

US ROCKIES WATTENBERG PLANNING

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

Plan A

Plan: Permit Rev-1

Standard Planning Report

11 January, 2017



Azimuths to True North
Magnetic North: 8.06°

Magnetic Field
Strength: 52443.7snT
Dip Angle: 66.70°
Date: 1/4/2017
Model: IGRF2010

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

Well: RW 29N-29HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1220.00	1230.12	Fox Hills Mkr
3940.00	4015.15	Parkman
4633.00	4710.17	Sussex
6910.00	7030.14	Sharon Springs
6977.00	7128.90	Niobrara
7022.00	7207.85	Nio B
7097.00	7406.41	Nio C

WELL DETAILS: RW 29N-29HZ

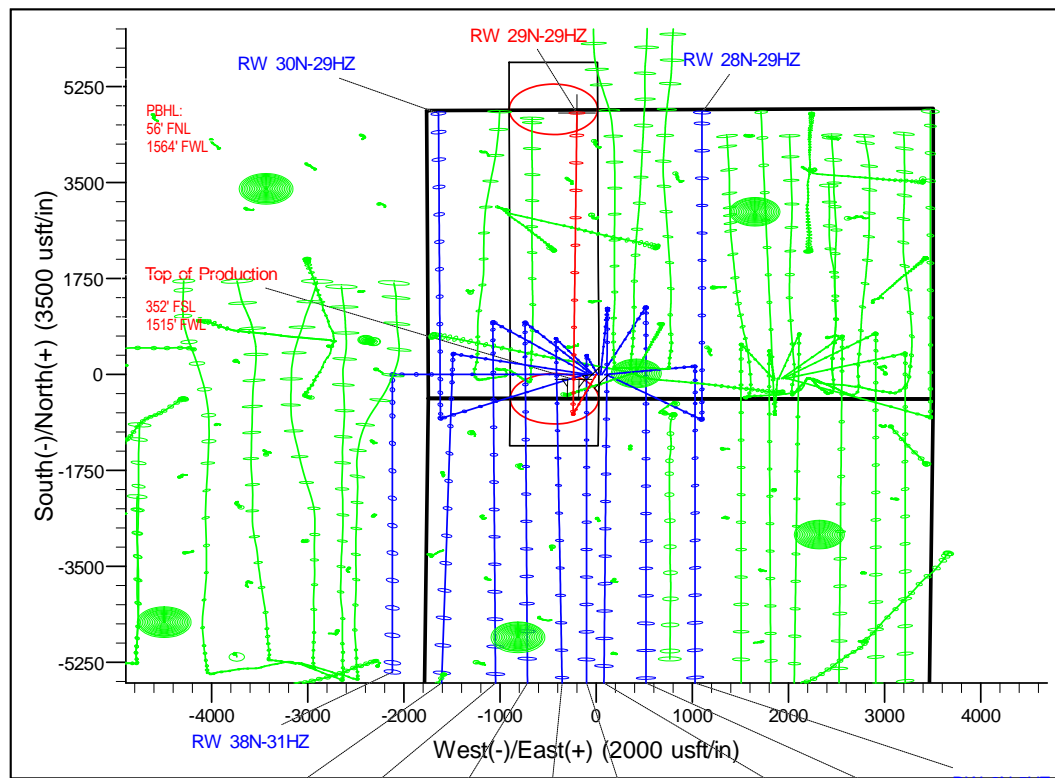
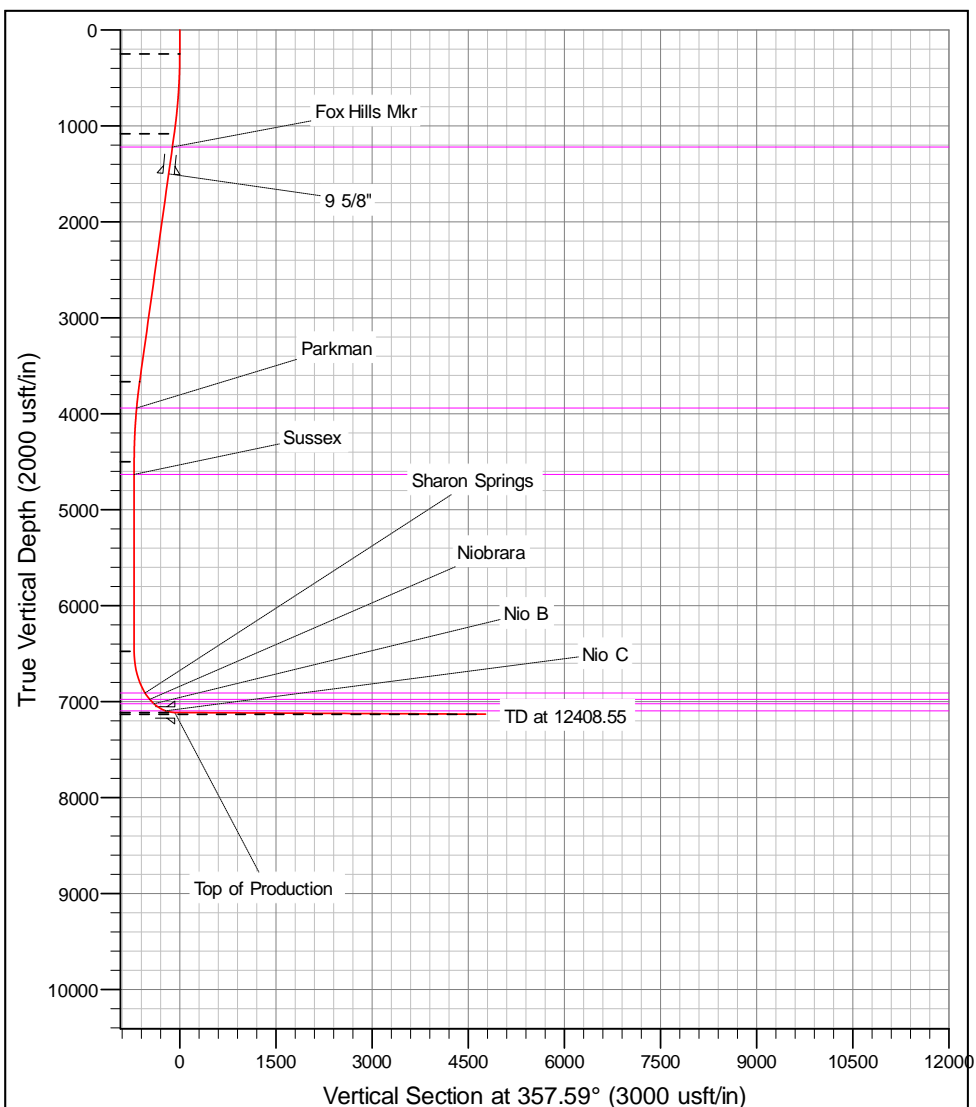
+N/-S	+E/-W	GL: 4885.00	RKB @ 4902.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northings 14596213.63	Easting 1726861.36	Latitude 40.190389	

