

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
4N-68W-11 S&B 5-11HZ PAD
SHAKE 11-11HZ**

Plan B

Plan: Permit Rev-1

SHL Lat/Long: 40.330318/-104.976769
Survey Program: MWD+IFR+MSA

Standard Planning Report

20 October, 2019

Project: WELD-NAD83-UTMFT13N
Site: 4N-68W-11 S&B 5-11HZ PAD
Well: SHAKE 11-11HZ
Wellbore: Plan B
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS		
TVD	MD	Size
1500.00	1520.87	9-5/8
6835.00	7387.20	5-1/2

WELL DETAILS: SHAKE 11-11HZ

GL = 4994.00

RKB = 17' @ 5011.00usft (Drilling Rig)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1264.00	15.21	349.75	1252.13	131.67	-23.81	1.50	349.75	21.99	
4	4064.00	15.21	349.75	3954.05	854.54	-154.53	0.00	0.00	142.73	
5	4824.50	0.00	0.00	4705.65	953.29	-172.38	2.00	180.00	159.22	
6	6238.06	0.00	0.00	6119.21	953.29	-172.38	0.00	0.00	159.22	
7	7387.20	91.93	269.21	6835.00	943.05	-912.64	8.00	269.21	899.55	
8	17448.09	91.93	269.21	6496.00	803.98	-10966.86	0.00	0.00	10954.73	SHAKE 11-11HZ_BHL

SHL
1896' FNL
839' FWL

HEEL
945' FNL
75' FEL

TOE
942' FNL
475' FWL

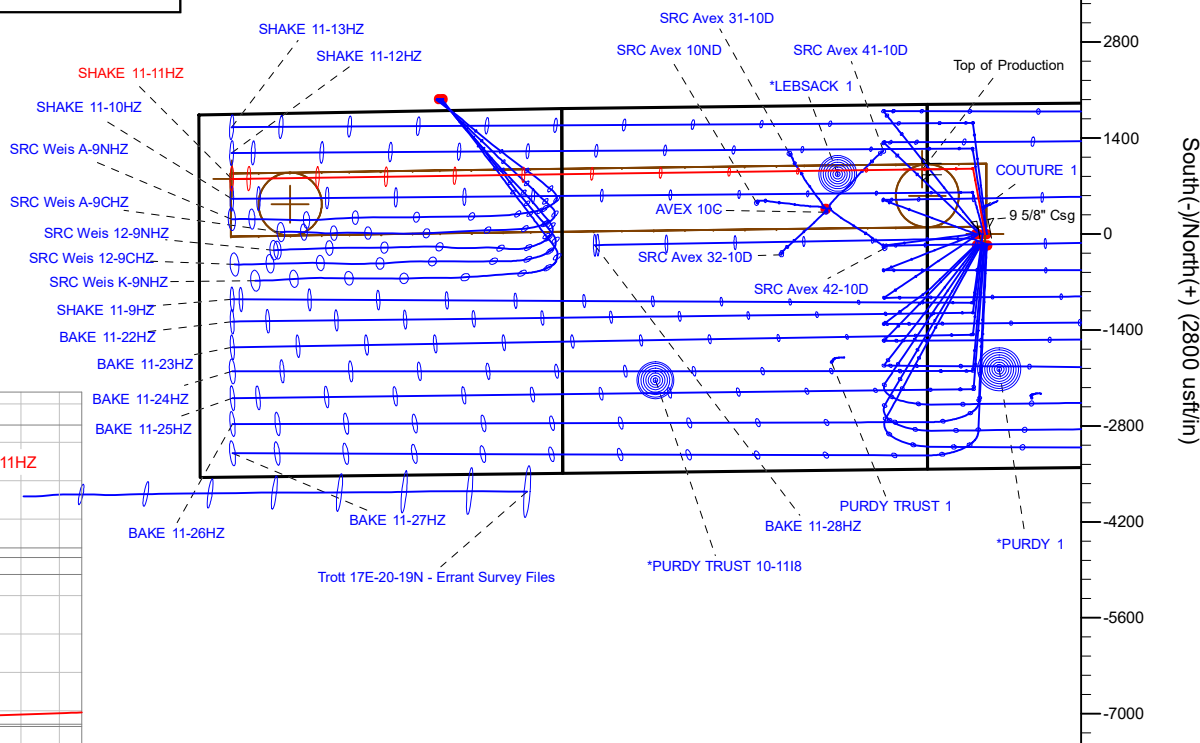
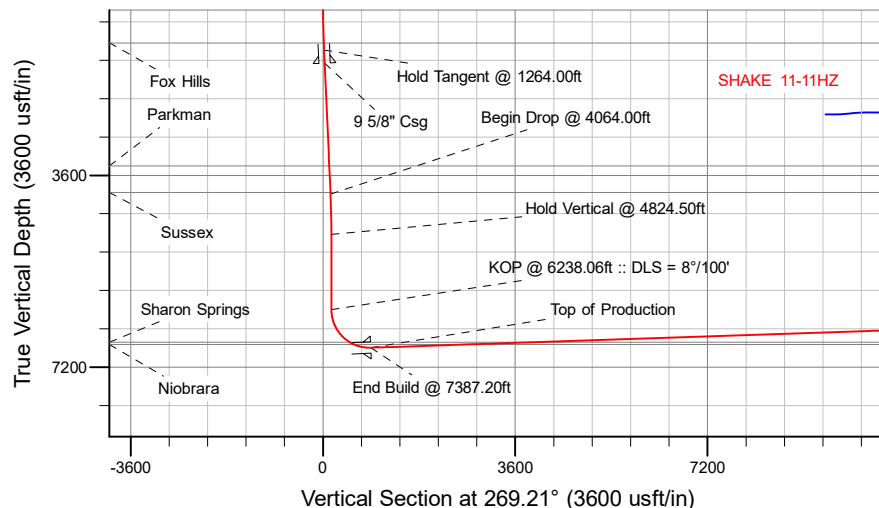
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SHAKE 11-11HZ_SHL	0.00	0.00	0.00	40.330318	-104.976769
SHAKE 11-11HZ_BHL	6496.00	803.98	-10966.86	40.332519	-105.016121

