

# **US ROCKIES WATTENBERG PLANNING**

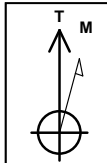
**WELD-NAD83-UTMFT13N  
3N-65W-29 RW 35-29HZ Pad  
RW 38N-31HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**11 January, 2017**



Azimuths to True North  
Magnetic North: 8.06°  
  
Magnetic Field  
Strength: 52443.6snT  
Dip Angle: 66.70°  
Date: 1/4/2017  
Model: IGRF2010

SITE: 3N-65W-29 RW 35-29HZ Pad

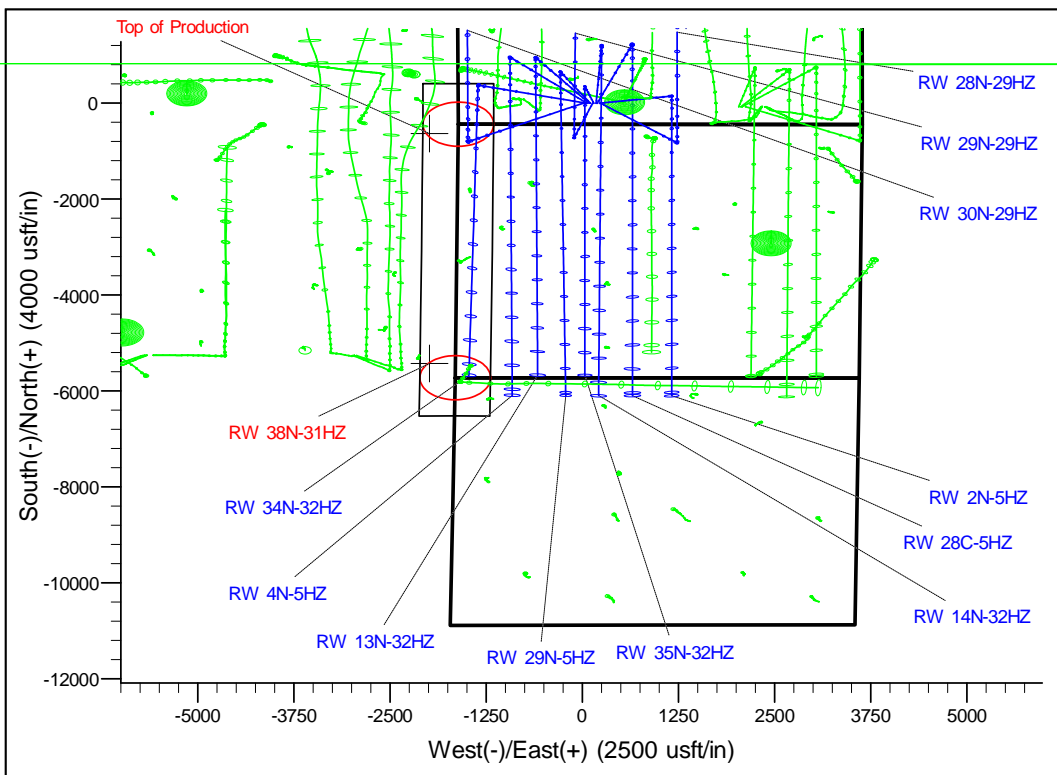
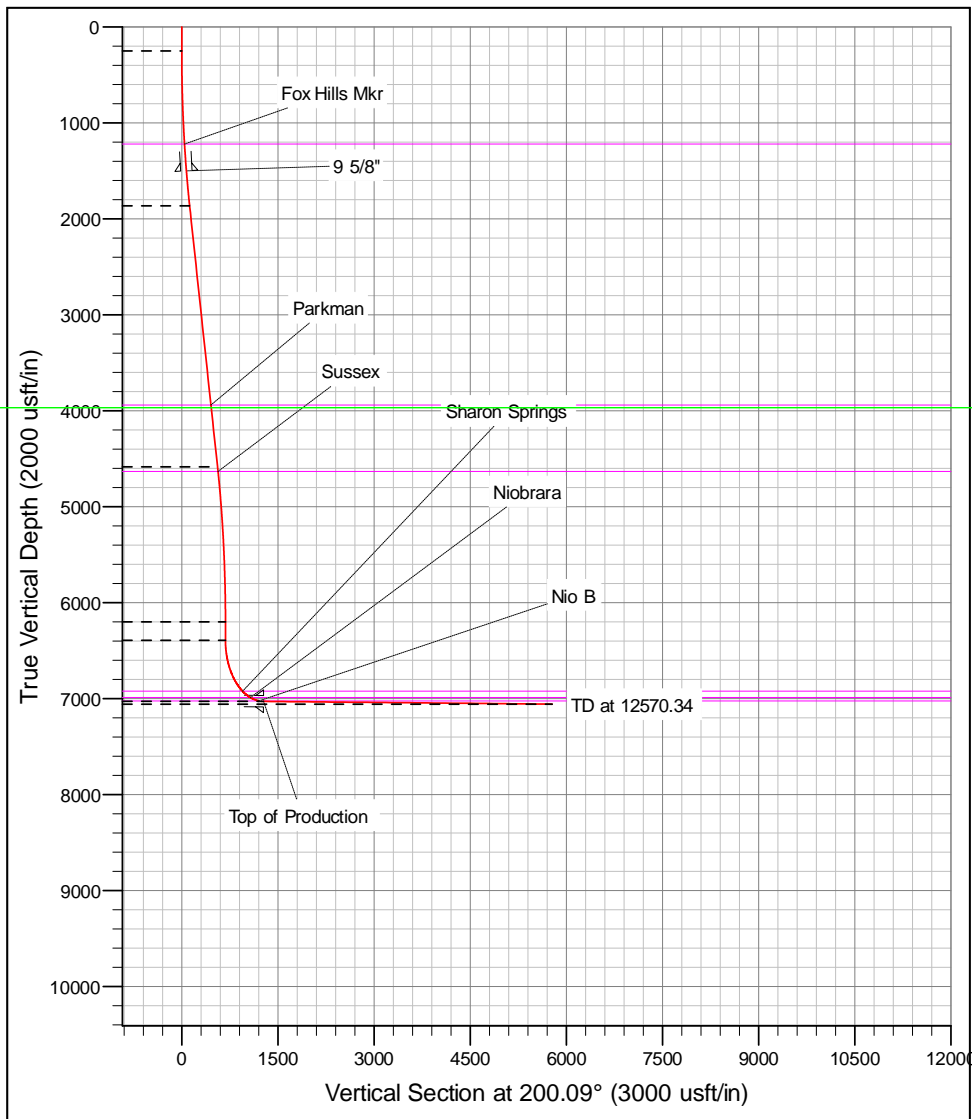
Well: RW 38N-31HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1220.00	1230.74	Fox Hills Mkr
3940.00	4207.03	Parkman
4633.00	4971.53	Sussex
6923.00	7405.45	Sharon Springs
6990.00	7553.53	Niobrara
7024.00	7694.95	Nio B

