

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

CAMENISCH 33-5HZ

Plan A

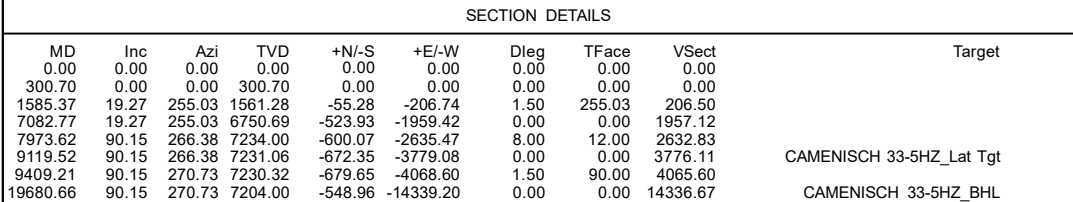
Plan: Permit Rev-2

Standard Planning Report

16 December, 2021

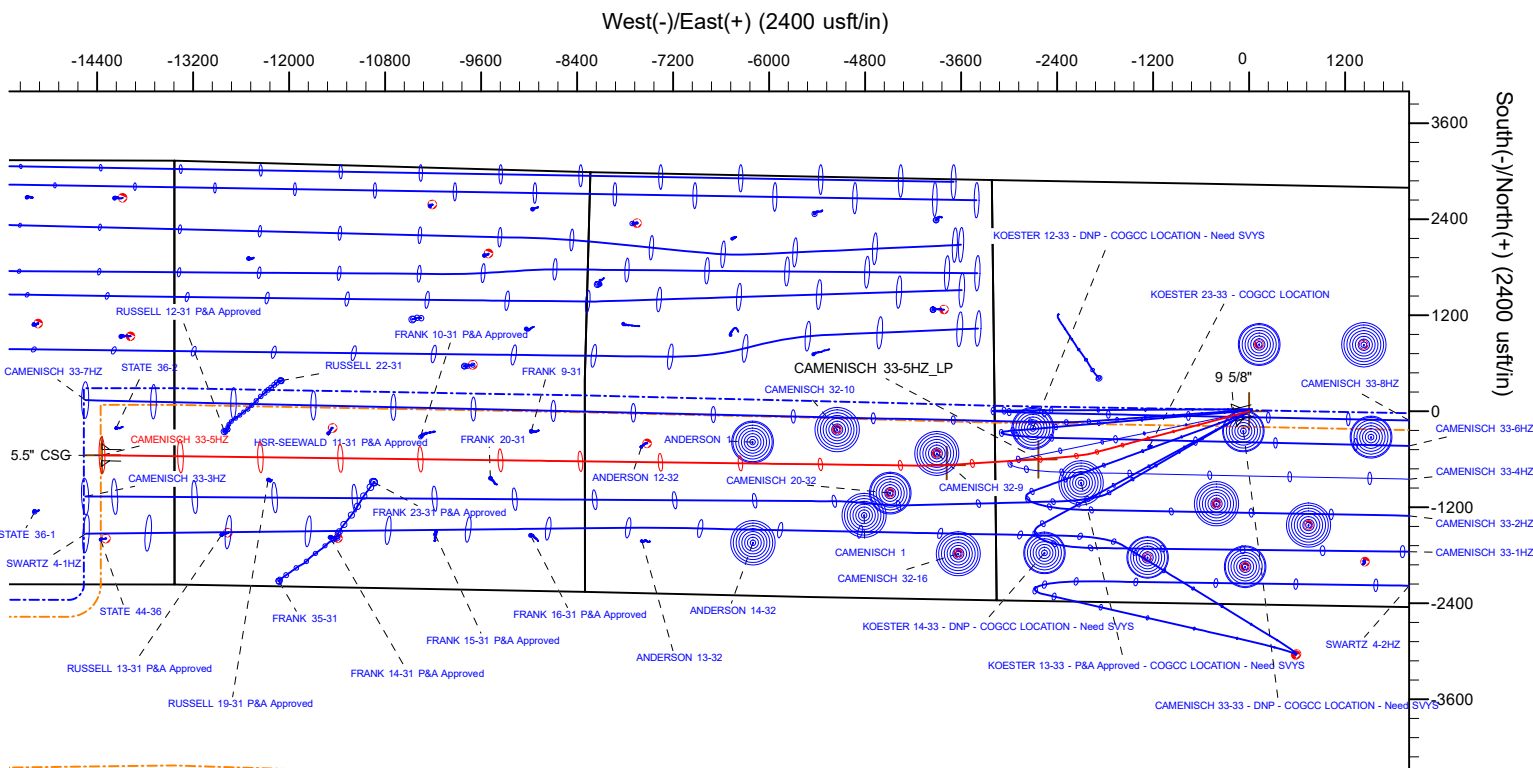
US ROCKIES WATTENBERG PLANNING

CASING DETAILS			
TVD	MD	Name	Size
1500.00	1520.63	9 5/8"	9-5/8
7204.00	19680.66	5.5" CSG	5-1/2



