

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

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

**CAMENISCH 29C-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 29C-35HZ  
Wellbore: Plan A  
Design: Permit Rev-1

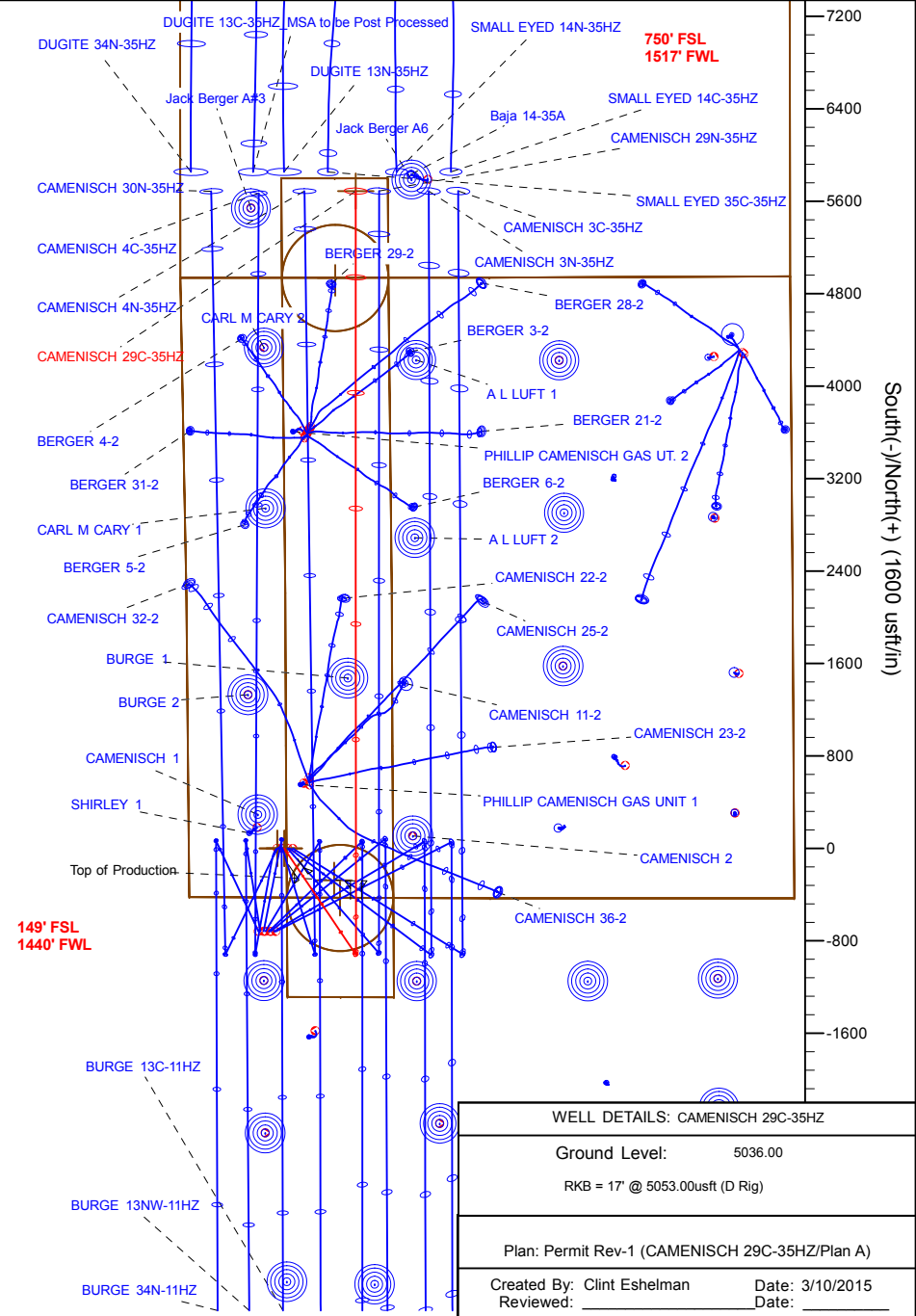
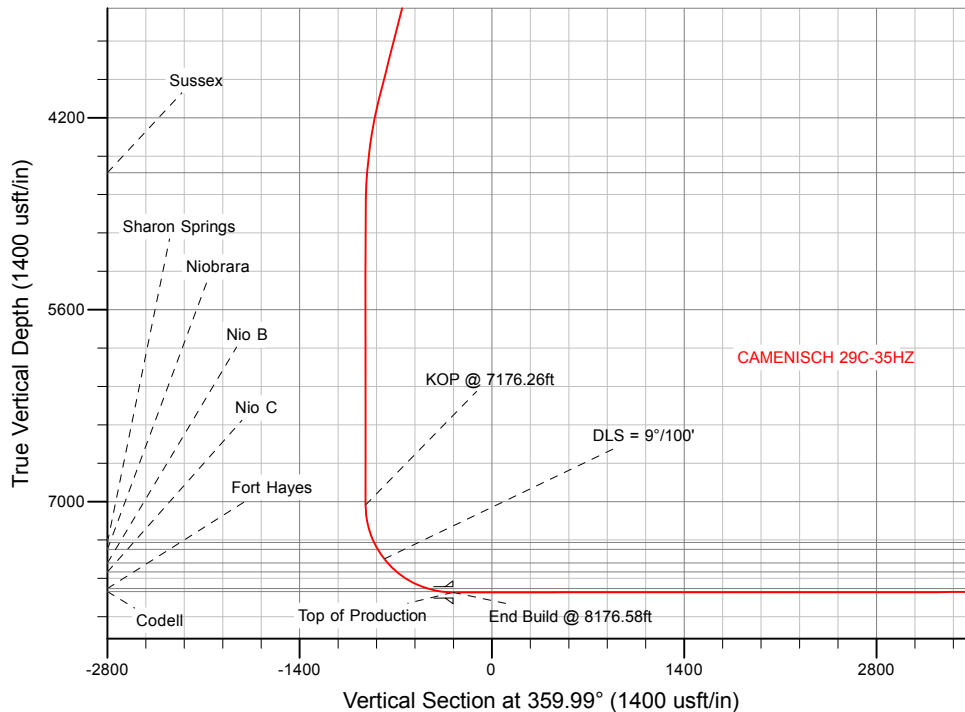
# US ROCKIES WATTENBERG PLANNING