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
1089.42	12.59	198.44	1082.68	-87.15	-29.05	1.50	-85.85
3737.75	12.59	198.44	3667.32	-634.85	-211.62	0.00	-625.39
4577.17	0.00	0.00	4500.00	-722.00	-240.67	1.50	-711.24
6554.76	0.00	0.00	6477.59	-722.00	-240.67	0.00	-711.24
7552.43	89.79	0.42	7114.20	-87.73	-236.05	9.00	-77.73
12408.55	89.79	0.42	7132.00	4768.23	-200.67	0.00	4772.45

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northings	Easting	Latitude	Longitude
RW 29N-29HZ_PBHL	7132.00	4768.23	-200.67	14600981.14	1726644.06	40.203483	-104.691183



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 29N-29HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 29N-29HZ	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	3N-65W-29 RW 35-29HZ Pad		
Site Position:		Northing:	14,596,214.62 usft
From:	Lat/Long	Easting:	1,726,726.18 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.190393
		Longitude:	-104.690948
		Grid Convergence:	0.20 °

Well	RW 29N-29HZ		
Well Position	+N/-S	-1.46 usft	Northing: 14,596,213.63 usft
	+E/-W	135.17 usft	Easting: 1,726,861.36 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:	Latitude: 40.190389
			Longitude: -104.690464
			Ground Level: 4,885.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/4/2017	8.06	66.70	52,443.66175955

