

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-67W-02 Camenisch 13-2HZ Pad

CAMENISCH 3C-35HZ

Plan A

Plan: Permit Rev-1

Standard Survey Report

10 March, 2016

Project: WELD-NAD83-UTMFT13N
Site: 1N-67W-02 Camenisch 13-2HZ Pad
Well: CAMENISCH 3C-35HZ
Wellbore: Plan A
Design: Permit Rev-1

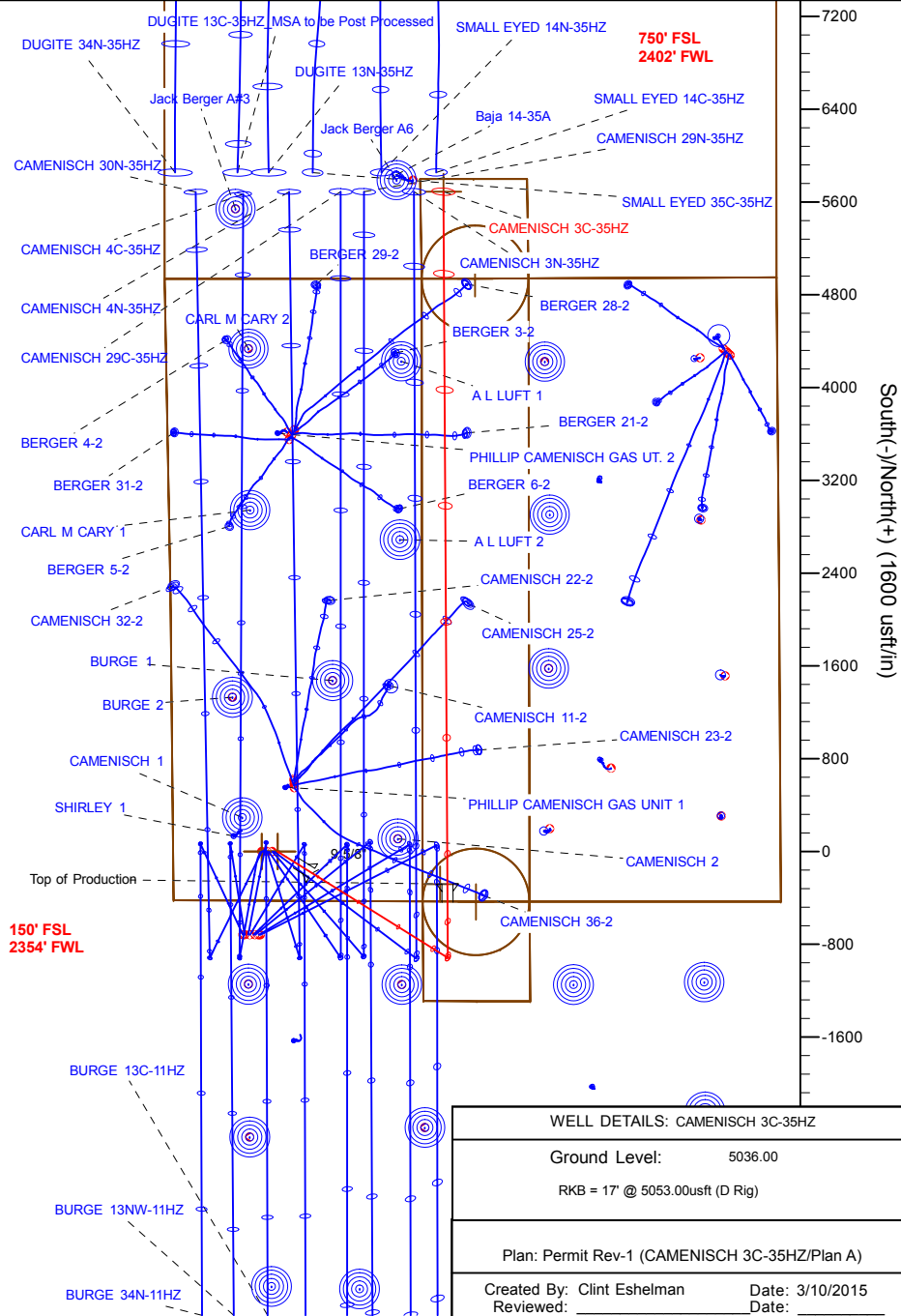
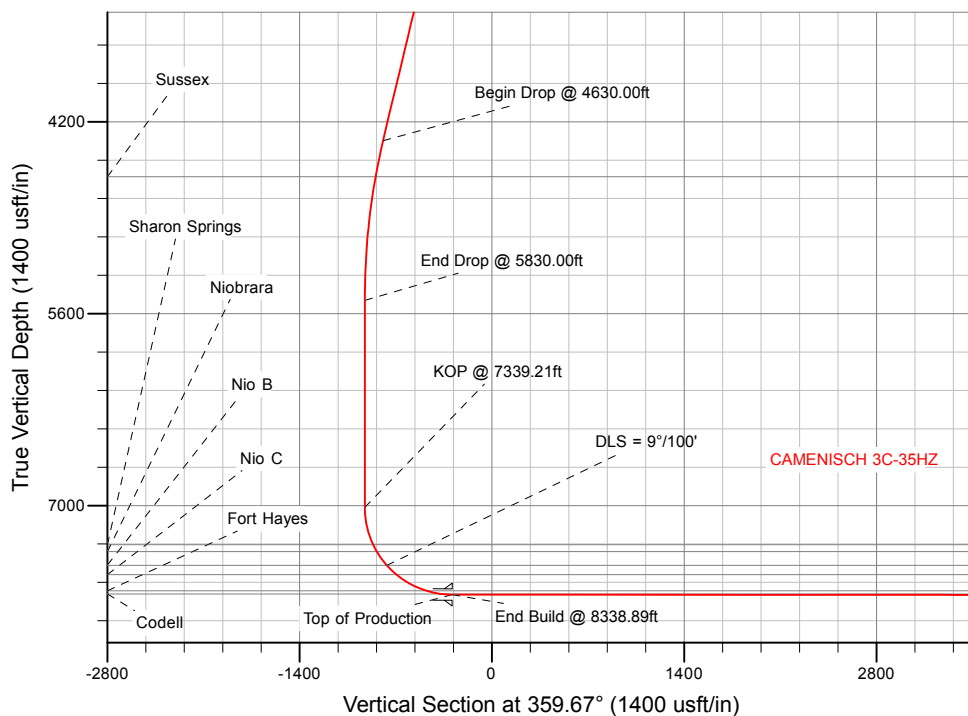
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1800.00	24.00	122.00	1753.62	-175.00	280.05	1.50	122.00	-176.61	
4	4630.00	24.00	122.00	4338.95	-784.97	1256.21	0.00	0.00	-792.19	
5	5830.00	0.00	0.00	5504.17	-916.21	1466.25	2.00	-180.00	-924.64	
6	7339.21	0.00	0.00	7013.38	-916.21	1466.25	0.00	0.00	-924.64	
7	8338.89	89.97	359.67	7650.00	-279.93	1462.56	9.00	359.67	-288.35	
8	14309.10	89.97	359.67	7653.00	5690.18	1427.94	0.00	0.00	5681.86	CAMENISCH 3C-35HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
CAMENISCH 3C-35HZ_SHL	0.00	0.00	0.00	40.073944	-104.864195	Point
CAMENISCH 3C-35HZ_TOE	7653.00	5690.18	1427.94	40.089570	-104.859089	Point



