

# **US ROCKIES WATTENBERG PLANNING**

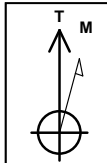
**WELD-NAD83-UTMFT13N  
3N-65W-29 RW 15-29HZ Pad  
RW 37N-32HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**12 December, 2016**



Azimuths to True North  
Magnetic North: 8.06°

Magnetic Field  
Strength: 52452.7snT  
Dip Angle: 66.70°  
Date: 12/6/2016  
Model: IGRF2010

SITE: 3N-65W-29 RW 15-29HZ Pad

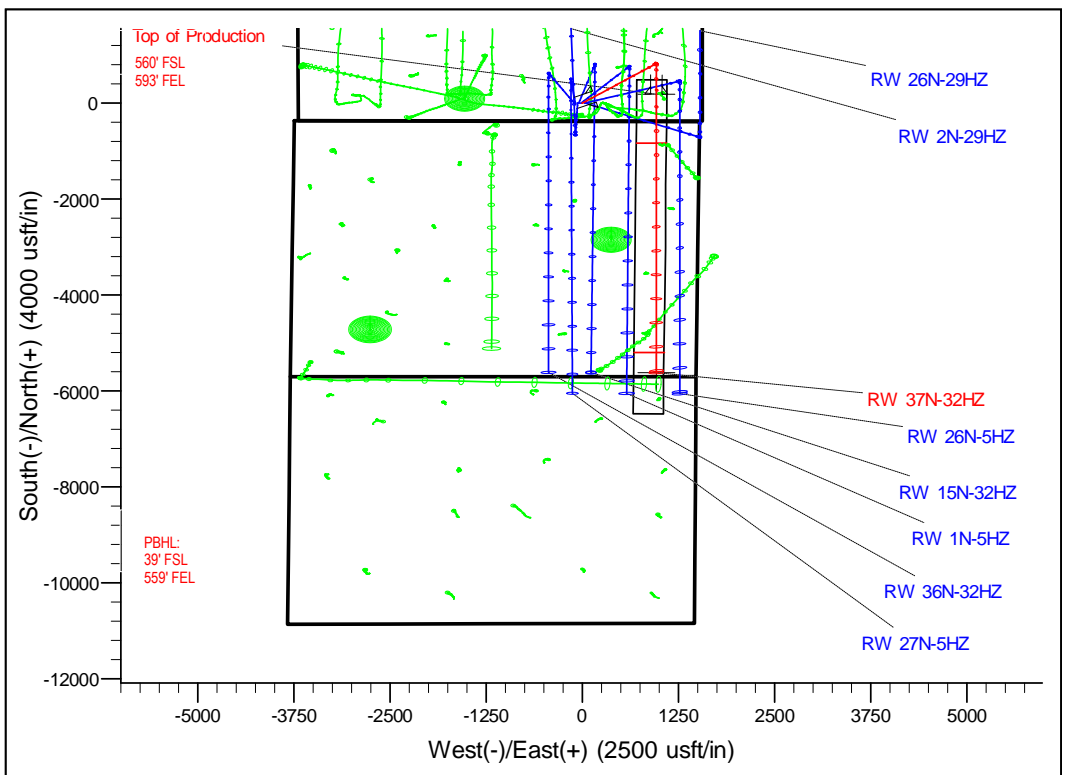
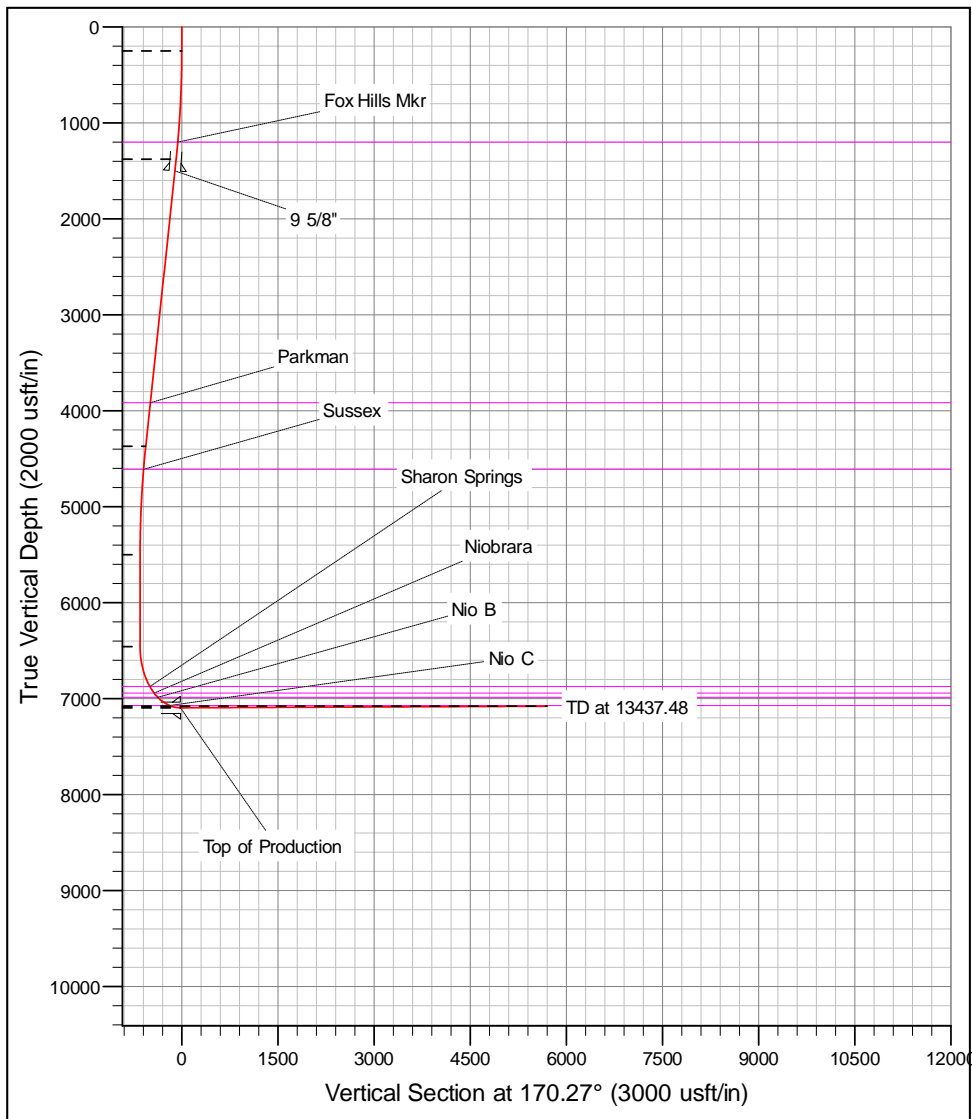
Well: RW 37N-32HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1202.00	1212.14	Fox Hills Mkr
3918.00	4053.94	Parkman
4611.00	4777.04	Sussex
6875.00	7086.44	Sharon Springs
6942.00	7181.28	Niobrara
6986.00	7253.64	Nio B
7073.00	7461.44	Nio C

