

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
5N-67W-18 PROWANT 4-18HZ PAD
PROWANT 18-10HZ**

Plan A

Plan: Permit Rev-4

SHL Lat/Long: 40.404925°/-104.942386°
Survey Program: MWD+IFR+MSA

Standard Planning Report

03 January, 2019

Project: WELD-NAD83-UTMFT13N
 Site: 5N-67W-18 PROWANT 4-18HZ PAD
 Well: PROWANT 18-10HZ
 Wellbore: Plan A
 Design: Permit Rev-4

US ROCKIES WATTENBERG PLANNING

CASING DETAILS		
TVD	MD	Size
1500.00	1519.64	9-5/8
7206.00	7711.00	5-1/2

WELL DETAILS: PROWANT 18-10HZ
 GL = 4939.00
 RKB = 17' @ 4956.00usft (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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1090.00	13.35	179.20	1081.97	-103.21	1.44	1.50	179.20	0.31	
4	3890.00	13.35	179.20	3806.31	-749.66	10.47	0.00	0.00	2.22	
5	4557.50	0.00	0.00	4467.78	-827.07	11.55	2.00	-180.00	2.45	
6	6579.55	0.00	0.00	6489.83	-827.07	11.55	0.00	0.00	2.45	
7	7711.00	90.52	268.73	7206.00	-843.15	-710.92	8.00	268.73	725.09	
8	18336.37	90.52	268.73	7110.29	-1079.56	-11333.23	0.00	0.00	11349.88	PROWANT 18-10HZ_target
9	18461.89	90.52	270.61	7109.16	-1080.29	-11458.73	1.50	89.98	11475.38	
10	20586.88	90.52	270.61	7090.00	-1057.75	-13583.52	0.00	0.00	13599.48	PROWANT 18-10HZ_BHL

SHL
741' FNL
622' FWL

HEEL
1587' FNL
75' FEL

TOE
1839' FNL
2164' FEL

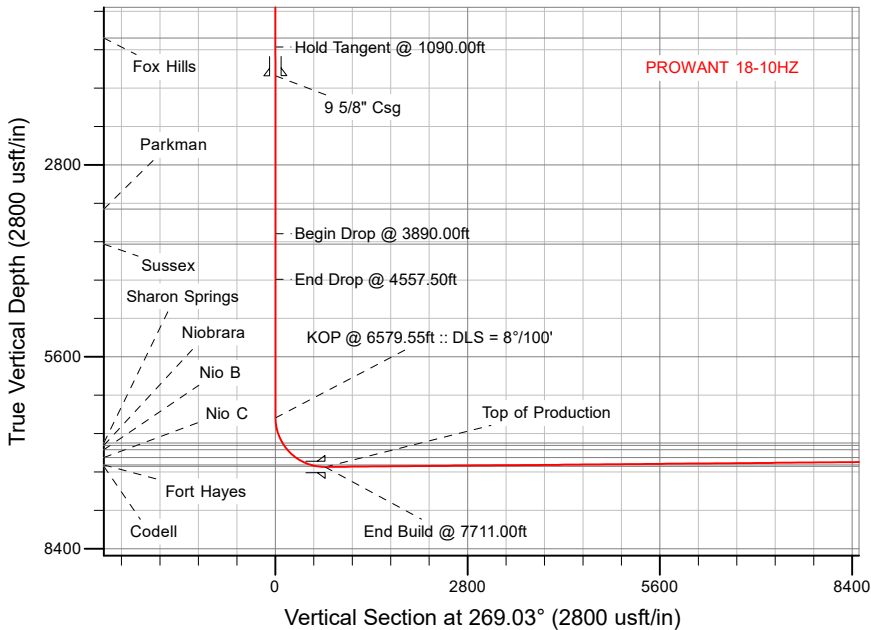
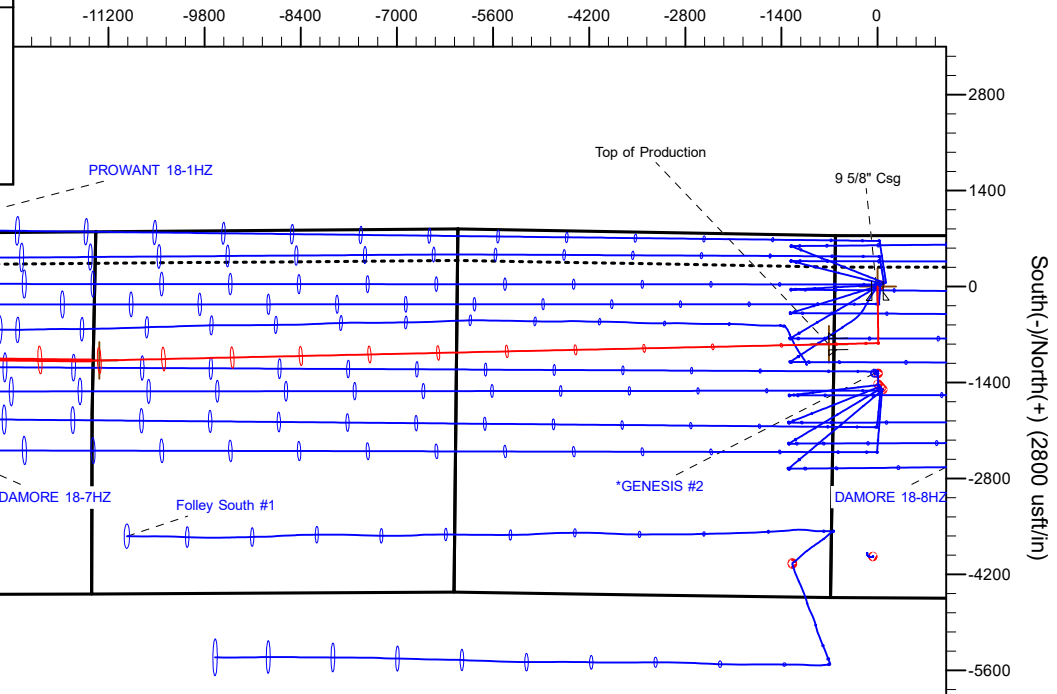
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
PROWANT 18-10HZ_SHL	0.00	0.00	0.00	40.404925	-104.942386
PROWANT 18-10HZ_BHL	7090.00	-1057.75	-13583.52	40.402010	-104.991177

