

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**1N-67W-24 QUARTER CIRCLE 14-24HZ**

**QUARTER CIRCLE 24-7HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**05 April, 2017**



Azimuths to True North  
Magnetic North: 8.09°

Magnetic Field  
Strength: 52318.0snT  
Dip Angle: 66.54°  
Date: 4/3/2017  
Model: IGRF2010

SITE: 1N-67W-24 QUARTER CIRCLE 14-24HZ

Well: QUARTER CIRCLE 24-7HZ  
Wellbore: Plan A  
Design: Permit Rev-1

### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
655.00	655.20	Fox Hills
4158.00	4159.67	Parkman
4958.00	4959.67	Sussex
7175.00	7199.27	Sharon Springs
7189.00	7216.40	Niobrara
7359.00	7468.94	Nio B
7424.00	7628.16	Nio C

### WELL DETAILS: QUARTER CIRCLE 24-7HZ

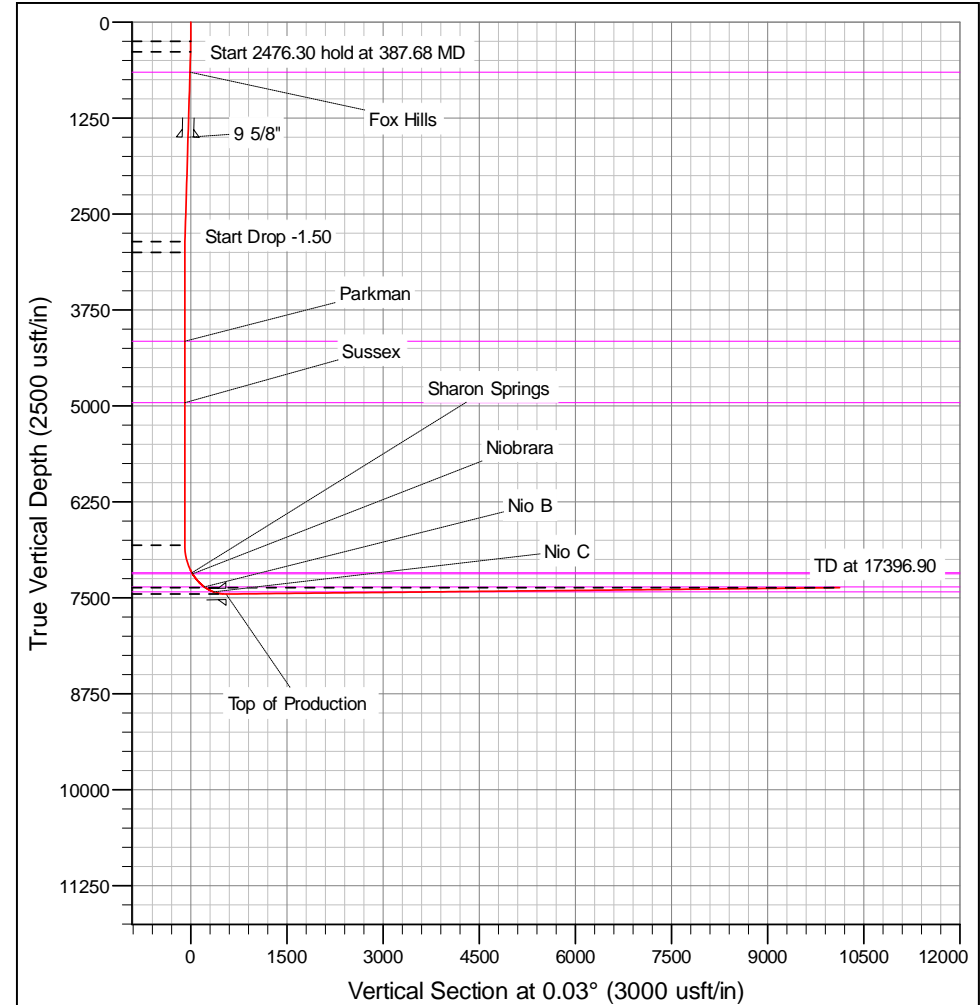
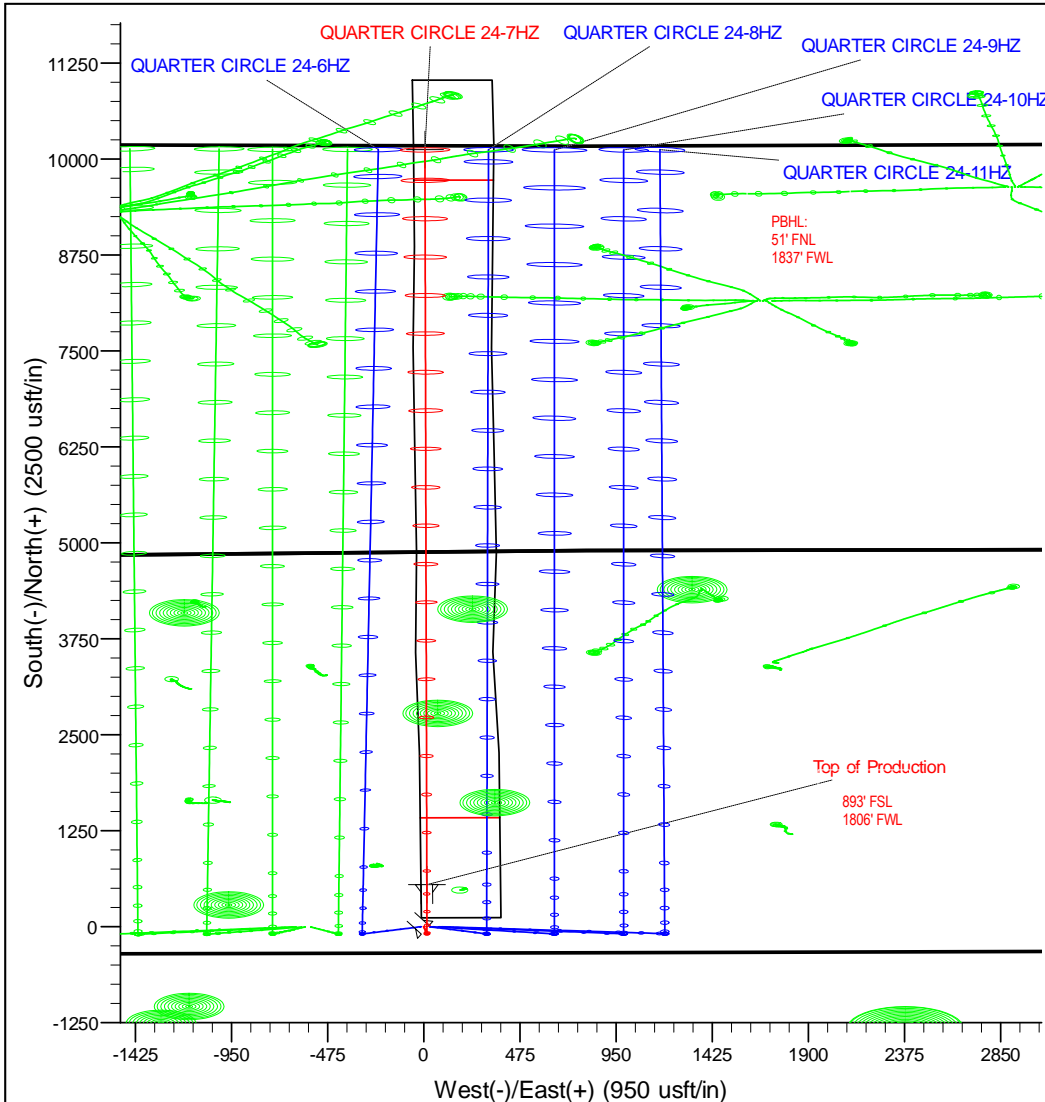
+N/-S	+E/-W	GL: 4941.00 Northing	RKB @ 4958.00usft (D Rig) Easting	Latitude 40.030335	Longitude -104.841986	Slot
0.00	0.00	14537818.93	1684649.06			

### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
QUARTER CIRCLE 24-7HZ_PBHL	7369.00	10123.37	5.00	14547942.30	1684636.10	40.058135	-104.841988

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	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
387.68	2.07	170.84	387.65	-2.45	0.40	1.50	-2.45
2863.99	2.07	170.84	2862.35	-90.55	14.80	0.00	-90.54
3001.67	0.00	0.00	3000.00	-93.00	15.00	1.50	-92.99
6816.79	0.00	0.00	6815.12	-93.00	15.00	0.00	-92.99
7822.29	90.50	359.94	7451.72	549.12	14.37	9.00	549.13
17396.90	90.50	359.94	7369.00	10123.37	5.00	0.00	10123.37



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<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)		

Site						1N-67W-24 QUARTER CIRCLE 14-24HZ											
Site Position:						Northing:			14,537,819.28 usft			Latitude:			40.030336		
From:			Lat/Long			Easting:			1,684,633.94 usft			Longitude:			-104.842040		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.10 °		

Well	QUARTER CIRCLE 24-7HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,537,818.94 usft	Latitude:	40.030335
	+E/-W	15.12 usft	Easting:	1,684,649.06 usft	Longitude:	-104.841986
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,941.00 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	4/3/2017	8.09	66.54	52,318.01566498

<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	0.03	

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/5/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,500.75	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:standard declination	
2	1,500.75	17,396.90	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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	
387.68	2.07	170.84	387.65	-2.45	0.40	1.50	1.50	0.00	170.84	
2,863.99	2.07	170.84	2,862.35	-90.55	14.60	0.00	0.00	0.00	0.00	
3,001.67	0.00	0.00	3,000.00	-93.00	15.00	1.50	-1.50	0.00	180.00	
6,816.79	0.00	0.00	6,815.12	-93.00	15.00	0.00	0.00	0.00	0.00	
7,822.29	90.50	359.94	7,451.72	549.12	14.37	9.00	9.00	0.00	359.94	
17,396.90	90.50	359.94	7,369.00	10,123.37	5.00	0.00	0.00	0.00	0.00	QUARTER CIRCLE

# Corporate Planning Report

**Database:** PLANNING  
**Company:** US ROCKIES WATTENBERG PLANNING  
**Project:** WELD-NAD83-UTMFT13N  
**Site:** 1N-67W-24 QUARTER CIRCLE 14-24HZ  
**Well:** QUARTER CIRCLE 24-7HZ  
**Wellbore:** Plan A  
**Design:** Permit Rev-1

**Local Co-ordinate Reference:** Well QUARTER CIRCLE 24-7HZ  
**TVD Reference:** RKB @ 4958.00usft (D Rig)  
**MD Reference:** RKB @ 4958.00usft (D Rig)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