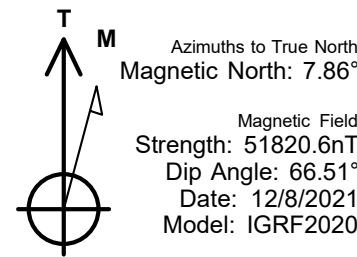
SHL	LP	BHL
2416' FSL	1772' FSL	1616' FSL
2096' FEL	540' FWL	906' FEL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
CAMENISCH 33-5HZ_SHL	0.00	14624633.18	1670107.66	40.268796	-104.893562
CAMENISCH 33-5HZ_LP	7234.00	14624029.95	1667472.91	40.267148	-104.903009
CAMENISCH 33-5HZ_BHL	7204.00	14624067.00	1655769.13	40.267277	-104.944965



WELL DETAILS: CAMENISCH 33-5HZ	
GL = 4870'	
RKB = 17" @ 4887.00usft (RIG)	
Plan: Permit Rev-2 (CAMENISCH 33-5HZ/Plan A)	
Date:	12/16/2021

FORMATION TOP DETAILS		
TVDPATH	MDPATH	Formation
772.00	773.20	Fox Hills
3663.00	3811.82	Parkman
4145.00	4322.43	Sussex
6906.00	7256.13	Sharon Springs
6936.00	7292.49	Niobrara
7088.00	7505.75	Nio B
7120.00	7561.62	Nio C
7222.00	7840.32	Fort Hayes



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-5HZ
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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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 33-5HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,624,633.18 usft	Latitude:	40.268796
	+E/-W	0.00 usft	Easting:	1,670,107.66 usft	Longitude:	-104.893562
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	51,820.59770464

Design	Permit Rev-2				
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	270.25	

Plan Survey Tool Program		Date	12/15/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination
2	2,000.00	19,680.66	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+II	Fixed:v2:Rockies, crustal dec +

Planning Report

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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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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	
300.70	0.00	0.00	300.70	0.00	0.00	0.00	0.00	0.00	0.00	
1,585.37	19.27	255.03	1,561.28	-55.28	-206.74	1.50	1.50	0.00	255.03	
7,082.77	19.27	255.03	6,750.69	-523.93	-1,959.42	0.00	0.00	0.00	0.00	
7,973.62	90.15	266.38	7,234.00	-600.07	-2,635.47	8.00	7.96	1.27	12.00	
9,119.52	90.15	266.38	7,231.06	-672.35	-3,779.08	0.00	0.00	0.00	0.00	CAMENISCH 33-5HZ
9,409.21	90.15	270.73	7,230.32	-679.65	-4,068.60	1.50	0.00	1.50	90.00	
19,680.66	90.15	270.73	7,204.00	-548.96	-14,339.20	0.00	0.00	0.00	0.00	CAMENISCH 33-5HZ