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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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		1N-67W-02 Camenisch 13-2HZ Pad			
Site Position:		Northing:	14,553,689.51 usft	Latitude:	40.073947
From:	Lat/Long	Easting:	1,678,273.09 usft	Longitude:	-104.864677
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well		CAMENISCH 3C-35HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,553,688.63 usft	Latitude:	40.073944
	+E/-W	0.00 usft	Easting:	1,678,407.93 usft	Longitude:	-104.864195
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,036.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2016	8.25	66.61	52,450

Design	Permit Rev-1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.67	

Survey Tool Program	Date	3/9/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,800.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,800.00	14,309.10	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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	122.00	299.99	-0.69	1.11	-0.70	1.50	1.50	0.00	
400.00	3.00	122.00	399.91	-2.77	4.44	-2.80	1.50	1.50	0.00	
500.00	4.50	122.00	499.69	-6.24	9.99	-6.30	1.50	1.50	0.00	
600.00	6.00	122.00	599.27	-11.09	17.75	-11.19	1.50	1.50	0.00	
700.00	7.50	122.00	698.57	-17.32	27.71	-17.48	1.50	1.50	0.00	
800.00	9.00	122.00	797.54	-24.92	39.88	-25.15	1.50	1.50	0.00	

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
900.00	10.50	122.00	896.09	-33.89	54.24	-34.21	1.50	1.50	0.00
1,000.00	12.00	122.00	994.16	-44.23	70.79	-44.64	1.50	1.50	0.00
1,100.00	13.50	122.00	1,091.70	-55.93	89.50	-56.44	1.50	1.50	0.00
1,200.00	15.00	122.00	1,188.62	-68.97	110.38	-69.61	1.50	1.50	0.00
1,300.00	16.50	122.00	1,284.86	-83.35	133.40	-84.12	1.50	1.50	0.00
1,393.32	17.90	122.00	1,374.00	-97.98	156.80	-98.88	1.50	1.50	0.00
Fox Hills									
1,400.00	18.00	122.00	1,380.36	-99.07	158.54	-99.98	1.50	1.50	0.00
1,500.00	19.50	122.00	1,475.05	-116.10	185.80	-117.17	1.50	1.50	0.00
1,600.00	21.00	122.00	1,568.86	-134.44	215.15	-135.68	1.50	1.50	0.00
1,700.00	22.50	122.00	1,661.74	-154.08	246.58	-155.50	1.50	1.50	0.00
1,800.00	24.00	122.00	1,753.62	-175.00	280.05	-176.61	1.50	1.50	0.00
