

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-66W-23 FARLEY 34-23HZ PAD
FARLEY 23-1HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.205233/-104.752181
Survey Program: MWD+IFR

Standard Planning Report

02 October, 2018

Project: WELD-NAD83-UTMFT13N
Site: 3N-66W-23 FARLEY 34-23HZ PAD
Well: FARLEY 23-1HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS			WELL DETAILS: FARLEY 23-1HZ GL = 4939.00 RKB = 17' @ 4956.00usft (Drilling Rig)
TVD	MD	Size	
1500.00 7387.00	1520.01 7904.18	9-5/8 5-1/2	

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	1220.00	14.55	293.40	1209.61	48.65	-112.43	1.50	293.40	-56.47	
4	4020.00	14.55	293.40	3919.81	328.02	-758.00	0.00	0.00	-380.73	
5	4747.50	0.00	0.00	4639.51	364.51	-842.32	2.00	180.00	-423.09	
6	6778.79	0.00	0.00	6670.80	364.51	-842.32	0.00	0.00	-423.09	
7	7904.18	90.03	175.49	7387.00	-349.86	-785.96	8.00	175.49	293.48	
8	13448.57	90.03	175.49	7384.00	-5877.07	-349.84	0.00	0.00	5837.69	FARLEY 23-1HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
FARLEY 23-1HZ_SHL	0.00	0.00	0.00	40.205233	-104.752181
FARLEY 23-1HZ_BHL	7384.00	-5877.07	-349.84	40.189094	-104.753434