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	357.59

Plan Survey Tool Program	Date	1/11/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,408.55	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	
1,089.42	12.59	198.44	1,082.68	-87.15	-29.05	1.50	1.50	0.00	198.44	
3,737.75	12.59	198.44	3,667.32	-634.85	-211.62	0.00	0.00	0.00	0.00	
4,577.17	0.00	0.00	4,500.00	-722.00	-240.67	1.50	-1.50	0.00	180.00	
6,554.76	0.00	0.00	6,477.59	-722.00	-240.67	0.00	0.00	0.00	0.00	
7,552.43	89.79	0.42	7,114.20	-87.73	-236.05	9.00	9.00	0.00	0.42	
12,408.55	89.79	0.42	7,132.00	4,768.23	-200.67	0.00	0.00	0.00	0.00	RW 29N-29HZ_PBI

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 29N-29HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 29N-29HZ	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	198.44	300.00	-0.31	-0.10	-0.31	1.50	1.50	0.00
400.00	2.25	198.44	399.96	-2.79	-0.93	-2.75	1.50	1.50	0.00
500.00	3.75	198.44	499.82	-7.76	-2.59	-7.64	1.50	1.50	0.00
600.00	5.25	198.44	599.51	-15.20	-5.07	-14.98	1.50	1.50	0.00
700.00	6.75	198.44	698.96	-25.12	-8.37	-24.74	1.50	1.50	0.00
800.00	8.25	198.44	798.10	-37.50	-12.50	-36.94	1.50	1.50	0.00
900.00	9.75	198.44	896.87	-52.34	-17.45	-51.56	1.50	1.50	0.00
1,000.00	11.25	198.44	995.19	-69.63	-23.21	-68.59	1.50	1.50	0.00
1,089.42	12.59	198.44	1,082.68	-87.15	-29.05	-85.85	1.50	1.50	0.00
1,100.00	12.59	198.44	1,093.01	-89.34	-29.78	-88.01	0.00	0.00	0.00
1,200.00	12.59	198.44	1,190.60	-110.02	-36.67	-108.38	0.00	0.00	0.00
1,230.12	12.59	198.44	1,220.00	-116.25	-38.75	-114.52	0.00	0.00	0.00
Fox Hills Mkr									
1,300.00	12.59	198.44	1,288.20	-130.70	-43.57	-128.75	0.00	0.00	0.00
1,400.00	12.59	198.44	1,385.79	-151.38	-50.46	-149.13	0.00	0.00	0.00
1,500.00	12.59	198.44	1,483.39	-172.06	-57.35	-169.50	0.00	0.00	0.00
1,517.02	12.59	198.44	1,500.00	-175.58	-58.53	-172.97	0.00	0.00	0.00
9 5/8"									
1,600.00	12.59	198.44	1,580.98	-192.74	-64.25	-189.87	0.00	0.00	0.00
1,700.00	12.59	198.44	1,678.58	-213.42	-71.14	-210.24	0.00	0.00	0.00
1,800.00	12.59	198.44	1,776.17	-234.10	-78.04	-230.62	0.00	0.00	0.00
1,900.00	12.59	198.44	1,873.77	-254.79	-84.93	-250.99	0.00	0.00	0.00
2,000.00	12.59	198.44	1,971.36	-275.47	-91.82	-271.36	0.00	0.00	0.00
2,100.00	12.59	198.44	2,068.95	-296.15	-98.72	-291.73	0.00	0.00	0.00
2,200.00	12.59	198.44	2,166.55	-316.83	-105.61	-312.11	0.00	0.00	0.00
2,300.00	12.59	198.44	2,264.14	-337.51	-112.50	-332.48	0.00	0.00	0.00
2,400.00	12.59	198.44	2,361.74	-358.19	-119.40	-352.85	0.00	0.00	0.00
2,500.00	12.59	198.44	2,459.33	-378.87	-126.29	-373.23	0.00	0.00	0.00
2,600.00	12.59	198.44	2,556.93	-399.55	-133.19	-393.60	0.00	0.00	0.00
2,700.00	12.59	198.44	2,654.52	-420.23	-140.08	-413.97	0.00	0.00	0.00
2,800.00	12.59	198.44	2,752.12	-440.91	-146.97	-434.34	0.00	0.00	0.00
2,900.00	12.59	198.44	2,849.71	-461.59	-153.87	-454.72	0.00	0.00	0.00
3,000.00	12.59	198.44	2,947.31	-482.28	-160.76	-475.09	0.00	0.00	0.00