WELL DETAILS: RW 38N-31HZ						
+N/-S	+E/-W	GL: 4885.00	RKB @ 4902.00usft (D Rig)			Slot
		Northing	Easting	Latitude	Longitude	
0.00	0.00	14596214.62	1726726.18	40.190393	-104.690948	

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
1916.91	25.00	270.00	1864.50	0.00	-357.98	1.50	122.96
4919.28	25.00	270.00	4585.50	0.00	-1627.01	0.00	558.84
6586.19	0.00	0.00	6200.00	0.00	-1984.99	1.50	681.80
6779.13	0.00	0.00	6392.94	0.00	-1984.99	0.00	681.80
7775.35	89.66	180.00	7029.55	-632.84	-1985.00	9.00	1276.15
12570.34	89.66	180.00	7058.00	-5427.74	-1985.09	0.00	5779.36

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RW 38N-31HZ_PBHL	7058.00	-5427.74	-1985.09	14590780.00	1724760.00	40.175488	-104.698054



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 38N-31HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 35-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 38N-31HZ	<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)		

<b>Site</b>	3N-65W-29 RW 35-29HZ Pad		
<b>Site Position:</b>		<b>Northing:</b>	14,596,214.62 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,726,726.18 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.190393
		<b>Longitude:</b>	-104.690948
		<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	RW 38N-31HZ		
<b>Well Position</b>	<b>+N-S</b>	0.00 usft	<b>Northing:</b> 14,596,214.62 usft
	<b>+E-W</b>	0.00 usft	<b>Easting:</b> 1,726,726.18 usft
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b> 40.190393
			<b>Longitude:</b> -104.690948
			<b>Ground Level:</b> 4,885.00 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	1/4/2017	8.06	66.70	52,443.61463120

<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	200.09

<b>Plan Survey Tool Program</b>	Date	1/11/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,570.34	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat

<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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,916.91	25.00	270.00	1,864.50	0.00	-357.98	1.50	1.50	0.00	270.00	
4,919.28	25.00	270.00	4,585.50	0.00	-1,627.01	0.00	0.00	0.00	0.00	
6,586.19	0.00	0.00	6,200.00	0.00	-1,984.99	1.50	-1.50	0.00	180.00	
6,779.13	0.00	0.00	6,392.94	0.00	-1,984.99	0.00	0.00	0.00	0.00	
7,775.35	89.66	180.00	7,029.55	-632.84	-1,985.00	9.00	9.00	0.00	180.00	
12,570.34	89.66	180.00	7,058.00	-5,427.74	-1,985.09	0.00	0.00	0.00	0.00	RW 38N-31HZ_PBI