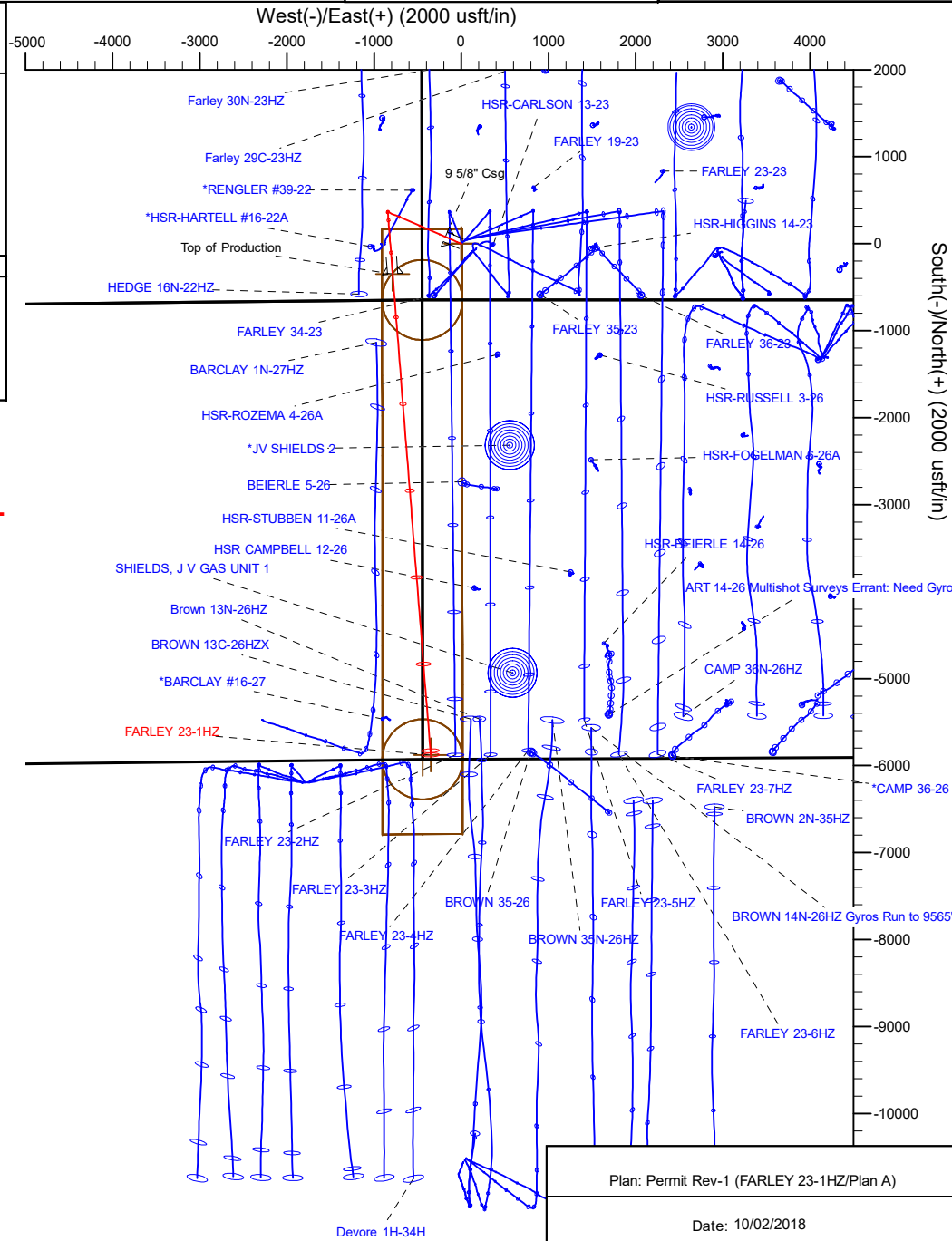
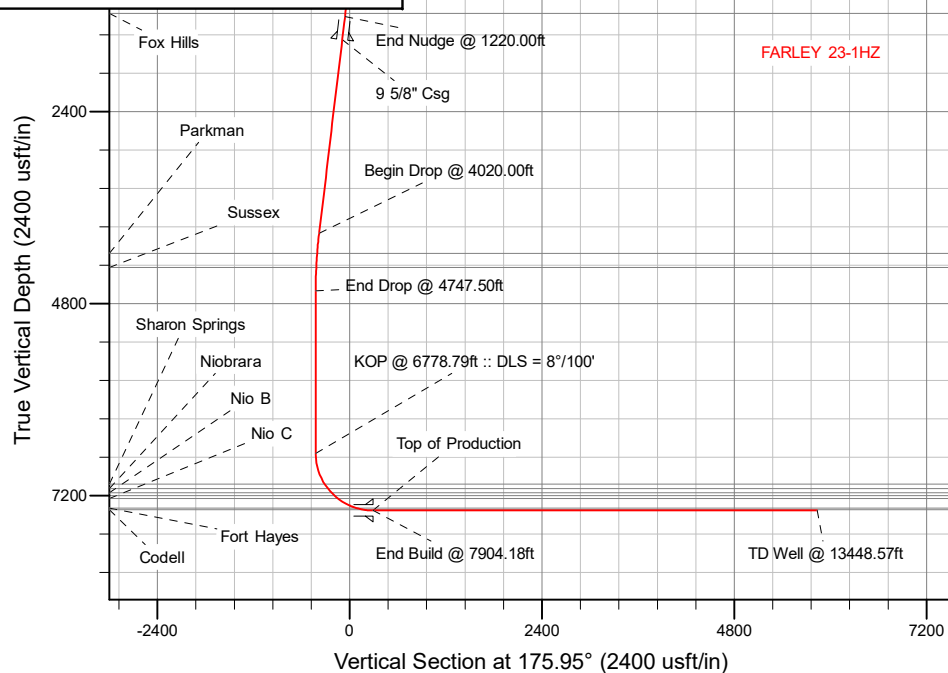
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1171.00	1180.17	Fox Hills
4171.00	4276.87	Parkman
4349.00	4456.49	Sussex
7057.00	7186.68	Sharon Springs
7114.00	7256.66	Niobrara
7163.00	7321.43	Nio B
7236.00	7430.13	Nio C
7357.00	7695.76	Fort Hayes
7378.00	7790.12	Codell

