

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

4N-67W-33 CAMENISCH 10-33HZ PAD

CAMENISCH 33-1HZ

Plan A

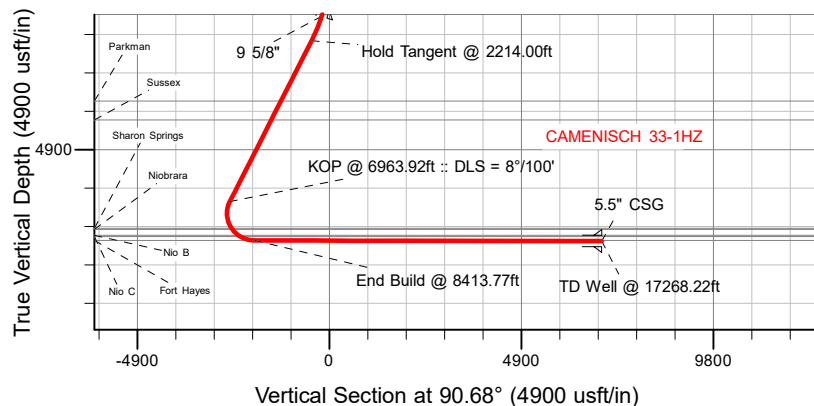
Plan: Permit Rev-1

Standard Planning Report

13 December, 2021

US ROCKIES WATTENBERG PLANNING

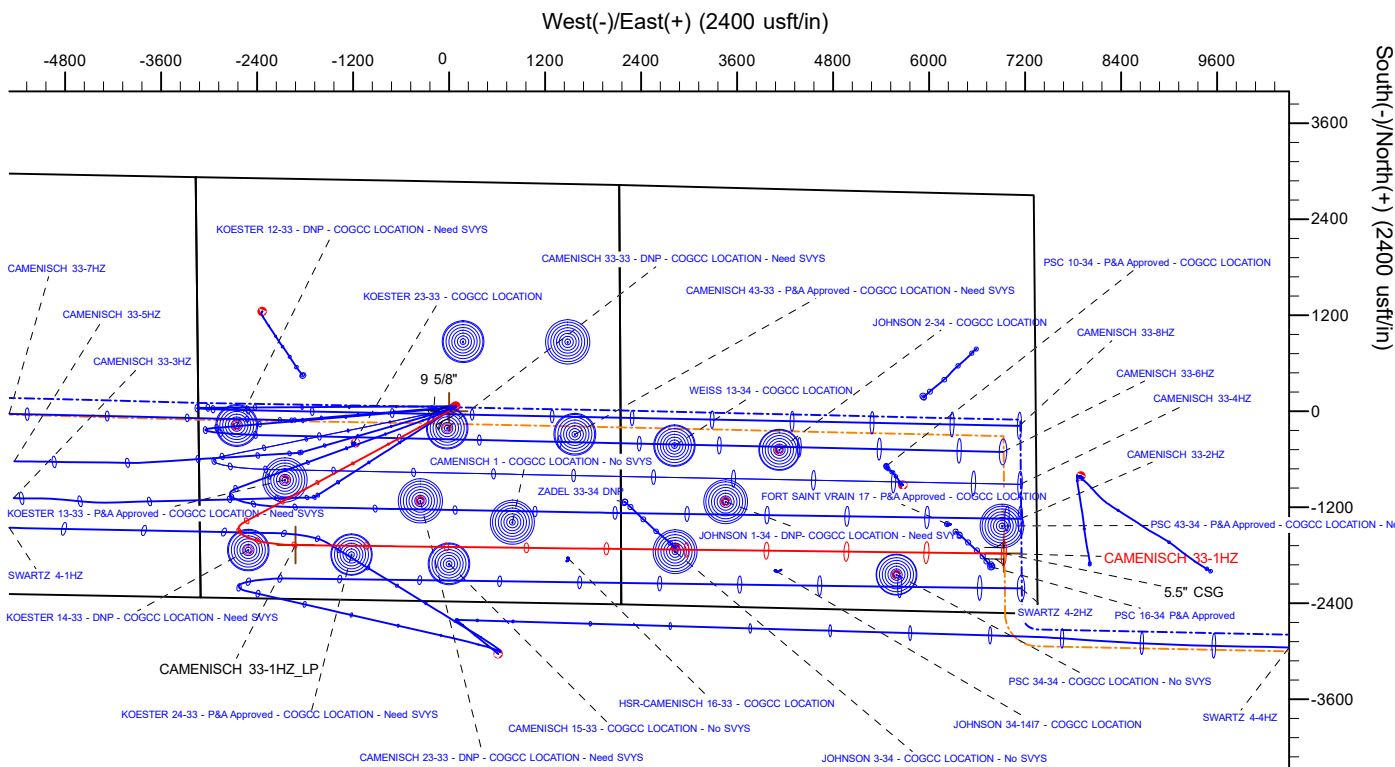
CASING DETAILS			
TVD	MD	Name	Size
1500.00	1526.50	9 5/8"	9-5/8
7234.00	17268.22	5.5" CSG	5-1/2