3,100.00	12.59	198.44	3,044.90	-502.96	-167.65	-495.46	0.00	0.00	0.00
3,200.00	12.59	198.44	3,142.50	-523.64	-174.55	-515.83	0.00	0.00	0.00
3,300.00	12.59	198.44	3,240.09	-544.32	-181.44	-536.21	0.00	0.00	0.00
3,400.00	12.59	198.44	3,337.69	-565.00	-188.34	-556.58	0.00	0.00	0.00
3,500.00	12.59	198.44	3,435.28	-585.68	-195.23	-576.95	0.00	0.00	0.00
3,600.00	12.59	198.44	3,532.88	-606.36	-202.12	-597.33	0.00	0.00	0.00
3,700.00	12.59	198.44	3,630.47	-627.04	-209.02	-617.70	0.00	0.00	0.00
3,737.75	12.59	198.44	3,667.32	-634.85	-211.62	-625.39	0.00	0.00	0.00
3,800.00	11.66	198.44	3,728.18	-647.25	-215.75	-637.61	1.50	-1.50	0.00
3,900.00	10.16	198.44	3,826.37	-665.20	-221.74	-655.29	1.50	-1.50	0.00
4,000.00	8.66	198.44	3,925.02	-680.71	-226.91	-670.57	1.50	-1.50	0.00
4,015.15	8.43	198.44	3,940.00	-682.84	-227.62	-672.67	1.50	-1.50	0.00
Parkman									
4,100.00	7.16	198.44	4,024.07	-693.76	-231.26	-683.42	1.50	-1.50	0.00
4,200.00	5.66	198.44	4,123.44	-704.35	-234.79	-693.85	1.50	-1.50	0.00
4,300.00	4.16	198.44	4,223.07	-712.46	-237.49	-701.85	1.50	-1.50	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 29N-29HZ	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)
4,400.00	2.66	198.44	4,322.89	-718.10	-239.37	-707.40	1.50	-1.50	0.00
4,500.00	1.16	198.44	4,422.83	-721.26	-240.42	-710.51	1.50	-1.50	0.00
4,577.17	0.00	0.00	4,500.00	-722.00	-240.67	-711.24	1.50	-1.50	0.00
4,600.00	0.00	0.00	4,522.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
4,700.00	0.00	0.00	4,622.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
4,710.17	0.00	0.00	4,633.00	-722.00	-240.67	-711.24	0.00	0.00	0.00
Sussex									
4,800.00	0.00	0.00	4,722.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
4,900.00	0.00	0.00	4,822.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,000.00	0.00	0.00	4,922.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,100.00	0.00	0.00	5,022.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,200.00	0.00	0.00	5,122.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,300.00	0.00	0.00	5,222.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,400.00	0.00	0.00	5,322.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,500.00	0.00	0.00	5,422.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,600.00	0.00	0.00	5,522.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,700.00	0.00	0.00	5,622.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,800.00	0.00	0.00	5,722.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
5,900.00	0.00	0.00	5,822.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,000.00	0.00	0.00	5,922.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,100.00	0.00	0.00	6,022.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,200.00	0.00	0.00	6,122.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,300.00	0.00	0.00	6,222.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,400.00	0.00	0.00	6,322.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,500.00	0.00	0.00	6,422.83	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,554.76	0.00	0.00	6,477.59	-722.00	-240.67	-711.24	0.00	0.00	0.00