SHL
646' FSL
448' FWL

HEEL
300' FSL
339' FEL

TOE
50' FSL
93' FWL



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-1HZ
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:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
Well:	FARLEY 23-1HZ	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-66W-23 FARLEY 34-23HZ PAD			
Site Position:		Northing:	14,601,565.02 usft	Latitude:	40.205233
From:	Lat/Long	Easting:	1,709,610.42 usft	Longitude:	-104.752181
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well		FARLEY 23-1HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,601,565.02 usft	Latitude:	40.205233
	+E/-W	0.00 usft	Easting:	1,709,610.42 usft	Longitude:	-104.752181
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	9/25/2018	8.05	66.67	52,146.29209691

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	175.95	

Plan Survey Tool Program		Date	10/2/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio	
2	1,500.00	13,448.57	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio	

Corporate
Planning Report

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Well:	FARLEY 23-1HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	
1,220.00	14.55	293.40	1,209.61	48.65	-112.43	1.50	1.50	0.00	293.40	
4,020.00	14.55	293.40	3,919.81	328.02	-758.00	0.00	0.00	0.00	0.00	
4,747.50	0.00	0.00	4,639.51	364.51	-842.32	2.00	-2.00	0.00	180.00	
6,778.79	0.00	0.00	6,670.80	364.51	-842.32	0.00	0.00	0.00	0.00	
7,904.18	90.03	175.49	7,387.00	-349.86	-785.96	8.00	8.00	15.59	175.49	
13,448.57	90.03	175.49	7,384.00	-5,877.07	-349.84	0.00	0.00	0.00	0.00	FARLEY 23-1HZ_BHI