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
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	
2214.00	30.21	241.58	2121.97	-246.90	-456.25	1.50	241.58	-453.28	
6963.92	30.21	241.58	6226.79	-1384.38	-2558.23	0.00	0.00	-2541.62	
8413.77	89.90	90.68	7219.00	-1672.42	-1919.51	8.00	-147.24	-1899.53	
17268.22	89.90	90.68	7234.00	-1777.65	6934.30	0.00	0.00	6954.91	CAMENISCH 33-1HZ BHL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
CAMENISCH 33-1HZ_SHL	0.00	14624597.34	16700059.57	40.268698	-104.893734
CAMENISCH 33-1HZ_LP	7219.00	14622922.62	1668142.07	40.264105	-104.900615
CAMENISCH 33-1HZ_BHL	7234.00	14622828.00	1676996.00	40.263814	-104.868877

SHL	LP	BHL
2379' FSL	675' FSL	745' FSL
2144' FEL	1195' FWL	415' FEL



WELL DETAILS: CAMENISCH 33-1HZ

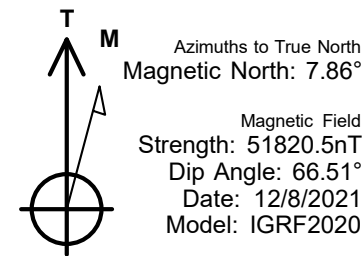
GL = 4870'

RKB = 17' @ 4887.00usft (RIG)

Plan: Permit Rev-1 (CAMENISCH 33-1HZ/Plan A)

Date: 12/14/2021

FORMATION TOP DETAILS		
TVDPATH	MDPATH	FORMATION
772.00	774.16	Fox Hills
3663.00	3997.21	Parkman
4145.00	4554.96	Sussex
6906.00	7703.54	Sharon Springs
6936.00	7741.42	Niobrara
7088.00	7966.12	Nio B
7120.00	8026.39	Nio C
7222.00	10185.26	Fort Hayes



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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		4N-67W-33 CAMENISCH 10-33HZ PAD				
Site Position:		Northing:	14,624,597.34	usft	Latitude:	40.268698
From:	Map	Easting:	1,670,059.57	usft	Longitude:	-104.893734
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"

Well		CAMENISCH 33-1HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,624,597.34 usft	Latitude:	40.268698
	+E/-W	0.00 usft	Easting:	1,670,059.57 usft	Longitude:	-104.893734
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,870.00 usft
Grid Convergence:		0.07 °				

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	12/8/2021	7.86	66.51	51,820.52815763

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	90.68	

Plan Survey Tool Program	Date	12/13/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	17,268.22	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,214.00	30.21	241.58	2,121.97	-246.90	-456.25	1.50	1.50	0.00	241.58	
6,963.92	30.21	241.58	6,226.79	-1,384.38	-2,558.23	0.00	0.00	0.00	0.00	
8,413.77	89.90	90.68	7,219.00	-1,672.42	-1,919.51	8.00	4.12	-10.41	-147.24	
17,268.23	89.90	90.68	7,234.00	-1,777.65	6,934.30	0.00	0.00	0.00	0.00	CAMENISCH 33-1HZ