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 38N-31HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 35-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 38N-31HZ	<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
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	270.00	300.00	0.00	-0.33	0.11	1.50	1.50	0.00
400.00	2.25	270.00	399.96	0.00	-2.94	1.01	1.50	1.50	0.00
500.00	3.75	270.00	499.82	0.00	-8.18	2.81	1.50	1.50	0.00
600.00	5.25	270.00	599.51	0.00	-16.02	5.50	1.50	1.50	0.00
700.00	6.75	270.00	698.96	0.00	-26.48	9.09	1.50	1.50	0.00
800.00	8.25	270.00	798.10	0.00	-39.53	13.58	1.50	1.50	0.00
900.00	9.75	270.00	896.87	0.00	-55.17	18.95	1.50	1.50	0.00
1,000.00	11.25	270.00	995.19	0.00	-73.39	25.21	1.50	1.50	0.00
1,100.00	12.75	270.00	1,093.00	0.00	-94.19	32.35	1.50	1.50	0.00
1,200.00	14.25	270.00	1,190.24	0.00	-117.53	40.37	1.50	1.50	0.00
1,230.74	14.71	270.00	1,220.00	0.00	-125.22	43.01	1.50	1.50	0.00
<b>Fox Hills Mkr</b>									
1,300.00	15.75	270.00	1,286.83	0.00	-143.41	49.26	1.50	1.50	0.00
1,400.00	17.25	270.00	1,382.71	0.00	-171.81	59.01	1.50	1.50	0.00
1,500.00	18.75	270.00	1,477.81	0.00	-202.71	69.63	1.50	1.50	0.00
1,523.46	19.10	270.00	1,500.00	0.00	-210.32	72.24	1.50	1.50	0.00
<b>9 5/8"</b>									
1,600.00	20.25	270.00	1,572.07	0.00	-236.09	81.09	1.50	1.50	0.00
1,700.00	21.75	270.00	1,665.43	0.00	-271.93	93.40	1.50	1.50	0.00
1,800.00	23.25	270.00	1,757.81	0.00	-310.19	106.55	1.50	1.50	0.00
1,900.00	24.75	270.00	1,849.16	0.00	-350.87	120.52	1.50	1.50	0.00
1,916.91	25.00	270.00	1,864.50	0.00	-357.98	122.96	1.50	1.50	0.00
2,000.00	25.00	270.00	1,939.81	0.00	-393.10	135.02	0.00	0.00	0.00
2,100.00	25.00	270.00	2,030.43	0.00	-435.37	149.54	0.00	0.00	0.00
2,200.00	25.00	270.00	2,121.06	0.00	-477.64	164.06	0.00	0.00	0.00
2,300.00	25.00	270.00	2,211.69	0.00	-519.90	178.58	0.00	0.00	0.00
2,400.00	25.00	270.00	2,302.32	0.00	-562.17	193.09	0.00	0.00	0.00
2,500.00	25.00	270.00	2,392.95	0.00	-604.44	207.61	0.00	0.00	0.00
2,600.00	25.00	270.00	2,483.58	0.00	-646.71	222.13	0.00	0.00	0.00
2,700.00	25.00	270.00	2,574.20	0.00	-688.97	236.65	0.00	0.00	0.00
2,800.00	25.00	270.00	2,664.83	0.00	-731.24	251.17	0.00	0.00	0.00
2,900.00	25.00	270.00	2,755.46	0.00	-773.51	265.68	0.00	0.00	0.00
3,000.00	25.00	270.00	2,846.09	0.00	-815.78	280.20	0.00	0.00	0.00
3,100.00	25.00	270.00	2,936.72	0.00	-858.04	294.72	0.00	0.00	0.00
3,200.00	25.00	270.00	3,027.34	0.00	-900.31	309.24	0.00	0.00	0.00
