

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

5N-67W-18 DAMORE 5-18HZ PAD

DAMORE 18-7HZ

Plan A

Plan: Permit Rev-5

SHL Lat/Long: 40.400822°/-104.942143°

Survey Program: MWD+IFR+MSA

Standard Planning Report

04 January, 2019

Project: WELD-NAD83-UTMFT13N
Site: 5N-67W-18 DAMORE 5-18HZ PAD
Well: DAMORE 18-7HZ
Wellbore: Plan A
Design: Permit Rev-5

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1516.81	9-5/8
7181.00	7703.46	5-1/2

WELL DETAILS: DAMORE 18-7HZ

GL = 4922.00

RKB = 17' @ 4939.00usft (Drilling Rig)

SECTION DETAILS

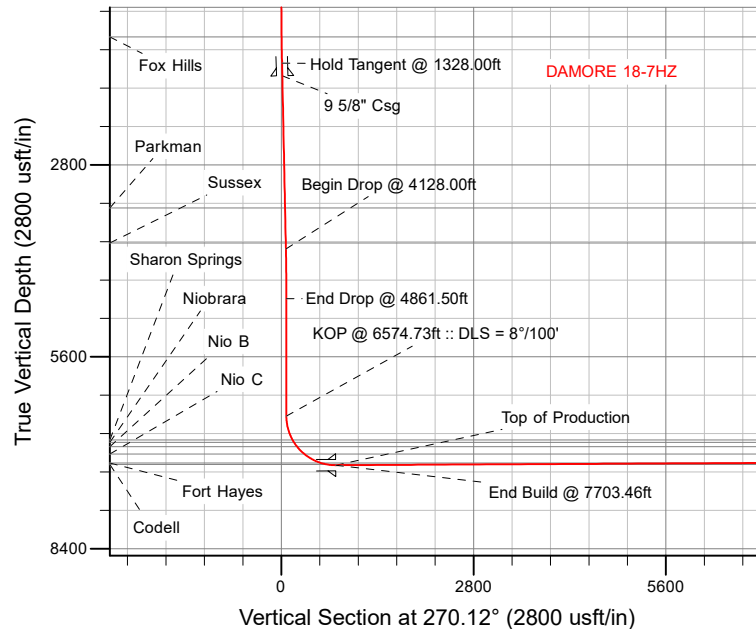
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	
3	1328.00	14.67	184.60	1317.35	-124.12	-9.99	1.50	184.60	9.73	
4	4128.00	14.67	184.60	4026.07	-830.94	-66.86	0.00	0.00	65.12	
5	4861.50	0.00	0.00	4751.58	-924.03	-74.35	2.00	180.00	72.41	
6	6574.73	0.00	0.00	6464.81	-924.03	-74.35	0.00	0.00	72.41	
7	7703.46	90.30	270.12	7181.00	-922.56	-794.27	8.00	270.12	792.34	
8	20571.42	90.30	270.12	7114.00	-896.35	-13662.03	0.00	0.00	13660.12	DAMORE 18-7HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
DAMORE 18-7HZ_SHL	0.00	0.00	0.00	40.400822	-104.942143
DAMORE 18-7HZ_BHL	7114.00	-896.35	-13662.03	40.398350	-104.991213

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
932.00	934.28	Fox Hills
3428.00	3509.78	Parkman
3939.00	4038.00	Sussex
6812.00	6937.19	Sharon Springs
6848.00	6979.05	Niobrara
6910.00	7055.14	Nio B
7019.00	7208.42	Nio C
7149.00	7484.80	Fort Hayes
7171.00	7579.85	Codell