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1383.33	17.00	146.00	1366.78	-138.37	93.33	1.50	146.00	-138.39	
4	4173.33	17.00	146.00	4034.87	-814.63	549.47	0.00	0.00	-814.73	
5	5023.33	0.00	0.00	4872.45	-918.41	619.47	2.00	180.00	-918.51	
6	7176.26	0.00	0.00	7025.38	-918.41	619.47	0.00	0.00	-918.51	
7	8176.58	90.03	359.99	7662.00	-281.47	619.36	9.00	359.99	-281.57	
8	14146.74	90.03	359.99	7659.00	5688.69	618.27	0.00	0.00	5688.58	CAMENISCH 29C-35HZ_TOE

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
CAMENISCH 29C-35HZ_SHL	0.00	0.00	0.00	40.073945	-104.864463	Point
CAMENISCH 29C-35HZ_TOE	7659.00	5688.69	618.27	40.089567	-104.862252	Point



## WELL DETAILS: CAMENISCH 29C-35HZ

Ground Level: 5036.00

RKB = 17' @ 5053.00usft (D Rig)

Plan: Permit Rev-1 (CAMENISCH 29C-35HZ/Plan A)

Created By: Clint Eshelman

Date: 3/10/2015

Reviewed:

Date:

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 29C-35HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,553,688.88 usft	Latitude:	40.073945
	+E/-W	0.00 usft	Easting:	1,678,332.96 usft	Longitude:	-104.864463
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,036.00 usft