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:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
Well:	FARLEY 23-1HZ	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
Begin Nudge @ 250.00ft									
300.00	0.75	293.40	300.00	0.13	-0.30	-0.15	1.50	1.50	0.00
400.00	2.25	293.40	399.96	1.17	-2.70	-1.36	1.50	1.50	0.00
500.00	3.75	293.40	499.82	3.25	-7.51	-3.77	1.50	1.50	0.00
600.00	5.25	293.40	599.51	6.36	-14.71	-7.39	1.50	1.50	0.00
700.00	6.75	293.40	698.96	10.52	-24.30	-12.21	1.50	1.50	0.00
800.00	8.25	293.40	798.10	15.70	-36.28	-18.22	1.50	1.50	0.00
900.00	9.75	293.40	896.87	21.91	-50.63	-25.43	1.50	1.50	0.00
1,000.00	11.25	293.40	995.19	29.15	-67.36	-33.83	1.50	1.50	0.00
1,100.00	12.75	293.40	1,093.00	37.41	-86.44	-43.42	1.50	1.50	0.00
1,180.17	13.95	293.40	1,171.00	44.76	-103.43	-51.95	1.50	1.50	0.00
Fox Hills									
1,200.00	14.25	293.40	1,190.24	46.68	-107.86	-54.18	1.50	1.50	0.00
1,220.00	14.55	293.40	1,209.61	48.65	-112.43	-56.47	1.50	1.50	0.00
End Nudge @ 1220.00ft									
1,300.00	14.55	293.40	1,287.04	56.63	-130.87	-65.74	0.00	0.00	0.00
1,400.00	14.55	293.40	1,383.84	66.61	-153.93	-77.32	0.00	0.00	0.00
1,500.00	14.55	293.40	1,480.63	76.59	-176.99	-88.90	0.00	0.00	0.00
1,520.01	14.55	293.40	1,500.00	78.59	-181.60	-91.21	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	14.55	293.40	1,577.42	86.57	-200.04	-100.48	0.00	0.00	0.00
1,700.00	14.55	293.40	1,674.21	96.54	-223.10	-112.06	0.00	0.00	0.00
1,800.00	14.55	293.40	1,771.01	106.52	-246.15	-123.64	0.00	0.00	0.00
1,900.00	14.55	293.40	1,867.80	116.50	-269.21	-135.22	0.00	0.00	0.00
2,000.00	14.55	293.40	1,964.59	126.48	-292.27	-146.80	0.00	0.00	0.00
2,100.00	14.55	293.40	2,061.39	136.45	-315.32	-158.38	0.00	0.00	0.00
2,200.00	14.55	293.40	2,158.18	146.43	-338.38	-169.96	0.00	0.00	0.00
2,300.00	14.55	293.40	2,254.97	156.41	-361.44	-181.54	0.00	0.00	0.00
2,400.00	14.55	293.40	2,351.76	166.38	-384.49	-193.12	0.00	0.00	0.00
2,500.00	14.55	293.40	2,448.56	176.36	-407.55	-204.71	0.00	0.00	0.00
2,600.00	14.55	293.40	2,545.35	186.34	-430.60	-216.29	0.00	0.00	0.00
2,700.00	14.55	293.40	2,642.14	196.32	-453.66	-227.87	0.00	0.00	0.00
2,800.00	14.55	293.40	2,738.94	206.29	-476.72	-239.45	0.00	0.00	0.00
2,900.00	14.55	293.40	2,835.73	216.27	-499.77	-251.03	0.00	0.00	0.00
3,000.00	14.55	293.40	2,932.52	226.25	-522.83	-262.61	0.00	0.00	0.00
3,100.00	14.55	293.40	3,029.31	236.23	-545.89	-274.19	0.00	0.00	0.00
3,200.00	14.55	293.40	3,126.11	246.20	-568.94	-285.77	0.00	0.00	0.00
3,300.00	14.55	293.40	3,222.90	256.18	-592.00	-297.35	0.00	0.00	0.00
3,400.00	14.55	293.40	3,319.69	266.16	-615.05	-308.93	0.00	0.00	0.00
3,500.00	14.55	293.40	3,416.49	276.14	-638.11	-320.51	0.00	0.00	0.00
3,600.00	14.55	293.40	3,513.28	286.11	-661.17	-332.09	0.00	0.00	0.00
3,700.00	14.55	293.40	3,610.07	296.09	-684.22	-343.68	0.00	0.00	0.00
3,800.00	14.55	293.40	3,706.86	306.07	-707.28	-355.26	0.00	0.00	0.00
3,900.00	14.55	293.40	3,803.66	316.04	-730.34	-366.84	0.00	0.00	0.00
4,000.00	14.55	293.40	3,900.45	326.02	-753.39	-378.42	0.00	0.00	0.00
4,020.00	14.55	293.40	3,919.81	328.02	-758.00	-380.73	0.00	0.00	0.00
Begin Drop @ 4020.00ft									
4,100.00	12.95	293.40	3,997.51	335.57	-775.45	-389.50	2.00	-2.00	0.00
4,200.00	10.95	293.40	4,095.34	343.79	-794.46	-399.04	2.00	-2.00	0.00
4,276.87	9.41	293.40	4,171.00	349.19	-806.93	-405.31	2.00	-2.00	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:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