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-5HZ
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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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
300.70	0.00	0.00	300.70	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 300.70ft									
400.00	1.49	255.03	399.99	-0.33	-1.25	1.25	1.50	1.50	0.00
500.00	2.99	255.03	499.91	-1.34	-5.02	5.02	1.50	1.50	0.00
600.00	4.49	255.03	599.69	-3.03	-11.32	11.31	1.50	1.50	0.00
700.00	5.99	255.03	699.27	-5.39	-20.14	20.12	1.50	1.50	0.00
773.20	7.09	255.03	772.00	-7.54	-28.20	28.16	1.50	1.50	0.00
Fox Hills									
800.00	7.49	255.03	798.58	-8.42	-31.48	31.44	1.50	1.50	0.00
900.00	8.99	255.03	897.54	-12.12	-45.33	45.27	1.50	1.50	0.00
1,000.00	10.49	255.03	996.10	-16.49	-61.67	61.60	1.50	1.50	0.00
1,100.00	11.99	255.03	1,094.18	-21.52	-80.50	80.40	1.50	1.50	0.00
1,200.00	13.49	255.03	1,191.71	-27.22	-101.80	101.68	1.50	1.50	0.00
1,300.00	14.99	255.03	1,288.64	-33.57	-125.56	125.41	1.50	1.50	0.00
1,400.00	16.49	255.03	1,384.89	-40.58	-151.77	151.59	1.50	1.50	0.00
1,500.00	17.99	255.03	1,480.39	-48.24	-180.40	180.18	1.50	1.50	0.00
1,520.63	18.30	255.03	1,500.00	-49.90	-186.60	186.38	1.50	1.50	0.00
9 5/8"									
1,585.37	19.27	255.03	1,561.28	-55.28	-206.74	206.50	1.50	1.50	0.00
Hold Tangent @ 1585.37ft									
1,600.00	19.27	255.03	1,575.10	-56.53	-211.41	211.16	0.00	0.00	0.00
1,700.00	19.27	255.03	1,669.50	-65.05	-243.29	243.00	0.00	0.00	0.00
1,800.00	19.27	255.03	1,763.89	-73.58	-275.17	274.85	0.00	0.00	0.00
1,900.00	19.27	255.03	1,858.29	-82.10	-307.05	306.69	0.00	0.00	0.00
2,000.00	19.27	255.03	1,952.69	-90.63	-338.93	338.54	0.00	0.00	0.00
2,100.00	19.27	255.03	2,047.08	-99.15	-370.82	370.38	0.00	0.00	0.00
2,200.00	19.27	255.03	2,141.48	-107.68	-402.70	402.22	0.00	0.00	0.00
2,300.00	19.27	255.03	2,235.88	-116.20	-434.58	434.07	0.00	0.00	0.00
2,400.00	19.27	255.03	2,330.28	-124.73	-466.46	465.91	0.00	0.00	0.00
2,500.00	19.27	255.03	2,424.67	-133.25	-498.34	497.76	0.00	0.00	0.00
2,600.00	19.27	255.03	2,519.07	-141.78	-530.23	529.60	0.00	0.00	0.00
2,700.00	19.27	255.03	2,613.47	-150.30	-562.11	561.45	0.00	0.00	0.00
2,800.00	19.27	255.03	2,707.87	-158.83	-593.99	593.29	0.00	0.00	0.00
2,900.00	19.27	255.03	2,802.26	-167.35	-625.87	625.14	0.00	0.00	0.00
3,000.00	19.27	255.03	2,896.66	-175.88	-657.75	656.98	0.00	0.00	0.00
3,100.00	19.27	255.03	2,991.06	-184.40	-689.64	688.82	0.00	0.00	0.00
3,200.00	19.27	255.03	3,085.46	-192.93	-721.52	720.67	0.00	0.00	0.00
3,300.00	19.27	255.03	3,179.85	-201.45	-753.40	752.51	0.00	0.00	0.00
3,400.00	19.27	255.03	3,274.25	-209.98	-785.28	784.36	0.00	0.00	0.00
3,500.00	19.27	255.03	3,368.65	-218.50	-817.16	816.20	0.00	0.00	0.00
3,600.00	19.27	255.03	3,463.05	-227.02	-849.05	848.05	0.00	0.00	0.00
3,700.00	19.27	255.03	3,557.44	-235.55	-880.93	879.89	0.00	0.00	0.00
3,800.00	19.27	255.03	3,651.84	-244.07	-912.81	911.74	0.00	0.00	0.00
3,811.82	19.27	255.03	3,663.00	-245.08	-916.58	915.50	0.00	0.00	0.00
Parkman									
3,900.00	19.27	255.03	3,746.24	-252.60	-944.69	943.58	0.00	0.00	0.00
4,000.00	19.27	255.03	3,840.64	-261.12	-976.57	975.42	0.00	0.00	0.00
4,100.00	19.27	255.03	3,935.03	-269.65	-1,008.46	1,007.27	0.00	0.00	0.00
4,200.00	19.27	255.03	4,029.43	-278.17	-1,040.34	1,039.11	0.00	0.00	0.00
4,300.00	19.27	255.03	4,123.83	-286.70	-1,072.22	1,070.96	0.00	0.00	0.00
4,322.43	19.27	255.03	4,145.00	-288.61	-1,079.37	1,078.10	0.00	0.00	0.00