End Nudge @ 1800.00ft									
1,850.77	24.00	122.00	1,800.00	-185.94	297.56	-187.65	0.00	0.00	0.00
9 5/8"									
1,900.00	24.00	122.00	1,844.97	-196.55	314.55	-198.36	0.00	0.00	0.00
2,000.00	24.00	122.00	1,936.33	-218.10	349.04	-220.11	0.00	0.00	0.00
2,100.00	24.00	122.00	2,027.68	-239.66	383.53	-241.86	0.00	0.00	0.00
2,200.00	24.00	122.00	2,119.04	-261.21	418.03	-263.61	0.00	0.00	0.00
2,300.00	24.00	122.00	2,210.39	-282.77	452.52	-285.37	0.00	0.00	0.00
2,400.00	24.00	122.00	2,301.75	-304.32	487.01	-307.12	0.00	0.00	0.00
2,500.00	24.00	122.00	2,393.10	-325.87	521.51	-328.87	0.00	0.00	0.00
2,600.00	24.00	122.00	2,484.46	-347.43	556.00	-350.62	0.00	0.00	0.00
2,700.00	24.00	122.00	2,575.81	-368.98	590.49	-372.37	0.00	0.00	0.00
2,800.00	24.00	122.00	2,667.17	-390.53	624.98	-394.13	0.00	0.00	0.00
2,900.00	24.00	122.00	2,758.52	-412.09	659.48	-415.88	0.00	0.00	0.00
3,000.00	24.00	122.00	2,849.87	-433.64	693.97	-437.63	0.00	0.00	0.00
3,100.00	24.00	122.00	2,941.23	-455.20	728.46	-459.38	0.00	0.00	0.00
3,200.00	24.00	122.00	3,032.58	-476.75	762.96	-481.14	0.00	0.00	0.00
3,300.00	24.00	122.00	3,123.94	-498.30	797.45	-502.89	0.00	0.00	0.00
3,400.00	24.00	122.00	3,215.29	-519.86	831.94	-524.64	0.00	0.00	0.00
3,500.00	24.00	122.00	3,306.65	-541.41	866.44	-546.39	0.00	0.00	0.00
3,600.00	24.00	122.00	3,398.00	-562.96	900.93	-568.14	0.00	0.00	0.00
3,700.00	24.00	122.00	3,489.36	-584.52	935.42	-589.90	0.00	0.00	0.00
3,800.00	24.00	122.00	3,580.71	-606.07	969.92	-611.65	0.00	0.00	0.00
3,900.00	24.00	122.00	3,672.07	-627.63	1,004.41	-633.40	0.00	0.00	0.00
4,000.00	24.00	122.00	3,763.42	-649.18	1,038.90	-655.15	0.00	0.00	0.00
4,100.00	24.00	122.00	3,854.77	-670.73	1,073.40	-676.90	0.00	0.00	0.00
4,200.00	24.00	122.00	3,946.13	-692.29	1,107.89	-698.66	0.00	0.00	0.00
4,300.00	24.00	122.00	4,037.48	-713.84	1,142.38	-720.41	0.00	0.00	0.00
4,400.00	24.00	122.00	4,128.84	-735.39	1,176.88	-742.16	0.00	0.00	0.00
4,500.00	24.00	122.00	4,220.19	-756.95	1,211.37	-763.91	0.00	0.00	0.00
4,600.00	24.00	122.00	4,311.55	-778.50	1,245.86	-785.66	0.00	0.00	0.00
4,630.00	24.00	122.00	4,338.95	-784.97	1,256.21	-792.19	0.00	0.00	0.00

