89	1,800.00	9 5/8"	9-5/8	13-1/2	
8,044.39	7,545.20	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,644.27	1,619.00	Fox Hills				
4,381.77	4,260.00	Parkman				
4,758.47	4,624.00	Sussex				
7,266.42	7,120.00	Sharon Springs				
7,294.21	7,146.00	Niobrara				
7,446.25	7,279.00	Nio B				
7,520.86	7,337.00	Nio C				
7,776.54	7,487.00	Fort Hayes				
7,835.14	7,509.00	Codell				