Well:	FARLEY 23-1HZ	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)
Parkman									
4,300.00	8.95	293.40	4,193.83	350.65	-810.31	-407.01	2.00	-2.00	0.00
4,400.00	6.95	293.40	4,292.87	356.15	-823.00	-413.38	2.00	-2.00	0.00
4,456.49	5.82	293.40	4,349.00	358.64	-828.77	-416.28	2.00	-2.00	0.00
Sussex									
4,500.00	4.95	293.40	4,392.32	360.26	-832.52	-418.16	2.00	-2.00	0.00
4,600.00	2.95	293.40	4,492.08	363.00	-838.84	-421.34	2.00	-2.00	0.00
4,700.00	0.95	293.40	4,592.02	364.35	-841.96	-422.90	2.00	-2.00	0.00
4,747.50	0.00	0.00	4,639.51	364.51	-842.32	-423.09	2.00	-2.00	0.00
End Drop @ 4747.50ft									
4,800.00	0.00	0.00	4,692.01	364.51	-842.32	-423.09	0.00	0.00	0.00
4,900.00	0.00	0.00	4,792.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,000.00	0.00	0.00	4,892.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,100.00	0.00	0.00	4,992.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,200.00	0.00	0.00	5,092.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,300.00	0.00	0.00	5,192.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,400.00	0.00	0.00	5,292.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,500.00	0.00	0.00	5,392.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,600.00	0.00	0.00	5,492.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,700.00	0.00	0.00	5,592.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,800.00	0.00	0.00	5,692.01	364.51	-842.32	-423.09	0.00	0.00	0.00
5,900.00	0.00	0.00	5,792.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,000.00	0.00	0.00	5,892.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,100.00	0.00	0.00	5,992.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,200.00	0.00	0.00	6,092.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,300.00	0.00	0.00	6,192.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,400.00	0.00	0.00	6,292.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,500.00	0.00	0.00	6,392.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,600.00	0.00	0.00	6,492.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,700.00	0.00	0.00	6,592.01	364.51	-842.32	-423.09	0.00	0.00	0.00
6,778.79	0.00	0.00	6,670.80	364.51	-842.32	-423.09	0.00	0.00	0.00
KOP @ 6778.79ft :: DLS = 8°/100'									
6,800.00	1.70	175.49	6,692.01	364.19	-842.30	-422.77	8.00	8.00	0.00
6,900.00	9.70	175.49	6,791.44	354.31	-841.52	-412.85	8.00	8.00	0.00
7,000.00	17.70	175.49	6,888.51	330.72	-839.66	-389.20	8.00	8.00	0.00
7,100.00	25.70	175.49	6,981.35	293.89	-836.75	-352.26	8.00	8.00	0.00
7,186.68	32.63	175.49	7,057.00	251.81	-833.43	-310.04	8.00	8.00	0.00
Sharon Springs									
7,200.00	33.70	175.49	7,068.15	244.55	-832.86	-302.76	8.00	8.00	0.00
7,256.66	38.23	175.49	7,114.00	211.38	-830.24	-269.49	8.00	8.00	0.00
Niobrara									
7,300.00	41.70	175.49	7,147.21	183.64	-828.05	-241.66	8.00	8.00	0.00
7,321.43	43.41	175.49	7,163.00	169.19	-826.91	-227.17	8.00	8.00	0.00
Nio B									
7,400.00	49.70	175.49	7,217.00	112.35	-822.43	-170.16	8.00	8.00	0.00
7,430.13	52.11	175.49	7,236.00	89.04	-820.59	-146.78	8.00	8.00	0.00
Nio C									
7,500.00	57.70	175.49	7,276.16	32.08	-816.09	-89.64	8.00	8.00	0.00
7,600.00	65.70	175.49	7,323.53	-55.62	-809.17	-1.66	8.00	8.00	0.00
7,695.76	73.36	175.49	7,357.00	-144.99	-802.12	87.97	8.00	8.00	0.00
Fort Hayes									
7,700.00	73.70	175.49	7,358.20	-149.04	-801.80	92.04	8.00	8.00	0.00
7,790.12	80.91	175.49	7,378.00	-236.63	-794.89	179.90	8.00	8.00	0.00