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Survey Report

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Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
Begin Drop @ 4630.00ft									
4,700.00	22.60	122.00	4,403.24	-799.64	1,279.69	-807.00	2.00	-2.00	0.00
4,800.00	20.60	122.00	4,496.22	-819.15	1,310.91	-826.68	2.00	-2.00	0.00
4,900.00	18.60	122.00	4,590.42	-836.92	1,339.35	-844.62	2.00	-2.00	0.00
4,911.16	18.38	122.00	4,601.00	-838.80	1,342.36	-846.51	2.00	-2.00	0.00
Sussex									
5,000.00	16.60	122.00	4,685.73	-852.94	1,365.00	-860.79	2.00	-2.00	0.00
5,100.00	14.60	122.00	4,782.04	-867.19	1,387.80	-875.17	2.00	-2.00	0.00
5,200.00	12.60	122.00	4,879.23	-879.65	1,407.74	-887.75	2.00	-2.00	0.00
5,300.00	10.60	122.00	4,977.19	-890.31	1,424.79	-898.50	2.00	-2.00	0.00
5,400.00	8.60	122.00	5,075.78	-899.15	1,438.93	-907.42	2.00	-2.00	0.00
5,500.00	6.60	122.00	5,174.90	-906.15	1,450.15	-914.49	2.00	-2.00	0.00
5,600.00	4.60	122.00	5,274.41	-911.32	1,458.42	-919.71	2.00	-2.00	0.00
5,700.00	2.60	122.00	5,374.21	-914.65	1,463.75	-923.07	2.00	-2.00	0.00
5,800.00	0.60	122.00	5,474.17	-916.13	1,466.12	-924.56	2.00	-2.00	0.00
5,830.00	0.00	0.00	5,504.17	-916.21	1,466.25	-924.64	2.00	-2.00	-406.67
End Drop @ 5830.00ft									
5,900.00	0.00	0.00	5,574.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,000.00	0.00	0.00	5,674.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,100.00	0.00	0.00	5,774.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,200.00	0.00	0.00	5,874.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,300.00	0.00	0.00	5,974.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,400.00	0.00	0.00	6,074.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,500.00	0.00	0.00	6,174.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,600.00	0.00	0.00	6,274.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,700.00	0.00	0.00	6,374.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,800.00	0.00	0.00	6,474.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
6,900.00	0.00	0.00	6,574.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
7,000.00	0.00	0.00	6,674.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
7,100.00	0.00	0.00	6,774.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
7,200.00	0.00	0.00	6,874.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
7,300.00	0.00	0.00	6,974.17	-916.21	1,466.25	-924.64	0.00	0.00	0.00
7,339.21	0.00	0.00	7,013.38	-916.21	1,466.25	-924.64	0.00	0.00	0.00
KOP @ 7339.21ft									
7,400.00	5.47	359.67	7,074.08	-913.31	1,466.23	-921.74	9.00	9.00	-0.55
7,500.00	14.47	359.67	7,172.46	-896.02	1,466.13	-904.45	9.00	9.00	0.00
7,600.00	23.47	359.67	7,266.94	-863.54	1,465.94	-871.97	9.00	9.00	0.00
7,620.94	25.36	359.67	7,286.00	-854.89	1,465.89	-863.32	9.00	9.00	0.00
Sharon Springs									
7,677.53	30.45	359.67	7,336.00	-828.41	1,465.74	-836.84	9.00	9.00	0.00
Niobrara									
7,700.00	32.47	359.67	7,355.16	-816.69	1,465.67	-825.12	9.00	9.00	0.00
7,800.00	41.47	359.67	7,434.97	-756.61	1,465.32	-765.04	9.00	9.00	0.00
DLS = 9°/100'									