West(-)/East(+) (2800 usft/in)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1119.00	1126.68	Fox Hills
3424.00	3514.71	Parkman
3920.00	4028.71	Sussex
6733.00	6975.35	Sharon Springs
6776.00	7069.30	Niobrara



Plan: Permit Rev-1 (SHAKE 11-11HZ/Plan B)

Date: 10/20/2019

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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	4N-68W-11 S&B 5-11HZ PAD			
Site Position:		Northing:	14,647,020.58 usft	Latitude: 40.330320
From:	Lat/Long	Easting:	1,646,741.13 usft	Longitude: -104.977307
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.01 °

Well	SHAKE 11-11HZ			
Well Position	+N/-S	-0.73 usft	Northing:	14,647,019.89 usft
	+E/-W	149.94 usft	Easting:	1,646,891.07 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	Ground Level: 4,994.00 usft

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/7/2019	8.14	66.72	52,145.03150851

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.21

Plan Survey Tool Program	Date	10/20/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	17,448.09	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	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	
1,264.00	15.21	349.75	1,252.13	131.67	-23.81	1.50	1.50	0.00	349.75	
4,064.00	15.21	349.75	3,954.05	854.54	-154.53	0.00	0.00	0.00	0.00	
4,824.50	0.00	0.00	4,705.65	953.29	-172.38	2.00	-2.00	0.00	180.00	
6,238.06	0.00	0.00	6,119.21	953.29	-172.38	0.00	0.00	0.00	0.00	
7,387.20	91.93	269.21	6,835.00	943.05	-912.64	8.00	8.00	-7.90	269.21	
17,448.09	91.93	269.21	6,496.00	803.98	-10,966.86	0.00	0.00	0.00	0.00	SHAKE 11-11HZ_BHL