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Site:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
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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)
Codell									
7,800.00	81.70	175.49	7,379.49	-246.37	-794.12	189.66	8.00	8.00	0.00
7,900.00	89.70	175.49	7,386.99	-345.69	-786.29	289.30	8.00	8.00	0.00
7,904.18	90.03	175.49	7,387.00	-349.86	-785.96	293.48	8.00	8.00	0.00
End Build @ 7904.18ft - Top of Production									
8,000.00	90.03	175.49	7,386.95	-445.38	-778.42	389.29	0.00	0.00	0.00
8,100.00	90.03	175.49	7,386.90	-545.07	-770.55	489.29	0.00	0.00	0.00
8,200.00	90.03	175.49	7,386.84	-644.76	-762.69	589.29	0.00	0.00	0.00
8,300.00	90.03	175.49	7,386.79	-744.45	-754.82	689.28	0.00	0.00	0.00
8,400.00	90.03	175.49	7,386.73	-844.14	-746.96	789.28	0.00	0.00	0.00
8,500.00	90.03	175.49	7,386.68	-943.83	-739.09	889.28	0.00	0.00	0.00
8,600.00	90.03	175.49	7,386.63	-1,043.53	-731.22	989.27	0.00	0.00	0.00
8,700.00	90.03	175.49	7,386.57	-1,143.22	-723.36	1,089.27	0.00	0.00	0.00
8,800.00	90.03	175.49	7,386.52	-1,242.91	-715.49	1,189.27	0.00	0.00	0.00
8,900.00	90.03	175.49	7,386.46	-1,342.60	-707.63	1,289.27	0.00	0.00	0.00
9,000.00	90.03	175.49	7,386.41	-1,442.29	-699.76	1,389.26	0.00	0.00	0.00
9,100.00	90.03	175.49	7,386.35	-1,541.98	-691.89	1,489.26	0.00	0.00	0.00
9,200.00	90.03	175.49	7,386.30	-1,641.67	-684.03	1,589.26	0.00	0.00	0.00
9,300.00	90.03	175.49	7,386.25	-1,741.36	-676.16	1,689.25	0.00	0.00	0.00
9,400.00	90.03	175.49	7,386.19	-1,841.05	-668.30	1,789.25	0.00	0.00	0.00
9,500.00	90.03	175.49	7,386.14	-1,940.74	-660.43	1,889.25	0.00	0.00	0.00
9,600.00	90.03	175.49	7,386.08	-2,040.43	-652.56	1,989.24	0.00	0.00	0.00
9,700.00	90.03	175.49	7,386.03	-2,140.12	-644.70	2,089.24	0.00	0.00	0.00
9,800.00	90.03	175.49	7,385.98	-2,239.81	-636.83	2,189.24	0.00	0.00	0.00
9,900.00	90.03	175.49	7,385.92	-2,339.50	-628.97	2,289.23	0.00	0.00	0.00
10,000.00	90.03	175.49	7,385.87	-2,439.19	-621.10	2,389.23	0.00	0.00	0.00
10,100.00	90.03	175.49	7,385.81	-2,538.88	-613.23	2,489.23	0.00	0.00	0.00
10,200.00	90.03	175.49	7,385.76	-2,638.57	-605.37	2,589.22	0.00	0.00	0.00
10,300.00	90.03	175.49	7,385.70	-2,738.26	-597.50	2,689.22	0.00	0.00	0.00
10,400.00	90.03	175.49	7,385.65	-2,837.95	-589.64	2,789.22	0.00	0.00	0.00
10,500.00	90.03	175.49	7,385.60	-2,937.64	-581.77	2,889.21	0.00	0.00	0.00
10,600.00	90.03	175.49	7,385.54	-3,037.33	-573.90	2,989.21	0.00	0.00	0.00
10,700.00	90.03	175.49	7,385.49	-3,137.02	-566.04	3,089.21	0.00	0.00	0.00
10,800.00	90.03	175.49	7,385.43	-3,236.71	-558.17	3,189.20	0.00	0.00	0.00
10,900.00	90.03	175.49	7,385.38	-3,336.40	-550.31	3,289.20	0.00	0.00	0.00
11,000.00	90.03	175.49	7,385.33	-3,436.09	-542.44	3,389.20	0.00	0.00	0.00
11,100.00	90.03	175.49	7,385.27	-3,535.78	-534.58	3,489.19	0.00	0.00	0.00