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
7,801.37	41.59	359.67	7,436.00	-755.70	1,465.32	-764.13	9.00	9.00	0.00
Nio B									
7,899.36	50.41	359.67	7,504.00	-685.28	1,464.91	-693.70	9.00	9.00	0.00
Nio C									
7,900.00	50.47	359.67	7,504.41	-684.79	1,464.91	-693.21	9.00	9.00	0.00
8,000.00	59.47	359.67	7,561.75	-602.99	1,464.43	-611.41	9.00	9.00	0.00
8,100.00	68.47	359.67	7,605.58	-513.22	1,463.91	-521.65	9.00	9.00	0.00
8,149.71	72.94	359.67	7,622.00	-466.32	1,463.64	-474.74	9.00	9.00	0.00
Fort Hayes									
8,200.00	77.47	359.67	7,634.84	-417.71	1,463.36	-426.13	9.00	9.00	0.00
8,259.39	82.82	359.67	7,645.00	-359.22	1,463.02	-367.64	9.00	9.00	0.00
Codell									
8,300.00	86.47	359.67	7,648.79	-318.79	1,462.79	-327.21	9.00	9.00	0.00
8,338.89	89.97	359.67	7,650.00	-279.93	1,462.56	-288.34	9.00	9.00	0.00
End Build @ 8338.89ft - Top of Production									
8,400.00	89.97	359.67	7,650.03	-218.82	1,462.21	-227.23	0.00	0.00	0.00
8,500.00	89.97	359.67	7,650.08	-118.82	1,461.63	-127.23	0.00	0.00	0.00
8,600.00	89.97	359.67	7,650.13	-18.82	1,461.05	-27.23	0.00	0.00	0.00
8,700.00	89.97	359.67	7,650.18	81.18	1,460.47	72.77	0.00	0.00	0.00
8,800.00	89.97	359.67	7,650.23	181.18	1,459.89	172.77	0.00	0.00	0.00
8,900.00	89.97	359.67	7,650.28	281.17	1,459.31	272.77	0.00	0.00	0.00
9,000.00	89.97	359.67	7,650.33	381.17	1,458.73	372.77	0.00	0.00	0.00
9,100.00	89.97	359.67	7,650.38	481.17	1,458.15	472.77	0.00	0.00	0.00
9,200.00	89.97	359.67	7,650.43	581.17	1,457.57	572.77	0.00	0.00	0.00
9,300.00	89.97	359.67	7,650.48	681.17	1,456.99	672.77	0.00	0.00	0.00
9,400.00	89.97	359.67	7,650.53	781.17	1,456.41	772.77	0.00	0.00	0.00
9,500.00	89.97	359.67	7,650.58	881.16	1,455.83	872.77	0.00	0.00	0.00
9,600.00	89.97	359.67	7,650.63	981.16	1,455.25	972.76	0.00	0.00	0.00
9,700.00	89.97	359.67	7,650.68	1,081.16	1,454.67	1,072.76	0.00	0.00	0.00
9,800.00	89.97	359.67	7,650.73	1,181.16	1,454.09	1,172.76	0.00	0.00	0.00
9,900.00	89.97	359.67	7,650.78	1,281.16	1,453.51	1,272.76	0.00	0.00	0.00
10,000.00	89.97	359.67	7,650.83	1,381.16	1,452.93	1,372.76	0.00	0.00	0.00
10,100.00	89.97	359.67	7,650.88	1,481.15	1,452.35	1,472.76	0.00	0.00	0.00
10,200.00	89.97	359.67	7,650.93	1,581.15	1,451.77	1,572.76	0.00	0.00	0.00
10,300.00	89.97	359.67	7,650.98	1,681.15	1,451.19	1,672.76	0.00	0.00	0.00
10,400.00	89.97	359.67	7,651.03	1,781.15	1,450.61	1,772.76	0.00	0.00	0.00
10,500.00	89.97	359.67	7,651.08	1,881.15	1,450.03	1,872.76	0.00	0.00	0.00
10,600.00	89.97	359.67	7,651.13	1,981.15	1,449.45	1,972.76	0.00	0.00	0.00
10,700.00	89.97	359.67	7,651.19	2,081.14	1,448.87	2,072.76	0.00	0.00	0.00
10,800.00	89.97	359.67	7,651.24	2,181.14	1,448.29	2,172.76	0.00	0.00	0.00
10,900.00	89.97	359.67	7,651.29	2,281.14	1,447.71	2,272.76	0.00	0.00	0.00
11,000.00	89.97	359.67	7,651.34	2,381.14	1,447.13	2,372.76	0.00	0.00	0.00
11,100.00	89.97	359.67	7,651.39	2,481.14	1,446.55	2,472.76	0.00	0.00	0.00
11,200.00	89.97	359.67	7,651.44	2,581.14	1,445.97	2,572.76	0.00	0.00	0.00