3,300.00	25.00	270.00	3,117.97	0.00	-942.58	323.76	0.00	0.00	0.00
3,400.00	25.00	270.00	3,208.60	0.00	-984.85	338.27	0.00	0.00	0.00
3,500.00	25.00	270.00	3,299.23	0.00	-1,027.11	352.79	0.00	0.00	0.00
3,600.00	25.00	270.00	3,389.86	0.00	-1,069.38	367.31	0.00	0.00	0.00
3,700.00	25.00	270.00	3,480.48	0.00	-1,111.65	381.83	0.00	0.00	0.00
3,800.00	25.00	270.00	3,571.11	0.00	-1,153.92	396.35	0.00	0.00	0.00
3,900.00	25.00	270.00	3,661.74	0.00	-1,196.18	410.86	0.00	0.00	0.00
4,000.00	25.00	270.00	3,752.37	0.00	-1,238.45	425.38	0.00	0.00	0.00
4,100.00	25.00	270.00	3,843.00	0.00	-1,280.72	439.90	0.00	0.00	0.00
4,200.00	25.00	270.00	3,933.62	0.00	-1,322.99	454.42	0.00	0.00	0.00
4,207.03	25.00	270.00	3,940.00	0.00	-1,325.96	455.44	0.00	0.00	0.00
<b>Parkman</b>									
4,300.00	25.00	270.00	4,024.25	0.00	-1,365.25	468.94	0.00	0.00	0.00
4,400.00	25.00	270.00	4,114.88	0.00	-1,407.52	483.45	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 38N-31HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 35-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 38N-31HZ	<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)	
4,500.00	25.00	270.00	4,205.51	0.00	-1,449.79	497.97	0.00	0.00	0.00	
4,600.00	25.00	270.00	4,296.14	0.00	-1,492.06	512.49	0.00	0.00	0.00	
4,700.00	25.00	270.00	4,386.77	0.00	-1,534.32	527.01	0.00	0.00	0.00	
4,800.00	25.00	270.00	4,477.39	0.00	-1,576.59	541.53	0.00	0.00	0.00	
4,900.00	25.00	270.00	4,568.02	0.00	-1,618.86	556.04	0.00	0.00	0.00	
4,919.28	25.00	270.00	4,585.50	0.00	-1,627.01	558.84	0.00	0.00	0.00	
4,971.53	24.22	270.00	4,633.00	0.00	-1,648.77	566.32	1.50	-1.50	0.00	
<b>Sussex</b>										
5,000.00	23.79	270.00	4,659.00	0.00	-1,660.35	570.30	1.50	-1.50	0.00	
5,100.00	22.29	270.00	4,751.02	0.00	-1,699.49	583.74	1.50	-1.50	0.00	
5,200.00	20.79	270.00	4,844.04	0.00	-1,736.21	596.35	1.50	-1.50	0.00	
5,300.00	19.29	270.00	4,937.98	0.00	-1,770.48	608.12	1.50	-1.50	0.00	
5,400.00	17.79	270.00	5,032.78	0.00	-1,802.28	619.05	1.50	-1.50	0.00	
5,500.00	16.29	270.00	5,128.39	0.00	-1,831.59	629.11	1.50	-1.50	0.00	
5,600.00	14.79	270.00	5,224.73	0.00	-1,858.39	638.32	1.50	-1.50	0.00	
5,700.00	13.29	270.00	5,321.74	0.00	-1,882.65	646.65	1.50	-1.50	0.00	
5,800.00	11.79	270.00	5,419.35	0.00	-1,904.37	654.11	1.50	-1.50	0.00	
5,900.00	10.29	270.00	5,517.49	0.00	-1,923.52	660.69	1.50	-1.50	0.00	
6,000.00	8.79	270.00	5,616.11	0.00	-1,940.10	666.38	1.50	-1.50	0.00	