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	170.84	300.00	-0.32	0.05	-0.32	1.50	1.50	0.00
387.68	2.07	170.84	387.65	-2.45	0.40	-2.45	1.50	1.50	0.00
400.00	2.07	170.84	399.96	-2.89	0.47	-2.89	0.00	0.00	0.00
500.00	2.07	170.84	499.90	-6.45	1.04	-6.44	0.00	0.00	0.00
600.00	2.07	170.84	599.83	-10.00	1.61	-10.00	0.00	0.00	0.00
655.20	2.07	170.84	655.00	-11.97	1.93	-11.97	0.00	0.00	0.00
Fox Hills									
700.00	2.07	170.84	699.77	-13.56	2.19	-13.56	0.00	0.00	0.00
800.00	2.07	170.84	799.70	-17.12	2.76	-17.12	0.00	0.00	0.00
900.00	2.07	170.84	899.64	-20.68	3.33	-20.67	0.00	0.00	0.00
1,000.00	2.07	170.84	999.57	-24.23	3.91	-24.23	0.00	0.00	0.00
1,100.00	2.07	170.84	1,099.51	-27.79	4.48	-27.79	0.00	0.00	0.00
1,200.00	2.07	170.84	1,199.44	-31.35	5.06	-31.35	0.00	0.00	0.00
1,300.00	2.07	170.84	1,299.38	-34.91	5.63	-34.90	0.00	0.00	0.00
1,400.00	2.07	170.84	1,399.31	-38.47	6.20	-38.46	0.00	0.00	0.00
1,500.00	2.07	170.84	1,499.25	-42.02	6.78	-42.02	0.00	0.00	0.00
1,500.75	2.07	170.84	1,500.00	-42.05	6.78	-42.05	0.00	0.00	0.00
9 5/8"									
1,600.00	2.07	170.84	1,599.18	-45.58	7.35	-45.58	0.00	0.00	0.00
1,700.00	2.07	170.84	1,699.12	-49.14	7.93	-49.13	0.00	0.00	0.00
1,800.00	2.07	170.84	1,799.05	-52.70	8.50	-52.69	0.00	0.00	0.00
1,900.00	2.07	170.84	1,898.99	-56.25	9.07	-56.25	0.00	0.00	0.00
2,000.00	2.07	170.84	1,998.92	-59.81	9.65	-59.81	0.00	0.00	0.00
2,100.00	2.07	170.84	2,098.86	-63.37	10.22	-63.36	0.00	0.00	0.00
2,200.00	2.07	170.84	2,198.79	-66.93	10.79	-66.92	0.00	0.00	0.00
2,300.00	2.07	170.84	2,298.73	-70.49	11.37	-70.48	0.00	0.00	0.00
2,400.00	2.07	170.84	2,398.66	-74.04	11.94	-74.04	0.00	0.00	0.00
2,500.00	2.07	170.84	2,498.60	-77.60	12.52	-77.59	0.00	0.00	0.00
2,600.00	2.07	170.84	2,598.53	-81.16	13.09	-81.15	0.00	0.00	0.00
2,700.00	2.07	170.84	2,698.47	-84.72	13.66	-84.71	0.00	0.00	0.00
2,800.00	2.07	170.84	2,798.40	-88.27	14.24	-88.27	0.00	0.00	0.00
2,863.99	2.07	170.84	2,862.35	-90.55	14.60	-90.54	0.00	0.00	0.00
2,900.00	1.53	170.84	2,898.34	-91.66	14.78	-91.66	1.50	-1.50	0.00
3,000.00	0.03	170.84	2,998.33	-93.00	15.00	-92.99	1.50	-1.50	0.00
3,001.67	0.00	0.00	3,000.00	-93.00	15.00	-92.99	1.50	-1.50	0.00
3,100.00	0.00	0.00	3,098.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,200.00	0.00	0.00	3,198.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,300.00	0.00	0.00	3,298.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,400.00	0.00	0.00	3,398.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,500.00	0.00	0.00	3,498.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,600.00	0.00	0.00	3,598.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,700.00	0.00	0.00	3,698.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,800.00	0.00	0.00	3,798.33	-93.00	15.00	-92.99	0.00	0.00	0.00