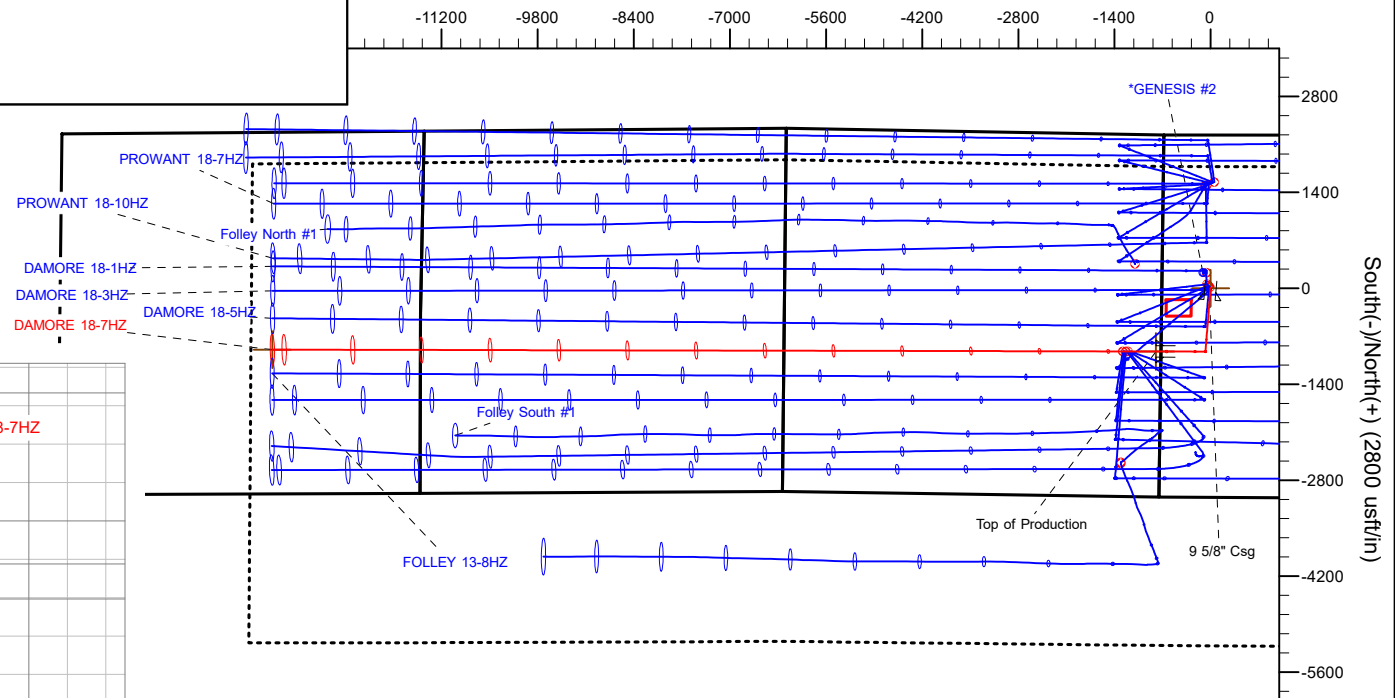


SHL
2236' FNL
710' FWL

HEEL
2124' FSL
75' FEL

TOE
2105' FSL
2157' FEL

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



Plan: Permit Rev-5 (DAMORE 18-7HZ/Plan A)

Date: 1/4/2019

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DAMORE 18-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

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 DAMORE 5-18HZ PAD			
Site Position:		Northing:	14,672,768.45 usft	Latitude: 40.401012
From:	Lat/Long	Easting:	1,656,467.04 usft	Longitude: -104.942349
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.04 °

Well	DAMORE 18-7HZ			
Well Position	+N/-S	-69.19 usft	Northing:	14,672,699.30 usft
	+E/-W	57.35 usft	Easting:	1,656,524.44 usft
Position Uncertainty		3.28 usft	Wellhead Elevation:	Latitude: 40.400822
				Longitude: -104.942143
				Ground Level: 4,922.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/21/2018	8.17	66.80	52,229.20352949

Design	Permit Rev-5			
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	270.12

Plan Survey Tool Program	Date	1/4/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-5 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	20,571.42	Permit Rev-5 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

Corporate
Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

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	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,328.00	14.67	184.60	1,317.35	-124.12	-9.99	1.50	1.50	0.00	184.60	
4,128.00	14.67	184.60	4,026.07	-830.94	-66.86	0.00	0.00	0.00	0.00	
4,861.50	0.00	0.00	4,751.58	-924.03	-74.35	2.00	-2.00	23.91	180.00	
6,574.73	0.00	0.00	6,464.81	-924.03	-74.35	0.00	0.00	0.00	0.00	
7,703.46	90.30	270.12	7,181.00	-922.56	-794.27	8.00	8.00	-7.96	270.12	
20,571.42	90.30	270.12	7,114.00	-896.35	-13,662.03	0.00	0.00	0.00	0.00	DAMORE 18-7HZ_B+