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
949.00	953.88	Fox Hills
3445.00	3518.66	Parkman
3956.00	4042.95	Sussex
6858.00	6966.23	Sharon Springs
6894.00	7008.99	Niobrara
6956.00	7087.16	Nio B
7070.00	7255.83	Nio C
7176.00	7496.42	Fort Hayes
7198.00	7597.20	Codell

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



Plan: Permit Rev-4 (PROWANT 18-10HZ/Plan A)

Date: 1/3/2019

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PROWANT 18-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	5N-67W-18 PROWANT 4-18HZ PAD				
Site Position:		Northing:	14,674,247.77 usft	Latitude:	40.405074
From:	Lat/Long	Easting:	1,656,579.10 usft	Longitude:	-104.941943
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.04 °

Well	PROWANT 18-10HZ					
Well Position	+N-S	-54.26 usft	Northing:	14,674,193.43 usft	Latitude:	40.404925
	+E-W	-123.33 usft	Easting:	1,656,455.81 usft	Longitude:	-104.942386
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,939.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/21/2018	8.17	66.80	52,231.16647550

Design	Permit Rev-4			
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	269.03

Plan Survey Tool Program	Date	1/3/2019			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-4 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	20,586.88	Permit Rev-4 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

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Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,090.00	13.35	179.20	1,081.97	-103.21	1.44	1.50	1.50	0.00	179.20	
3,890.00	13.35	179.20	3,806.31	-749.66	10.47	0.00	0.00	0.00	0.00	
4,557.50	0.00	0.00	4,467.78	-827.07	11.55	2.00	-2.00	-26.85	-180.00	
6,579.55	0.00	0.00	6,489.83	-827.07	11.55	0.00	0.00	0.00	0.00	
7,711.00	90.52	268.73	7,206.00	-843.15	-710.92	8.00	8.00	-8.07	268.73	
18,336.37	90.52	268.73	7,110.29	-1,079.56	-11,333.23	0.00	0.00	0.00	0.00	PROWANT 18-10HZ_
18,461.89	90.52	270.61	7,109.16	-1,080.29	-11,458.73	1.50	0.00	1.50	89.98	
20,586.88	90.52	270.61	7,090.00	-1,057.75	-13,583.52	0.00	0.00	0.00	0.00	PROWANT 18-10HZ_