3,900.00	0.00	0.00	3,898.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,000.00	0.00	0.00	3,998.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,100.00	0.00	0.00	4,098.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,159.67	0.00	0.00	4,158.00	-93.00	15.00	-92.99	0.00	0.00	0.00
Parkman									
4,200.00	0.00	0.00	4,198.33	-93.00	15.00	-92.99	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<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)
4,300.00	0.00	0.00	4,298.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,400.00	0.00	0.00	4,398.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,500.00	0.00	0.00	4,498.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,600.00	0.00	0.00	4,598.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,700.00	0.00	0.00	4,698.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,800.00	0.00	0.00	4,798.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,900.00	0.00	0.00	4,898.33	-93.00	15.00	-92.99	0.00	0.00	0.00
4,959.67	0.00	0.00	4,958.00	-93.00	15.00	-92.99	0.00	0.00	0.00
<b>Sussex</b>									
5,000.00	0.00	0.00	4,998.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,100.00	0.00	0.00	5,098.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,200.00	0.00	0.00	5,198.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,300.00	0.00	0.00	5,298.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,400.00	0.00	0.00	5,398.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,500.00	0.00	0.00	5,498.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,600.00	0.00	0.00	5,598.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,700.00	0.00	0.00	5,698.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,800.00	0.00	0.00	5,798.33	-93.00	15.00	-92.99	0.00	0.00	0.00
5,900.00	0.00	0.00	5,898.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,000.00	0.00	0.00	5,998.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,100.00	0.00	0.00	6,098.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,200.00	0.00	0.00	6,198.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,300.00	0.00	0.00	6,298.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,400.00	0.00	0.00	6,398.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,500.00	0.00	0.00	6,498.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,600.00	0.00	0.00	6,598.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,700.00	0.00	0.00	6,698.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,800.00	0.00	0.00	6,798.33	-93.00	15.00	-92.99	0.00	0.00	0.00
6,816.79	0.00	0.00	6,815.12	-93.00	15.00	-92.99	0.00	0.00	0.00
6,900.00	7.49	359.94	6,898.10	-87.57	14.99	-87.56	9.00	9.00	0.00
7,000.00	16.49	359.94	6,995.81	-66.82	14.97	-66.81	9.00	9.00	0.00
7,100.00	25.49	359.94	7,089.08	-31.04	14.94	-31.03	9.00	9.00	0.00
7,199.27	34.42	359.94	7,175.00	18.48	14.89	18.49	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,200.00	34.49	359.94	7,175.61	18.89	14.89	18.90	9.00	9.00	0.00
7,216.40	35.96	359.94	7,189.00	28.35	14.88	28.36	9.00	9.00	0.00
<b>Niobrara</b>									