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DAMORE 18-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 350.00ft									
400.00	0.75	184.60	400.00	-0.33	-0.03	0.03	1.50	1.50	0.00
500.00	2.25	184.60	499.96	-2.94	-0.24	0.23	1.50	1.50	0.00
600.00	3.75	184.60	599.82	-8.15	-0.66	0.64	1.50	1.50	0.00
700.00	5.25	184.60	699.51	-15.97	-1.29	1.25	1.50	1.50	0.00
800.00	6.75	184.60	798.96	-26.39	-2.12	2.07	1.50	1.50	0.00
900.00	8.25	184.60	898.10	-39.40	-3.17	3.09	1.50	1.50	0.00
934.28	8.76	184.60	932.00	-44.46	-3.58	3.48	1.50	1.50	0.00
Fox Hills									
1,000.00	9.75	184.60	996.87	-54.99	-4.42	4.31	1.50	1.50	0.00
1,100.00	11.25	184.60	1,095.19	-73.16	-5.89	5.73	1.50	1.50	0.00
1,200.00	12.75	184.60	1,193.00	-93.88	-7.55	7.36	1.50	1.50	0.00
1,300.00	14.25	184.60	1,290.24	-117.15	-9.43	9.18	1.50	1.50	0.00
1,328.00	14.67	184.60	1,317.35	-124.12	-9.99	9.73	1.50	1.50	0.00
Hold Tangent @ 1328.00ft									
1,400.00	14.67	184.60	1,387.00	-142.30	-11.45	11.15	0.00	0.00	0.00
1,500.00	14.67	184.60	1,483.74	-167.54	-13.48	13.13	0.00	0.00	0.00
1,516.81	14.67	184.60	1,500.00	-171.78	-13.82	13.46	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	14.67	184.60	1,580.48	-192.78	-15.51	15.11	0.00	0.00	0.00
1,700.00	14.67	184.60	1,677.22	-218.03	-17.54	17.09	0.00	0.00	0.00
1,800.00	14.67	184.60	1,773.96	-243.27	-19.57	19.06	0.00	0.00	0.00
1,900.00	14.67	184.60	1,870.70	-268.51	-21.60	21.04	0.00	0.00	0.00
2,000.00	14.67	184.60	1,967.44	-293.76	-23.64	23.02	0.00	0.00	0.00
2,100.00	14.67	184.60	2,064.18	-319.00	-25.67	25.00	0.00	0.00	0.00
2,200.00	14.67	184.60	2,160.92	-344.24	-27.70	26.98	0.00	0.00	0.00
2,300.00	14.67	184.60	2,257.66	-369.49	-29.73	28.95	0.00	0.00	0.00
2,400.00	14.67	184.60	2,354.40	-394.73	-31.76	30.93	0.00	0.00	0.00
2,500.00	14.67	184.60	2,451.14	-419.97	-33.79	32.91	0.00	0.00	0.00
2,600.00	14.67	184.60	2,547.88	-445.22	-35.82	34.89	0.00	0.00	0.00
2,700.00	14.67	184.60	2,644.62	-470.46	-37.85	36.87	0.00	0.00	0.00
2,800.00	14.67	184.60	2,741.36	-495.71	-39.88	38.85	0.00	0.00	0.00
2,900.00	14.67	184.60	2,838.10	-520.95	-41.91	40.82	0.00	0.00	0.00
3,000.00	14.67	184.60	2,934.84	-546.19	-43.95	42.80	0.00	0.00	0.00
3,100.00	14.67	184.60	3,031.58	-571.44	-45.98	44.78	0.00	0.00	0.00
3,200.00	14.67	184.60	3,128.32	-596.68	-48.01	46.76	0.00	0.00	0.00
3,300.00	14.67	184.60	3,225.06	-621.92	-50.04	48.74	0.00	0.00	0.00
3,400.00	14.67	184.60	3,321.80	-647.17	-52.07	50.71	0.00	0.00	0.00
3,500.00	14.67	184.60	3,418.54	-672.41	-54.10	52.69	0.00	0.00	0.00
3,509.78	14.67	184.60	3,428.00	-674.88	-54.30	52.89	0.00	0.00	0.00
Parkman									
3,600.00	14.67	184.60	3,515.28	-697.65	-56.13	54.67	0.00	0.00	0.00
3,700.00	14.67	184.60	3,612.02	-722.90	-58.16	56.65	0.00	0.00	0.00
3,800.00	14.67	184.60	3,708.76	-748.14	-60.19	58.63	0.00	0.00	0.00
3,900.00	14.67	184.60	3,805.50	-773.38	-62.23	60.61	0.00	0.00	0.00
4,000.00	14.67	184.60	3,902.24	-798.63	-64.26	62.58	0.00	0.00	0.00
4,038.00	14.67	184.60	3,939.00	-808.22	-65.03	63.33	0.00	0.00	0.00
Sussex									