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

<b>Design</b>	Permit Rev-1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	359.99	

<b>Survey Tool Program</b>	<b>Date</b>	3/9/2016			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	1,800.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,800.00	14,146.74	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

<b>Planned Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
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	
<b>Begin Nudge @ 250.00ft</b>										
300.00	0.75	146.00	300.00	-0.27	0.18	-0.27	1.50	1.50	0.00	
400.00	2.25	146.00	399.96	-2.44	1.65	-2.44	1.50	1.50	0.00	
500.00	3.75	146.00	499.82	-6.78	4.57	-6.78	1.50	1.50	0.00	
600.00	5.25	146.00	599.51	-13.28	8.96	-13.29	1.50	1.50	0.00	
700.00	6.75	146.00	698.96	-21.95	14.81	-21.95	1.50	1.50	0.00	

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
800.00	8.25	146.00	798.10	-32.77	22.10	-32.77	1.50	1.50	0.00
900.00	9.75	146.00	896.87	-45.74	30.85	-45.74	1.50	1.50	0.00
1,000.00	11.25	146.00	995.19	-60.85	41.04	-60.85	1.50	1.50	0.00
1,100.00	12.75	146.00	1,093.00	-78.08	52.67	-78.09	1.50	1.50	0.00
1,200.00	14.25	146.00	1,190.24	-97.44	65.72	-97.45	1.50	1.50	0.00
1,300.00	15.75	146.00	1,286.83	-118.89	80.19	-118.91	1.50	1.50	0.00
1,383.33	17.00	146.00	1,366.77	-138.37	93.33	-138.38	1.50	1.50	0.00
<b>End Nudge @ 1383.33ft</b>									
1,390.89	17.00	146.00	1,374.00	-140.20	94.57	-140.22	0.00	0.00	0.00
<b>Fox Hills</b>									
1,400.00	17.00	146.00	1,382.72	-142.41	96.06	-142.43	0.00	0.00	0.00
1,500.00	17.00	146.00	1,478.35	-166.65	112.41	-166.67	0.00	0.00	0.00
1,600.00	17.00	146.00	1,573.98	-190.89	128.75	-190.91	0.00	0.00	0.00
1,700.00	17.00	146.00	1,669.61	-215.13	145.10	-215.15	0.00	0.00	0.00
1,800.00	17.00	146.00	1,765.24	-239.36	161.45	-239.39	0.00	0.00	0.00
1,836.35	17.00	146.00	1,800.00	-248.17	167.40	-248.20	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	17.00	146.00	1,860.87	-263.60	177.80	-263.63	0.00	0.00	0.00
2,000.00	17.00	146.00	1,956.50	-287.84	194.15	-287.88	0.00	0.00	0.00
2,100.00	17.00	146.00	2,052.13	-312.08	210.50	-312.12	0.00	0.00	0.00
2,200.00	17.00	146.00	2,147.76	-336.32	226.85	-336.36	0.00	0.00	0.00
2,300.00	17.00	146.00	2,243.39	-360.56	243.20	-360.60	0.00	0.00	0.00
2,400.00	17.00	146.00	2,339.02	-384.80	259.55	-384.84	0.00	0.00	0.00
2,500.00	17.00	146.00	2,434.65	-409.03	275.90	-409.08	0.00	0.00	0.00
2,600.00	17.00	146.00	2,530.28	-433.27	292.25	-433.32	0.00	0.00	0.00
2,700.00	17.00	146.00	2,625.91	-457.51	308.60	-457.57	0.00	0.00	0.00
2,800.00	17.00	146.00	2,721.54	-481.75	324.95	-481.81	0.00	0.00	0.00
2,900.00	17.00	146.00	2,817.17	-505.99	341.29	-506.05	0.00	0.00	0.00
3,000.00	17.00	146.00	2,912.80	-530.23	357.64	-530.29	0.00	0.00	0.00
3,100.00	17.00	146.00	3,008.43	-554.47	373.99	-554.53	0.00	0.00	0.00
3,200.00	17.00	146.00	3,104.06	-578.71	390.34	-578.77	0.00	0.00	0.00
3,300.00	17.00	146.00	3,199.70	-602.94	406.69	-603.02	0.00	0.00	0.00
3,400.00	17.00	146.00	3,295.33	-627.18	423.04	-627.26	0.00	0.00	0.00
3,500.00	17.00	146.00	3,390.96	-651.42	439.39	-651.50	0.00	0.00	0.00
3,600.00	17.00	146.00	3,486.59	-675.66	455.74	-675.74	0.00	0.00	0.00