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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
Begin Nudge @ 200.00ft									
300.00	1.50	241.58	299.99	-0.62	-1.15	-1.14	1.50	1.50	0.00
400.00	3.00	241.58	399.91	-2.49	-4.60	-4.57	1.50	1.50	0.00
500.00	4.50	241.58	499.69	-5.60	-10.36	-10.29	1.50	1.50	0.00
600.00	6.00	241.58	599.27	-9.96	-18.40	-18.28	1.50	1.50	0.00
700.00	7.50	241.58	698.57	-15.55	-28.74	-28.55	1.50	1.50	0.00
774.16	8.61	241.58	772.00	-20.50	-37.88	-37.63	1.50	1.50	0.00
Fox Hills									
800.00	9.00	241.58	797.54	-22.38	-41.36	-41.09	1.50	1.50	0.00
900.00	10.50	241.58	896.09	-30.44	-56.25	-55.89	1.50	1.50	0.00
1,000.00	12.00	241.58	994.16	-39.73	-73.41	-72.93	1.50	1.50	0.00
1,100.00	13.50	241.58	1,091.70	-50.23	-92.82	-92.22	1.50	1.50	0.00
1,200.00	15.00	241.58	1,188.62	-61.94	-114.47	-113.72	1.50	1.50	0.00
1,300.00	16.50	241.58	1,284.86	-74.86	-138.34	-137.44	1.50	1.50	0.00
1,400.00	18.00	241.58	1,380.36	-88.98	-164.42	-163.35	1.50	1.50	0.00
1,500.00	19.50	241.58	1,475.05	-104.27	-192.69	-191.44	1.50	1.50	0.00
1,526.50	19.90	241.58	1,500.00	-108.53	-200.55	-199.24	1.50	1.50	0.00
9 5/8"									
1,600.00	21.00	241.58	1,568.86	-120.75	-223.13	-221.68	1.50	1.50	0.00
1,700.00	22.50	241.58	1,661.74	-138.38	-255.72	-254.06	1.50	1.50	0.00
1,800.00	24.00	241.58	1,753.62	-157.17	-290.43	-288.55	1.50	1.50	0.00
1,900.00	25.50	241.58	1,844.43	-177.09	-327.25	-325.13	1.50	1.50	0.00
2,000.00	27.00	241.58	1,934.12	-198.14	-366.15	-363.77	1.50	1.50	0.00
2,100.00	28.50	241.58	2,022.61	-220.30	-407.10	-404.46	1.50	1.50	0.00
2,200.00	30.00	241.58	2,109.86	-243.56	-450.07	-447.15	1.50	1.50	0.00
2,214.00	30.21	241.58	2,121.97	-246.90	-456.25	-453.28	1.50	1.50	0.00
Hold Tangent @ 2214.00ft									
2,300.00	30.21	241.58	2,196.29	-267.49	-494.30	-491.10	0.00	0.00	0.00
2,400.00	30.21	241.58	2,282.71	-291.44	-538.56	-535.06	0.00	0.00	0.00
2,500.00	30.21	241.58	2,369.13	-315.39	-582.81	-579.03	0.00	0.00	0.00
2,600.00	30.21	241.58	2,455.55	-339.33	-627.06	-622.99	0.00	0.00	0.00
2,700.00	30.21	241.58	2,541.97	-363.28	-671.32	-666.96	0.00	0.00	0.00
2,800.00	30.21	241.58	2,628.38	-387.23	-715.57	-710.92	0.00	0.00	0.00
2,900.00	30.21	241.58	2,714.80	-411.18	-759.82	-754.89	0.00	0.00	0.00
3,000.00	30.21	241.58	2,801.22	-435.12	-804.08	-798.85	0.00	0.00	0.00
3,100.00	30.21	241.58	2,887.64	-459.07	-848.33	-842.82	0.00	0.00	0.00
3,200.00	30.21	241.58	2,974.06	-483.02	-892.58	-886.79	0.00	0.00	0.00
