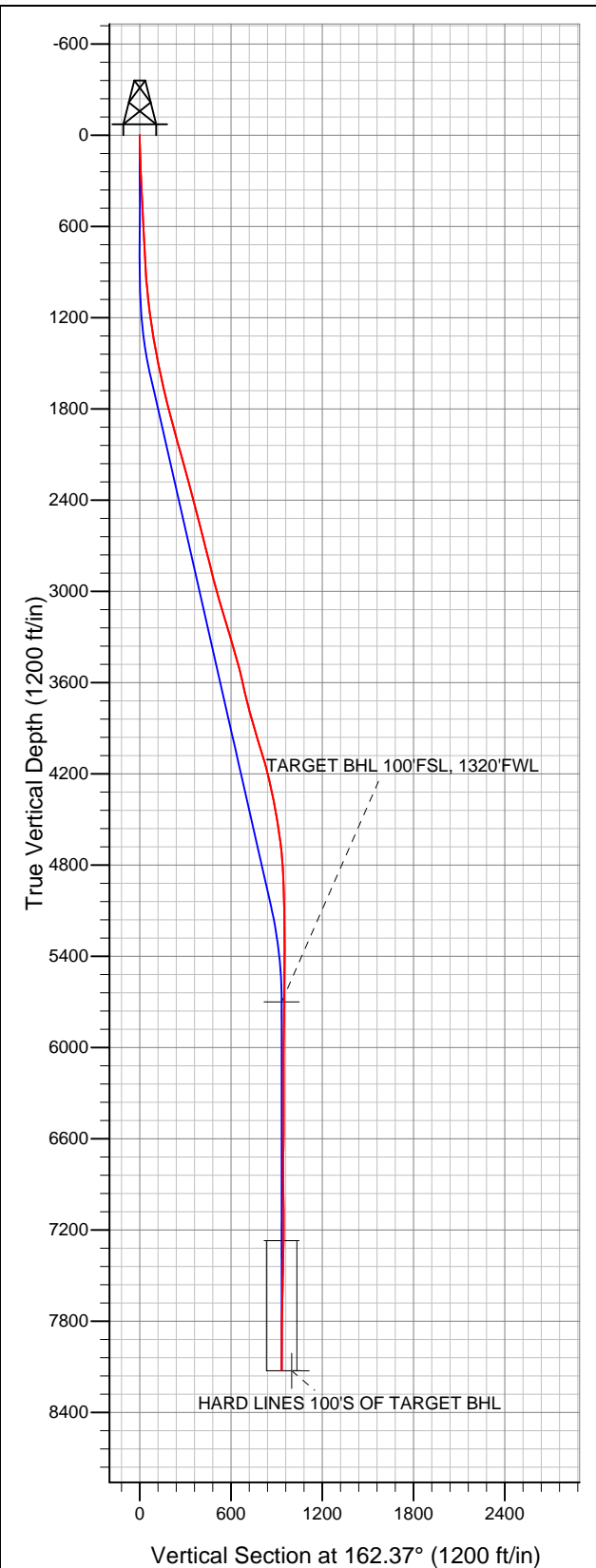


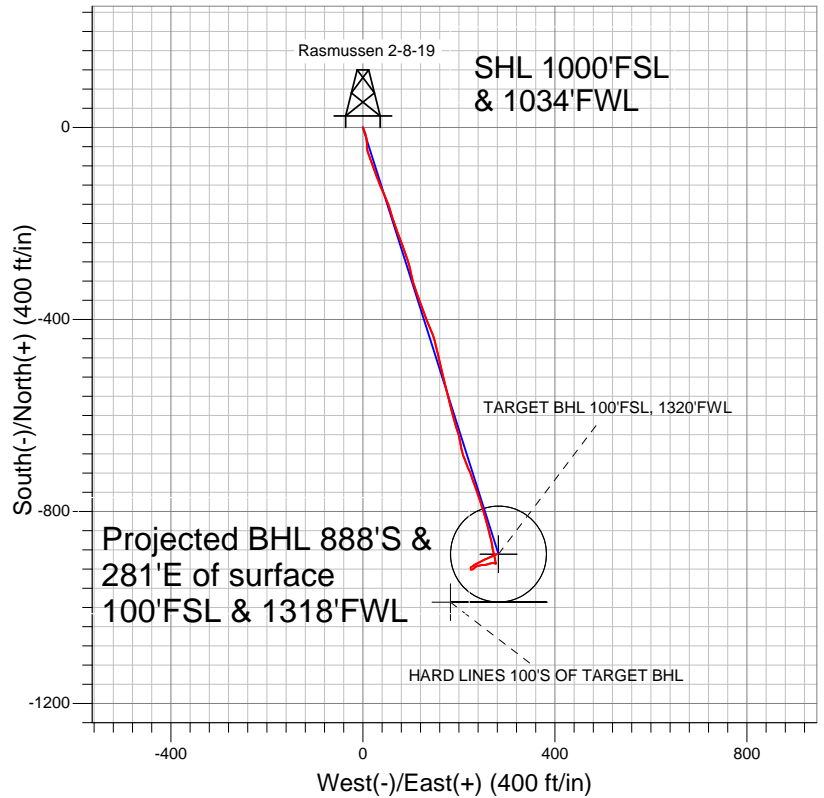
# Well Name: Rasmussen 2-8-19

Surface Location: Rasmussen 0-6-19 Pad Sec.19-T2N-R68W  
 North American Datum 1983 US State Plane 1983Colorado Northern Zone  
 Ground Elevation: 5000.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1286636.43	3125369.75	40.119340	-105.051710	
		Original Well Elev	WELL @ 5013.0ft (Original Well Elev)			



## EnCana Oil & Gas Weld County CO



### LEGEND

- Survey #1
- Rasmussen 2-8-19, Wellbore #1, Plan #1 (2-22-12) R V0
- Wellbore #1

## Final Survey Plot

Projected Final Survey -  
 8240'MD & 8124'TVD @ 932'VS  
 3.80 deg Inc 64.30 deg AZ

Project: SEC.19-T2N-R68W  
 Site: Rasmussen 0-6-19 Pad Sec.19-T2N-R68W  
 Well: Rasmussen 2-8-19  
 Plan: Wellbore #1



# **EnCana Oil & Gas Weld County CO**

**SEC.19-T2N-R68W**

**Rasmussen 0-6-19 Pad Sec.19-T2N-R68W**

**Rasmussen 2-8-19**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**29 February, 2012**

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Rasmussen 2-8-19
<b>Project:</b>	SEC.19-T2N-R68W	<b>TVD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Site:</b>	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	<b>MD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Well:</b>	Rasmussen 2-8-19	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.19-T2N-R68W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Rasmussen 0-6-19 Pad Sec.19-T2N-R68W			