6,100.00	7.29	270.00	5,715.12	0.00	-1,954.09	671.19	1.50	-1.50	0.00	
6,200.00	5.79	270.00	5,814.47	0.00	-1,965.48	675.10	1.50	-1.50	0.00	
6,300.00	4.29	270.00	5,914.08	0.00	-1,974.27	678.12	1.50	-1.50	0.00	
6,400.00	2.79	270.00	6,013.88	0.00	-1,980.45	680.25	1.50	-1.50	0.00	
6,500.00	1.29	270.00	6,113.82	0.00	-1,984.02	681.47	1.50	-1.50	0.00	
6,586.19	0.00	0.00	6,200.00	0.00	-1,984.99	681.80	1.50	-1.50	0.00	
6,600.00	0.00	0.00	6,213.81	0.00	-1,984.99	681.80	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,313.81	0.00	-1,984.99	681.80	0.00	0.00	0.00	
6,779.13	0.00	0.00	6,392.94	0.00	-1,984.99	681.80	0.00	0.00	0.00	
6,800.00	1.88	180.00	6,413.80	-0.34	-1,984.99	682.12	9.00	9.00	0.00	
6,900.00	10.88	180.00	6,513.08	-11.44	-1,984.99	692.55	9.00	9.00	0.00	
7,000.00	19.88	180.00	6,609.40	-37.93	-1,984.99	717.43	9.00	9.00	0.00	
7,100.00	28.88	180.00	6,700.39	-79.17	-1,984.99	756.15	9.00	9.00	0.00	
7,200.00	37.88	180.00	6,783.81	-134.13	-1,984.99	807.77	9.00	9.00	0.00	
7,300.00	46.88	180.00	6,857.61	-201.46	-1,984.99	871.01	9.00	9.00	0.00	
7,400.00	55.88	180.00	6,919.96	-279.51	-1,985.00	944.31	9.00	9.00	0.00	
7,405.45	56.37	180.00	6,923.00	-284.03	-1,985.00	948.56	9.00	9.00	0.00	
<b>Sharon Springs</b>										
7,500.00	64.88	180.00	6,969.34	-366.35	-1,985.00	1,025.87	9.00	9.00	0.00	
7,553.53	69.70	180.00	6,990.00	-415.71	-1,985.00	1,072.22	9.00	9.00	0.00	
<b>Niobrara</b>										
7,600.00	73.88	180.00	7,004.52	-459.84	-1,985.00	1,113.67	9.00	9.00	0.00	
7,694.95	82.42	180.00	7,024.00	-552.69	-1,985.00	1,200.87	9.00	9.00	0.00	
<b>Nio B</b>										
7,700.00	82.88	180.00	7,024.65	-557.69	-1,985.00	1,205.57	9.00	9.00	0.00	
7,775.35	89.66	180.00	7,029.55	-632.84	-1,985.00	1,276.15	9.00	9.00	0.00	
<b>Top of Production - RW 38N-31HZ_PHL</b>										
7,800.00	89.66	180.00	7,029.69	-657.49	-1,985.00	1,299.30	0.00	0.00	0.00	
7,900.00	89.66	180.00	7,030.29	-757.49	-1,985.00	1,393.21	0.00	0.00	0.00	
8,000.00	89.66	180.00	7,030.88	-857.49	-1,985.01	1,487.13	0.00	0.00	0.00	
8,100.00	89.66	180.00	7,031.47	-957.48	-1,985.01	1,581.04	0.00	0.00	0.00	
8,200.00	89.66	180.00	7,032.07	-1,057.48	-1,985.01	1,674.96	0.00	0.00	0.00	
8,300.00	89.66	180.00	7,032.66	-1,157.48	-1,985.01	1,768.87	0.00	0.00	0.00	
8,400.00	89.66	180.00	7,033.25	-1,257.48	-1,985.01	1,862.79	0.00	0.00	0.00	
8,500.00	89.66	180.00	7,033.85	-1,357.48	-1,985.02	1,956.70	0.00	0.00	0.00	