7,300.00	43.49	359.94	7,253.25	81.75	14.83	81.75	9.00	9.00	0.00
7,400.00	52.49	359.94	7,320.11	155.97	14.76	155.98	9.00	9.00	0.00
7,468.84	58.68	359.94	7,359.00	212.74	14.70	212.75	9.00	9.00	0.00
<b>Nio B</b>									
7,500.00	61.49	359.94	7,374.54	239.74	14.67	239.75	9.00	9.00	0.00
7,600.00	70.49	359.94	7,415.18	331.00	14.58	331.00	9.00	9.00	0.00
7,628.16	73.02	359.94	7,424.00	357.74	14.56	357.75	9.00	9.00	0.00
<b>Nio C</b>									
7,700.00	79.49	359.94	7,441.06	427.48	14.49	427.49	9.00	9.00	0.00
7,800.00	88.49	359.94	7,451.52	526.83	14.39	526.84	9.00	9.00	0.00
7,822.29	90.50	359.94	7,451.72	549.12	14.37	549.13	9.00	9.00	0.00
<b>Top of Production - QUARTER CIRCLE 24-7HZ_PHL</b>									
7,900.00	90.50	359.94	7,451.05	626.83	14.30	626.83	0.00	0.00	0.00
8,000.00	90.50	359.94	7,450.18	726.82	14.20	726.83	0.00	0.00	0.00
8,100.00	90.50	359.94	7,449.32	826.82	14.10	826.83	0.00	0.00	0.00
8,200.00	90.50	359.94	7,448.45	926.82	14.00	926.82	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<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	90.50	359.94	7,447.59	1,026.81	13.90	1,026.82	0.00	0.00	0.00
8,400.00	90.50	359.94	7,446.73	1,126.81	13.81	1,126.81	0.00	0.00	0.00
8,500.00	90.50	359.94	7,445.86	1,226.80	13.71	1,226.81	0.00	0.00	0.00
8,600.00	90.50	359.94	7,445.00	1,326.80	13.61	1,326.81	0.00	0.00	0.00
8,700.00	90.50	359.94	7,444.14	1,426.80	13.51	1,426.80	0.00	0.00	0.00
8,800.00	90.50	359.94	7,443.27	1,526.79	13.41	1,526.80	0.00	0.00	0.00
8,900.00	90.50	359.94	7,442.41	1,626.79	13.32	1,626.80	0.00	0.00	0.00
9,000.00	90.50	359.94	7,441.54	1,726.79	13.22	1,726.79	0.00	0.00	0.00
9,100.00	90.50	359.94	7,440.68	1,826.78	13.12	1,826.79	0.00	0.00	0.00
9,200.00	90.50	359.94	7,439.82	1,926.78	13.02	1,926.78	0.00	0.00	0.00
9,300.00	90.50	359.94	7,438.95	2,026.77	12.93	2,026.78	0.00	0.00	0.00
9,400.00	90.50	359.94	7,438.09	2,126.77	12.83	2,126.78	0.00	0.00	0.00
9,500.00	90.50	359.94	7,437.22	2,226.77	12.73	2,226.77	0.00	0.00	0.00
9,600.00	90.50	359.94	7,436.36	2,326.76	12.63	2,326.77	0.00	0.00	0.00
9,700.00	90.50	359.94	7,435.50	2,426.76	12.53	2,426.76	0.00	0.00	0.00
9,800.00	90.50	359.94	7,434.63	2,526.75	12.44	2,526.76	0.00	0.00	0.00
9,900.00	90.50	359.94	7,433.77	2,626.75	12.34	2,626.76	0.00	0.00	0.00
10,000.00	90.50	359.94	7,432.90	2,726.75	12.24	2,726.75	0.00	0.00	0.00
10,100.00	90.50	359.94	7,432.04	2,826.74	12.14	2,826.75	0.00	0.00	0.00
10,200.00	90.50	359.94	7,431.18	2,926.74	12.04	2,926.75	0.00	0.00	0.00
10,300.00	90.50	359.94	7,430.31	3,026.74	11.95	3,026.74	0.00	0.00	0.00
10,400.00	90.50	359.94	7,429.45	3,126.73	11.85	3,126.74	0.00	0.00	0.00
10,500.00	90.50	359.94	7,428.58	3,226.73	11.75	3,226.73	0.00	0.00	0.00
10,600.00	90.50	359.94	7,427.72	3,326.72	11.65	3,326.73	0.00	0.00	0.00
10,700.00	90.50	359.94	7,426.86	3,426.72	11.55	3,426.73	0.00	0.00	0.00
10,800.00	90.50	359.94	7,425.99	3,526.72	11.46	3,526.72	0.00	0.00	0.00