WELL DETAILS: RW 37N-32HZ						
+N/-S	+E/-W	GL: 4867.00	RKB @ 4884.00usft (D Rig)			
		Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	14596148.02	1728806.19	40.190190	-104.683501	

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
1396.48	17.20	49.44	1379.34	111.04	129.74	1.50	-87.52
4527.79	17.20	49.44	4370.66	713.05	833.09	0.00	-562.03
5674.26	0.00	0.00	5500.00	824.09	962.82	1.50	-649.56
6633.85	0.00	0.00	6459.58	824.09	962.82	0.00	-649.56
7635.63	90.16	180.00	7096.20	185.69	962.82	9.00	-20.34
13437.48	90.16	180.00	7080.00	-5616.14	962.80	0.00	5698.07

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RW 15-29HZ_PBHL	7080.00	-5616.14	962.80	1459535.36	1729789.00	40.174768	-104.680054



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 37N-32HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 15-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 37N-32HZ	<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 15-29HZ Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,596,148.74 usft	<b>Latitude:</b>	40.190193
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,728,701.18 usft	<b>Longitude:</b>	-104.683877
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	RW 37N-32HZ					
<b>Well Position</b>	<b>+N-S</b>	-1.09 usft	<b>Northing:</b>	14,596,148.02 usft	<b>Latitude:</b>	40.190190
	<b>+E-W</b>	105.01 usft	<b>Easting:</b>	1,728,806.19 usft	<b>Longitude:</b>	-104.683501
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,867.00 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	12/6/2016	8.07	66.70	52,452.74585966

<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	170.27

<b>Plan Survey Tool Program</b>	Date	12/12/2016			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	13,437.48	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	
1,396.48	17.20	49.44	1,379.34	111.04	129.74	1.50	1.50	0.00	49.44	
4,527.79	17.20	49.44	4,370.66	713.05	833.09	0.00	0.00	0.00	0.00	
5,674.26	0.00	0.00	5,500.00	824.09	962.82	1.50	-1.50	0.00	180.00	
6,633.85	0.00	0.00	6,459.58	824.09	962.82	0.00	0.00	0.00	0.00	
7,635.63	90.16	180.00	7,096.20	185.69	962.82	9.00	9.00	0.00	180.00	
13,437.48	90.16	180.00	7,080.00	-5,616.14	962.80	0.00	0.00	0.00	0.00	RW 15-29HZ_PBHI