6,600.00	4.07	0.42	6,522.79	-720.39	-240.66	-709.64	9.00	9.00	0.00
6,700.00	13.07	0.42	6,621.57	-705.50	-240.55	-694.77	9.00	9.00	0.00
6,800.00	22.07	0.42	6,716.81	-675.35	-240.33	-664.64	9.00	9.00	0.00
6,900.00	31.07	0.42	6,806.15	-630.66	-240.00	-620.01	9.00	9.00	0.00
7,000.00	40.07	0.42	6,887.41	-572.55	-239.58	-561.97	9.00	9.00	0.00
7,030.14	42.78	0.42	6,910.00	-552.61	-239.44	-542.06	9.00	9.00	0.00
Sharon Springs									
7,100.00	49.07	0.42	6,958.57	-502.45	-239.07	-491.95	9.00	9.00	0.00
7,128.90	51.67	0.42	6,977.00	-480.19	-238.91	-469.72	9.00	9.00	0.00
Niobrara									
7,200.00	58.07	0.42	7,017.89	-422.07	-238.48	-411.67	9.00	9.00	0.00
7,207.85	58.78	0.42	7,022.00	-415.39	-238.44	-404.99	9.00	9.00	0.00
Nio B									
7,300.00	67.07	0.42	7,063.91	-333.41	-237.84	-323.11	9.00	9.00	0.00
7,400.00	76.07	0.42	7,095.49	-238.63	-237.15	-228.45	9.00	9.00	0.00
7,406.41	76.65	0.42	7,097.00	-232.40	-237.10	-222.22	9.00	9.00	0.00
Nio C									
7,500.00	85.07	0.42	7,111.85	-140.09	-236.43	-130.02	9.00	9.00	0.00
7,552.43	89.79	0.42	7,114.20	-87.73	-236.05	-77.72	9.00	9.00	0.00
Top of Production - RW 29N-29HZ_PHL									
7,600.00	89.79	0.42	7,114.38	-40.16	-235.70	-30.21	0.00	0.00	0.00
7,700.00	89.79	0.42	7,114.74	59.84	-234.97	69.67	0.00	0.00	0.00
7,800.00	89.79	0.42	7,115.11	159.83	-234.25	169.54	0.00	0.00	0.00
7,900.00	89.79	0.42	7,115.48	259.83	-233.52	269.42	0.00	0.00	0.00
8,000.00	89.79	0.42	7,115.84	359.83	-232.79	369.30	0.00	0.00	0.00
8,100.00	89.79	0.42	7,116.21	459.82	-232.06	469.18	0.00	0.00	0.00
8,200.00	89.79	0.42	7,116.58	559.82	-231.33	569.05	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 29N-29HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 29N-29HZ	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)	
8,300.00	89.79	0.42	7,116.94	659.82	-230.60	668.93	0.00	0.00	0.00	
8,400.00	89.79	0.42	7,117.31	759.81	-229.87	768.81	0.00	0.00	0.00	
8,500.00	89.79	0.42	7,117.67	859.81	-229.15	868.69	0.00	0.00	0.00	
8,600.00	89.79	0.42	7,118.04	959.81	-228.42	968.56	0.00	0.00	0.00	
8,700.00	89.79	0.42	7,118.41	1,059.81	-227.69	1,068.44	0.00	0.00	0.00	
8,800.00	89.79	0.42	7,118.77	1,159.80	-226.96	1,168.32	0.00	0.00	0.00	
8,900.00	89.79	0.42	7,119.14	1,259.80	-226.23	1,268.20	0.00	0.00	0.00	
9,000.00	89.79	0.42	7,119.51	1,359.80	-225.50	1,368.07	0.00	0.00	0.00	
9,100.00	89.79	0.42	7,119.87	1,459.79	-224.77	1,467.95	0.00	0.00	0.00	
9,200.00	89.79	0.42	7,120.24	1,559.79	-224.05	1,567.83	0.00	0.00	0.00	
9,300.00	89.79	0.42	7,120.61	1,659.79	-223.32	1,667.71	0.00	0.00	0.00	
9,400.00	89.79	0.42	7,120.97	1,759.78	-222.59	1,767.58	0.00	0.00	0.00	
9,500.00	89.79	0.42	7,121.34	1,859.78	-221.86	1,867.46	0.00	0.00	0.00	
9,600.00	89.79	0.42	7,121.71	1,959.78	-221.13	1,967.34	0.00	0.00	0.00	