10,900.00	90.50	359.94	7,425.13	3,626.71	11.36	3,626.72	0.00	0.00	0.00
11,000.00	90.50	359.94	7,424.26	3,726.71	11.26	3,726.71	0.00	0.00	0.00
11,100.00	90.50	359.94	7,423.40	3,826.71	11.16	3,826.71	0.00	0.00	0.00
11,200.00	90.50	359.94	7,422.54	3,926.70	11.07	3,926.71	0.00	0.00	0.00
11,300.00	90.50	359.94	7,421.67	4,026.70	10.97	4,026.70	0.00	0.00	0.00
11,400.00	90.50	359.94	7,420.81	4,126.69	10.87	4,126.70	0.00	0.00	0.00
11,500.00	90.50	359.94	7,419.95	4,226.69	10.77	4,226.70	0.00	0.00	0.00
11,600.00	90.50	359.94	7,419.08	4,326.69	10.67	4,326.69	0.00	0.00	0.00
11,700.00	90.50	359.94	7,418.22	4,426.68	10.58	4,426.69	0.00	0.00	0.00
11,800.00	90.50	359.94	7,417.35	4,526.68	10.48	4,526.68	0.00	0.00	0.00
11,900.00	90.50	359.94	7,416.49	4,626.68	10.38	4,626.68	0.00	0.00	0.00
12,000.00	90.50	359.94	7,415.63	4,726.67	10.28	4,726.68	0.00	0.00	0.00
12,100.00	90.50	359.94	7,414.76	4,826.67	10.18	4,826.67	0.00	0.00	0.00
12,200.00	90.50	359.94	7,413.90	4,926.66	10.09	4,926.67	0.00	0.00	0.00
12,300.00	90.50	359.94	7,413.03	5,026.66	9.99	5,026.66	0.00	0.00	0.00
12,400.00	90.50	359.94	7,412.17	5,126.66	9.89	5,126.66	0.00	0.00	0.00
12,500.00	90.50	359.94	7,411.31	5,226.65	9.79	5,226.66	0.00	0.00	0.00
12,600.00	90.50	359.94	7,410.44	5,326.65	9.70	5,326.65	0.00	0.00	0.00
12,700.00	90.50	359.94	7,409.58	5,426.65	9.60	5,426.65	0.00	0.00	0.00
12,800.00	90.50	359.94	7,408.71	5,526.64	9.50	5,526.65	0.00	0.00	0.00
12,900.00	90.50	359.94	7,407.85	5,626.64	9.40	5,626.64	0.00	0.00	0.00
13,000.00	90.50	359.94	7,406.99	5,726.63	9.30	5,726.64	0.00	0.00	0.00
13,100.00	90.50	359.94	7,406.12	5,826.63	9.21	5,826.63	0.00	0.00	0.00
13,200.00	90.50	359.94	7,405.26	5,926.63	9.11	5,926.63	0.00	0.00	0.00
13,300.00	90.50	359.94	7,404.39	6,026.62	9.01	6,026.63	0.00	0.00	0.00
13,400.00	90.50	359.94	7,403.53	6,126.62	8.91	6,126.62	0.00	0.00	0.00
13,500.00	90.50	359.94	7,402.67	6,226.62	8.81	6,226.62	0.00	0.00	0.00
13,600.00	90.50	359.94	7,401.80	6,326.61	8.72	6,326.61	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<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)	
13,700.00	90.50	359.94	7,400.94	6,426.61	8.62	6,426.61	0.00	0.00	0.00	
13,800.00	90.50	359.94	7,400.07	6,526.60	8.52	6,526.61	0.00	0.00	0.00	
13,900.00	90.50	359.94	7,399.21	6,626.60	8.42	6,626.60	0.00	0.00	0.00	
14,000.00	90.50	359.94	7,398.35	6,726.60	8.32	6,726.60	0.00	0.00	0.00	
14,100.00	90.50	359.94	7,397.48	6,826.59	8.23	6,826.60	0.00	0.00	0.00	
14,200.00	90.50	359.94	7,396.62	6,926.59	8.13	6,926.59	0.00	0.00	0.00	
14,300.00	90.50	359.94	7,395.76	7,026.58	8.03	7,026.59	0.00	0.00	0.00	
14,400.00	90.50	359.94	7,394.89	7,126.58	7.93	7,126.58	0.00	0.00	0.00	
14,500.00	90.50	359.94	7,394.03	7,226.58	7.84	7,226.58	0.00	0.00	0.00	
14,600.00	90.50	359.94	7,393.16	7,326.57	7.74	7,326.58	0.00	0.00	0.00	
14,700.00	90.50	359.94	7,392.30	7,426.57	7.64	7,426.57	0.00	0.00	0.00	
14,800.00	90.50	359.94	7,391.44	7,526.57	7.54	7,526.57	0.00	0.00	0.00	