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 37N-32HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 15-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 37N-32HZ	<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	49.44	300.00	0.21	0.25	-0.17	1.50	1.50	0.00
400.00	2.25	49.44	399.96	1.91	2.24	-1.51	1.50	1.50	0.00
500.00	3.75	49.44	499.82	5.32	6.21	-4.19	1.50	1.50	0.00
600.00	5.25	49.44	599.51	10.42	12.17	-8.21	1.50	1.50	0.00
700.00	6.75	49.44	698.96	17.22	20.11	-13.57	1.50	1.50	0.00
800.00	8.25	49.44	798.10	25.70	30.03	-20.26	1.50	1.50	0.00
900.00	9.75	49.44	896.87	35.88	41.92	-28.28	1.50	1.50	0.00
1,000.00	11.25	49.44	995.19	47.73	55.76	-37.62	1.50	1.50	0.00
1,100.00	12.75	49.44	1,093.00	61.24	71.55	-48.27	1.50	1.50	0.00
1,200.00	14.25	49.44	1,190.24	76.42	89.29	-60.24	1.50	1.50	0.00
1,212.14	14.43	49.44	1,202.00	78.38	91.57	-61.78	1.50	1.50	0.00
<b>Fox Hills Mkr</b>									
1,300.00	15.75	49.44	1,286.83	93.25	108.95	-73.50	1.50	1.50	0.00
1,396.48	17.20	49.44	1,379.34	111.04	129.74	-87.52	1.50	1.50	0.00
1,400.00	17.20	49.44	1,382.71	111.72	130.53	-88.06	0.00	0.00	0.00
1,500.00	17.20	49.44	1,478.24	130.95	152.99	-103.21	0.00	0.00	0.00
1,522.78	17.20	49.44	1,500.00	135.33	158.11	-106.66	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	17.20	49.44	1,573.76	150.17	175.45	-118.37	0.00	0.00	0.00
1,700.00	17.20	49.44	1,669.29	169.40	197.91	-133.52	0.00	0.00	0.00
1,800.00	17.20	49.44	1,764.82	188.62	220.37	-148.67	0.00	0.00	0.00
1,900.00	17.20	49.44	1,860.35	207.85	242.84	-163.83	0.00	0.00	0.00
2,000.00	17.20	49.44	1,955.88	227.07	265.30	-178.98	0.00	0.00	0.00
2,100.00	17.20	49.44	2,051.41	246.30	287.76	-194.13	0.00	0.00	0.00
2,200.00	17.20	49.44	2,146.94	265.52	310.22	-209.29	0.00	0.00	0.00
2,300.00	17.20	49.44	2,242.47	284.75	332.68	-224.44	0.00	0.00	0.00
2,400.00	17.20	49.44	2,338.00	303.97	355.15	-239.59	0.00	0.00	0.00
2,500.00	17.20	49.44	2,433.53	323.20	377.61	-254.75	0.00	0.00	0.00
2,600.00	17.20	49.44	2,529.06	342.42	400.07	-269.90	0.00	0.00	0.00
2,700.00	17.20	49.44	2,624.59	361.65	422.53	-285.06	0.00	0.00	0.00
2,800.00	17.20	49.44	2,720.12	380.88	444.99	-300.21	0.00	0.00	0.00
2,900.00	17.20	49.44	2,815.65	400.10	467.46	-315.36	0.00	0.00	0.00
3,000.00	17.20	49.44	2,911.17	419.33	489.92	-330.52	0.00	0.00	0.00
3,100.00	17.20	49.44	3,006.70	438.55	512.38	-345.67	0.00	0.00	0.00
3,200.00	17.20	49.44	3,102.23	457.78	534.84	-360.82	0.00	0.00	0.00
3,300.00	17.20	49.44	3,197.76	477.00	557.30	-375.98	0.00	0.00	0.00
3,400.00	17.20	49.44	3,293.29	496.23	579.76	-391.13	0.00	0.00	0.00
3,500.00	17.20	49.44	3,388.82	515.45	602.23	-406.28	0.00	0.00	0.00
3,600.00	17.20	49.44	3,484.35	534.68	624.69	-421.44	0.00	0.00	0.00
3,700.00	17.20	49.44	3,579.88	553.90	647.15	-436.59	0.00	0.00	0.00
3,800.00	17.20	49.44	3,675.41	573.13	669.61	-451.74	0.00	0.00	0.00
3,900.00	17.20	49.44	3,770.94	592.36	692.07	-466.90	0.00	0.00	0.00
4,000.00	17.20	49.44	3,866.47	611.58	714.54	-482.05	0.00	0.00	0.00
4,053.94	17.20	49.44	3,918.00	621.95	726.65	-490.23	0.00	0.00	0.00
<b>Parkman</b>									
4,100.00	17.20	49.44	3,962.00	630.81	737.00	-497.21	0.00	0.00	0.00
4,200.00	17.20	49.44	4,057.53	650.03	759.46	-512.36	0.00	0.00	0.00
4,300.00	17.20	49.44	4,153.06	669.26	781.92	-527.51	0.00	0.00	0.00
4,400.00	17.20	49.44	4,248.58	688.48	804.38	-542.67	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 37N-32HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 15-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 37N-32HZ	<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	17.20	49.44	4,344.11	707.71	826.85	-557.82	0.00	0.00	0.00	