Planning Report

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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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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									
4,400.00	19.27	255.03	4,218.22	-295.22	-1,104.10	1,102.80	0.00	0.00	0.00
4,500.00	19.27	255.03	4,312.62	-303.75	-1,135.98	1,134.65	0.00	0.00	0.00
4,600.00	19.27	255.03	4,407.02	-312.27	-1,167.87	1,166.49	0.00	0.00	0.00
4,700.00	19.27	255.03	4,501.42	-320.80	-1,199.75	1,198.34	0.00	0.00	0.00
4,800.00	19.27	255.03	4,595.81	-329.32	-1,231.63	1,230.18	0.00	0.00	0.00
4,900.00	19.27	255.03	4,690.21	-337.85	-1,263.51	1,262.03	0.00	0.00	0.00
5,000.00	19.27	255.03	4,784.61	-346.37	-1,295.39	1,293.87	0.00	0.00	0.00
5,100.00	19.27	255.03	4,879.01	-354.90	-1,327.28	1,325.71	0.00	0.00	0.00
5,200.00	19.27	255.03	4,973.40	-363.42	-1,359.16	1,357.56	0.00	0.00	0.00
5,300.00	19.27	255.03	5,067.80	-371.95	-1,391.04	1,389.40	0.00	0.00	0.00
5,400.00	19.27	255.03	5,162.20	-380.47	-1,422.92	1,421.25	0.00	0.00	0.00
5,500.00	19.27	255.03	5,256.60	-389.00	-1,454.80	1,453.09	0.00	0.00	0.00
5,600.00	19.27	255.03	5,350.99	-397.52	-1,486.69	1,484.94	0.00	0.00	0.00
5,700.00	19.27	255.03	5,445.39	-406.05	-1,518.57	1,516.78	0.00	0.00	0.00
5,800.00	19.27	255.03	5,539.79	-414.57	-1,550.45	1,548.63	0.00	0.00	0.00
5,900.00	19.27	255.03	5,634.19	-423.10	-1,582.33	1,580.47	0.00	0.00	0.00
6,000.00	19.27	255.03	5,728.58	-431.62	-1,614.21	1,612.31	0.00	0.00	0.00
6,100.00	19.27	255.03	5,822.98	-440.15	-1,646.10	1,644.16	0.00	0.00	0.00
6,200.00	19.27	255.03	5,917.38	-448.67	-1,677.98	1,676.00	0.00	0.00	0.00
6,300.00	19.27	255.03	6,011.78	-457.20	-1,709.86	1,707.85	0.00	0.00	0.00
6,400.00	19.27	255.03	6,106.17	-465.72	-1,741.74	1,739.69	0.00	0.00	0.00
6,500.00	19.27	255.03	6,200.57	-474.25	-1,773.62	1,771.54	0.00	0.00	0.00
6,600.00	19.27	255.03	6,294.97	-482.77	-1,805.50	1,803.38	0.00	0.00	0.00
6,700.00	19.27	255.03	6,389.36	-491.30	-1,837.39	1,835.23	0.00	0.00	0.00
6,800.00	19.27	255.03	6,483.76	-499.82	-1,869.27	1,867.07	0.00	0.00	0.00
6,900.00	19.27	255.03	6,578.16	-508.35	-1,901.15	1,898.91	0.00	0.00	0.00
7,000.00	19.27	255.03	6,672.56	-516.87	-1,933.03	1,930.76	0.00	0.00	0.00
7,082.77	19.27	255.03	6,750.69	-523.93	-1,959.42	1,957.12	0.00	0.00	0.00
KOP @ 7082.77ft :: DLS = 8°/100'									
7,100.00	20.62	255.84	6,766.89	-525.40	-1,965.11	1,962.80	8.00	7.84	4.72
7,150.00	24.56	257.72	6,813.04	-529.77	-1,983.81	1,981.48	8.00	7.87	3.75
7,200.00	28.51	259.10	6,857.77	-534.24	-2,005.68	2,003.33	8.00	7.90	2.77
7,250.00	32.47	260.17	6,900.85	-538.79	-2,030.63	2,028.26	8.00	7.93	2.14
7,256.13	32.96	260.29	6,906.00	-539.35	-2,033.90	2,031.52	8.00	7.94	1.88
Sharon Springs									
7,292.49	35.84	260.91	6,936.00	-542.70	-2,054.16	2,051.78	8.00	7.94	1.72
Niobrara									
7,300.00	36.44	261.03	6,942.07	-543.39	-2,058.54	2,056.15	8.00	7.95	1.58
7,350.00	40.42	261.74	6,981.23	-548.04	-2,089.26	2,086.85	8.00	7.95	1.42
7,400.00	44.40	262.35	7,018.14	-552.70	-2,122.65	2,120.22	8.00	7.96	1.21
7,450.00	48.38	262.87	7,052.62	-557.35	-2,158.54	2,156.09	8.00	7.96	1.05
7,500.00	52.36	263.33	7,084.51	-561.97	-2,196.76	2,194.29	8.00	7.97	0.93
7,505.75	52.82	263.38	7,088.00	-562.50	-2,201.30	2,198.83	8.00	7.97	0.87
Nio B									
7,550.00	56.35	263.75	7,113.64	-566.53	-2,237.13	2,234.64	8.00	7.97	0.83
7,561.62	57.27	263.84	7,120.00	-567.59	-2,246.80	2,244.30	8.00	7.97	0.78
Nio C									
7,600.00	60.33	264.13	7,139.88	-571.02	-2,279.44	2,276.93	8.00	7.97	0.75
7,650.00	64.32	264.48	7,163.09	-575.42	-2,323.50	2,320.97	8.00	7.98	0.70
7,700.00	68.31	264.81	7,183.17	-579.69	-2,369.08	2,366.53	8.00	7.98	0.65
7,750.00	72.30	265.12	7,200.02	-583.82	-2,415.96	2,413.39	8.00	7.98	0.62
7,800.00	76.29	265.41	7,213.55	-587.79	-2,463.92	2,461.33	8.00	7.98	0.59