3,300.00	30.21	241.58	3,060.48	-506.97	-936.83	-930.75	0.00	0.00	0.00
3,400.00	30.21	241.58	3,146.90	-530.91	-981.09	-974.72	0.00	0.00	0.00
3,500.00	30.21	241.58	3,233.32	-554.86	-1,025.34	-1,018.68	0.00	0.00	0.00
3,600.00	30.21	241.58	3,319.73	-578.81	-1,069.59	-1,062.65	0.00	0.00	0.00
3,700.00	30.21	241.58	3,406.15	-602.76	-1,113.85	-1,106.61	0.00	0.00	0.00
3,800.00	30.21	241.58	3,492.57	-626.70	-1,158.10	-1,150.58	0.00	0.00	0.00
3,900.00	30.21	241.58	3,578.99	-650.65	-1,202.35	-1,194.55	0.00	0.00	0.00
3,997.21	30.21	241.58	3,663.00	-673.93	-1,245.37	-1,237.29	0.00	0.00	0.00
Parkman									
4,000.00	30.21	241.58	3,665.41	-674.60	-1,246.61	-1,238.51	0.00	0.00	0.00
4,100.00	30.21	241.58	3,751.83	-698.55	-1,290.86	-1,282.48	0.00	0.00	0.00
4,200.00	30.21	241.58	3,838.25	-722.49	-1,335.11	-1,326.44	0.00	0.00	0.00
4,300.00	30.21	241.58	3,924.66	-746.44	-1,379.36	-1,370.41	0.00	0.00	0.00
4,400.00	30.21	241.58	4,011.08	-770.39	-1,423.62	-1,414.37	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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)
4,500.00	30.21	241.58	4,097.50	-794.34	-1,467.87	-1,458.34	0.00	0.00	0.00
4,554.96	30.21	241.58	4,145.00	-807.50	-1,492.19	-1,482.50	0.00	0.00	0.00
Sussex									
4,600.00	30.21	241.58	4,183.92	-818.28	-1,512.12	-1,502.31	0.00	0.00	0.00
4,700.00	30.21	241.58	4,270.34	-842.23	-1,556.38	-1,546.27	0.00	0.00	0.00
4,800.00	30.21	241.58	4,356.76	-866.18	-1,600.63	-1,590.24	0.00	0.00	0.00
4,900.00	30.21	241.58	4,443.18	-890.13	-1,644.88	-1,634.20	0.00	0.00	0.00
5,000.00	30.21	241.58	4,529.60	-914.07	-1,689.14	-1,678.17	0.00	0.00	0.00
5,100.00	30.21	241.58	4,616.01	-938.02	-1,733.39	-1,722.13	0.00	0.00	0.00
5,200.00	30.21	241.58	4,702.43	-961.97	-1,777.64	-1,766.10	0.00	0.00	0.00
5,300.00	30.21	241.58	4,788.85	-985.92	-1,821.89	-1,810.07	0.00	0.00	0.00
5,400.00	30.21	241.58	4,875.27	-1,009.86	-1,866.15	-1,854.03	0.00	0.00	0.00
5,500.00	30.21	241.58	4,961.69	-1,033.81	-1,910.40	-1,898.00	0.00	0.00	0.00
5,600.00	30.21	241.58	5,048.11	-1,057.76	-1,954.65	-1,941.96	0.00	0.00	0.00
5,700.00	30.21	241.58	5,134.53	-1,081.71	-1,998.91	-1,985.93	0.00	0.00	0.00
5,800.00	30.21	241.58	5,220.95	-1,105.65	-2,043.16	-2,029.89	0.00	0.00	0.00
5,900.00	30.21	241.58	5,307.36	-1,129.60	-2,087.41	-2,073.86	0.00	0.00	0.00
6,000.00	30.21	241.58	5,393.78	-1,153.55	-2,131.67	-2,117.82	0.00	0.00	0.00
6,100.00	30.21	241.58	5,480.20	-1,177.50	-2,175.92	-2,161.79	0.00	0.00	0.00