4,527.79	17.20	49.44	4,370.66	713.05	833.09	-562.03	0.00	0.00	0.00	
4,600.00	16.11	49.44	4,439.84	726.51	848.81	-572.64	1.50	-1.50	0.00	
4,700.00	14.61	49.44	4,536.26	743.74	868.94	-586.22	1.50	-1.50	0.00	
4,777.04	13.46	49.44	4,611.00	755.89	883.13	-595.79	1.50	-1.50	0.00	
<b>Sussex</b>										
4,800.00	13.11	49.44	4,633.35	759.32	887.14	-598.50	1.50	-1.50	0.00	
4,900.00	11.61	49.44	4,731.03	773.24	903.41	-609.47	1.50	-1.50	0.00	
5,000.00	10.11	49.44	4,829.23	785.50	917.73	-619.13	1.50	-1.50	0.00	
5,100.00	8.61	49.44	4,927.90	796.07	930.09	-627.47	1.50	-1.50	0.00	
5,200.00	7.11	49.44	5,026.95	804.97	940.48	-634.48	1.50	-1.50	0.00	
5,300.00	5.61	49.44	5,126.33	812.18	948.90	-640.17	1.50	-1.50	0.00	
5,400.00	4.11	49.44	5,225.97	817.69	955.35	-644.51	1.50	-1.50	0.00	
5,500.00	2.61	49.44	5,325.80	821.51	959.80	-647.52	1.50	-1.50	0.00	
5,600.00	1.11	49.44	5,425.74	823.62	962.27	-649.19	1.50	-1.50	0.00	
5,674.26	0.00	0.00	5,500.00	824.09	962.82	-649.56	1.50	-1.50	0.00	
5,700.00	0.00	0.00	5,525.74	824.09	962.82	-649.56	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,625.74	824.09	962.82	-649.56	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,725.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,825.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,925.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,025.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,125.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,225.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,325.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,425.74	824.09	962.82	-649.56	0.00	0.00	0.00	
6,633.85	0.00	0.00	6,459.58	824.09	962.82	-649.56	0.00	0.00	0.00	
6,700.00	5.95	180.00	6,525.62	820.66	962.82	-646.17	9.00	9.00	0.00	
6,800.00	14.95	180.00	6,623.86	802.53	962.82	-628.31	9.00	9.00	0.00	
6,900.00	23.95	180.00	6,718.05	769.26	962.82	-595.51	9.00	9.00	0.00	
7,000.00	32.95	180.00	6,805.88	721.67	962.82	-548.60	9.00	9.00	0.00	
7,086.44	40.73	180.00	6,875.00	669.88	962.82	-497.56	9.00	9.00	0.00	
<b>Sharon Springs</b>										
7,100.00	41.95	180.00	6,885.18	660.92	962.82	-488.73	9.00	9.00	0.00	
7,181.28	49.27	180.00	6,942.00	602.88	962.82	-431.52	9.00	9.00	0.00	
<b>Niobrara</b>										
7,200.00	50.95	180.00	6,954.01	588.51	962.82	-417.36	9.00	9.00	0.00	
7,253.64	55.78	180.00	6,986.00	545.48	962.82	-374.95	9.00	9.00	0.00	
<b>Nio B</b>										
7,300.00	59.95	180.00	7,010.66	506.23	962.82	-336.26	9.00	9.00	0.00	
7,400.00	68.95	180.00	7,053.74	416.10	962.82	-247.43	9.00	9.00	0.00	
7,461.44	74.48	180.00	7,073.00	357.78	962.82	-189.95	9.00	9.00	0.00	
<b>Nio C</b>										
7,500.00	77.95	180.00	7,082.19	320.34	962.82	-153.04	9.00	9.00	0.00	
7,600.00	86.95	180.00	7,095.30	221.31	962.82	-55.44	9.00	9.00	0.00	
7,635.63	90.16	180.00	7,096.20	185.69	962.82	-20.33	9.00	9.00	0.00	
<b>Top of Production - RW 37N-32HZ_PHL</b>										
7,700.00	90.16	180.00	7,096.02	121.32	962.82	43.11	0.00	0.00	0.00	
7,800.00	90.16	180.00	7,095.74	21.32	962.82	141.67	0.00	0.00	0.00	
7,900.00	90.16	180.00	7,095.46	-78.68	962.82	240.23	0.00	0.00	0.00	
8,000.00	90.16	180.00	7,095.18	-178.68	962.82	338.79	0.00	0.00	0.00	
8,100.00	90.16	180.00	7,094.91	-278.68	962.82	437.36	0.00	0.00	0.00	
8,200.00	90.16	180.00	7,094.63	-378.68	962.82	535.92	0.00	0.00	0.00	