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 38N-31HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 35-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 38N-31HZ	<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)
8,600.00	89.66	180.00	7,034.44	-1,457.48	-1,985.02	2,050.62	0.00	0.00	0.00
8,700.00	89.66	180.00	7,035.03	-1,557.47	-1,985.02	2,144.53	0.00	0.00	0.00
8,800.00	89.66	180.00	7,035.63	-1,657.47	-1,985.02	2,238.45	0.00	0.00	0.00
8,900.00	89.66	180.00	7,036.22	-1,757.47	-1,985.02	2,332.36	0.00	0.00	0.00
9,000.00	89.66	180.00	7,036.81	-1,857.47	-1,985.02	2,426.28	0.00	0.00	0.00
9,100.00	89.66	180.00	7,037.41	-1,957.47	-1,985.03	2,520.19	0.00	0.00	0.00
9,200.00	89.66	180.00	7,038.00	-2,057.47	-1,985.03	2,614.11	0.00	0.00	0.00
9,300.00	89.66	180.00	7,038.59	-2,157.46	-1,985.03	2,708.02	0.00	0.00	0.00
9,400.00	89.66	180.00	7,039.19	-2,257.46	-1,985.03	2,801.94	0.00	0.00	0.00
9,500.00	89.66	180.00	7,039.78	-2,357.46	-1,985.03	2,895.85	0.00	0.00	0.00
9,600.00	89.66	180.00	7,040.37	-2,457.46	-1,985.04	2,989.77	0.00	0.00	0.00
9,700.00	89.66	180.00	7,040.97	-2,557.46	-1,985.04	3,083.68	0.00	0.00	0.00
9,800.00	89.66	180.00	7,041.56	-2,657.45	-1,985.04	3,177.60	0.00	0.00	0.00
9,900.00	89.66	180.00	7,042.15	-2,757.45	-1,985.04	3,271.51	0.00	0.00	0.00
10,000.00	89.66	180.00	7,042.75	-2,857.45	-1,985.04	3,365.43	0.00	0.00	0.00
10,100.00	89.66	180.00	7,043.34	-2,957.45	-1,985.05	3,459.34	0.00	0.00	0.00
10,200.00	89.66	180.00	7,043.93	-3,057.45	-1,985.05	3,553.26	0.00	0.00	0.00
10,300.00	89.66	180.00	7,044.53	-3,157.45	-1,985.05	3,647.17	0.00	0.00	0.00
10,400.00	89.66	180.00	7,045.12	-3,257.44	-1,985.05	3,741.09	0.00	0.00	0.00
10,500.00	89.66	180.00	7,045.71	-3,357.44	-1,985.05	3,835.00	0.00	0.00	0.00
10,600.00	89.66	180.00	7,046.31	-3,457.44	-1,985.05	3,928.92	0.00	0.00	0.00
10,700.00	89.66	180.00	7,046.90	-3,557.44	-1,985.06	4,022.83	0.00	0.00	0.00
10,800.00	89.66	180.00	7,047.49	-3,657.44	-1,985.06	4,116.75	0.00	0.00	0.00
10,900.00	89.66	180.00	7,048.09	-3,757.44	-1,985.06	4,210.66	0.00	0.00	0.00
11,000.00	89.66	180.00	7,048.68	-3,857.43	-1,985.06	4,304.58	0.00	0.00	0.00
11,100.00	89.66	180.00	7,049.28	-3,957.43	-1,985.06	4,398.49	0.00	0.00	0.00
11,200.00	89.66	180.00	7,049.87	-4,057.43	-1,985.07	4,492.41	0.00	0.00	0.00
11,300.00	89.66	180.00	7,050.46	-4,157.43	-1,985.07	4,586.32	0.00	0.00	0.00
11,400.00	89.66	180.00	7,051.06	-4,257.43	-1,985.07	4,680.24	0.00	0.00	0.00
11,500.00	89.66	180.00	7,051.65	-4,357.42	-1,985.07	4,774.15	0.00	0.00	0.00
11,600.00	89.66	180.00	7,052.24	-4,457.42	-1,985.07	4,868.07	0.00	0.00	0.00
11,700.00	89.66	180.00	7,052.84	-4,557.42	-1,985.07	4,961.98	0.00	0.00	0.00
11,800.00	89.66	180.00	7,053.43	-4,657.42	-1,985.08	5,055.90	0.00	0.00	0.00
11,900.00	89.66	180.00	7,054.02	-4,757.42	-1,985.08	5,149.81	0.00	0.00	0.00
12,000.00	89.66	180.00	7,054.62	-4,857.42	-1,985.08	5,243.73	0.00	0.00	0.00
12,100.00	89.66	180.00	7,055.21	-4,957.41	-1,985.08	5,337.64	0.00	0.00	0.00
12,200.00	89.66	180.00	7,055.80	-5,057.41	-1,985.08	5,431.56	0.00	0.00	0.00
12,300.00	89.66	180.00	7,056.40	-5,157.41	-1,985.09	5,525.47	0.00	0.00	0.00
12,400.00	89.66	180.00	7,056.99	-5,257.41	-1,985.09	5,619.39	0.00	0.00	0.00
12,500.00	89.66	180.00	7,057.58	-5,357.41	-1,985.09	5,713.30	0.00	0.00	0.00
12,570.34	89.66	180.00	7,058.00	-5,427.74	-1,985.09	5,779.36	0.00	0.00	0.00

**RW 38N-31HZ\_PBHL**

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 38N-31HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4902.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 35-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 38N-31HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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									
RW 38N-31HZ_PHL - plan hits target center - Point	0.00	0.00	7,029.55	-632.84	-1,985.00	14,595,574.87	1,724,743.40	40.188655	-104.698056
RW 38N-31HZ_PBHL - plan hits target center - Point	0.00	0.00	7,058.00	-5,427.74	-1,985.09	14,590,780.00	1,724,760.00	40.175488	-104.698055

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(")	(")	
1,523.46	1,500.00	9 5/8"	9-5/8	13-1/2	
7,775.35	7,029.55	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
1,230.74	1,220.00	Fox Hills Mkr				
4,207.03	3,940.00	Parkman				
4,971.53	4,633.00	Sussex				
7,405.45	6,923.00	Sharon Springs				
7,553.53	6,990.00	Niobrara				
7,694.95	7,024.00	Nio B				