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

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)
11,300.00	89.97	359.67	7,651.49	2,681.13	1,445.39	2,672.76	0.00	0.00	0.00
11,400.00	89.97	359.67	7,651.54	2,781.13	1,444.81	2,772.76	0.00	0.00	0.00
11,500.00	89.97	359.67	7,651.59	2,881.13	1,444.23	2,872.76	0.00	0.00	0.00
11,600.00	89.97	359.67	7,651.64	2,981.13	1,443.65	2,972.76	0.00	0.00	0.00
11,700.00	89.97	359.67	7,651.69	3,081.13	1,443.07	3,072.76	0.00	0.00	0.00
11,800.00	89.97	359.67	7,651.74	3,181.13	1,442.49	3,172.76	0.00	0.00	0.00
11,900.00	89.97	359.67	7,651.79	3,281.12	1,441.91	3,272.76	0.00	0.00	0.00
12,000.00	89.97	359.67	7,651.84	3,381.12	1,441.33	3,372.76	0.00	0.00	0.00
12,100.00	89.97	359.67	7,651.89	3,481.12	1,440.75	3,472.76	0.00	0.00	0.00
12,200.00	89.97	359.67	7,651.94	3,581.12	1,440.17	3,572.76	0.00	0.00	0.00
12,300.00	89.97	359.67	7,651.99	3,681.12	1,439.59	3,672.76	0.00	0.00	0.00
12,400.00	89.97	359.67	7,652.04	3,781.12	1,439.01	3,772.76	0.00	0.00	0.00
12,500.00	89.97	359.67	7,652.09	3,881.11	1,438.43	3,872.76	0.00	0.00	0.00
12,600.00	89.97	359.67	7,652.14	3,981.11	1,437.85	3,972.76	0.00	0.00	0.00
12,700.00	89.97	359.67	7,652.19	4,081.11	1,437.27	4,072.76	0.00	0.00	0.00
12,800.00	89.97	359.67	7,652.24	4,181.11	1,436.69	4,172.76	0.00	0.00	0.00
12,900.00	89.97	359.67	7,652.29	4,281.11	1,436.11	4,272.76	0.00	0.00	0.00
13,000.00	89.97	359.67	7,652.34	4,381.11	1,435.53	4,372.76	0.00	0.00	0.00
13,100.00	89.97	359.67	7,652.39	4,481.10	1,434.95	4,472.76	0.00	0.00	0.00
13,200.00	89.97	359.67	7,652.44	4,581.10	1,434.37	4,572.76	0.00	0.00	0.00
13,300.00	89.97	359.67	7,652.49	4,681.10	1,433.79	4,672.76	0.00	0.00	0.00
13,400.00	89.97	359.67	7,652.54	4,781.10	1,433.21	4,772.76	0.00	0.00	0.00
13,500.00	89.97	359.67	7,652.59	4,881.10	1,432.63	4,872.76	0.00	0.00	0.00
13,600.00	89.97	359.67	7,652.64	4,981.10	1,432.05	4,972.76	0.00	0.00	0.00
13,700.00	89.97	359.67	7,652.69	5,081.09	1,431.47	5,072.76	0.00	0.00	0.00
13,800.00	89.97	359.67	7,652.74	5,181.09	1,430.89	5,172.76	0.00	0.00	0.00
13,900.00	89.97	359.67	7,652.79	5,281.09	1,430.31	5,272.76	0.00	0.00	0.00
14,000.00	89.97	359.67	7,652.84	5,381.09	1,429.73	5,372.76	0.00	0.00	0.00
14,100.00	89.97	359.67	7,652.90	5,481.09	1,429.15	5,472.76	0.00	0.00	0.00
14,200.00	89.97	359.67	7,652.95	5,581.09	1,428.57	5,572.76	0.00	0.00	0.00
14,300.00	89.97	359.67	7,653.00	5,681.08	1,427.99	5,672.76	0.00	0.00	0.00
14,309.10	89.97	359.67	7,653.00	5,690.18	1,427.94	5,681.86	0.00	0.00	0.00