Site Position:		Northing:		1,286,636.30ft	
From:	Lat/Long	Easting:		Longitude:	
		3,125,338.98ft		-105.051820	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		0.29 °	

Well	Rasmussen 2-8-19					
Well Position	+N/-S	0.0 ft	Northing:	1,286,636.43 ft	Latitude:	40.119340
	+E/-W	0.0 ft	Easting:	3,125,369.75 ft	Longitude:	-105.051710
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,000.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/22/2012	8.90	66.75	52,878

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	5,700.0	0.0	0.0	162.37	

Survey Program		Date	2/29/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
72.0	8,240.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
72.0	1.20	160.80	72.0	-0.7	0.2	0.8	1.67	1.67	0.00
163.0	2.10	153.60	163.0	-3.1	1.3	3.4	1.01	0.99	-7.91
254.0	2.10	156.90	253.9	-6.1	2.7	6.7	0.13	0.00	3.63
346.0	2.60	163.90	345.8	-9.7	3.9	10.4	0.63	0.54	7.61
438.0	3.00	162.00	437.7	-14.0	5.3	14.9	0.45	0.43	-2.07
529.0	3.10	169.90	528.6	-18.7	6.4	19.7	0.47	0.11	8.68
621.0	3.10	169.90	620.4	-23.6	7.3	24.7	0.00	0.00	0.00
712.0	2.90	171.20	711.3	-28.3	8.1	29.4	0.23	-0.22	1.43
746.0	2.90	176.10	745.3	-30.0	8.3	31.1	0.73	0.00	14.41
810.0	2.90	176.10	809.2	-33.2	8.5	34.2	0.00	0.00	0.00
815.0	3.10	178.50	814.2	-33.5	8.5	34.5	4.72	4.00	48.00
902.0	3.60	181.40	901.0	-38.5	8.5	39.3	0.61	0.57	3.33