6,200.00	30.21	241.58	5,566.62	-1,201.44	-2,220.17	-2,205.76	0.00	0.00	0.00
6,300.00	30.21	241.58	5,653.04	-1,225.39	-2,264.42	-2,249.72	0.00	0.00	0.00
6,400.00	30.21	241.58	5,739.46	-1,249.34	-2,308.68	-2,293.69	0.00	0.00	0.00
6,500.00	30.21	241.58	5,825.88	-1,273.29	-2,352.93	-2,337.65	0.00	0.00	0.00
6,600.00	30.21	241.58	5,912.30	-1,297.23	-2,397.18	-2,381.62	0.00	0.00	0.00
6,700.00	30.21	241.58	5,998.71	-1,321.18	-2,441.44	-2,425.58	0.00	0.00	0.00
6,800.00	30.21	241.58	6,085.13	-1,345.13	-2,485.69	-2,469.55	0.00	0.00	0.00
6,900.00	30.21	241.58	6,171.55	-1,369.08	-2,529.94	-2,513.52	0.00	0.00	0.00
6,963.92	30.21	241.58	6,226.79	-1,384.38	-2,558.23	-2,541.62	0.00	0.00	0.00
KOP @ 6963.92ft :: DLS = 8°/100'									
7,000.00	27.82	238.23	6,258.34	-1,393.14	-2,573.37	-2,556.66	8.00	-6.62	-9.28
7,050.00	24.68	232.64	6,303.19	-1,405.62	-2,591.60	-2,574.73	8.00	-6.29	-11.19
7,100.00	21.79	225.60	6,349.14	-1,418.45	-2,606.53	-2,589.51	8.00	-5.77	-14.08
7,150.00	19.28	216.69	6,395.97	-1,431.57	-2,618.10	-2,600.92	8.00	-5.01	-17.82
7,200.00	17.32	205.55	6,443.45	-1,444.91	-2,626.24	-2,608.91	8.00	-3.92	-22.27
7,250.00	16.11	192.27	6,491.35	-1,458.41	-2,630.93	-2,613.44	8.00	-2.43	-26.57
7,300.00	15.82	177.73	6,539.44	-1,472.01	-2,632.14	-2,614.48	8.00	-0.59	-29.08
7,350.00	16.49	163.52	6,587.49	-1,485.63	-2,629.85	-2,612.04	8.00	1.35	-28.41
7,400.00	18.03	151.04	6,635.25	-1,499.21	-2,624.09	-2,606.11	8.00	3.07	-24.97
7,450.00	20.23	140.81	6,682.50	-1,512.68	-2,614.88	-2,596.74	8.00	4.40	-20.45
7,500.00	22.90	132.70	6,729.01	-1,525.98	-2,602.26	-2,583.97	8.00	5.35	-16.23
7,550.00	25.90	126.29	6,774.54	-1,539.05	-2,586.30	-2,567.85	8.00	6.00	-12.83
7,600.00	29.13	121.16	6,818.89	-1,551.82	-2,567.08	-2,548.48	8.00	6.46	-10.25
7,650.00	32.52	117.00	6,861.82	-1,564.22	-2,544.68	-2,525.94	8.00	6.77	-8.32
7,700.00	36.02	113.56	6,903.14	-1,576.20	-2,519.22	-2,500.34	8.00	7.00	-6.89
7,703.54	36.27	113.34	6,906.00	-1,577.03	-2,517.31	-2,498.41	8.00	7.10	-6.26
Sharon Springs									
7,741.42	38.98	111.12	6,936.00	-1,585.77	-2,495.90	-2,476.90	8.00	7.16	-5.85
Niobrara									
7,750.00	39.60	110.65	6,942.64	-1,587.70	-2,490.82	-2,471.80	8.00	7.22	-5.43
7,800.00	43.24	108.16	6,980.13	-1,598.67	-2,459.62	-2,440.48	8.00	7.29	-4.98
7,850.00	46.94	105.99	7,015.43	-1,609.04	-2,425.78	-2,406.51	8.00	7.38	-4.35
7,900.00	50.67	104.06	7,048.36	-1,618.77	-2,389.44	-2,370.06	8.00	7.46	-3.85
7,950.00	54.42	102.33	7,078.76	-1,627.81	-2,350.81	-2,331.32	8.00	7.51	-3.46