14,900.00	90.50	359.94	7,390.57	7,626.56	7.44	7,626.56	0.00	0.00	0.00	
15,000.00	90.50	359.94	7,389.71	7,726.56	7.35	7,726.56	0.00	0.00	0.00	
15,100.00	90.50	359.94	7,388.84	7,826.55	7.25	7,826.56	0.00	0.00	0.00	
15,200.00	90.50	359.94	7,387.98	7,926.55	7.15	7,926.55	0.00	0.00	0.00	
15,300.00	90.50	359.94	7,387.12	8,026.55	7.05	8,026.55	0.00	0.00	0.00	
15,400.00	90.50	359.94	7,386.25	8,126.54	6.95	8,126.55	0.00	0.00	0.00	
15,500.00	90.50	359.94	7,385.39	8,226.54	6.86	8,226.54	0.00	0.00	0.00	
15,600.00	90.50	359.94	7,384.52	8,326.54	6.76	8,326.54	0.00	0.00	0.00	
15,700.00	90.50	359.94	7,383.66	8,426.53	6.66	8,426.53	0.00	0.00	0.00	
15,800.00	90.50	359.94	7,382.80	8,526.53	6.56	8,526.53	0.00	0.00	0.00	
15,900.00	90.50	359.94	7,381.93	8,626.52	6.47	8,626.53	0.00	0.00	0.00	
16,000.00	90.50	359.94	7,381.07	8,726.52	6.37	8,726.52	0.00	0.00	0.00	
16,100.00	90.50	359.94	7,380.20	8,826.52	6.27	8,826.52	0.00	0.00	0.00	
16,200.00	90.50	359.94	7,379.34	8,926.51	6.17	8,926.52	0.00	0.00	0.00	
16,300.00	90.50	359.94	7,378.48	9,026.51	6.07	9,026.51	0.00	0.00	0.00	
16,400.00	90.50	359.94	7,377.61	9,126.51	5.98	9,126.51	0.00	0.00	0.00	
16,500.00	90.50	359.94	7,376.75	9,226.50	5.88	9,226.50	0.00	0.00	0.00	
16,600.00	90.50	359.94	7,375.88	9,326.50	5.78	9,326.50	0.00	0.00	0.00	
16,700.00	90.50	359.94	7,375.02	9,426.49	5.68	9,426.50	0.00	0.00	0.00	
16,800.00	90.50	359.94	7,374.16	9,526.49	5.58	9,526.49	0.00	0.00	0.00	
16,900.00	90.50	359.94	7,373.29	9,626.49	5.49	9,626.49	0.00	0.00	0.00	
17,000.00	90.50	359.94	7,372.43	9,726.48	5.39	9,726.48	0.00	0.00	0.00	
17,100.00	90.50	359.94	7,371.57	9,826.48	5.29	9,826.48	0.00	0.00	0.00	
17,200.00	90.50	359.94	7,370.70	9,926.48	5.19	9,926.48	0.00	0.00	0.00	
17,300.00	90.50	359.94	7,369.84	10,026.47	5.09	10,026.47	0.00	0.00	0.00	
17,396.90	90.50	359.94	7,369.00	10,123.37	5.00	10,123.37	0.00	0.00	0.00	
QUARTER CIRCLE 24-7HZ_PBHL										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
QUARTER CIRCLE 2	0.00	0.00	7,369.00	10,123.37	5.00	14,547,942.29	1,684,636.10	40.058136	-104.841968	
- plan hits target center										
- Point										
QUARTER CIRCLE 2	0.00	0.00	7,451.72	549.12	14.37	14,538,368.08	1,684,662.45	40.031843	-104.841935	
- plan hits target center										
- Point										



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well QUARTER CIRCLE 24-7HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4958.00usft (D Rig)
<b>Site:</b>	1N-67W-24 QUARTER CIRCLE 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	QUARTER CIRCLE 24-7HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.75	1,500.00	9 5/8"	9-5/8	13-1/2	
7,822.29	7,451.72	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
655.20	655.00	Fox Hills				
4,159.67	4,158.00	Parkman				
4,959.67	4,958.00	Sussex				
7,199.27	7,175.00	Sharon Springs				
7,216.40	7,189.00	Niobrara				
7,468.84	7,359.00	Nio B				
7,628.16	7,424.00	Nio C				