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Rasmussen 2-8-19
<b>Project:</b>	SEC.19-T2N-R68W	<b>TVD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Site:</b>	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	<b>MD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Well:</b>	Rasmussen 2-8-19	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
989.0	5.50	172.20	987.8	-45.4	9.0	46.0	2.33	2.18	-10.57
1,077.0	6.20	160.80	1,075.3	-54.1	11.1	54.9	1.54	0.80	-12.95
1,164.0	7.70	161.00	1,161.7	-64.0	14.6	65.4	1.72	1.72	0.23
1,251.0	7.90	157.30	1,247.9	-75.0	18.8	77.2	0.62	0.23	-4.25
1,339.0	9.10	160.30	1,334.9	-87.2	23.5	90.2	1.45	1.36	3.41
1,426.0	10.90	159.60	1,420.6	-101.4	28.7	105.3	2.07	2.07	-0.80
1,513.0	11.60	159.00	1,505.9	-117.2	34.7	122.2	0.82	0.80	-0.69
1,601.0	12.40	155.50	1,592.0	-134.1	41.7	140.4	1.23	0.91	-3.98
1,688.0	13.50	157.30	1,676.8	-152.0	49.5	159.8	1.35	1.26	2.07
1,775.0	13.70	161.80	1,761.3	-171.1	56.7	180.3	1.24	0.23	5.17
1,862.0	14.80	163.90	1,845.6	-191.6	63.0	201.7	1.40	1.26	2.41
1,950.0	15.20	159.40	1,930.6	-213.2	70.1	224.4	1.40	0.45	-5.11
2,037.0	15.70	158.70	2,014.5	-234.8	78.4	247.6	0.61	0.57	-0.80
2,124.0	15.40	159.90	2,098.3	-256.6	86.7	270.8	0.51	-0.34	1.38
2,212.0	14.90	163.80	2,183.3	-278.5	93.9	293.8	1.29	-0.57	4.43
2,299.0	14.90	168.00	2,267.3	-300.2	99.3	316.1	1.24	0.00	4.83
2,386.0	15.10	165.00	2,351.4	-322.1	104.6	338.6	0.92	0.23	-3.45
2,474.0	15.50	158.10	2,436.3	-344.0	111.9	361.8	2.12	0.45	-7.84
2,561.0	13.50	162.20	2,520.5	-364.5	119.4	383.5	2.58	-2.30	4.71
2,648.0	13.70	159.70	2,605.1	-383.8	126.0	404.0	0.71	0.23	-2.87
2,735.0	14.80	156.60	2,689.4	-403.7	134.0	425.3	1.54	1.26	-3.56
2,823.0	15.10	157.80	2,774.4	-424.6	142.8	447.9	0.49	0.34	1.36
2,910.0	13.50	165.90	2,858.7	-445.0	149.6	469.4	2.94	-1.84	9.31
2,997.0	14.00	165.20	2,943.2	-465.0	154.7	490.0	0.61	0.57	-0.80
3,085.0	16.40	168.70	3,028.1	-487.5	159.9	513.0	2.92	2.73	3.98
3,172.0	17.50	166.20	3,111.4	-512.2	165.4	538.3	1.52	1.26	-2.87
3,259.0	16.30	164.80	3,194.6	-536.7	171.7	563.5	1.46	-1.38	-1.61
3,347.0	16.20	167.10	3,279.1	-560.6	177.7	588.1	0.74	-0.11	2.61
3,434.0	16.30	166.90	3,362.6	-584.3	183.2	612.3	0.13	0.11	-0.23
3,521.0	16.20	164.80	3,446.1	-607.9	189.1	636.6	0.69	-0.11	-2.41
3,608.0	14.20	158.90	3,530.1	-629.6	196.2	659.4	2.90	-2.30	-6.78
3,696.0	11.80	171.50	3,615.8	-648.6	201.4	679.1	4.21	-2.73	14.32
3,783.0	14.70	168.20	3,700.5	-668.2	205.0	698.9	3.44	3.33	-3.79
3,870.0	15.10	159.00	3,784.6	-689.5	211.3	721.1	2.75	0.46	-10.57
3,958.0	15.10	156.60	3,869.6	-710.8	219.9	744.0	0.71	0.00	-2.73
4,045.0	17.40	160.80	3,953.1	-733.5	228.7	768.3	2.97	2.64	4.83
4,132.0	17.50	161.50	4,036.1	-758.1	237.1	794.4	0.27	0.11	0.80
4,220.0	16.20	159.90	4,120.3	-782.2	245.6	819.9	1.57	-1.48	-1.82
4,307.0	13.70	165.20	4,204.4	-803.6	252.4	842.3	3.27	-2.87	6.09
4,394.0	12.20	165.20	4,289.1	-822.4	257.3	861.7	1.72	-1.72	0.00
4,481.0	10.80	164.70	4,374.4	-839.2	261.8	879.1	1.61	-1.61	-0.57
4,569.0	10.20	166.40	4,460.9	-854.7	265.9	895.1	0.77	-0.68	1.93
4,656.0	9.10	167.80	4,546.7	-868.9	269.1	909.6	1.29	-1.26	1.61
4,743.0	7.30	170.80	4,632.8	-881.1	271.5	921.9	2.13	-2.07	3.45
4,831.0	5.90	169.60	4,720.2	-891.1	273.2	932.0	1.60	-1.59	-1.36
4,918.0	4.00	156.90	4,806.9	-898.3	275.2	939.4	2.51	-2.18	-14.60
5,005.0	2.40	177.00	4,893.7	-902.9	276.4	944.2	2.22	-1.84	23.10
5,093.0	2.10	197.00	4,981.7	-906.3	276.1	947.3	0.95	-0.34	22.73
5,180.0	0.70	181.70	5,068.7	-908.3	275.6	949.1	1.65	-1.61	-17.59
5,267.0	0.30	164.10	5,155.6	-909.1	275.6	949.8	0.49	-0.46	-20.23
5,442.0	0.20	47.00	5,330.6	-909.3	276.0	950.2	0.25	-0.06	-66.91
5,616.0	0.60	66.96	5,504.6	-908.7	277.0	950.0	0.24	0.23	11.47
5,791.0	0.80	297.20	5,679.6	-907.8	276.8	949.0	0.73	0.11	-74.15
5,811.3	0.90	291.47	5,699.9	-907.7	276.5	948.8	0.65	0.49	-28.23