Planning Report

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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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
7,840.32	79.51	265.64	7,222.00	-590.87	-2,503.22	2,500.62	8.00	7.98	0.57
Fort Hayes									
7,850.00	80.28	265.70	7,223.70	-591.58	-2,512.72	2,510.12	8.00	7.98	0.57
7,900.00	84.27	265.98	7,230.42	-595.18	-2,562.13	2,559.51	8.00	7.98	0.56
7,950.00	88.26	266.25	7,233.67	-598.56	-2,611.90	2,609.26	8.00	7.98	0.55
7,973.62	90.15	266.38	7,234.00	-600.07	-2,635.47	2,632.83	8.00	7.98	0.55
End Build @ 7973.62ft									
8,000.00	90.15	266.38	7,233.93	-601.74	-2,661.79	2,659.14	0.00	0.00	0.00
8,100.00	90.15	266.38	7,233.68	-608.04	-2,761.59	2,758.91	0.00	0.00	0.00
8,200.00	90.15	266.38	7,233.42	-614.35	-2,861.39	2,858.69	0.00	0.00	0.00
8,300.00	90.15	266.38	7,233.16	-620.66	-2,961.20	2,958.46	0.00	0.00	0.00
8,400.00	90.15	266.38	7,232.91	-626.97	-3,061.00	3,058.23	0.00	0.00	0.00
8,500.00	90.15	266.38	7,232.65	-633.27	-3,160.80	3,158.00	0.00	0.00	0.00
8,600.00	90.15	266.38	7,232.39	-639.58	-3,260.60	3,257.78	0.00	0.00	0.00
8,700.00	90.15	266.38	7,232.14	-645.89	-3,360.40	3,357.55	0.00	0.00	0.00
8,800.00	90.15	266.38	7,231.88	-652.20	-3,460.20	3,457.32	0.00	0.00	0.00
8,900.00	90.15	266.38	7,231.62	-658.50	-3,560.00	3,557.09	0.00	0.00	0.00
9,000.00	90.15	266.38	7,231.37	-664.81	-3,659.80	3,656.86	0.00	0.00	0.00
9,100.00	90.15	266.38	7,231.11	-671.12	-3,759.60	3,756.64	0.00	0.00	0.00
9,119.52	90.15	266.38	7,231.06	-672.35	-3,779.08	3,776.11	0.00	0.00	0.00
Begin Turn to BHL @ 9119.52ft									
9,200.00	90.15	267.59	7,230.85	-676.58	-3,859.45	3,856.46	1.50	0.00	1.50
9,300.00	90.15	269.09	7,230.60	-679.47	-3,959.40	3,956.40	1.50	0.00	1.50
9,409.21	90.15	270.73	7,230.32	-679.65	-4,068.60	4,065.60	1.50	0.00	1.50
End Turn @ 9409.21ft									
9,500.00	90.15	270.73	7,230.08	-678.49	-4,159.39	4,156.39	0.00	0.00	0.00
9,600.00	90.15	270.73	7,229.83	-677.22	-4,259.38	4,256.39	0.00	0.00	0.00
9,700.00	90.15	270.73	7,229.57	-675.95	-4,359.37	4,356.38	0.00	0.00	0.00
9,800.00	90.15	270.73	7,229.32	-674.67	-4,459.37	4,456.38	0.00	0.00	0.00
9,900.00	90.15	270.73	7,229.06	-673.40	-4,559.36	4,556.38	0.00	0.00	0.00
10,000.00	90.15	270.73	7,228.80	-672.13	-4,659.35	4,656.37	0.00	0.00	0.00
10,100.00	90.15	270.73	7,228.55	-670.86	-4,759.34	4,756.37	0.00	0.00	0.00
10,200.00	90.15	270.73	7,228.29	-669.58	-4,859.33	4,856.36	0.00	0.00	0.00
10,300.00	90.15	270.73	7,228.03	-668.31	-4,959.32	4,956.36	0.00	0.00	0.00
10,400.00	90.15	270.73	7,227.78	-667.04	-5,059.32	5,056.36	0.00	0.00	0.00
10,500.00	90.15	270.73	7,227.52	-665.77	-5,159.31	5,156.35	0.00	0.00	0.00
10,600.00	90.15	270.73	7,227.27	-664.50	-5,259.30	5,256.35	0.00	0.00	0.00