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Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
Begin Nudge @ 200.00ft										
300.00	1.50	179.20	299.99	-1.31	0.02	0.00	1.50	1.50	0.00	0.00
400.00	3.00	179.20	399.91	-5.23	0.07	0.02	1.50	1.50	0.00	0.00
500.00	4.50	179.20	499.69	-11.77	0.16	0.03	1.50	1.50	0.00	0.00
600.00	6.00	179.20	599.27	-20.92	0.29	0.06	1.50	1.50	0.00	0.00
700.00	7.50	179.20	698.57	-32.68	0.46	0.10	1.50	1.50	0.00	0.00
800.00	9.00	179.20	797.54	-47.02	0.66	0.14	1.50	1.50	0.00	0.00
900.00	10.50	179.20	896.09	-63.96	0.89	0.19	1.50	1.50	0.00	0.00
953.88	11.31	179.20	949.00	-74.15	1.04	0.22	1.50	1.50	0.00	0.00
Fox Hills										
1,000.00	12.00	179.20	994.16	-83.46	1.17	0.25	1.50	1.50	0.00	0.00
1,090.00	13.35	179.20	1,081.97	-103.21	1.44	0.31	1.50	1.50	0.00	0.00
Hold Tangent @ 1090.00ft										
1,100.00	13.35	179.20	1,091.70	-105.52	1.47	0.31	0.00	0.00	0.00	0.00
1,200.00	13.35	179.20	1,189.00	-128.60	1.80	0.38	0.00	0.00	0.00	0.00
1,300.00	13.35	179.20	1,286.29	-151.69	2.12	0.45	0.00	0.00	0.00	0.00
1,400.00	13.35	179.20	1,383.59	-174.78	2.44	0.52	0.00	0.00	0.00	0.00
1,500.00	13.35	179.20	1,480.89	-197.87	2.76	0.59	0.00	0.00	0.00	0.00
1,519.64	13.35	179.20	1,500.00	-202.40	2.83	0.60	0.00	0.00	0.00	0.00
9 5/8" Csg										
1,600.00	13.35	179.20	1,578.19	-220.95	3.09	0.66	0.00	0.00	0.00	0.00
1,700.00	13.35	179.20	1,675.49	-244.04	3.41	0.72	0.00	0.00	0.00	0.00
1,800.00	13.35	179.20	1,772.78	-267.13	3.73	0.79	0.00	0.00	0.00	0.00
1,900.00	13.35	179.20	1,870.08	-290.22	4.05	0.86	0.00	0.00	0.00	0.00
2,000.00	13.35	179.20	1,967.38	-313.30	4.37	0.93	0.00	0.00	0.00	0.00
2,100.00	13.35	179.20	2,064.68	-336.39	4.70	1.00	0.00	0.00	0.00	0.00
2,200.00	13.35	179.20	2,161.97	-359.48	5.02	1.07	0.00	0.00	0.00	0.00
2,300.00	13.35	179.20	2,259.27	-382.57	5.34	1.14	0.00	0.00	0.00	0.00
2,400.00	13.35	179.20	2,356.57	-405.66	5.66	1.20	0.00	0.00	0.00	0.00
2,500.00	13.35	179.20	2,453.87	-428.74	5.99	1.27	0.00	0.00	0.00	0.00
2,600.00	13.35	179.20	2,551.17	-451.83	6.31	1.34	0.00	0.00	0.00	0.00
2,700.00	13.35	179.20	2,648.46	-474.92	6.63	1.41	0.00	0.00	0.00	0.00
2,800.00	13.35	179.20	2,745.76	-498.01	6.95	1.48	0.00	0.00	0.00	0.00
2,900.00	13.35	179.20	2,843.06	-521.09	7.28	1.55	0.00	0.00	0.00	0.00
3,000.00	13.35	179.20	2,940.36	-544.18	7.60	1.61	0.00	0.00	0.00	0.00
3,100.00	13.35	179.20	3,037.65	-567.27	7.92	1.68	0.00	0.00	0.00	0.00
3,200.00	13.35	179.20	3,134.95	-590.36	8.24	1.75	0.00	0.00	0.00	0.00
3,300.00	13.35	179.20	3,232.25	-613.44	8.57	1.82	0.00	0.00	0.00	0.00
3,400.00	13.35	179.20	3,329.55	-636.53	8.89	1.89	0.00	0.00	0.00	0.00
3,500.00	13.35	179.20	3,426.85	-659.62	9.21	1.96	0.00	0.00	0.00	0.00
3,518.66	13.35	179.20	3,445.00	-663.93	9.27	1.97	0.00	0.00	0.00	0.00
Parkman										
3,600.00	13.35	179.20	3,524.14	-682.71	9.53	2.03	0.00	0.00	0.00	0.00
3,700.00	13.35	179.20	3,621.44	-705.79	9.86	2.09	0.00	0.00	0.00	0.00
3,800.00	13.35	179.20	3,718.74	-728.88	10.18	2.16	0.00	0.00	0.00	0.00
3,890.00	13.35	179.20	3,806.31	-749.66	10.47	2.22	0.00	0.00	0.00	0.00
Begin Drop @ 3890.00ft										
3,900.00	13.15	179.20	3,816.04	-751.95	10.50	2.23	2.00	-2.00	0.00	0.00
4,000.00	11.15	179.20	3,913.80	-773.00	10.79	2.29	2.00	-2.00	0.00	0.00
4,042.95	10.29	179.20	3,956.00	-780.99	10.91	2.32	2.00	-2.00	0.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)