9,700.00	89.79	0.42	7,122.07	2,059.77	-220.40	2,067.22	0.00	0.00	0.00	
9,800.00	89.79	0.42	7,122.44	2,159.77	-219.67	2,167.10	0.00	0.00	0.00	
9,900.00	89.79	0.42	7,122.81	2,259.77	-218.95	2,266.97	0.00	0.00	0.00	
10,000.00	89.79	0.42	7,123.17	2,359.76	-218.22	2,366.85	0.00	0.00	0.00	
10,100.00	89.79	0.42	7,123.54	2,459.76	-217.49	2,466.73	0.00	0.00	0.00	
10,200.00	89.79	0.42	7,123.91	2,559.76	-216.76	2,566.61	0.00	0.00	0.00	
10,300.00	89.79	0.42	7,124.27	2,659.75	-216.03	2,666.48	0.00	0.00	0.00	
10,400.00	89.79	0.42	7,124.64	2,759.75	-215.30	2,766.36	0.00	0.00	0.00	
10,500.00	89.79	0.42	7,125.00	2,859.75	-214.57	2,866.24	0.00	0.00	0.00	
10,600.00	89.79	0.42	7,125.37	2,959.74	-213.85	2,966.12	0.00	0.00	0.00	
10,700.00	89.79	0.42	7,125.74	3,059.74	-213.12	3,065.99	0.00	0.00	0.00	
10,800.00	89.79	0.42	7,126.10	3,159.74	-212.39	3,165.87	0.00	0.00	0.00	
10,900.00	89.79	0.42	7,126.47	3,259.73	-211.66	3,265.75	0.00	0.00	0.00	
11,000.00	89.79	0.42	7,126.84	3,359.73	-210.93	3,365.63	0.00	0.00	0.00	
11,100.00	89.79	0.42	7,127.20	3,459.73	-210.20	3,465.50	0.00	0.00	0.00	
11,200.00	89.79	0.42	7,127.57	3,559.72	-209.47	3,565.38	0.00	0.00	0.00	
11,300.00	89.79	0.42	7,127.94	3,659.72	-208.75	3,665.26	0.00	0.00	0.00	
11,400.00	89.79	0.42	7,128.30	3,759.72	-208.02	3,765.14	0.00	0.00	0.00	
11,500.00	89.79	0.42	7,128.67	3,859.71	-207.29	3,865.01	0.00	0.00	0.00	
11,600.00	89.79	0.42	7,129.04	3,959.71	-206.56	3,964.89	0.00	0.00	0.00	
11,700.00	89.79	0.42	7,129.40	4,059.71	-205.83	4,064.77	0.00	0.00	0.00	
11,800.00	89.79	0.42	7,129.77	4,159.70	-205.10	4,164.65	0.00	0.00	0.00	
11,900.00	89.79	0.42	7,130.14	4,259.70	-204.37	4,264.52	0.00	0.00	0.00	
12,000.00	89.79	0.42	7,130.50	4,359.70	-203.65	4,364.40	0.00	0.00	0.00	
12,100.00	89.79	0.42	7,130.87	4,459.69	-202.92	4,464.28	0.00	0.00	0.00	
12,200.00	89.79	0.42	7,131.24	4,559.69	-202.19	4,564.16	0.00	0.00	0.00	
12,300.00	89.79	0.42	7,131.60	4,659.69	-201.46	4,664.04	0.00	0.00	0.00	
12,400.00	89.79	0.42	7,131.97	4,759.68	-200.73	4,763.91	0.00	0.00	0.00	
12,408.55	89.79	0.42	7,132.00	4,768.23	-200.67	4,772.45	0.00	0.00	0.00	
RW 29N-29HZ_PBHL										

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 29N-29HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 29N-29HZ	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)		
RW 29N-29HZ_PHL	0.00	0.00	7,114.20	-87.73	-236.05	14,596,125.08	1,726,625.61	40.190148	-104.691309
- plan hits target center									
- Point									
RW 29N-29HZ_PBHL	0.00	0.00	7,132.00	4,768.23	-200.67	14,600,981.13	1,726,644.06	40.203483	-104.691183
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,517.02	1,500.00	9 5/8"	9-5/8	13-1/2	
7,552.43	7,114.20	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,230.12	1,220.00	Fox Hills Mkr				
4,015.15	3,940.00	Parkman				
4,710.17	4,633.00	Sussex				
7,030.14	6,910.00	Sharon Springs				
7,128.90	6,977.00	Niobrara				
7,207.85	7,022.00	Nio B				
7,406.41	7,097.00	Nio C				