10,700.00	90.15	270.73	7,227.01	-663.22	-5,359.29	5,356.35	0.00	0.00	0.00
10,800.00	90.15	270.73	7,226.75	-661.95	-5,459.28	5,456.34	0.00	0.00	0.00
10,900.00	90.15	270.73	7,226.50	-660.68	-5,559.27	5,556.34	0.00	0.00	0.00
11,000.00	90.15	270.73	7,226.24	-659.41	-5,659.26	5,656.33	0.00	0.00	0.00
11,100.00	90.15	270.73	7,225.98	-658.13	-5,759.26	5,756.33	0.00	0.00	0.00
11,200.00	90.15	270.73	7,225.73	-656.86	-5,859.25	5,856.33	0.00	0.00	0.00
11,300.00	90.15	270.73	7,225.47	-655.59	-5,959.24	5,956.32	0.00	0.00	0.00
11,400.00	90.15	270.73	7,225.22	-654.32	-6,059.23	6,056.32	0.00	0.00	0.00
11,500.00	90.15	270.73	7,224.96	-653.04	-6,159.22	6,156.31	0.00	0.00	0.00
11,600.00	90.15	270.73	7,224.70	-651.77	-6,259.21	6,256.31	0.00	0.00	0.00
11,700.00	90.15	270.73	7,224.45	-650.50	-6,359.21	6,356.31	0.00	0.00	0.00
11,800.00	90.15	270.73	7,224.19	-649.23	-6,459.20	6,456.30	0.00	0.00	0.00
11,900.00	90.15	270.73	7,223.94	-647.96	-6,559.19	6,556.30	0.00	0.00	0.00
12,000.00	90.15	270.73	7,223.68	-646.68	-6,659.18	6,656.30	0.00	0.00	0.00
12,100.00	90.15	270.73	7,223.42	-645.41	-6,759.17	6,756.29	0.00	0.00	0.00
12,200.00	90.15	270.73	7,223.17	-644.14	-6,859.16	6,856.29	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-5HZ
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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
12,300.00	90.15	270.73	7,222.91	-642.87	-6,959.16	6,956.28	0.00	0.00	0.00
12,400.00	90.15	270.73	7,222.65	-641.59	-7,059.15	7,056.28	0.00	0.00	0.00
12,500.00	90.15	270.73	7,222.40	-640.32	-7,159.14	7,156.28	0.00	0.00	0.00
12,600.00	90.15	270.73	7,222.14	-639.05	-7,259.13	7,256.27	0.00	0.00	0.00
12,700.00	90.15	270.73	7,221.89	-637.78	-7,359.12	7,356.27	0.00	0.00	0.00
12,800.00	90.15	270.73	7,221.63	-636.50	-7,459.11	7,456.26	0.00	0.00	0.00
12,900.00	90.15	270.73	7,221.37	-635.23	-7,559.10	7,556.26	0.00	0.00	0.00
13,000.00	90.15	270.73	7,221.12	-633.96	-7,659.10	7,656.26	0.00	0.00	0.00
13,100.00	90.15	270.73	7,220.86	-632.69	-7,759.09	7,756.25	0.00	0.00	0.00
13,200.00	90.15	270.73	7,220.60	-631.42	-7,859.08	7,856.25	0.00	0.00	0.00
13,300.00	90.15	270.73	7,220.35	-630.14	-7,959.07	7,956.25	0.00	0.00	0.00
13,400.00	90.15	270.73	7,220.09	-628.87	-8,059.06	8,056.24	0.00	0.00	0.00
13,500.00	90.15	270.73	7,219.84	-627.60	-8,159.05	8,156.24	0.00	0.00	0.00
13,600.00	90.15	270.73	7,219.58	-626.33	-8,259.05	8,256.23	0.00	0.00	0.00
13,700.00	90.15	270.73	7,219.32	-625.05	-8,359.04	8,356.23	0.00	0.00	0.00
13,800.00	90.15	270.73	7,219.07	-623.78	-8,459.03	8,456.23	0.00	0.00	0.00
13,900.00	90.15	270.73	7,218.81	-622.51	-8,559.02	8,556.22	0.00	0.00	0.00
14,000.00	90.15	270.73	7,218.55	-621.24	-8,659.01	8,656.22	0.00	0.00	0.00
14,100.00	90.15	270.73	7,218.30	-619.96	-8,759.00	8,756.22	0.00	0.00	0.00