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Section (usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)
4,100.00	14.67	184.60	3,998.98	-823.87	-66.29	64.56	0.00	0.00	0.00
4,128.00	14.67	184.60	4,026.07	-830.94	-66.86	65.12	0.00	0.00	0.00
Begin Drop @ 4128.00ft									
4,200.00	13.23	184.60	4,095.95	-848.24	-68.25	66.47	2.00	-2.00	0.00
4,300.00	11.23	184.60	4,193.67	-869.36	-69.95	68.13	2.00	-2.00	0.00
4,400.00	9.23	184.60	4,292.08	-887.06	-71.37	69.51	2.00	-2.00	0.00
4,500.00	7.23	184.60	4,391.04	-901.33	-72.52	70.63	2.00	-2.00	0.00
4,600.00	5.23	184.60	4,490.45	-912.14	-73.39	71.48	2.00	-2.00	0.00
4,700.00	3.23	184.60	4,590.17	-919.49	-73.98	72.05	2.00	-2.00	0.00
4,800.00	1.23	184.60	4,690.09	-923.37	-74.29	72.36	2.00	-2.00	0.00
4,861.50	0.00	0.00	4,751.58	-924.03	-74.35	72.41	2.00	-2.00	285.20
End Drop @ 4861.50ft									
4,900.00	0.00	0.00	4,790.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,000.00	0.00	0.00	4,890.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,100.00	0.00	0.00	4,990.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,090.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,190.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,290.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,390.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,490.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,590.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,690.08	-924.03	-74.35	72.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,790.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,890.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,100.00	0.00	0.00	5,990.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,090.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,190.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,290.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,390.08	-924.03	-74.35	72.41	0.00	0.00	0.00
6,574.73	0.00	0.00	6,464.81	-924.03	-74.35	72.41	0.00	0.00	0.00
KOP @ 6574.73ft :: DLS = 8°/100'									
6,600.00	2.02	270.12	6,490.08	-924.03	-74.79	72.86	8.00	8.00	-355.69
6,700.00	10.02	270.12	6,589.44	-924.01	-85.27	83.34	8.00	8.00	0.00
6,800.00	18.02	270.12	6,686.39	-923.96	-109.48	107.55	8.00	8.00	0.00
6,900.00	26.02	270.12	6,779.02	-923.88	-146.95	145.01	8.00	8.00	0.00
6,937.19	29.00	270.12	6,812.00	-923.85	-164.12	162.19	8.00	8.00	0.00
Sharon Springs									
6,979.05	32.35	270.12	6,848.00	-923.80	-185.48	183.54	8.00	8.00	0.00
Niobrara									
7,000.00	34.02	270.12	6,865.53	-923.78	-196.94	195.00	8.00	8.00	0.00
7,055.14	38.43	270.12	6,910.00	-923.71	-229.52	227.58	8.00	8.00	0.00
Nio B									
7,100.00	42.02	270.12	6,944.24	-923.65	-258.48	256.55	8.00	8.00	0.00
7,200.00	50.02	270.12	7,013.63	-923.51	-330.39	328.45	8.00	8.00	0.00
7,208.43	50.70	270.12	7,019.00	-923.49	-336.87	334.94	8.00	8.00	0.00
Nio C									
7,300.00	58.02	270.12	7,072.33	-923.34	-411.24	409.31	8.00	8.00	0.00
7,400.00	66.02	270.12	7,119.20	-923.16	-499.49	497.55	8.00	8.00	0.00
7,484.80	72.81	270.12	7,149.00	-923.00	-578.82	576.89	8.00	8.00	0.00
Fort Hayes									
7,500.00	74.02	270.12	7,153.34	-922.97	-593.39	591.46	8.00	8.00	0.00
7,579.85	80.41	270.12	7,171.00	-922.81	-671.22	669.28	8.00	8.00	0.00
Codell									

Corporate Planning Report

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Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