3,700.00	17.00	146.00	3,582.22	-699.90	472.09	-699.98	0.00	0.00	0.00
3,800.00	17.00	146.00	3,677.85	-724.14	488.44	-724.22	0.00	0.00	0.00
3,900.00	17.00	146.00	3,773.48	-748.38	504.79	-748.47	0.00	0.00	0.00
4,000.00	17.00	146.00	3,869.11	-772.62	521.14	-772.71	0.00	0.00	0.00
4,100.00	17.00	146.00	3,964.74	-796.85	537.49	-796.95	0.00	0.00	0.00
4,173.33	17.00	146.00	4,034.86	-814.63	549.47	-814.72	0.00	0.00	0.00
<b>Begin Drop @ 4173.33ft</b>									
4,200.00	16.47	146.00	4,060.41	-820.99	553.77	-821.09	2.00	-2.00	0.00
4,300.00	14.47	146.00	4,156.78	-843.10	568.68	-843.20	2.00	-2.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
4,400.00	12.47	146.00	4,254.02	-862.41	581.70	-862.51	2.00	-2.00	0.00
4,500.00	10.47	146.00	4,352.02	-878.89	592.82	-878.99	2.00	-2.00	0.00
4,600.00	8.47	146.00	4,450.66	-892.52	602.01	-892.63	2.00	-2.00	0.00
4,700.00	6.47	146.00	4,549.80	-903.30	609.28	-903.40	2.00	-2.00	0.00
4,751.47	5.44	146.00	4,601.00	-907.72	612.27	-907.83	2.00	-2.00	0.00
<b>Sussex</b>									
4,800.00	4.47	146.00	4,649.34	-911.19	614.61	-911.30	2.00	-2.00	0.00
4,900.00	2.47	146.00	4,749.16	-916.21	617.99	-916.31	2.00	-2.00	0.00
5,000.00	0.47	146.00	4,849.12	-918.33	619.42	-918.44	2.00	-2.00	0.00
5,023.33	0.00	0.00	4,872.45	-918.41	619.47	-918.51	2.00	-2.00	-625.80
<b>End Drop @ 5023.33ft</b>									
5,100.00	0.00	0.00	4,949.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,200.00	0.00	0.00	5,049.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,300.00	0.00	0.00	5,149.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,400.00	0.00	0.00	5,249.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,500.00	0.00	0.00	5,349.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,600.00	0.00	0.00	5,449.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,700.00	0.00	0.00	5,549.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,800.00	0.00	0.00	5,649.12	-918.41	619.47	-918.51	0.00	0.00	0.00
5,900.00	0.00	0.00	5,749.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,000.00	0.00	0.00	5,849.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,100.00	0.00	0.00	5,949.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,200.00	0.00	0.00	6,049.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,300.00	0.00	0.00	6,149.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,400.00	0.00	0.00	6,249.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,500.00	0.00	0.00	6,349.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,600.00	0.00	0.00	6,449.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,700.00	0.00	0.00	6,549.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,800.00	0.00	0.00	6,649.12	-918.41	619.47	-918.51	0.00	0.00	0.00
6,900.00	0.00	0.00	6,749.12	-918.41	619.47	-918.51	0.00	0.00	0.00
7,000.00	0.00	0.00	6,849.12	-918.41	619.47	-918.51	0.00	0.00	0.00
7,100.00	0.00	0.00	6,949.12	-918.41	619.47	-918.51	0.00	0.00	0.00
7,176.26	0.00	0.00	7,025.38	-918.41	619.47	-918.51	0.00	0.00	0.00
<b>KOP @ 7176.26ft</b>									
7,200.00	2.14	359.99	7,049.11	-917.96	619.47	-918.07	9.00	9.00	0.00
7,300.00	11.14	359.99	7,148.34	-906.42	619.47	-906.53	9.00	9.00	0.00
7,400.00	20.14	359.99	7,244.54	-879.49	619.47	-879.60	9.00	9.00	0.00