Sussex									
4,100.00	9.15	179.20	4,012.23	-790.62	11.04	2.35	2.00	-2.00	0.00
4,200.00	7.15	179.20	4,111.21	-804.79	11.24	2.39	2.00	-2.00	0.00
4,300.00	5.15	179.20	4,210.63	-815.50	11.39	2.42	2.00	-2.00	0.00
4,400.00	3.15	179.20	4,310.36	-822.74	11.49	2.44	2.00	-2.00	0.00
4,500.00	1.15	179.20	4,410.29	-826.49	11.54	2.45	2.00	-2.00	0.00
4,557.50	0.00	0.00	4,467.78	-827.07	11.55	2.45	2.00	-2.00	-311.65
End Drop @ 4557.50ft									
4,600.00	0.00	0.00	4,510.28	-827.07	11.55	2.45	0.00	0.00	0.00
4,700.00	0.00	0.00	4,610.28	-827.07	11.55	2.45	0.00	0.00	0.00
4,800.00	0.00	0.00	4,710.28	-827.07	11.55	2.45	0.00	0.00	0.00
4,900.00	0.00	0.00	4,810.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,000.00	0.00	0.00	4,910.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,100.00	0.00	0.00	5,010.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,200.00	0.00	0.00	5,110.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,300.00	0.00	0.00	5,210.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,400.00	0.00	0.00	5,310.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,500.00	0.00	0.00	5,410.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,600.00	0.00	0.00	5,510.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,700.00	0.00	0.00	5,610.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,800.00	0.00	0.00	5,710.28	-827.07	11.55	2.45	0.00	0.00	0.00
5,900.00	0.00	0.00	5,810.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,000.00	0.00	0.00	5,910.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,100.00	0.00	0.00	6,010.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,200.00	0.00	0.00	6,110.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,300.00	0.00	0.00	6,210.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,400.00	0.00	0.00	6,310.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,500.00	0.00	0.00	6,410.28	-827.07	11.55	2.45	0.00	0.00	0.00
6,579.55	0.00	0.00	6,489.83	-827.07	11.55	2.45	0.00	0.00	0.00
KOP @ 6579.55ft :: DLS = 8°/100'									
6,600.00	1.64	268.73	6,510.28	-827.07	11.26	2.75	8.00	8.00	-446.33
6,700.00	9.64	268.73	6,609.72	-827.29	1.45	12.56	8.00	8.00	0.00
6,800.00	17.64	268.73	6,706.82	-827.82	-22.10	36.11	8.00	8.00	0.00
6,900.00	25.64	268.73	6,799.70	-828.64	-58.94	72.96	8.00	8.00	0.00
6,966.23	30.93	268.73	6,858.00	-829.33	-90.30	104.33	8.00	8.00	0.00
Sharon Springs									
7,000.00	33.64	268.73	6,886.55	-829.73	-108.33	122.36	8.00	8.00	0.00
7,008.99	34.36	268.73	6,894.00	-829.85	-113.36	127.39	8.00	8.00	0.00
Niobrara									
7,087.16	40.61	268.73	6,956.00	-830.90	-160.89	174.93	8.00	8.00	0.00
Nio B									
7,100.00	41.64	268.73	6,965.67	-831.09	-169.33	183.38	8.00	8.00	0.00
7,200.00	49.64	268.73	7,035.54	-832.68	-240.75	254.81	8.00	8.00	0.00
7,255.83	54.10	268.73	7,070.00	-833.66	-284.64	298.71	8.00	8.00	0.00
Nio C									
7,300.00	57.64	268.73	7,094.78	-834.47	-321.19	335.27	8.00	8.00	0.00
7,400.00	65.64	268.73	7,142.25	-836.43	-409.09	423.19	8.00	8.00	0.00
7,496.42	73.35	268.73	7,176.00	-838.44	-499.31	513.43	8.00	8.00	0.00
Fort Hayes									
7,500.00	73.64	268.73	7,177.02	-838.51	-502.74	516.86	8.00	8.00	0.00
7,597.20	81.41	268.73	7,198.00	-840.62	-597.55	611.69	8.00	8.00	0.00
Codell									
7,600.00	81.64	268.73	7,198.41	-840.68	-600.32	614.46	8.00	8.00	0.00