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)	
7,600.00	82.02	270.12	7,174.08	-922.77	-691.13	689.20	8.00	8.00	0.00	
7,700.00	90.02	270.12	7,181.01	-922.57	-790.81	788.88	8.00	8.00	0.00	
7,703.46	90.30	270.12	7,181.00	-922.56	-794.27	792.34	8.00	8.00	0.00	
End Build @ 7703.46ft - Top of Production										
7,800.00	90.30	270.12	7,180.50	-922.37	-890.81	888.88	0.00	0.00	0.00	
7,900.00	90.30	270.12	7,179.98	-922.16	-990.81	988.87	0.00	0.00	0.00	
8,000.00	90.30	270.12	7,179.46	-921.96	-1,090.81	1,088.87	0.00	0.00	0.00	
8,100.00	90.30	270.12	7,178.94	-921.76	-1,190.81	1,188.87	0.00	0.00	0.00	
8,200.00	90.30	270.12	7,178.41	-921.55	-1,290.80	1,288.87	0.00	0.00	0.00	
8,300.00	90.30	270.12	7,177.89	-921.35	-1,390.80	1,388.87	0.00	0.00	0.00	
8,400.00	90.30	270.12	7,177.37	-921.14	-1,490.80	1,488.87	0.00	0.00	0.00	
8,500.00	90.30	270.12	7,176.85	-920.94	-1,590.80	1,588.87	0.00	0.00	0.00	
8,600.00	90.30	270.12	7,176.33	-920.74	-1,690.80	1,688.87	0.00	0.00	0.00	
8,700.00	90.30	270.12	7,175.81	-920.53	-1,790.80	1,788.86	0.00	0.00	0.00	
8,800.00	90.30	270.12	7,175.29	-920.33	-1,890.79	1,888.86	0.00	0.00	0.00	
8,900.00	90.30	270.12	7,174.77	-920.13	-1,990.79	1,988.86	0.00	0.00	0.00	
9,000.00	90.30	270.12	7,174.25	-919.92	-2,090.79	2,088.86	0.00	0.00	0.00	
9,100.00	90.30	270.12	7,173.73	-919.72	-2,190.79	2,188.86	0.00	0.00	0.00	
9,200.00	90.30	270.12	7,173.21	-919.51	-2,290.79	2,288.86	0.00	0.00	0.00	
9,300.00	90.30	270.12	7,172.69	-919.31	-2,390.79	2,388.86	0.00	0.00	0.00	
9,400.00	90.30	270.12	7,172.17	-919.11	-2,490.78	2,488.85	0.00	0.00	0.00	
9,500.00	90.30	270.12	7,171.65	-918.90	-2,590.78	2,588.85	0.00	0.00	0.00	
9,600.00	90.30	270.12	7,171.13	-918.70	-2,690.78	2,688.85	0.00	0.00	0.00	
9,700.00	90.30	270.12	7,170.60	-918.50	-2,790.78	2,788.85	0.00	0.00	0.00	
9,800.00	90.30	270.12	7,170.08	-918.29	-2,890.78	2,888.85	0.00	0.00	0.00	
9,900.00	90.30	270.12	7,169.56	-918.09	-2,990.78	2,988.85	0.00	0.00	0.00	
10,000.00	90.30	270.12	7,169.04	-917.88	-3,090.78	3,088.85	0.00	0.00	0.00	
10,100.00	90.30	270.12	7,168.52	-917.68	-3,190.77	3,188.84	0.00	0.00	0.00	