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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)	
7,966.12	55.64	101.81	7,088.00	-1,630.58	-2,337.89	-2,318.37	8.00	7.55	-3.24	
Nio B										
8,000.00	58.20	100.76	7,106.49	-1,636.13	-2,310.05	-2,290.47	8.00	7.57	-3.10	
8,026.39	60.20	99.98	7,120.00	-1,640.20	-2,287.75	-2,268.13	8.00	7.59	-2.95	
Nio C										
8,050.00	62.00	99.31	7,131.41	-1,643.66	-2,267.38	-2,247.71	8.00	7.60	-2.84	
8,100.00	65.81	97.95	7,153.40	-1,650.39	-2,222.99	-2,203.25	8.00	7.62	-2.70	
8,150.00	69.63	96.68	7,172.35	-1,656.28	-2,177.11	-2,157.30	8.00	7.65	-2.54	
8,200.00	73.47	95.47	7,188.17	-1,661.29	-2,129.95	-2,110.09	8.00	7.66	-2.42	
8,250.00	77.30	94.31	7,200.78	-1,665.41	-2,081.76	-2,061.85	8.00	7.68	-2.33	
8,300.00	81.15	93.18	7,210.13	-1,668.61	-2,032.75	-2,012.81	8.00	7.69	-2.26	
8,350.00	84.99	92.07	7,216.16	-1,670.89	-1,983.18	-1,963.21	8.00	7.69	-2.21	
8,400.00	88.84	90.98	7,218.85	-1,672.22	-1,933.28	-1,913.30	8.00	7.70	-2.19	
8,413.77	89.90	90.68	7,219.00	-1,672.42	-1,919.51	-1,899.53	8.00	7.70	-2.18	
End Build @ 8413.77ft										
8,500.00	89.90	90.68	7,219.14	-1,673.44	-1,833.29	-1,813.30	0.00	0.00	0.00	
8,600.00	89.90	90.68	7,219.31	-1,674.63	-1,733.30	-1,713.30	0.00	0.00	0.00	
8,700.00	89.90	90.68	7,219.48	-1,675.82	-1,633.30	-1,613.30	0.00	0.00	0.00	
8,800.00	89.90	90.68	7,219.65	-1,677.01	-1,533.31	-1,513.30	0.00	0.00	0.00	
8,900.00	89.90	90.68	7,219.82	-1,678.19	-1,433.32	-1,413.30	0.00	0.00	0.00	
9,000.00	89.90	90.68	7,219.99	-1,679.38	-1,333.33	-1,313.30	0.00	0.00	0.00	
9,100.00	89.90	90.68	7,220.16	-1,680.57	-1,233.33	-1,213.30	0.00	0.00	0.00	
9,200.00	89.90	90.68	7,220.33	-1,681.76	-1,133.34	-1,113.30	0.00	0.00	0.00	
9,300.00	89.90	90.68	7,220.50	-1,682.95	-1,033.35	-1,013.30	0.00	0.00	0.00	
9,400.00	89.90	90.68	7,220.67	-1,684.14	-933.35	-913.30	0.00	0.00	0.00	
9,500.00	89.90	90.68	7,220.84	-1,685.33	-833.36	-813.30	0.00	0.00	0.00	
9,600.00	89.90	90.68	7,221.01	-1,686.51	-733.37	-713.30	0.00	0.00	0.00	
9,700.00	89.90	90.68	7,221.18	-1,687.70	-633.38	-613.30	0.00	0.00	0.00	
9,800.00	89.90	90.68	7,221.35	-1,688.89	-533.38	-513.30	0.00	0.00	0.00	
9,900.00	89.90	90.68	7,221.52	-1,690.08	-433.39	-413.30	0.00	0.00	0.00	
10,000.00	89.90	90.68	7,221.69	-1,691.27	-333.40	-313.30	0.00	0.00	0.00	
10,100.00	89.90	90.68	7,221.86	-1,692.46	-233.40	-213.30	0.00	0.00	0.00	
10,185.26	89.90	90.68	7,222.00	-1,693.47	-148.15	-128.05	0.00	0.00	0.00	
Fort Hayes										
10,200.00	89.90	90.68	7,222.03	-1,693.65	-133.41	-113.30	0.00	0.00	0.00	
10,300.00	89.90	90.68	7,222.19	-1,694.83	-33.42	-13.30	0.00	0.00	0.00	
10,400.00	89.90	90.68	7,222.36	-1,696.02	66.57	86.70	0.00	0.00	0.00	
10,500.00	89.90	90.68	7,222.53	-1,697.21	166.57	186.70	0.00	0.00	0.00	
10,600.00	89.90	90.68	7,222.70	-1,698.40	266.56	286.70	0.00	0.00	0.00	
10,700.00	89.90	90.68	7,222.87	-1,699.59	366.55	386.70	0.00	0.00	0.00	
10,800.00	89.90	90.68	7,223.04	-1,700.78	466.55	486.70	0.00	0.00	0.00	
10,900.00	89.90	90.68	7,223.21	-1,701.97	566.54	586.70	0.00	0.00	0.00	