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)	
7,700.00	89.64	268.73	7,206.02	-842.90	-699.92	714.09	8.00	8.00	0.00	
7,711.00	90.52	268.73	7,206.00	-843.15	-710.92	725.09	8.00	8.00	0.00	
End Build @ 7711.00ft - Top of Production										
7,800.00	90.52	268.73	7,205.20	-845.13	-799.89	814.09	0.00	0.00	0.00	
7,900.00	90.52	268.73	7,204.30	-847.35	-899.87	914.08	0.00	0.00	0.00	
8,000.00	90.52	268.73	7,203.40	-849.58	-999.84	1,014.08	0.00	0.00	0.00	
8,100.00	90.52	268.73	7,202.50	-851.80	-1,099.81	1,114.07	0.00	0.00	0.00	
8,200.00	90.52	268.73	7,201.60	-854.03	-1,199.78	1,214.06	0.00	0.00	0.00	
8,300.00	90.52	268.73	7,200.70	-856.25	-1,299.75	1,314.06	0.00	0.00	0.00	
8,400.00	90.52	268.73	7,199.80	-858.48	-1,399.72	1,414.05	0.00	0.00	0.00	
8,500.00	90.52	268.73	7,198.89	-860.70	-1,499.69	1,514.05	0.00	0.00	0.00	
8,600.00	90.52	268.73	7,197.99	-862.93	-1,599.66	1,614.04	0.00	0.00	0.00	
8,700.00	90.52	268.73	7,197.09	-865.15	-1,699.63	1,714.04	0.00	0.00	0.00	
8,800.00	90.52	268.73	7,196.19	-867.38	-1,799.61	1,814.03	0.00	0.00	0.00	
8,900.00	90.52	268.73	7,195.29	-869.60	-1,899.58	1,914.03	0.00	0.00	0.00	
9,000.00	90.52	268.73	7,194.39	-871.83	-1,999.55	2,014.02	0.00	0.00	0.00	
9,100.00	90.52	268.73	7,193.49	-874.05	-2,099.52	2,114.02	0.00	0.00	0.00	
9,200.00	90.52	268.73	7,192.59	-876.28	-2,199.49	2,214.01	0.00	0.00	0.00	
9,300.00	90.52	268.73	7,191.69	-878.50	-2,299.46	2,314.00	0.00	0.00	0.00	
9,400.00	90.52	268.73	7,190.79	-880.73	-2,399.43	2,414.00	0.00	0.00	0.00	
9,500.00	90.52	268.73	7,189.89	-882.95	-2,499.40	2,513.99	0.00	0.00	0.00	
9,600.00	90.52	268.73	7,188.99	-885.18	-2,599.38	2,613.99	0.00	0.00	0.00	
9,700.00	90.52	268.73	7,188.09	-887.40	-2,699.35	2,713.98	0.00	0.00	0.00	
9,800.00	90.52	268.73	7,187.18	-889.63	-2,799.32	2,813.98	0.00	0.00	0.00	
9,900.00	90.52	268.73	7,186.28	-891.85	-2,899.29	2,913.97	0.00	0.00	0.00	
10,000.00	90.52	268.73	7,185.38	-894.08	-2,999.26	3,013.97	0.00	0.00	0.00	
10,100.00	90.52	268.73	7,184.48	-896.30	-3,099.23	3,113.96	0.00	0.00	0.00	
10,200.00	90.52	268.73	7,183.58	-898.53	-3,199.20	3,213.95	0.00	0.00	0.00	
10,300.00	90.52	268.73	7,182.68	-900.75	-3,299.17	3,313.95	0.00	0.00	0.00	
10,400.00	90.52	268.73	7,181.78	-902.98	-3,399.14	3,413.94	0.00	0.00	0.00	
10,500.00	90.52	268.73	7,180.88	-905.20	-3,499.12	3,513.94	0.00	0.00	0.00	
10,600.00	90.52	268.73	7,179.98	-907.43	-3,599.09	3,613.93	0.00	0.00	0.00	
10,700.00	90.52	268.73	7,179.08	-909.65	-3,699.06	3,713.93	0.00	0.00	0.00	
10,800.00	90.52	268.73	7,178.18	-911.88	-3,799.03	3,813.92	0.00	0.00	0.00	
10,900.00	90.52	268.73	7,177.28	-914.10	-3,899.00	3,913.92	0.00	0.00	0.00	
11,000.00	90.52	268.73	7,176.37	-916.33	-3,998.97	4,013.91	0.00	0.00	0.00	
11,100.00	90.52	268.73	7,175.47	-918.55	-4,098.94	4,113.91	0.00	0.00	0.00	
11,200.00	90.52	268.73	7,174.57	-920.78	-4,198.91	4,213.90	0.00	0.00	0.00	
11,300.00	90.52	268.73	7,173.67	-923.00	-4,298.89	4,313.89	0.00	0.00	0.00	
11,400.00	90.52	268.73	7,172.77	-925.23	-4,398.86	4,413.89	0.00	0.00	0.00	
11,500.00	90.52	268.73	7,171.87	-927.45	-4,498.83	4,513.88	0.00	0.00	0.00	
11,600.00	90.52	268.73	7,170.97	-929.68	-4,598.80	4,613.88	0.00	0.00	0.00	
11,700.00	90.52	268.73	7,170.07	-931.90	-4,698.77	4,713.87	0.00	0.00	0.00	
11,800.00	90.52	268.73	7,169.17	-934.13	-4,798.74	4,813.87	0.00	0.00	0.00	
11,900.00	90.52	268.73	7,168.27	-936.35	-4,898.71	4,913.86	0.00	0.00	0.00	
12,000.00	90.52	268.73	7,167.37	-938.58	-4,998.68	5,013.86	0.00	0.00	0.00	
12,100.00	90.52	268.73	7,166.47	-940.80	-5,098.65	5,113.85	0.00	0.00	0.00	