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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
Begin Nudge @ 250.00ft									
300.00	0.75	349.75	300.00	0.32	-0.06	0.05	1.50	1.50	0.00
400.00	2.25	349.75	399.96	2.90	-0.52	0.48	1.50	1.50	0.00
500.00	3.75	349.75	499.82	8.05	-1.46	1.34	1.50	1.50	0.00
600.00	5.25	349.75	599.51	15.77	-2.85	2.63	1.50	1.50	0.00
700.00	6.75	349.75	698.96	26.05	-4.71	4.35	1.50	1.50	0.00
800.00	8.25	349.75	798.10	38.90	-7.03	6.50	1.50	1.50	0.00
900.00	9.75	349.75	896.87	54.29	-9.82	9.07	1.50	1.50	0.00
1,000.00	11.25	349.75	995.19	72.22	-13.06	12.06	1.50	1.50	0.00
1,100.00	12.75	349.75	1,093.00	92.68	-16.76	15.48	1.50	1.50	0.00
1,126.68	13.15	349.75	1,119.00	98.57	-17.82	16.46	1.50	1.50	0.00
Fox Hills									
1,200.00	14.25	349.75	1,190.24	115.65	-20.91	19.32	1.50	1.50	0.00
1,264.00	15.21	349.75	1,252.13	131.67	-23.81	21.99	1.50	1.50	0.00
Hold Tangent @ 1264.00ft									
1,300.00	15.21	349.75	1,286.87	140.96	-25.49	23.54	0.00	0.00	0.00
1,400.00	15.21	349.75	1,383.37	166.78	-30.16	27.86	0.00	0.00	0.00
1,500.00	15.21	349.75	1,479.87	192.59	-34.83	32.17	0.00	0.00	0.00
1,520.87	15.21	349.75	1,500.00	197.98	-35.80	33.07	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	15.21	349.75	1,576.36	218.41	-39.50	36.48	0.00	0.00	0.00
1,700.00	15.21	349.75	1,672.86	244.23	-44.16	40.79	0.00	0.00	0.00
1,800.00	15.21	349.75	1,769.36	270.05	-48.83	45.10	0.00	0.00	0.00
1,900.00	15.21	349.75	1,865.85	295.86	-53.50	49.42	0.00	0.00	0.00
2,000.00	15.21	349.75	1,962.35	321.68	-58.17	53.73	0.00	0.00	0.00
2,100.00	15.21	349.75	2,058.85	347.50	-62.84	58.04	0.00	0.00	0.00
2,200.00	15.21	349.75	2,155.34	373.31	-67.51	62.35	0.00	0.00	0.00
2,300.00	15.21	349.75	2,251.84	399.13	-72.17	66.66	0.00	0.00	0.00
2,400.00	15.21	349.75	2,348.34	424.95	-76.84	70.98	0.00	0.00	0.00
2,500.00	15.21	349.75	2,444.84	450.77	-81.51	75.29	0.00	0.00	0.00
2,600.00	15.21	349.75	2,541.33	476.58	-86.18	79.60	0.00	0.00	0.00
2,700.00	15.21	349.75	2,637.83	502.40	-90.85	83.91	0.00	0.00	0.00
2,800.00	15.21	349.75	2,734.33	528.22	-95.52	88.23	0.00	0.00	0.00
2,900.00	15.21	349.75	2,830.82	554.03	-100.19	92.54	0.00	0.00	0.00
3,000.00	15.21	349.75	2,927.32	579.85	-104.85	96.85	0.00	0.00	0.00
3,100.00	15.21	349.75	3,023.82	605.67	-109.52	101.16	0.00	0.00	0.00
3,200.00	15.21	349.75	3,120.32	631.48	-114.19	105.47	0.00	0.00	0.00
3,300.00	15.21	349.75	3,216.81	657.30	-118.86	109.79	0.00	0.00	0.00
3,400.00	15.21	349.75	3,313.31	683.12	-123.53	114.10	0.00	0.00	0.00
3,500.00	15.21	349.75	3,409.81	708.94	-128.20	118.41	0.00	0.00	0.00
3,514.71	15.21	349.75	3,424.00	712.73	-128.88	119.04	0.00	0.00	0.00
Parkman									
3,600.00	15.21	349.75	3,506.30	734.75	-132.86	122.72	0.00	0.00	0.00
3,700.00	15.21	349.75	3,602.80	760.57	-137.53	127.03	0.00	0.00	0.00
3,800.00	15.21	349.75	3,699.30	786.39	-142.20	131.35	0.00	0.00	0.00
3,900.00	15.21	349.75	3,795.80	812.20	-146.87	135.66	0.00	0.00	0.00