11,000.00	89.90	90.68	7,223.38	-1,703.15	666.53	686.70	0.00	0.00	0.00	
11,100.00	89.90	90.68	7,223.55	-1,704.34	766.52	786.70	0.00	0.00	0.00	
11,200.00	89.90	90.68	7,223.72	-1,705.53	866.52	886.70	0.00	0.00	0.00	
11,300.00	89.90	90.68	7,223.89	-1,706.72	966.51	986.70	0.00	0.00	0.00	
11,400.00	89.90	90.68	7,224.06	-1,707.91	1,066.50	1,086.70	0.00	0.00	0.00	
11,500.00	89.90	90.68	7,224.23	-1,709.10	1,166.49	1,186.70	0.00	0.00	0.00	
11,600.00	89.90	90.68	7,224.40	-1,710.29	1,266.49	1,286.70	0.00	0.00	0.00	
11,700.00	89.90	90.68	7,224.57	-1,711.47	1,366.48	1,386.70	0.00	0.00	0.00	
11,800.00	89.90	90.68	7,224.74	-1,712.66	1,466.47	1,486.70	0.00	0.00	0.00	
11,900.00	89.90	90.68	7,224.91	-1,713.85	1,566.47	1,586.70	0.00	0.00	0.00	
12,000.00	89.90	90.68	7,225.07	-1,715.04	1,666.46	1,686.70	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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)	
12,100.00	89.90	90.68	7,225.24	-1,716.23	1,766.45	1,786.70	0.00	0.00	0.00	
12,200.00	89.90	90.68	7,225.41	-1,717.42	1,866.44	1,886.70	0.00	0.00	0.00	
12,300.00	89.90	90.68	7,225.58	-1,718.61	1,966.44	1,986.70	0.00	0.00	0.00	
12,400.00	89.90	90.68	7,225.75	-1,719.79	2,066.43	2,086.69	0.00	0.00	0.00	
12,500.00	89.90	90.68	7,225.92	-1,720.98	2,166.42	2,186.69	0.00	0.00	0.00	
12,600.00	89.90	90.68	7,226.09	-1,722.17	2,266.42	2,286.69	0.00	0.00	0.00	
12,700.00	89.90	90.68	7,226.26	-1,723.36	2,366.41	2,386.69	0.00	0.00	0.00	
12,800.00	89.90	90.68	7,226.43	-1,724.55	2,466.40	2,486.69	0.00	0.00	0.00	
12,900.00	89.90	90.68	7,226.60	-1,725.74	2,566.39	2,586.69	0.00	0.00	0.00	
13,000.00	89.90	90.68	7,226.77	-1,726.93	2,666.39	2,686.69	0.00	0.00	0.00	
13,100.00	89.90	90.68	7,226.94	-1,728.11	2,766.38	2,786.69	0.00	0.00	0.00	
13,200.00	89.90	90.68	7,227.11	-1,729.30	2,866.37	2,886.69	0.00	0.00	0.00	
13,300.00	89.90	90.68	7,227.28	-1,730.49	2,966.37	2,986.69	0.00	0.00	0.00	
13,400.00	89.90	90.68	7,227.45	-1,731.68	3,066.36	3,086.69	0.00	0.00	0.00	
13,500.00	89.90	90.68	7,227.62	-1,732.87	3,166.35	3,186.69	0.00	0.00	0.00	
13,600.00	89.90	90.68	7,227.79	-1,734.06	3,266.34	3,286.69	0.00	0.00	0.00	
13,700.00	89.90	90.68	7,227.95	-1,735.24	3,366.34	3,386.69	0.00	0.00	0.00	
13,800.00	89.90	90.68	7,228.12	-1,736.43	3,466.33	3,486.69	0.00	0.00	0.00	
13,900.00	89.90	90.68	7,228.29	-1,737.62	3,566.32	3,586.69	0.00	0.00	0.00	
14,000.00	89.90	90.68	7,228.46	-1,738.81	3,666.31	3,686.69	0.00	0.00	0.00	
14,100.00	89.90	90.68	7,228.63	-1,740.00	3,766.31	3,786.69	0.00	0.00	0.00	
14,200.00	89.90	90.68	7,228.80	-1,741.19	3,866.30	3,886.69	0.00	0.00	0.00	
14,300.00	89.90	90.68	7,228.97	-1,742.38	3,966.29	3,986.69	0.00	0.00	0.00	
14,400.00	89.90	90.68	7,229.14	-1,743.56	4,066.29	4,086.69	0.00	0.00	0.00	
14,500.00	89.90	90.68	7,229.31	-1,744.75	4,166.28	4,186.69	0.00	0.00	0.00	
14,600.00	89.90	90.68	7,229.48	-1,745.94	4,266.27	4,286.69	0.00	0.00	0.00	
14,700.00	89.90	90.68	7,229.65	-1,747.13	4,366.26	4,386.69	0.00	0.00	0.00	
14,800.00	89.90	90.68	7,229.82	-1,748.32	4,466.26	4,486.69	0.00	0.00	0.00	