10,200.00	90.30	270.12	7,168.00	-917.48	-3,290.77	3,288.84	0.00	0.00	0.00	
10,300.00	90.30	270.12	7,167.48	-917.27	-3,390.77	3,388.84	0.00	0.00	0.00	
10,400.00	90.30	270.12	7,166.96	-917.07	-3,490.77	3,488.84	0.00	0.00	0.00	
10,500.00	90.30	270.12	7,166.44	-916.87	-3,590.77	3,588.84	0.00	0.00	0.00	
10,600.00	90.30	270.12	7,165.92	-916.66	-3,690.77	3,688.84	0.00	0.00	0.00	
10,700.00	90.30	270.12	7,165.40	-916.46	-3,790.76	3,788.84	0.00	0.00	0.00	
10,800.00	90.30	270.12	7,164.88	-916.26	-3,890.76	3,888.84	0.00	0.00	0.00	
10,900.00	90.30	270.12	7,164.36	-916.05	-3,990.76	3,988.83	0.00	0.00	0.00	
11,000.00	90.30	270.12	7,163.84	-915.85	-4,090.76	4,088.83	0.00	0.00	0.00	
11,100.00	90.30	270.12	7,163.32	-915.64	-4,190.76	4,188.83	0.00	0.00	0.00	
11,200.00	90.30	270.12	7,162.79	-915.44	-4,290.76	4,288.83	0.00	0.00	0.00	
11,300.00	90.30	270.12	7,162.27	-915.24	-4,390.76	4,388.83	0.00	0.00	0.00	
11,400.00	90.30	270.12	7,161.75	-915.03	-4,490.75	4,488.83	0.00	0.00	0.00	
11,500.00	90.30	270.12	7,161.23	-914.83	-4,590.75	4,588.83	0.00	0.00	0.00	
11,600.00	90.30	270.12	7,160.71	-914.63	-4,690.75	4,688.82	0.00	0.00	0.00	
11,700.00	90.30	270.12	7,160.19	-914.42	-4,790.75	4,788.82	0.00	0.00	0.00	
11,800.00	90.30	270.12	7,159.67	-914.22	-4,890.75	4,888.82	0.00	0.00	0.00	
11,900.00	90.30	270.12	7,159.15	-914.01	-4,990.75	4,988.82	0.00	0.00	0.00	
12,000.00	90.30	270.12	7,158.63	-913.81	-5,090.74	5,088.82	0.00	0.00	0.00	
12,100.00	90.30	270.12	7,158.11	-913.61	-5,190.74	5,188.82	0.00	0.00	0.00	
12,200.00	90.30	270.12	7,157.59	-913.40	-5,290.74	5,288.82	0.00	0.00	0.00	
12,300.00	90.30	270.12	7,157.07	-913.20	-5,390.74	5,388.82	0.00	0.00	0.00	
12,400.00	90.30	270.12	7,156.55	-913.00	-5,490.74	5,488.81	0.00	0.00	0.00	
12,500.00	90.30	270.12	7,156.03	-912.79	-5,590.74	5,588.81	0.00	0.00	0.00	
12,600.00	90.30	270.12	7,155.51	-912.59	-5,690.73	5,688.81	0.00	0.00	0.00	
12,700.00	90.30	270.12	7,154.98	-912.38	-5,790.73	5,788.81	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DAMORE 18-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