12,200.00	90.52	268.73	7,165.57	-943.03	-5,198.63	5,213.85	0.00	0.00	0.00	
12,300.00	90.52	268.73	7,164.66	-945.25	-5,298.60	5,313.84	0.00	0.00	0.00	
12,400.00	90.52	268.73	7,163.76	-947.48	-5,398.57	5,413.83	0.00	0.00	0.00	
12,500.00	90.52	268.73	7,162.86	-949.70	-5,498.54	5,513.83	0.00	0.00	0.00	
12,600.00	90.52	268.73	7,161.96	-951.93	-5,598.51	5,613.82	0.00	0.00	0.00	
12,700.00	90.52	268.73	7,161.06	-954.15	-5,698.48	5,713.82	0.00	0.00	0.00	
12,800.00	90.52	268.73	7,160.16	-956.38	-5,798.45	5,813.81	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PROWANT 18-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)
12,900.00	90.52	268.73	7,159.26	-958.60	-5,898.42	5,913.81	0.00	0.00	0.00
13,000.00	90.52	268.73	7,158.36	-960.83	-5,998.40	6,013.80	0.00	0.00	0.00
13,100.00	90.52	268.73	7,157.46	-963.05	-6,098.37	6,113.80	0.00	0.00	0.00
13,200.00	90.52	268.73	7,156.56	-965.28	-6,198.34	6,213.79	0.00	0.00	0.00
13,300.00	90.52	268.73	7,155.66	-967.50	-6,298.31	6,313.79	0.00	0.00	0.00
13,400.00	90.52	268.73	7,154.76	-969.73	-6,398.28	6,413.78	0.00	0.00	0.00
13,500.00	90.52	268.73	7,153.86	-971.95	-6,498.25	6,513.77	0.00	0.00	0.00
13,600.00	90.52	268.73	7,152.95	-974.18	-6,598.22	6,613.77	0.00	0.00	0.00
13,700.00	90.52	268.73	7,152.05	-976.40	-6,698.19	6,713.76	0.00	0.00	0.00
13,800.00	90.52	268.73	7,151.15	-978.63	-6,798.17	6,813.76	0.00	0.00	0.00
13,900.00	90.52	268.73	7,150.25	-980.85	-6,898.14	6,913.75	0.00	0.00	0.00
14,000.00	90.52	268.73	7,149.35	-983.08	-6,998.11	7,013.75	0.00	0.00	0.00
14,100.00	90.52	268.73	7,148.45	-985.30	-7,098.08	7,113.74	0.00	0.00	0.00
14,200.00	90.52	268.73	7,147.55	-987.53	-7,198.05	7,213.74	0.00	0.00	0.00
14,300.00	90.52	268.73	7,146.65	-989.75	-7,298.02	7,313.73	0.00	0.00	0.00
14,400.00	90.52	268.73	7,145.75	-991.98	-7,397.99	7,413.73	0.00	0.00	0.00
14,500.00	90.52	268.73	7,144.85	-994.20	-7,497.96	7,513.72	0.00	0.00	0.00
14,600.00	90.52	268.73	7,143.95	-996.43	-7,597.93	7,613.71	0.00	0.00	0.00
14,700.00	90.52	268.73	7,143.05	-998.65	-7,697.91	7,713.71	0.00	0.00	0.00
14,800.00	90.52	268.73	7,142.15	-1,000.88	-7,797.88	7,813.70	0.00	0.00	0.00
14,900.00	90.52	268.73	7,141.24	-1,003.10	-7,897.85	7,913.70	0.00	0.00	0.00
15,000.00	90.52	268.73	7,140.34	-1,005.33	-7,997.82	8,013.69	0.00	0.00	0.00
15,100.00	90.52	268.73	7,139.44	-1,007.55	-8,097.79	8,113.69	0.00	0.00	0.00
15,200.00	90.52	268.73	7,138.54	-1,009.78	-8,197.76	8,213.68	0.00	0.00	0.00
15,300.00	90.52	268.73	7,137.64	-1,012.00	-8,297.73	8,313.68	0.00	0.00	0.00
15,400.00	90.52	268.73	7,136.74	-1,014.23	-8,397.70	8,413.67	0.00	0.00	0.00
15,500.00	90.52	268.73	7,135.84	-1,016.45	-8,497.68	8,513.66	0.00	0.00	0.00
15,600.00	90.52	268.73	7,134.94	-1,018.68	-8,597.65	8,613.66	0.00	0.00	0.00
15,700.00	90.52	268.73	7,134.04	-1,020.90	-8,697.62	8,713.65	0.00	0.00	0.00
15,800.00	90.52	268.73	7,133.14	-1,023.13	-8,797.59	8,813.65	0.00	0.00	0.00
15,900.00	90.52	268.73	7,132.24	-1,025.35	-8,897.56	8,913.64	0.00	0.00	0.00
16,000.00	90.52	268.73	7,131.34	-1,027.58	-8,997.53	9,013.64	0.00	0.00	0.00
16,100.00	90.52	268.73	7,130.43	-1,029.80	-9,097.50	9,113.63	0.00	0.00	0.00
16,200.00	90.52	268.73	7,129.53	-1,032.03	-9,197.47	9,213.63	0.00	0.00	0.00
16,300.00	90.52	268.73	7,128.63	-1,034.25	-9,297.44	9,313.62	0.00	0.00	0.00
16,400.00	90.52	268.73	7,127.73	-1,036.48	-9,397.42	9,413.62	0.00	0.00	0.00
16,500.00	90.52	268.73	7,126.83	-1,038.70	-9,497.39	9,513.61	0.00	0.00	0.00
16,600.00	90.52	268.73	7,125.93	-1,040.93	-9,597.36	9,613.60	0.00	0.00	0.00
16,700.00	90.52	268.73	7,125.03	-1,043.15	-9,697.33	9,713.60	0.00	0.00	0.00