7,457.99	25.36	359.99	7,298.00	-857.08	619.46	-857.19	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,500.00	29.14	359.99	7,335.34	-837.85	619.46	-837.96	9.00	9.00	0.00
7,514.58	30.45	359.99	7,348.00	-830.61	619.46	-830.71	9.00	9.00	0.00
<b>Niobrara</b>									
7,600.00	38.14	359.99	7,418.52	-782.52	619.45	-782.62	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
7,638.42	41.59	359.99	7,448.00	-757.89	619.44	-758.00	9.00	9.00	0.00
<b>Nio B</b>									
7,700.00	47.14	359.99	7,492.01	-714.85	619.44	-714.96	9.00	9.00	0.00
7,731.73	49.99	359.99	7,513.00	-691.07	619.43	-691.18	9.00	9.00	0.00
<b>Nio C</b>									
7,800.00	56.14	359.99	7,554.01	-636.52	619.42	-636.63	9.00	9.00	0.00
7,900.00	65.14	359.99	7,602.99	-549.46	619.41	-549.57	9.00	9.00	0.00
7,986.75	72.94	359.99	7,634.00	-468.52	619.39	-468.62	9.00	9.00	0.00
<b>Fort Hayes</b>									
8,000.00	74.14	359.99	7,637.76	-455.81	619.39	-455.91	9.00	9.00	0.00
8,096.42	82.81	359.99	7,657.00	-361.43	619.37	-361.53	9.00	9.00	0.00
<b>Codell</b>									
8,100.00	83.14	359.99	7,657.44	-357.87	619.37	-357.98	9.00	9.00	0.00
8,176.58	90.03	359.99	7,662.00	-281.47	619.36	-281.58	9.00	9.00	0.00
<b>End Build @ 8176.58ft - Top of Production</b>									
8,200.00	90.03	359.99	7,661.99	-258.05	619.35	-258.16	0.00	0.00	0.00
8,300.00	90.03	359.99	7,661.94	-158.05	619.33	-158.16	0.00	0.00	0.00
8,400.00	90.03	359.99	7,661.89	-58.05	619.32	-58.16	0.00	0.00	0.00
8,500.00	90.03	359.99	7,661.84	41.95	619.30	41.84	0.00	0.00	0.00
8,600.00	90.03	359.99	7,661.79	141.95	619.28	141.84	0.00	0.00	0.00
8,700.00	90.03	359.99	7,661.74	241.95	619.26	241.84	0.00	0.00	0.00
8,800.00	90.03	359.99	7,661.69	341.95	619.24	341.84	0.00	0.00	0.00
8,900.00	90.03	359.99	7,661.64	441.95	619.23	441.84	0.00	0.00	0.00
9,000.00	90.03	359.99	7,661.59	541.95	619.21	541.84	0.00	0.00	0.00
9,100.00	90.03	359.99	7,661.54	641.95	619.19	641.84	0.00	0.00	0.00
9,200.00	90.03	359.99	7,661.49	741.95	619.17	741.84	0.00	0.00	0.00
9,300.00	90.03	359.99	7,661.44	841.95	619.15	841.84	0.00	0.00	0.00
9,400.00	90.03	359.99	7,661.39	941.95	619.13	941.84	0.00	0.00	0.00
9,500.00	90.03	359.99	7,661.34	1,041.95	619.12	1,041.84	0.00	0.00	0.00
9,600.00	90.03	359.99	7,661.29	1,141.95	619.10	1,141.84	0.00	0.00	0.00
9,700.00	90.03	359.99	7,661.24	1,241.95	619.08	1,241.84	0.00	0.00	0.00
9,800.00	90.03	359.99	7,661.19	1,341.95	619.06	1,341.84	0.00	0.00	0.00
9,900.00	90.03	359.99	7,661.13	1,441.95	619.04	1,441.84	0.00	0.00	0.00
10,000.00	90.03	359.99	7,661.08	1,541.95	619.02	1,541.84	0.00	0.00	0.00
10,100.00	90.03	359.99	7,661.03	1,641.95	619.01	1,641.84	0.00	0.00	0.00
10,200.00	90.03	359.99	7,660.98	1,741.95	618.99	1,741.84	0.00	0.00	0.00
10,300.00	90.03	359.99	7,660.93	1,841.95	618.97	1,841.84	0.00	0.00	0.00
10,400.00	90.03	359.99	7,660.88	1,941.95	618.95	1,941.84	0.00	0.00	0.00
10,500.00	90.03	359.99	7,660.83	2,041.95	618.93	2,041.84	0.00	0.00	0.00
10,600.00	90.03	359.99	7,660.78	2,141.95	618.92	2,141.84	0.00	0.00	0.00
10,700.00	90.03	359.99	7,660.73	2,241.95	618.90	2,241.84	0.00	0.00	0.00
10,800.00	90.03	359.99	7,660.68	2,341.95	618.88	2,341.84	0.00	0.00	0.00
10,900.00	90.03	359.99	7,660.63	2,441.95	618.86	2,441.84	0.00	0.00	0.00
11,000.00	90.03	359.99	7,660.58	2,541.95	618.84	2,541.84	0.00	0.00	0.00