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)
12,800.00	90.30	270.12	7,154.46	-912.18	-5,890.73	5,888.81	0.00	0.00	0.00
12,900.00	90.30	270.12	7,153.94	-911.98	-5,990.73	5,988.81	0.00	0.00	0.00
13,000.00	90.30	270.12	7,153.42	-911.77	-6,090.73	6,088.81	0.00	0.00	0.00
13,100.00	90.30	270.12	7,152.90	-911.57	-6,190.73	6,188.80	0.00	0.00	0.00
13,200.00	90.30	270.12	7,152.38	-911.37	-6,290.73	6,288.80	0.00	0.00	0.00
13,300.00	90.30	270.12	7,151.86	-911.16	-6,390.72	6,388.80	0.00	0.00	0.00
13,400.00	90.30	270.12	7,151.34	-910.96	-6,490.72	6,488.80	0.00	0.00	0.00
13,500.00	90.30	270.12	7,150.82	-910.75	-6,590.72	6,588.80	0.00	0.00	0.00
13,600.00	90.30	270.12	7,150.30	-910.55	-6,690.72	6,688.80	0.00	0.00	0.00
13,700.00	90.30	270.12	7,149.78	-910.35	-6,790.72	6,788.80	0.00	0.00	0.00
13,800.00	90.30	270.12	7,149.26	-910.14	-6,890.72	6,888.79	0.00	0.00	0.00
13,900.00	90.30	270.12	7,148.74	-909.94	-6,990.71	6,988.79	0.00	0.00	0.00
14,000.00	90.30	270.12	7,148.22	-909.74	-7,090.71	7,088.79	0.00	0.00	0.00
14,100.00	90.30	270.12	7,147.70	-909.53	-7,190.71	7,188.79	0.00	0.00	0.00
14,200.00	90.30	270.12	7,147.17	-909.33	-7,290.71	7,288.79	0.00	0.00	0.00
14,300.00	90.30	270.12	7,146.65	-909.13	-7,390.71	7,388.79	0.00	0.00	0.00
14,400.00	90.30	270.12	7,146.13	-908.92	-7,490.71	7,488.79	0.00	0.00	0.00
14,500.00	90.30	270.12	7,145.61	-908.72	-7,590.71	7,588.79	0.00	0.00	0.00
14,600.00	90.30	270.12	7,145.09	-908.51	-7,690.70	7,688.78	0.00	0.00	0.00
14,700.00	90.30	270.12	7,144.57	-908.31	-7,790.70	7,788.78	0.00	0.00	0.00
14,800.00	90.30	270.12	7,144.05	-908.11	-7,890.70	7,888.78	0.00	0.00	0.00
14,900.00	90.30	270.12	7,143.53	-907.90	-7,990.70	7,988.78	0.00	0.00	0.00
15,000.00	90.30	270.12	7,143.01	-907.70	-8,090.70	8,088.78	0.00	0.00	0.00
15,100.00	90.30	270.12	7,142.49	-907.50	-8,190.70	8,188.78	0.00	0.00	0.00
15,200.00	90.30	270.12	7,141.97	-907.29	-8,290.69	8,288.78	0.00	0.00	0.00
15,300.00	90.30	270.12	7,141.45	-907.09	-8,390.69	8,388.77	0.00	0.00	0.00
15,400.00	90.30	270.12	7,140.93	-906.88	-8,490.69	8,488.77	0.00	0.00	0.00
15,500.00	90.30	270.12	7,140.41	-906.68	-8,590.69	8,588.77	0.00	0.00	0.00
15,600.00	90.30	270.12	7,139.89	-906.48	-8,690.69	8,688.77	0.00	0.00	0.00
15,700.00	90.30	270.12	7,139.36	-906.27	-8,790.69	8,788.77	0.00	0.00	0.00
15,800.00	90.30	270.12	7,138.84	-906.07	-8,890.69	8,888.77	0.00	0.00	0.00
15,900.00	90.30	270.12	7,138.32	-905.87	-8,990.68	8,988.77	0.00	0.00	0.00
16,000.00	90.30	270.12	7,137.80	-905.66	-9,090.68	9,088.77	0.00	0.00	0.00
16,100.00	90.30	270.12	7,137.28	-905.46	-9,190.68	9,188.76	0.00	0.00	0.00
16,200.00	90.30	270.12	7,136.76	-905.25	-9,290.68	9,288.76	0.00	0.00	0.00
16,300.00	90.30	270.12	7,136.24	-905.05	-9,390.68	9,388.76	0.00	0.00	0.00
16,400.00	90.30	270.12	7,135.72	-904.85	-9,490.68	9,488.76	0.00	0.00	0.00
16,500.00	90.30	270.12	7,135.20	-904.64	-9,590.67	9,588.76	0.00	0.00	0.00
16,600.00	90.30	270.12	7,134.68	-904.44	-9,690.67	9,688.76	0.00	0.00	0.00
16,700.00	90.30	270.12	7,134.16	-904.24	-9,790.67	9,788.76	0.00	0.00	0.00
16,800.00	90.30	270.12	7,133.64	-904.03	-9,890.67	9,888.75	0.00	0.00	0.00
16,900.00	90.30	270.12	7,133.12	-903.83	-9,990.67	9,988.75	0.00	0.00	0.00
17,000.00	90.30	270.12	7,132.60	-903.62	-10,090.67	10,088.75	0.00	0.00	0.00
17,100.00	90.30	270.12	7,132.07	-903.42	-10,190.66	10,188.75	0.00	0.00	0.00
17,200.00	90.30	270.12	7,131.55	-903.22	-10,290.66	10,288.75	0.00	0.00	0.00
17,300.00	90.30	270.12	7,131.03	-903.01	-10,390.66	10,388.75	0.00	0.00	0.00
17,400.00	90.30	270.12	7,130.51	-902.81	-10,490.66	10,488.75	0.00	0.00	0.00
17,500.00	90.30	270.12	7,129.99	-902.61	-10,590.66	10,588.74	0.00	0.00	0.00
17,600.00	90.30	270.12	7,129.47	-902.40	-10,690.66	10,688.74	0.00	0.00	0.00
17,700.00	90.30	270.12	7,128.95	-902.20	-10,790.66	10,788.74	0.00	0.00	0.00
17,800.00	90.30	270.12	7,128.43	-902.00	-10,890.65	10,888.74	0.00	0.00	0.00
17,900.00	90.30	270.12	7,127.91	-901.79	-10,990.65	10,988.74	0.00	0.00	0.00
18,000.00	90.30	270.12	7,127.39	-901.59	-11,090.65	11,088.74	0.00	0.00	0.00
18,100.00	90.30	270.12	7,126.87	-901.38	-11,190.65	11,188.74	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DAMORE 18-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