16,800.00	90.52	268.73	7,124.13	-1,045.38	-9,797.30	9,813.59	0.00	0.00	0.00
16,900.00	90.52	268.73	7,123.23	-1,047.60	-9,897.27	9,913.59	0.00	0.00	0.00
17,000.00	90.52	268.73	7,122.33	-1,049.83	-9,997.24	10,013.58	0.00	0.00	0.00
17,100.00	90.52	268.73	7,121.43	-1,052.05	-10,097.21	10,113.58	0.00	0.00	0.00
17,200.00	90.52	268.73	7,120.53	-1,054.28	-10,197.19	10,213.57	0.00	0.00	0.00
17,300.00	90.52	268.73	7,119.63	-1,056.50	-10,297.16	10,313.57	0.00	0.00	0.00
17,400.00	90.52	268.73	7,118.72	-1,058.73	-10,397.13	10,413.56	0.00	0.00	0.00
17,500.00	90.52	268.73	7,117.82	-1,060.95	-10,497.10	10,513.56	0.00	0.00	0.00
17,600.00	90.52	268.73	7,116.92	-1,063.18	-10,597.07	10,613.55	0.00	0.00	0.00
17,700.00	90.52	268.73	7,116.02	-1,065.40	-10,697.04	10,713.54	0.00	0.00	0.00
17,800.00	90.52	268.73	7,115.12	-1,067.63	-10,797.01	10,813.54	0.00	0.00	0.00
17,900.00	90.52	268.73	7,114.22	-1,069.85	-10,896.98	10,913.53	0.00	0.00	0.00
18,000.00	90.52	268.73	7,113.32	-1,072.08	-10,996.96	11,013.53	0.00	0.00	0.00
18,100.00	90.52	268.73	7,112.42	-1,074.30	-11,096.93	11,113.52	0.00	0.00	0.00
18,200.00	90.52	268.73	7,111.52	-1,076.53	-11,196.90	11,213.52	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PROWANT 18-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)
18,300.00	90.52	268.73	7,110.62	-1,078.75	-11,296.87	11,313.51	0.00	0.00	0.00
18,336.37	90.52	268.73	7,110.29	-1,079.56	-11,333.23	11,349.88	0.00	0.00	0.00
Begin Turn to BHL @ 18336.37ft									
18,400.00	90.52	269.68	7,109.72	-1,080.45	-11,396.85	11,413.51	1.50	0.00	1.50
18,461.89	90.52	270.61	7,109.16	-1,080.29	-11,458.74	11,475.38	1.50	0.00	1.50
End Turn @ 18461.89ft									
18,500.00	90.52	270.61	7,108.82	-1,079.89	-11,496.84	11,513.48	0.00	0.00	0.00
18,600.00	90.52	270.61	7,107.91	-1,078.83	-11,596.83	11,613.43	0.00	0.00	0.00
18,700.00	90.52	270.61	7,107.01	-1,077.76	-11,696.82	11,713.39	0.00	0.00	0.00
18,800.00	90.52	270.61	7,106.11	-1,076.70	-11,796.81	11,813.35	0.00	0.00	0.00
18,900.00	90.52	270.61	7,105.21	-1,075.64	-11,896.80	11,913.31	0.00	0.00	0.00
19,000.00	90.52	270.61	7,104.31	-1,074.58	-11,996.79	12,013.27	0.00	0.00	0.00
19,100.00	90.52	270.61	7,103.41	-1,073.52	-12,096.78	12,113.22	0.00	0.00	0.00
19,200.00	90.52	270.61	7,102.50	-1,072.46	-12,196.77	12,213.18	0.00	0.00	0.00
19,300.00	90.52	270.61	7,101.60	-1,071.40	-12,296.76	12,313.14	0.00	0.00	0.00
19,400.00	90.52	270.61	7,100.70	-1,070.34	-12,396.75	12,413.10	0.00	0.00	0.00
19,500.00	90.52	270.61	7,099.80	-1,069.28	-12,496.74	12,513.06	0.00	0.00	0.00
19,600.00	90.52	270.61	7,098.90	-1,068.22	-12,596.73	12,613.01	0.00	0.00	0.00
19,700.00	90.52	270.61	7,098.00	-1,067.16	-12,696.73	12,712.97	0.00	0.00	0.00
19,800.00	90.52	270.61	7,097.09	-1,066.10	-12,796.72	12,812.93	0.00	0.00	0.00
19,900.00	90.52	270.61	7,096.19	-1,065.04	-12,896.71	12,912.89	0.00	0.00	0.00
20,000.00	90.52	270.61	7,095.29	-1,063.98	-12,996.70	13,012.85	0.00	0.00	0.00
20,100.00	90.52	270.61	7,094.39	-1,062.91	-13,096.69	13,112.80	0.00	0.00	0.00
20,200.00	90.52	270.61	7,093.49	-1,061.85	-13,196.68	13,212.76	0.00	0.00	0.00
20,300.00	90.52	270.61	7,092.59	-1,060.79	-13,296.67	13,312.72	0.00	0.00	0.00
20,400.00	90.52	270.61	7,091.69	-1,059.73	-13,396.66	13,412.68	0.00	0.00	0.00
20,500.00	90.52	270.61	7,090.78	-1,058.67	-13,496.65	13,512.64	0.00	0.00	0.00
20,586.88	90.52	270.61	7,090.00	-1,057.75	-13,583.52	13,599.48	0.00	0.00	0.00
TD Well @ 20586.88ft									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,519.64	1,500.00	9 5/8" Csg	9-5/8	13-1/2
7,711.00	7,206.00	Top of Production	5-1/2	7-7/8