14,900.00	89.90	90.68	7,229.99	-1,749.51	4,566.25	4,586.69	0.00	0.00	0.00	
15,000.00	89.90	90.68	7,230.16	-1,750.70	4,666.24	4,686.69	0.00	0.00	0.00	
15,100.00	89.90	90.68	7,230.33	-1,751.88	4,766.24	4,786.69	0.00	0.00	0.00	
15,200.00	89.90	90.68	7,230.50	-1,753.07	4,866.23	4,886.69	0.00	0.00	0.00	
15,300.00	89.90	90.68	7,230.67	-1,754.26	4,966.22	4,986.69	0.00	0.00	0.00	
15,400.00	89.90	90.68	7,230.84	-1,755.45	5,066.21	5,086.69	0.00	0.00	0.00	
15,500.00	89.90	90.68	7,231.00	-1,756.64	5,166.21	5,186.69	0.00	0.00	0.00	
15,600.00	89.90	90.68	7,231.17	-1,757.83	5,266.20	5,286.69	0.00	0.00	0.00	
15,700.00	89.90	90.68	7,231.34	-1,759.02	5,366.19	5,386.69	0.00	0.00	0.00	
15,800.00	89.90	90.68	7,231.51	-1,760.20	5,466.19	5,486.69	0.00	0.00	0.00	
15,900.00	89.90	90.68	7,231.68	-1,761.39	5,566.18	5,586.69	0.00	0.00	0.00	
16,000.00	89.90	90.68	7,231.85	-1,762.58	5,666.17	5,686.69	0.00	0.00	0.00	
16,100.00	89.90	90.68	7,232.02	-1,763.77	5,766.16	5,786.69	0.00	0.00	0.00	
16,200.00	89.90	90.68	7,232.19	-1,764.96	5,866.16	5,886.69	0.00	0.00	0.00	
16,300.00	89.90	90.68	7,232.36	-1,766.15	5,966.15	5,986.69	0.00	0.00	0.00	
16,400.00	89.90	90.68	7,232.53	-1,767.34	6,066.14	6,086.69	0.00	0.00	0.00	
16,500.00	89.90	90.68	7,232.70	-1,768.52	6,166.13	6,186.69	0.00	0.00	0.00	
16,600.00	89.90	90.68	7,232.87	-1,769.71	6,266.13	6,286.69	0.00	0.00	0.00	
16,700.00	89.90	90.68	7,233.04	-1,770.90	6,366.12	6,386.69	0.00	0.00	0.00	
16,800.00	89.90	90.68	7,233.21	-1,772.09	6,466.11	6,486.69	0.00	0.00	0.00	
16,900.00	89.90	90.68	7,233.38	-1,773.28	6,566.11	6,586.69	0.00	0.00	0.00	
17,000.00	89.90	90.68	7,233.55	-1,774.47	6,666.10	6,686.69	0.00	0.00	0.00	
17,100.00	89.90	90.68	7,233.72	-1,775.66	6,766.09	6,786.69	0.00	0.00	0.00	
17,200.00	89.90	90.68	7,233.88	-1,776.84	6,866.08	6,886.69	0.00	0.00	0.00	
17,268.22	89.90	90.68	7,234.00	-1,777.65	6,934.30	6,954.91	0.00	0.00	0.00	
TD Well @ 17268.22ft - 5.5" CSG										

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-1HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4887.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4887.00usft (RIG)
Site:	4N-67W-33 CAMENISCH 10-33HZ PAD	North Reference:	True
Well:	CAMENISCH 33-1HZ	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)

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,526.50	1,500.00	9 5/8"		9-5/8	13-1/2
17,268.22	7,234.00	5.5" CSG		5-1/2	7-7/8

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
774.16	772.00	Fox Hills				
3,997.21	3,663.00	Parkman				
4,554.96	4,145.00	Sussex				
7,703.54	6,906.00	Sharon Springs				
7,741.42	6,936.00	Niobrara				
7,966.12	7,088.00	Nio B				
8,026.39	7,120.00	Nio C				
10,185.26	7,222.00	Fort Hayes				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
2,214.00	2,121.97	-246.90	-456.25	Hold Tangent @ 2214.00ft	
6,963.92	6,226.79	-1,384.38	-2,558.23	KOP @ 6963.92ft :: DLS = 8°/100'	
8,413.77	7,219.00	-1,672.42	-1,919.51	End Build @ 8413.77ft	
17,268.22	7,234.00	-1,777.65	6,934.30	TD Well @ 17268.22ft	