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	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)
11,100.00	90.03	359.99	7,660.53	2,641.95	618.82	2,641.84	0.00	0.00	0.00
11,200.00	90.03	359.99	7,660.48	2,741.95	618.81	2,741.84	0.00	0.00	0.00
11,300.00	90.03	359.99	7,660.43	2,841.95	618.79	2,841.84	0.00	0.00	0.00
11,400.00	90.03	359.99	7,660.38	2,941.95	618.77	2,941.84	0.00	0.00	0.00
11,500.00	90.03	359.99	7,660.33	3,041.95	618.75	3,041.84	0.00	0.00	0.00
11,600.00	90.03	359.99	7,660.28	3,141.95	618.73	3,141.84	0.00	0.00	0.00
11,700.00	90.03	359.99	7,660.23	3,241.95	618.72	3,241.84	0.00	0.00	0.00
11,800.00	90.03	359.99	7,660.18	3,341.95	618.70	3,341.84	0.00	0.00	0.00
11,900.00	90.03	359.99	7,660.13	3,441.95	618.68	3,441.84	0.00	0.00	0.00
12,000.00	90.03	359.99	7,660.08	3,541.95	618.66	3,541.84	0.00	0.00	0.00
12,100.00	90.03	359.99	7,660.03	3,641.95	618.64	3,641.84	0.00	0.00	0.00
12,200.00	90.03	359.99	7,659.98	3,741.95	618.62	3,741.84	0.00	0.00	0.00
12,300.00	90.03	359.99	7,659.93	3,841.95	618.61	3,841.84	0.00	0.00	0.00
12,400.00	90.03	359.99	7,659.88	3,941.95	618.59	3,941.84	0.00	0.00	0.00
12,500.00	90.03	359.99	7,659.83	4,041.95	618.57	4,041.84	0.00	0.00	0.00
12,600.00	90.03	359.99	7,659.78	4,141.95	618.55	4,141.84	0.00	0.00	0.00
12,700.00	90.03	359.99	7,659.73	4,241.95	618.53	4,241.84	0.00	0.00	0.00
12,800.00	90.03	359.99	7,659.68	4,341.95	618.52	4,341.84	0.00	0.00	0.00
12,900.00	90.03	359.99	7,659.63	4,441.95	618.50	4,441.84	0.00	0.00	0.00
13,000.00	90.03	359.99	7,659.58	4,541.95	618.48	4,541.84	0.00	0.00	0.00
13,100.00	90.03	359.99	7,659.53	4,641.95	618.46	4,641.84	0.00	0.00	0.00
13,200.00	90.03	359.99	7,659.48	4,741.95	618.44	4,741.84	0.00	0.00	0.00
13,300.00	90.03	359.99	7,659.43	4,841.95	618.42	4,841.84	0.00	0.00	0.00
13,400.00	90.03	359.99	7,659.38	4,941.95	618.41	4,941.84	0.00	0.00	0.00
13,500.00	90.03	359.99	7,659.33	5,041.95	618.39	5,041.84	0.00	0.00	0.00
13,600.00	90.03	359.99	7,659.27	5,141.95	618.37	5,141.84	0.00	0.00	0.00
13,700.00	90.03	359.99	7,659.22	5,241.95	618.35	5,241.84	0.00	0.00	0.00
13,800.00	90.03	359.99	7,659.17	5,341.95	618.33	5,341.84	0.00	0.00	0.00
13,900.00	90.03	359.99	7,659.12	5,441.95	618.31	5,441.84	0.00	0.00	0.00
14,000.00	90.03	359.99	7,659.07	5,541.95	618.30	5,541.84	0.00	0.00	0.00
14,100.00	90.03	359.99	7,659.02	5,641.95	618.28	5,641.84	0.00	0.00	0.00
14,146.74	90.03	359.99	7,659.00	5,688.69	618.27	5,688.58	0.00	0.00	0.00