4,000.00	15.21	349.75	3,892.29	838.02	-151.54	139.97	0.00	0.00	0.00
4,028.71	15.21	349.75	3,920.00	845.43	-152.88	141.21	0.00	0.00	0.00
Sussex									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
4,064.00	15.21	349.75	3,954.05	854.54	-154.53	142.73	0.00	0.00	0.00
Begin Drop @ 4064.00ft									
4,100.00	14.49	349.75	3,988.85	863.62	-156.17	144.25	2.00	-2.00	0.00
4,200.00	12.49	349.75	4,086.08	886.58	-160.32	148.08	2.00	-2.00	0.00
4,300.00	10.49	349.75	4,184.07	906.18	-163.86	151.35	2.00	-2.00	0.00
4,400.00	8.49	349.75	4,282.70	922.40	-166.80	154.06	2.00	-2.00	0.00
4,500.00	6.49	349.75	4,381.84	935.23	-169.12	156.21	2.00	-2.00	0.00
4,600.00	4.49	349.75	4,481.38	944.64	-170.82	157.78	2.00	-2.00	0.00
4,700.00	2.49	349.75	4,581.19	950.63	-171.90	158.78	2.00	-2.00	0.00
4,800.00	0.49	349.75	4,681.15	953.19	-172.37	159.21	2.00	-2.00	0.00
4,824.50	0.00	0.00	4,705.65	953.29	-172.38	159.22	2.00	-2.00	0.00
Hold Vertical @ 4824.50ft									
4,900.00	0.00	0.00	4,781.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,000.00	0.00	0.00	4,881.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,100.00	0.00	0.00	4,981.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,200.00	0.00	0.00	5,081.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,300.00	0.00	0.00	5,181.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,400.00	0.00	0.00	5,281.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,500.00	0.00	0.00	5,381.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,600.00	0.00	0.00	5,481.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,700.00	0.00	0.00	5,581.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,800.00	0.00	0.00	5,681.15	953.29	-172.38	159.22	0.00	0.00	0.00
5,900.00	0.00	0.00	5,781.15	953.29	-172.38	159.22	0.00	0.00	0.00
6,000.00	0.00	0.00	5,881.15	953.29	-172.38	159.22	0.00	0.00	0.00
6,100.00	0.00	0.00	5,981.15	953.29	-172.38	159.22	0.00	0.00	0.00
6,200.00	0.00	0.00	6,081.15	953.29	-172.38	159.22	0.00	0.00	0.00
6,238.06	0.00	0.00	6,119.21	953.29	-172.38	159.22	0.00	0.00	0.00
KOP @ 6238.06ft :: DLS = 8°/100'									
6,300.00	4.96	269.21	6,181.07	953.26	-175.06	161.90	8.00	8.00	0.00
6,400.00	12.96	269.21	6,279.77	953.04	-190.61	177.45	8.00	8.00	0.00
6,500.00	20.96	269.21	6,375.35	952.64	-219.75	206.59	8.00	8.00	0.00
6,600.00	28.96	269.21	6,465.94	952.06	-261.90	248.75	8.00	8.00	0.00
6,700.00	36.96	269.21	6,549.78	951.30	-316.25	303.10	8.00	8.00	0.00
6,800.00	44.96	269.21	6,625.24	950.40	-381.74	368.60	8.00	8.00	0.00
6,900.00	52.96	269.21	6,690.85	949.36	-457.09	443.96	8.00	8.00	0.00
6,975.35	58.98	269.21	6,733.00	948.49	-519.50	506.37	8.00	8.00	0.00
Sharon Springs									
7,000.00	60.96	269.21	6,745.34	948.20	-540.84	527.71	8.00	8.00	0.00
7,069.30	66.50	269.21	6,776.00	947.34	-602.94	589.83	8.00	8.00	0.00
Niobrara									
7,100.00	68.96	269.21	6,787.64	946.95	-631.35	618.24	8.00	8.00	0.00
7,200.00	76.96	269.21	6,816.92	945.62	-726.87	713.77	8.00	8.00	0.00