11,200.00	90.03	175.49	7,385.22	-3,635.47	-526.71	3,589.19	0.00	0.00	0.00
11,300.00	90.03	175.49	7,385.16	-3,735.16	-518.84	3,689.19	0.00	0.00	0.00
11,400.00	90.03	175.49	7,385.11	-3,834.85	-510.98	3,789.18	0.00	0.00	0.00
11,500.00	90.03	175.49	7,385.06	-3,934.54	-503.11	3,889.18	0.00	0.00	0.00
11,600.00	90.03	175.49	7,385.00	-4,034.23	-495.25	3,989.18	0.00	0.00	0.00
11,700.00	90.03	175.49	7,384.95	-4,133.92	-487.38	4,089.17	0.00	0.00	0.00
11,800.00	90.03	175.49	7,384.89	-4,233.61	-479.51	4,189.17	0.00	0.00	0.00
11,900.00	90.03	175.49	7,384.84	-4,333.30	-471.65	4,289.17	0.00	0.00	0.00
12,000.00	90.03	175.49	7,384.78	-4,432.99	-463.78	4,389.16	0.00	0.00	0.00
12,100.00	90.03	175.49	7,384.73	-4,532.68	-455.92	4,489.16	0.00	0.00	0.00
12,200.00	90.03	175.49	7,384.68	-4,632.37	-448.05	4,589.16	0.00	0.00	0.00
12,300.00	90.03	175.49	7,384.62	-4,732.06	-440.18	4,689.15	0.00	0.00	0.00
12,400.00	90.03	175.49	7,384.57	-4,831.75	-432.32	4,789.15	0.00	0.00	0.00
12,500.00	90.03	175.49	7,384.51	-4,931.44	-424.45	4,889.15	0.00	0.00	0.00
12,600.00	90.03	175.49	7,384.46	-5,031.13	-416.59	4,989.14	0.00	0.00	0.00
12,700.00	90.03	175.49	7,384.41	-5,130.82	-408.72	5,089.14	0.00	0.00	0.00
12,800.00	90.03	175.49	7,384.35	-5,230.51	-400.85	5,189.14	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-1HZ
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:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
Well:	FARLEY 23-1HZ	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)
12,900.00	90.03	175.49	7,384.30	-5,330.20	-392.99	5,289.13	0.00	0.00	0.00
13,000.00	90.03	175.49	7,384.24	-5,429.89	-385.12	5,389.13	0.00	0.00	0.00
13,100.00	90.03	175.49	7,384.19	-5,529.58	-377.26	5,489.13	0.00	0.00	0.00
13,200.00	90.03	175.49	7,384.13	-5,629.27	-369.39	5,589.13	0.00	0.00	0.00
13,300.00	90.03	175.49	7,384.08	-5,728.96	-361.52	5,689.12	0.00	0.00	0.00
13,400.00	90.03	175.49	7,384.03	-5,828.65	-353.66	5,789.12	0.00	0.00	0.00
13,448.57	90.03	175.49	7,384.00	-5,877.07	-349.84	5,837.69	0.00	0.00	0.00
TD Well @ 13448.57ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,520.01	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
7,904.18	7,387.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,180.17	1,171.00	Fox Hills			
4,276.87	4,171.00	Parkman			
4,456.49	4,349.00	Sussex			
7,186.68	7,057.00	Sharon Springs			
7,256.66	7,114.00	Niobrara			
7,321.43	7,163.00	Nio B			
7,430.13	7,236.00	Nio C			
7,695.76	7,357.00	Fort Hayes			
7,790.12	7,378.00	Codell			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,220.00	1,209.61	48.65	-112.43	End Nudge @ 1220.00ft
4,020.00	3,919.81	328.02	-758.00	Begin Drop @ 4020.00ft
4,747.50	4,639.51	364.51	-842.32	End Drop @ 4747.50ft
6,778.79	6,670.80	364.51	-842.32	KOP @ 6778.79ft :: DLS = 8°/100'
7,904.18	7,387.00	-349.86	-785.96	End Build @ 7904.18ft
13,448.57	7,384.00	-5,877.07	-349.84	TD Well @ 13448.57ft