TD Well @ 14146.75ft

# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
2N-R67W-Sec. 35_Secti	0.00	0.00	0.00	0.73	-59.87	14,553,689.51	1,678,273.09	40.073947	-104.864677
- plan misses target center by 59.87usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	10,230.77	-843.44		14,563,918.99	1,677,414.08		
Point 2		0.00	10,218.65	1,790.52		14,563,910.88	1,680,048.05		
Point 3		0.00	10,206.53	4,424.50		14,563,902.77	1,682,682.05		
Point 4		0.00	7,578.31	4,426.97		14,561,274.56	1,682,688.52		
Point 5		0.00	4,950.33	4,430.33		14,558,646.59	1,682,695.88		
Point 6		0.00	4,939.63	1,832.58		14,558,631.93	1,680,098.15		
Point 7		0.00	4,937.01	-837.44		14,558,625.25	1,677,428.14		
Point 8		0.00	7,583.97	-840.57		14,561,272.20	1,677,420.98		
CAMENISCH 29C-35HZ	0.00	0.00	0.00	0.00	0.00	14,553,688.88	1,678,332.96	40.073945	-104.864463
- plan hits target center									
- Polygon									
Point 1		0.00	5,799.36	-24.73		14,559,488.20	1,678,299.40		
Point 2		0.00	5,799.26	435.27		14,559,488.80	1,678,759.40		
Point 3		0.00	5,799.06	895.27		14,559,489.30	1,679,219.40		
Point 4		0.00	4,937.15	900.56		14,558,627.40	1,679,226.00		
Point 5		0.00	3,574.53	914.58		14,557,264.80	1,679,242.10		
Point 6		0.00	2,211.81	928.51		14,555,902.10	1,679,258.10		
Point 7		0.00	890.59	935.89		14,554,580.90	1,679,267.50		
Point 8		0.00	-426.42	943.19		14,553,263.90	1,679,276.80		
Point 9		0.00	-1,288.53	947.48		14,552,401.80	1,679,282.40		
Point 10		0.00	-1,287.32	487.48		14,552,402.30	1,678,822.40		
Point 11		0.00	-1,286.12	27.48		14,552,402.80	1,678,362.40		
Point 12		0.00	-426.72	23.19		14,553,262.20	1,678,356.80		
Point 13		0.00	893.50	15.90		14,554,582.40	1,678,347.50		
Point 14		0.00	2,213.71	8.51		14,555,902.60	1,678,338.10		
Point 15		0.00	3,575.03	-5.52		14,557,263.90	1,678,322.00		
Point 16		0.00	4,936.25	-19.45		14,558,625.10	1,678,306.00		
Point 17		0.00	5,799.36	-24.73		14,559,488.20	1,678,299.40		
CAMENISCH 29C-35HZ	0.00	0.00	0.00	0.00	0.00	14,553,688.88	1,678,332.96	40.073945	-104.864463
- plan hits target center									
- Point									
CAMENISCH 29C-35HZ	0.00	0.00	0.00	4,936.75	440.56	14,558,626.30	1,678,766.00	40.087502	-104.862888
- plan misses target center by 4956.37usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
CAMENISCH 29C-35HZ	0.00	0.00	0.00	-276.02	430.54	14,553,413.51	1,678,763.92	40.073187	-104.862924
- plan misses target center by 511.42usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
CAMENISCH 29C-35HZ	0.00	0.00	0.00	-428.72	483.18	14,553,260.90	1,678,816.80	40.072768	-104.862736
- plan misses target center by 645.96usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 460.00)									
1N-R67W-Sec. 2_Sectio	0.00	0.00	0.00	0.73	-59.87	14,553,689.51	1,678,273.09	40.073947	-104.864677
- plan misses target center by 59.87usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1		0.00	4,937.01	-837.44		14,558,625.25	1,677,428.14		
Point 2		0.00	4,939.63	1,832.58		14,558,631.93	1,680,098.15		
Point 3		0.00	4,950.33	4,430.33		14,558,646.59	1,682,695.88		
Point 4		0.00	2,206.22	4,453.01		14,555,902.52	1,682,722.74		
Point 5		0.00	-432.33	4,467.41		14,553,263.99	1,682,741.16		
Point 6		0.00	-432.55	1,840.25		14,553,259.77	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	1,677,484.17		
CAMENISCH 29C-35HZ	0.00	0.00	7,659.00	5,688.69	618.27	14,559,378.50	1,678,942.57	40.089567	-104.862253



# Anadarko

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well CAMENISCH 29C-35HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Site:</b>	1N-67W-02 Camenisch 13-2HZ Pad	<b>MD Reference:</b>	RKB = 17' @ 5053.00usft (D Rig)
<b>Well:</b>	CAMENISCH 29C-35HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Permit Rev-1	<b>Database:</b>	PLANNING

- plan hits target center  
- Point

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,836.35	1,800.00	9 5/8"	9-5/8	13-1/2	
8,176.58	7,662.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,390.89	1,374.00	Fox Hills				
4,751.47	4,601.00	Sussex				
7,457.99	7,298.00	Sharon Springs				
7,514.58	7,348.00	Niobrara				
7,638.42	7,448.00	Nio B				
7,731.73	7,513.00	Nio C				
7,986.75	7,634.00	Fort Hayes				
8,096.42	7,657.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250	250	0	0	Begin Nudge @ 250.00ft	
1383	1367	-138	93	End Nudge @ 1383.33ft	
4173	4035	-815	549	Begin Drop @ 4173.33ft	
5023	4872	-918	619	End Drop @ 5023.33ft	
7176	7025	-918	619	KOP @ 7176.26ft	
7600	7419	-783	619	DLS = 9°/100'	
8177	7662	-281	619	End Build @ 8176.58ft	
14,147	7659	5689	618	TD Well @ 14146.75ft	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_