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)
18,200.00	90.30	270.12	7,126.35	-901.18	-11,290.65	11,288.74	0.00	0.00	0.00
18,300.00	90.30	270.12	7,125.83	-900.98	-11,390.65	11,388.73	0.00	0.00	0.00
18,400.00	90.30	270.12	7,125.31	-900.77	-11,490.64	11,488.73	0.00	0.00	0.00
18,500.00	90.30	270.12	7,124.79	-900.57	-11,590.64	11,588.73	0.00	0.00	0.00
18,600.00	90.30	270.12	7,124.26	-900.37	-11,690.64	11,688.73	0.00	0.00	0.00
18,700.00	90.30	270.12	7,123.74	-900.16	-11,790.64	11,788.73	0.00	0.00	0.00
18,800.00	90.30	270.12	7,123.22	-899.96	-11,890.64	11,888.73	0.00	0.00	0.00
18,900.00	90.30	270.12	7,122.70	-899.75	-11,990.64	11,988.73	0.00	0.00	0.00
19,000.00	90.30	270.12	7,122.18	-899.55	-12,090.64	12,088.72	0.00	0.00	0.00
19,100.00	90.30	270.12	7,121.66	-899.35	-12,190.63	12,188.72	0.00	0.00	0.00
19,200.00	90.30	270.12	7,121.14	-899.14	-12,290.63	12,288.72	0.00	0.00	0.00
19,300.00	90.30	270.12	7,120.62	-898.94	-12,390.63	12,388.72	0.00	0.00	0.00
19,400.00	90.30	270.12	7,120.10	-898.74	-12,490.63	12,488.72	0.00	0.00	0.00
19,500.00	90.30	270.12	7,119.58	-898.53	-12,590.63	12,588.72	0.00	0.00	0.00
19,600.00	90.30	270.12	7,119.06	-898.33	-12,690.63	12,688.72	0.00	0.00	0.00
19,700.00	90.30	270.12	7,118.54	-898.12	-12,790.62	12,788.72	0.00	0.00	0.00
19,800.00	90.30	270.12	7,118.02	-897.92	-12,890.62	12,888.71	0.00	0.00	0.00
19,900.00	90.30	270.12	7,117.50	-897.72	-12,990.62	12,988.71	0.00	0.00	0.00
20,000.00	90.30	270.12	7,116.98	-897.51	-13,090.62	13,088.71	0.00	0.00	0.00
20,100.00	90.30	270.12	7,116.45	-897.31	-13,190.62	13,188.71	0.00	0.00	0.00
20,200.00	90.30	270.12	7,115.93	-897.11	-13,290.62	13,288.71	0.00	0.00	0.00
20,300.00	90.30	270.12	7,115.41	-896.90	-13,390.61	13,388.71	0.00	0.00	0.00
20,400.00	90.30	270.12	7,114.89	-896.70	-13,490.61	13,488.71	0.00	0.00	0.00
20,500.00	90.30	270.12	7,114.37	-896.50	-13,590.61	13,588.70	0.00	0.00	0.00
20,571.42	90.30	270.12	7,114.00	-896.35	-13,662.03	13,660.12	0.00	0.00	0.00
TD Well @ 20571.42ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,516.81	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
7,703.46	7,181.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
934.28	932.00	Fox Hills				
3,509.78	3,428.00	Parkman				
4,038.00	3,939.00	Sussex				
6,937.19	6,812.00	Sharon Springs				
6,979.05	6,848.00	Niobrara				
7,055.14	6,910.00	Nio B				
7,208.43	7,019.00	Nio C				
7,484.80	7,149.00	Fort Hayes				
7,579.85	7,171.00	Codell				

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well DAMORE 18-7HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4939.00usft (Drilling Rig)
Site:	5N-67W-18 DAMORE 5-18HZ PAD	North Reference:	True
Well:	DAMORE 18-7HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-5		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
350.00	350.00	0.00	0.00	Begin Nudge @ 350.00ft
1,328.00	1,317.35	-124.12	-9.99	Hold Tangent @ 1328.00ft
4,128.00	4,026.07	-830.94	-66.86	Begin Drop @ 4128.00ft
4,861.50	4,751.58	-924.03	-74.35	End Drop @ 4861.50ft
6,574.73	6,464.81	-924.03	-74.35	KOP @ 6574.73ft :: DLS = 8"/100'
7,703.46	7,181.00	-922.56	-794.27	End Build @ 7703.46ft
20,571.42	7,114.00	-896.35	-13,662.03	TD Well @ 20571.42ft