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 37N-32HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 15-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 37N-32HZ	<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)
8,300.00	90.16	180.00	7,094.35	-478.68	962.82	634.48	0.00	0.00	0.00
8,400.00	90.16	180.00	7,094.07	-578.68	962.82	733.04	0.00	0.00	0.00
8,500.00	90.16	180.00	7,093.79	-678.67	962.82	831.60	0.00	0.00	0.00
8,600.00	90.16	180.00	7,093.51	-778.67	962.82	930.16	0.00	0.00	0.00
8,700.00	90.16	180.00	7,093.23	-878.67	962.82	1,028.73	0.00	0.00	0.00
8,800.00	90.16	180.00	7,092.95	-978.67	962.82	1,127.29	0.00	0.00	0.00
8,900.00	90.16	180.00	7,092.67	-1,078.67	962.82	1,225.85	0.00	0.00	0.00
9,000.00	90.16	180.00	7,092.39	-1,178.67	962.82	1,324.41	0.00	0.00	0.00
9,100.00	90.16	180.00	7,092.11	-1,278.67	962.81	1,422.97	0.00	0.00	0.00
9,200.00	90.16	180.00	7,091.83	-1,378.67	962.81	1,521.53	0.00	0.00	0.00
9,300.00	90.16	180.00	7,091.55	-1,478.67	962.81	1,620.10	0.00	0.00	0.00
9,400.00	90.16	180.00	7,091.27	-1,578.67	962.81	1,718.66	0.00	0.00	0.00
9,500.00	90.16	180.00	7,091.00	-1,678.67	962.81	1,817.22	0.00	0.00	0.00
9,600.00	90.16	180.00	7,090.72	-1,778.67	962.81	1,915.78	0.00	0.00	0.00
9,700.00	90.16	180.00	7,090.44	-1,878.67	962.81	2,014.34	0.00	0.00	0.00
9,800.00	90.16	180.00	7,090.16	-1,978.67	962.81	2,112.90	0.00	0.00	0.00
9,900.00	90.16	180.00	7,089.88	-2,078.67	962.81	2,211.47	0.00	0.00	0.00
10,000.00	90.16	180.00	7,089.60	-2,178.67	962.81	2,310.03	0.00	0.00	0.00
10,100.00	90.16	180.00	7,089.32	-2,278.67	962.81	2,408.59	0.00	0.00	0.00
10,200.00	90.16	180.00	7,089.04	-2,378.67	962.81	2,507.15	0.00	0.00	0.00
10,300.00	90.16	180.00	7,088.76	-2,478.67	962.81	2,605.71	0.00	0.00	0.00
10,400.00	90.16	180.00	7,088.48	-2,578.67	962.81	2,704.27	0.00	0.00	0.00
10,500.00	90.16	180.00	7,088.20	-2,678.67	962.81	2,802.84	0.00	0.00	0.00
10,600.00	90.16	180.00	7,087.92	-2,778.67	962.81	2,901.40	0.00	0.00	0.00
10,700.00	90.16	180.00	7,087.64	-2,878.67	962.81	2,999.96	0.00	0.00	0.00
10,800.00	90.16	180.00	7,087.37	-2,978.67	962.81	3,098.52	0.00	0.00	0.00
10,900.00	90.16	180.00	7,087.09	-3,078.67	962.81	3,197.08	0.00	0.00	0.00
11,000.00	90.16	180.00	7,086.81	-3,178.67	962.81	3,295.65	0.00	0.00	0.00
11,100.00	90.16	180.00	7,086.53	-3,278.66	962.81	3,394.21	0.00	0.00	0.00
11,200.00	90.16	180.00	7,086.25	-3,378.66	962.81	3,492.77	0.00	0.00	0.00
11,300.00	90.16	180.00	7,085.97	-3,478.66	962.81	3,591.33	0.00	0.00	0.00
11,400.00	90.16	180.00	7,085.69	-3,578.66	962.81	3,689.89	0.00	0.00	0.00