7,300.00	84.96	269.21	6,832.63	944.26	-825.54	812.44	8.00	8.00	0.00
7,387.20	91.93	269.21	6,835.00	943.05	-912.65	899.56	8.00	8.00	0.00
End Build @ 7387.20ft - Top of Production									
7,400.00	91.93	269.21	6,834.57	942.88	-925.44	912.35	0.00	0.00	0.00
7,500.00	91.93	269.21	6,831.20	941.50	-1,025.37	1,012.29	0.00	0.00	0.00
7,600.00	91.93	269.21	6,827.83	940.11	-1,125.30	1,112.24	0.00	0.00	0.00
7,700.00	91.93	269.21	6,824.46	938.73	-1,225.24	1,212.18	0.00	0.00	0.00
7,800.00	91.93	269.21	6,821.09	937.35	-1,325.17	1,312.12	0.00	0.00	0.00
7,900.00	91.93	269.21	6,817.72	935.97	-1,425.11	1,412.07	0.00	0.00	0.00
8,000.00	91.93	269.21	6,814.35	934.58	-1,525.04	1,512.01	0.00	0.00	0.00
8,100.00	91.93	269.21	6,810.98	933.20	-1,624.97	1,611.95	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
8,200.00	91.93	269.21	6,807.61	931.82	-1,724.91	1,711.89	0.00	0.00	0.00
8,300.00	91.93	269.21	6,804.24	930.44	-1,824.84	1,811.84	0.00	0.00	0.00
8,400.00	91.93	269.21	6,800.87	929.05	-1,924.77	1,911.78	0.00	0.00	0.00
8,500.00	91.93	269.21	6,797.50	927.67	-2,024.71	2,011.72	0.00	0.00	0.00
8,600.00	91.93	269.21	6,794.13	926.29	-2,124.64	2,111.67	0.00	0.00	0.00
8,700.00	91.93	269.21	6,790.77	924.91	-2,224.57	2,211.61	0.00	0.00	0.00
8,800.00	91.93	269.21	6,787.40	923.52	-2,324.51	2,311.55	0.00	0.00	0.00
8,900.00	91.93	269.21	6,784.03	922.14	-2,424.44	2,411.50	0.00	0.00	0.00
9,000.00	91.93	269.21	6,780.66	920.76	-2,524.38	2,511.44	0.00	0.00	0.00
9,100.00	91.93	269.21	6,777.29	919.38	-2,624.31	2,611.38	0.00	0.00	0.00
9,200.00	91.93	269.21	6,773.92	918.00	-2,724.24	2,711.33	0.00	0.00	0.00
9,300.00	91.93	269.21	6,770.55	916.61	-2,824.18	2,811.27	0.00	0.00	0.00
9,400.00	91.93	269.21	6,767.18	915.23	-2,924.11	2,911.21	0.00	0.00	0.00
9,500.00	91.93	269.21	6,763.81	913.85	-3,024.04	3,011.16	0.00	0.00	0.00
9,600.00	91.93	269.21	6,760.44	912.47	-3,123.98	3,111.10	0.00	0.00	0.00
9,700.00	91.93	269.21	6,757.07	911.08	-3,223.91	3,211.04	0.00	0.00	0.00
9,800.00	91.93	269.21	6,753.70	909.70	-3,323.84	3,310.99	0.00	0.00	0.00
9,900.00	91.93	269.21	6,750.33	908.32	-3,423.78	3,410.93	0.00	0.00	0.00
10,000.00	91.93	269.21	6,746.96	906.94	-3,523.71	3,510.87	0.00	0.00	0.00
10,100.00	91.93	269.21	6,743.59	905.55	-3,623.65	3,610.82	0.00	0.00	0.00
10,200.00	91.93	269.21	6,740.22	904.17	-3,723.58	3,710.76	0.00	0.00	0.00
10,300.00	91.93	269.21	6,736.85	902.79	-3,823.51	3,810.70	0.00	0.00	0.00
10,400.00	91.93	269.21	6,733.48	901.41	-3,923.45	3,910.65	0.00	0.00	0.00
10,500.00	91.93	269.21	6,730.11	900.03	-4,023.38	4,010.59	0.00	0.00	0.00
10,600.00	91.93	269.21	6,726.75	898.64	-4,123.31	4,110.53	0.00	0.00	0.00
10,700.00	91.93	269.21	6,723.38	897.26	-4,223.25	4,210.48	0.00	0.00	0.00
10,800.00	91.93	269.21	6,720.01	895.88	-4,323.18	4,310.42	0.00	0.00	0.00
10,900.00	91.93	269.21	6,716.64	894.50	-4,423.12	4,410.36	0.00	0.00	0.00
11,000.00	91.93	269.21	6,713.27	893.11	-4,523.05	4,510.30	0.00	0.00	0.00