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PROWANT 18-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	5N-67W-18 PROWANT 4-18HZ PAD	North Reference:	True
Well:	PROWANT 18-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
953.88	949.00	Fox Hills				
3,518.66	3,445.00	Parkman				
4,042.95	3,956.00	Sussex				
6,966.23	6,858.00	Sharon Springs				
7,008.99	6,894.00	Niobrara				
7,087.16	6,956.00	Nio B				
7,255.83	7,070.00	Nio C				
7,496.42	7,176.00	Fort Hayes				
7,597.20	7,198.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N/-S (usft)	+E/-W (usft)		
200.00	200.00	0.00	0.00		Begin Nudge @ 200.00ft
1,090.00	1,081.97	-103.21	1.44		Hold Tangent @ 1090.00ft
3,890.00	3,806.31	-749.66	10.47		Begin Drop @ 3890.00ft
4,557.50	4,467.78	-827.07	11.55		End Drop @ 4557.50ft
6,579.55	6,489.83	-827.07	11.55		KOP @ 6579.55ft :: DLS = 8"/100'
7,711.00	7,206.00	-843.15	-710.92		End Build @ 7711.00ft
18,336.37	7,110.29	-1,079.56	-11,333.23		Begin Turn to BHL @ 18336.37ft
18,461.89	7,109.16	-1,080.29	-11,458.74		End Turn @ 18461.89ft
20,586.88	7,090.00	-1,057.75	-13,583.52		TD Well @ 20586.88ft