11,500.00	90.16	180.00	7,085.41	-3,678.66	962.81	3,788.45	0.00	0.00	0.00
11,600.00	90.16	180.00	7,085.13	-3,778.66	962.81	3,887.02	0.00	0.00	0.00
11,700.00	90.16	180.00	7,084.85	-3,878.66	962.81	3,985.58	0.00	0.00	0.00
11,800.00	90.16	180.00	7,084.57	-3,978.66	962.80	4,084.14	0.00	0.00	0.00
11,900.00	90.16	180.00	7,084.29	-4,078.66	962.80	4,182.70	0.00	0.00	0.00
12,000.00	90.16	180.00	7,084.01	-4,178.66	962.80	4,281.26	0.00	0.00	0.00
12,100.00	90.16	180.00	7,083.74	-4,278.66	962.80	4,379.82	0.00	0.00	0.00
12,200.00	90.16	180.00	7,083.46	-4,378.66	962.80	4,478.39	0.00	0.00	0.00
12,300.00	90.16	180.00	7,083.18	-4,478.66	962.80	4,576.95	0.00	0.00	0.00
12,400.00	90.16	180.00	7,082.90	-4,578.66	962.80	4,675.51	0.00	0.00	0.00
12,500.00	90.16	180.00	7,082.62	-4,678.66	962.80	4,774.07	0.00	0.00	0.00
12,600.00	90.16	180.00	7,082.34	-4,778.66	962.80	4,872.63	0.00	0.00	0.00
12,700.00	90.16	180.00	7,082.06	-4,878.66	962.80	4,971.19	0.00	0.00	0.00
12,800.00	90.16	180.00	7,081.78	-4,978.66	962.80	5,069.76	0.00	0.00	0.00
12,900.00	90.16	180.00	7,081.50	-5,078.66	962.80	5,168.32	0.00	0.00	0.00
13,000.00	90.16	180.00	7,081.22	-5,178.66	962.80	5,266.88	0.00	0.00	0.00
13,100.00	90.16	180.00	7,080.94	-5,278.66	962.80	5,365.44	0.00	0.00	0.00
13,200.00	90.16	180.00	7,080.66	-5,378.66	962.80	5,464.00	0.00	0.00	0.00
13,300.00	90.16	180.00	7,080.38	-5,478.66	962.80	5,562.56	0.00	0.00	0.00
13,400.00	90.16	180.00	7,080.10	-5,578.66	962.80	5,661.13	0.00	0.00	0.00
13,437.48	90.16	180.00	7,080.00	-5,616.14	962.80	5,698.07	0.00	0.00	0.00

RW 15-29HZ\_PBHL

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well RW 37N-32HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4884.00usft (D Rig)
<b>Site:</b>	3N-65W-29 RW 15-29HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	RW 37N-32HZ	<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)

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RW 15-29HZ_PBHL - hit/miss target - Shape	0.00	0.00	7,080.00	-5,616.14	962.80	14,590,535.35	1,729,789.00	40.174768	-104.680055
- plan hits target center									
- Point									
RW 37N-32HZ_PHL - plan hits target center - Point	0.00	0.00	7,096.20	185.69	962.82	14,596,337.14	1,729,768.34	40.190700	-104.680054

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,522.78	1,500.00	9 5/8"	9-5/8	13-1/2	
7,635.63	7,096.20	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,212.14	1,202.00	Fox Hills Mkr				
4,053.94	3,918.00	Parkman				
4,777.04	4,611.00	Sussex				
7,086.44	6,875.00	Sharon Springs				
7,181.28	6,942.00	Niobrara				
7,253.64	6,986.00	Nio B				
7,461.44	7,073.00	Nio C				