11,100.00	91.93	269.21	6,709.90	891.73	-4,622.98	4,610.25	0.00	0.00	0.00
11,200.00	91.93	269.21	6,706.53	890.35	-4,722.92	4,710.19	0.00	0.00	0.00
11,300.00	91.93	269.21	6,703.16	888.97	-4,822.85	4,810.13	0.00	0.00	0.00
11,400.00	91.93	269.21	6,699.79	887.58	-4,922.78	4,910.08	0.00	0.00	0.00
11,500.00	91.93	269.21	6,696.42	886.20	-5,022.72	5,010.02	0.00	0.00	0.00
11,600.00	91.93	269.21	6,693.05	884.82	-5,122.65	5,109.96	0.00	0.00	0.00
11,700.00	91.93	269.21	6,689.68	883.44	-5,222.58	5,209.91	0.00	0.00	0.00
11,800.00	91.93	269.21	6,686.31	882.06	-5,322.52	5,309.85	0.00	0.00	0.00
11,900.00	91.93	269.21	6,682.94	880.67	-5,422.45	5,409.79	0.00	0.00	0.00
12,000.00	91.93	269.21	6,679.57	879.29	-5,522.39	5,509.74	0.00	0.00	0.00
12,100.00	91.93	269.21	6,676.20	877.91	-5,622.32	5,609.68	0.00	0.00	0.00
12,200.00	91.93	269.21	6,672.83	876.53	-5,722.25	5,709.62	0.00	0.00	0.00
12,300.00	91.93	269.21	6,669.46	875.14	-5,822.19	5,809.57	0.00	0.00	0.00
12,400.00	91.93	269.21	6,666.09	873.76	-5,922.12	5,909.51	0.00	0.00	0.00
12,500.00	91.93	269.21	6,662.73	872.38	-6,022.05	6,009.45	0.00	0.00	0.00
12,600.00	91.93	269.21	6,659.36	871.00	-6,121.99	6,109.40	0.00	0.00	0.00
12,700.00	91.93	269.21	6,655.99	869.61	-6,221.92	6,209.34	0.00	0.00	0.00
12,800.00	91.93	269.21	6,652.62	868.23	-6,321.85	6,309.28	0.00	0.00	0.00
12,900.00	91.93	269.21	6,649.25	866.85	-6,421.79	6,409.23	0.00	0.00	0.00
13,000.00	91.93	269.21	6,645.88	865.47	-6,521.72	6,509.17	0.00	0.00	0.00
13,100.00	91.93	269.21	6,642.51	864.08	-6,621.66	6,609.11	0.00	0.00	0.00
13,200.00	91.93	269.21	6,639.14	862.70	-6,721.59	6,709.06	0.00	0.00	0.00
13,300.00	91.93	269.21	6,635.77	861.32	-6,821.52	6,809.00	0.00	0.00	0.00
13,400.00	91.93	269.21	6,632.40	859.94	-6,921.46	6,908.94	0.00	0.00	0.00
13,500.00	91.93	269.21	6,629.03	858.56	-7,021.39	7,008.89	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
13,600.00	91.93	269.21	6,625.66	857.17	-7,121.32	7,108.83	0.00	0.00	0.00
13,700.00	91.93	269.21	6,622.29	855.79	-7,221.26	7,208.77	0.00	0.00	0.00
13,800.00	91.93	269.21	6,618.92	854.41	-7,321.19	7,308.72	0.00	0.00	0.00
13,900.00	91.93	269.21	6,615.55	853.03	-7,421.12	7,408.66	0.00	0.00	0.00
14,000.00	91.93	269.21	6,612.18	851.64	-7,521.06	7,508.60	0.00	0.00	0.00
14,100.00	91.93	269.21	6,608.81	850.26	-7,620.99	7,608.54	0.00	0.00	0.00
14,200.00	91.93	269.21	6,605.44	848.88	-7,720.93	7,708.49	0.00	0.00	0.00
14,300.00	91.93	269.21	6,602.07	847.50	-7,820.86	7,808.43	0.00	0.00	0.00
14,400.00	91.93	269.21	6,598.70	846.11	-7,920.79	7,908.37	0.00	0.00	0.00
14,500.00	91.93	269.21	6,595.34	844.73	-8,020.73	8,008.32	0.00	0.00	0.00
14,600.00	91.93	269.21	6,591.97	843.35	-8,120.66	8,108.26	0.00	0.00	0.00
14,700.00	91.93	269.21	6,588.60	841.97	-8,220.59	8,208.20	0.00	0.00	0.00
14,800.00	91.93	269.21	6,585.23	840.59	-8,320.53	8,308.15	0.00	0.00	0.00
14,900.00	91.93	269.21	6,581.86	839.20	-8,420.46	8,408.09	0.00	0.00	0.00