TD Well @ 14309.10ft

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
CAMENISCH 3C-35HZ_ - plan misses target center by 1762.53usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	-433.84	1,708.30	14,553,257.40	1,680,116.90	40.072753	-104.858089
2N-R67W-Sec. 35_Secti - plan misses target center by 134.84usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	1.09	-134.84	14,553,689.51	1,678,273.09	40.073947	-104.864677
Point 1		0.00	10,230.77	-843.44		14,563,918.99	1,677,414.04		
Point 2		0.00	10,218.65	1,790.52		14,563,910.89	1,680,048.02		
Point 3		0.00	10,206.53	4,424.50		14,563,902.79	1,682,682.02		
Point 4		0.00	7,578.31	4,426.97		14,561,274.57	1,682,688.50		
Point 5		0.00	4,950.33	4,430.33		14,558,646.60	1,682,695.87		
Point 6		0.00	4,939.63	1,832.58		14,558,631.94	1,680,098.14		
Point 7		0.00	4,937.01	-837.44		14,558,625.24	1,677,428.12		
Point 8		0.00	7,583.97	-840.57		14,561,272.20	1,677,420.95		
CAMENISCH 3C-35HZ_ - plan misses target center by 5222.99usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 460.00)	0.00	0.00	0.00	4,938.38	1,700.60	14,558,629.60	1,680,101.00	40.087505	-104.858115
1N-R67W-Sec. 2_Sectio - plan misses target center by 134.84usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	0.00	1.09	-134.84	14,553,689.51	1,678,273.09	40.073947	-104.864677
Point 1		0.00	4,937.01	-837.44		14,558,625.24	1,677,428.12		
Point 2		0.00	4,939.63	1,832.58		14,558,631.94	1,680,098.14		
Point 3		0.00	4,950.33	4,430.33		14,558,646.60	1,682,695.87		
Point 4		0.00	2,206.22	4,453.01		14,555,902.53	1,682,722.73		
Point 5		0.00	-432.33	4,467.41		14,553,264.01	1,682,741.16		
Point 6		0.00	-432.55	1,840.25		14,553,259.78	1,680,114.00		
Point 7		0.00	-421.59	-759.75		14,553,266.77	1,677,513.99		
Point 8		0.00	2,217.11	-785.55		14,555,905.43	1,677,484.16		
CAMENISCH 3C-35HZ_ - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,553,688.63	1,678,407.93	40.073944	-104.864195
Point 1		0.00	5,799.30	1,227.91		14,559,489.80	1,679,627.00		
Point 2		0.00	5,799.20	1,687.92		14,559,490.40	1,680,087.00		
Point 3		0.00	5,799.80	2,148.02		14,559,491.70	1,680,547.10		
Point 4		0.00	4,940.98	2,160.61		14,558,632.90	1,680,561.00		
Point 5		0.00	3,575.17	2,162.62		14,557,267.10	1,680,565.10		
Point 6		0.00	2,209.47	2,164.64		14,555,901.40	1,680,569.20		
Point 7		0.00	887.76	2,166.42		14,554,579.70	1,680,573.00		
Point 8		0.00	-430.44	2,168.31		14,553,261.50	1,680,576.90		
Point 9		0.00	-1,290.45	2,174.70		14,552,401.50	1,680,584.60		
Point 10		0.00	-1,290.35	1,714.60		14,552,400.90	1,680,124.50		
Point 11		0.00	-1,289.15	1,254.60		14,552,401.40	1,679,664.50		
Point 12		0.00	-437.24	1,248.30		14,553,253.30	1,679,656.90		
Point 13		0.00	889.67	1,246.42		14,554,580.20	1,679,653.00		
Point 14		0.00	2,211.27	1,244.64		14,555,901.80	1,679,649.20		
Point 15		0.00	3,574.68	1,242.62		14,557,265.20	1,679,645.10		
Point 16		0.00	4,937.98	1,240.60		14,558,628.50	1,679,641.00		
Point 17		0.00	5,799.30	1,227.91		14,559,489.80	1,679,627.00		
CAMENISCH 3C-35HZ_ - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,553,688.63	1,678,407.93	40.073944	-104.864195
CAMENISCH 3C-35HZ_ - plan misses target center by 1427.13usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	-280.35	1,399.32	14,553,410.41	1,679,807.68	40.073174	-104.859193
CAMENISCH 3C-35HZ_	0.00	0.00	7,653.00	5,690.18	1,427.94	14,559,380.98	1,679,827.19	40.089570	-104.859090

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Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well CAMENISCH 3C-35HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Site:	1N-67W-02 Camenisch 13-2HZ Pad	MD Reference:	RKB = 17' @ 5053.00usft (D Rig)
Well:	CAMENISCH 3C-35HZ	North Reference:	True
Wellbore:	Plan A	Survey Calculation Method:	Minimum Curvature
Design:	Permit Rev-1	Database:	PLANNING

- plan hits target center
- Point

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,850.77	1,800.00	9 5/8"	9-5/8	13-1/2	
8,338.89	7,650.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,393.32	-3,679.00	Fox Hills				
4,911.16	-452.00	Sussex				
7,620.94	2,233.00	Sharon Springs				
7,677.53	2,283.00	Niobrara				
7,801.37	2,383.00	Nio B				
7,899.36	2,451.00	Nio C				
8,149.71	2,569.00	Fort Hayes				
8,259.39	2,592.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200	200	0	0	Begin Nudge @ 200.00ft	
1800	1754	-175	280	End Nudge @ 1800.00ft	
4630	4339	-785	1256	Begin Drop @ 4630.00ft	
5830	5504	-916	1466	End Drop @ 5830.00ft	
7339	7013	-916	1466	KOP @ 7339.21ft	
7800	7435	-757	1465	DLS = 9°/100'	
8339	7650	-280	1463	End Build @ 8338.89ft	
14,309	7653	5690	1428	TD Well @ 14309.10ft	

Checked By: _____ Approved By: _____ Date: _____