14,200.00	90.15	270.73	7,218.04	-618.69	-8,859.00	8,856.21	0.00	0.00	0.00
14,300.00	90.15	270.73	7,217.79	-617.42	-8,958.99	8,956.21	0.00	0.00	0.00
14,400.00	90.15	270.73	7,217.53	-616.15	-9,058.98	9,056.20	0.00	0.00	0.00
14,500.00	90.15	270.73	7,217.27	-614.87	-9,158.97	9,156.20	0.00	0.00	0.00
14,600.00	90.15	270.73	7,217.02	-613.60	-9,258.96	9,256.20	0.00	0.00	0.00
14,700.00	90.15	270.73	7,216.76	-612.33	-9,358.95	9,356.19	0.00	0.00	0.00
14,800.00	90.15	270.73	7,216.51	-611.06	-9,458.94	9,456.19	0.00	0.00	0.00
14,900.00	90.15	270.73	7,216.25	-609.79	-9,558.94	9,556.18	0.00	0.00	0.00
15,000.00	90.15	270.73	7,215.99	-608.51	-9,658.93	9,656.18	0.00	0.00	0.00
15,100.00	90.15	270.73	7,215.74	-607.24	-9,758.92	9,756.18	0.00	0.00	0.00
15,200.00	90.15	270.73	7,215.48	-605.97	-9,858.91	9,856.17	0.00	0.00	0.00
15,300.00	90.15	270.73	7,215.22	-604.70	-9,958.90	9,956.17	0.00	0.00	0.00
15,400.00	90.15	270.73	7,214.97	-603.42	-10,058.89	10,056.17	0.00	0.00	0.00
15,500.00	90.15	270.73	7,214.71	-602.15	-10,158.89	10,156.16	0.00	0.00	0.00
15,600.00	90.15	270.73	7,214.46	-600.88	-10,258.88	10,256.16	0.00	0.00	0.00
15,700.00	90.15	270.73	7,214.20	-599.61	-10,358.87	10,356.15	0.00	0.00	0.00
15,800.00	90.15	270.73	7,213.94	-598.33	-10,458.86	10,456.15	0.00	0.00	0.00
15,900.00	90.15	270.73	7,213.69	-597.06	-10,558.85	10,556.15	0.00	0.00	0.00
16,000.00	90.15	270.73	7,213.43	-595.79	-10,658.84	10,656.14	0.00	0.00	0.00
16,100.00	90.15	270.73	7,213.17	-594.52	-10,758.84	10,756.14	0.00	0.00	0.00
16,200.00	90.15	270.73	7,212.92	-593.25	-10,858.83	10,856.13	0.00	0.00	0.00
16,300.00	90.15	270.73	7,212.66	-591.97	-10,958.82	10,956.13	0.00	0.00	0.00
16,400.00	90.15	270.73	7,212.41	-590.70	-11,058.81	11,056.13	0.00	0.00	0.00
16,500.00	90.15	270.73	7,212.15	-589.43	-11,158.80	11,156.12	0.00	0.00	0.00
16,600.00	90.15	270.73	7,211.89	-588.16	-11,258.79	11,256.12	0.00	0.00	0.00
16,700.00	90.15	270.73	7,211.64	-586.88	-11,358.78	11,356.12	0.00	0.00	0.00
16,800.00	90.15	270.73	7,211.38	-585.61	-11,458.78	11,456.11	0.00	0.00	0.00
16,900.00	90.15	270.73	7,211.12	-584.34	-11,558.77	11,556.11	0.00	0.00	0.00
17,000.00	90.15	270.73	7,210.87	-583.07	-11,658.76	11,656.10	0.00	0.00	0.00
17,100.00	90.15	270.73	7,210.61	-581.79	-11,758.75	11,756.10	0.00	0.00	0.00
17,200.00	90.15	270.73	7,210.36	-580.52	-11,858.74	11,856.10	0.00	0.00	0.00
17,300.00	90.15	270.73	7,210.10	-579.25	-11,958.73	11,956.09	0.00	0.00	0.00
17,400.00	90.15	270.73	7,209.84	-577.98	-12,058.73	12,056.09	0.00	0.00	0.00
17,500.00	90.15	270.73	7,209.59	-576.71	-12,158.72	12,156.09	0.00	0.00	0.00
17,600.00	90.15	270.73	7,209.33	-575.43	-12,258.71	12,256.08	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-5HZ