15,000.00	91.93	269.21	6,578.49	837.82	-8,520.40	8,508.03	0.00	0.00	0.00
15,100.00	91.93	269.21	6,575.12	836.44	-8,620.33	8,607.98	0.00	0.00	0.00
15,200.00	91.93	269.21	6,571.75	835.06	-8,720.26	8,707.92	0.00	0.00	0.00
15,300.00	91.93	269.21	6,568.38	833.67	-8,820.20	8,807.86	0.00	0.00	0.00
15,400.00	91.93	269.21	6,565.01	832.29	-8,920.13	8,907.81	0.00	0.00	0.00
15,500.00	91.93	269.21	6,561.64	830.91	-9,020.06	9,007.75	0.00	0.00	0.00
15,600.00	91.93	269.21	6,558.27	829.53	-9,120.00	9,107.69	0.00	0.00	0.00
15,700.00	91.93	269.21	6,554.90	828.14	-9,219.93	9,207.64	0.00	0.00	0.00
15,800.00	91.93	269.21	6,551.53	826.76	-9,319.86	9,307.58	0.00	0.00	0.00
15,900.00	91.93	269.21	6,548.16	825.38	-9,419.80	9,407.52	0.00	0.00	0.00
16,000.00	91.93	269.21	6,544.79	824.00	-9,519.73	9,507.47	0.00	0.00	0.00
16,100.00	91.93	269.21	6,541.42	822.62	-9,619.67	9,607.41	0.00	0.00	0.00
16,200.00	91.93	269.21	6,538.05	821.23	-9,719.60	9,707.35	0.00	0.00	0.00
16,300.00	91.93	269.21	6,534.68	819.85	-9,819.53	9,807.30	0.00	0.00	0.00
16,400.00	91.93	269.21	6,531.32	818.47	-9,919.47	9,907.24	0.00	0.00	0.00
16,500.00	91.93	269.21	6,527.95	817.09	-10,019.40	10,007.18	0.00	0.00	0.00
16,600.00	91.93	269.21	6,524.58	815.70	-10,119.33	10,107.13	0.00	0.00	0.00
16,700.00	91.93	269.21	6,521.21	814.32	-10,219.27	10,207.07	0.00	0.00	0.00
16,800.00	91.93	269.21	6,517.84	812.94	-10,319.20	10,307.01	0.00	0.00	0.00
16,900.00	91.93	269.21	6,514.47	811.56	-10,419.13	10,406.95	0.00	0.00	0.00
17,000.00	91.93	269.21	6,511.10	810.17	-10,519.07	10,506.90	0.00	0.00	0.00
17,100.00	91.93	269.21	6,507.73	808.79	-10,619.00	10,606.84	0.00	0.00	0.00
17,200.00	91.93	269.21	6,504.36	807.41	-10,718.94	10,706.78	0.00	0.00	0.00
17,300.00	91.93	269.21	6,500.99	806.03	-10,818.87	10,806.73	0.00	0.00	0.00
17,400.00	91.93	269.21	6,497.62	804.64	-10,918.80	10,906.67	0.00	0.00	0.00
17,448.09	91.93	269.21	6,496.00	803.98	-10,966.86	10,954.73	0.00	0.00	0.00
TD Well @ 17448.09ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,520.87	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
7,387.20	6,835.00	Top of Production	5-1/2	7-7/8	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SHAKE 11-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5011.00usft (Drilling Rig)
Site:	4N-68W-11 S&B 5-11HZ PAD	North Reference:	True
Well:	SHAKE 11-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,126.68	1,119.00	Fox Hills				
3,514.71	3,424.00	Parkman				
4,028.71	3,920.00	Sussex				
6,975.35	6,733.00	Sharon Springs				
7,069.30	6,776.00	Niobrara				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,264.00	1,252.13	131.67	-23.81	Hold Tangent @ 1264.00ft	
4,064.00	3,954.05	854.54	-154.53	Begin Drop @ 4064.00ft	
4,824.50	4,705.65	953.29	-172.38	Hold Vertical @ 4824.50ft	
6,238.06	6,119.21	953.29	-172.38	KOP @ 6238.06ft :: DLS = 8"/100'	
7,387.20	6,835.00	943.05	-912.64	End Build @ 7387.20ft	
17,448.09	6,496.00	803.98	-10,966.86	TD Well @ 17448.09ft	