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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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)
17,700.00	90.15	270.73	7,209.07	-574.16	-12,358.70	12,356.08	0.00	0.00	0.00
17,800.00	90.15	270.73	7,208.82	-572.89	-12,458.69	12,456.07	0.00	0.00	0.00
17,900.00	90.15	270.73	7,208.56	-571.62	-12,558.68	12,556.07	0.00	0.00	0.00
18,000.00	90.15	270.73	7,208.31	-570.34	-12,658.68	12,656.07	0.00	0.00	0.00
18,100.00	90.15	270.73	7,208.05	-569.07	-12,758.67	12,756.06	0.00	0.00	0.00
18,200.00	90.15	270.73	7,207.79	-567.80	-12,858.66	12,856.06	0.00	0.00	0.00
18,300.00	90.15	270.73	7,207.54	-566.53	-12,958.65	12,956.05	0.00	0.00	0.00
18,400.00	90.15	270.73	7,207.28	-565.25	-13,058.64	13,056.05	0.00	0.00	0.00
18,500.00	90.15	270.73	7,207.03	-563.98	-13,158.63	13,156.05	0.00	0.00	0.00
18,600.00	90.15	270.73	7,206.77	-562.71	-13,258.62	13,256.04	0.00	0.00	0.00
18,700.00	90.15	270.73	7,206.51	-561.44	-13,358.62	13,356.04	0.00	0.00	0.00
18,800.00	90.15	270.73	7,206.26	-560.16	-13,458.61	13,456.04	0.00	0.00	0.00
18,900.00	90.15	270.73	7,206.00	-558.89	-13,558.60	13,556.03	0.00	0.00	0.00
19,000.00	90.15	270.73	7,205.74	-557.62	-13,658.59	13,656.03	0.00	0.00	0.00
19,100.00	90.15	270.73	7,205.49	-556.35	-13,758.58	13,756.02	0.00	0.00	0.00
19,200.00	90.15	270.73	7,205.23	-555.08	-13,858.57	13,856.02	0.00	0.00	0.00
19,300.00	90.15	270.73	7,204.98	-553.80	-13,958.57	13,956.02	0.00	0.00	0.00
19,400.00	90.15	270.73	7,204.72	-552.53	-14,058.56	14,056.01	0.00	0.00	0.00
19,500.00	90.15	270.73	7,204.46	-551.26	-14,158.55	14,156.01	0.00	0.00	0.00
19,600.00	90.15	270.73	7,204.21	-549.99	-14,258.54	14,256.01	0.00	0.00	0.00
19,680.66	90.15	270.73	7,204.00	-548.96	-14,339.19	14,336.66	0.00	0.00	0.00
TD Well @ 19680.66ft - 5.5" CSG									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,520.63	1,500.00	9 5/8"	9-5/8	13-1/2
19,680.66	7,204.00	5.5" CSG	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
773.20	772.00	Fox Hills			
3,811.82	3,663.00	Parkman			
4,322.43	4,145.00	Sussex			
7,256.13	6,906.00	Sharon Springs			
7,292.49	6,936.00	Niobrara			
7,505.75	7,088.00	Nio B			
7,561.62	7,120.00	Nio C			
7,840.32	7,222.00	Fort Hayes			

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well CAMENISCH 33-5HZ
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 33-5HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.70	300.70	0.00	0.00	Begin Nudge @ 300.70ft
1,585.37	1,561.28	-55.28	-206.74	Hold Tangent @ 1585.37ft
7,082.77	6,750.69	-523.93	-1,959.42	KOP @ 7082.77ft :: DLS = 8°/100'
7,973.62	7,234.00	-600.07	-2,635.47	End Build @ 7973.62ft
9,119.52	7,231.06	-672.35	-3,779.08	Begin Turn to BHL @ 9119.52ft
9,409.21	7,230.32	-679.65	-4,068.60	End Turn @ 9409.21ft
19,680.66	7,204.00	-548.96	-14,339.20	TD Well @ 19680.66ft