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Rasmussen 2-8-19
<b>Project:</b>	SEC.19-T2N-R68W	<b>TVD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Site:</b>	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	<b>MD Reference:</b>	WELL @ 5013.0ft (Original Well Elev)
<b>Well:</b>	Rasmussen 2-8-19	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>TARGET BHL 100'FSL, 1320'FWL</b>									
5,966.0	1.80	271.70	5,854.6	-907.2	273.0	947.2	0.65	0.58	-12.78
6,140.0	1.80	256.60	6,028.5	-907.7	267.6	946.1	0.27	0.00	-8.68
6,315.0	1.80	252.20	6,203.4	-909.2	262.3	945.9	0.08	0.00	-2.51
6,489.0	1.80	253.40	6,377.3	-910.8	257.1	945.9	0.02	0.00	0.69
6,664.0	1.60	277.30	6,552.3	-911.3	252.0	944.8	0.42	-0.11	13.66
6,839.0	2.70	255.70	6,727.1	-912.0	245.6	943.5	0.77	0.63	-12.34
7,013.0	2.70	251.30	6,900.9	-914.3	237.7	943.4	0.12	0.00	-2.53
7,188.0	2.50	220.40	7,075.8	-918.6	231.4	945.5	0.80	-0.11	-17.66
7,362.0	2.60	278.70	7,249.6	-920.8	225.0	945.7	1.43	0.06	33.51
7,382.6	2.13	285.38	7,270.2	-920.7	224.2	945.3	2.65	-2.29	32.40
<b>TARGET CIRCLE 100'FSL &amp; 1320'FWL</b>									
7,537.0	2.60	44.90	7,424.5	-917.4	223.9	942.1	2.65	0.31	77.42
7,712.0	7.00	60.60	7,598.9	-909.4	236.0	938.1	2.60	2.51	8.97
7,886.0	6.40	65.20	7,771.7	-900.1	254.0	934.8	0.46	-0.34	2.64
8,061.0	4.50	68.70	7,945.9	-893.5	269.3	933.1	1.10	-1.09	2.00
8,190.0	3.90	64.30	8,074.6	-889.8	277.9	932.2	0.53	-0.47	-3.41
8,233.7	3.81	64.30	8,118.1	-888.5	280.6	931.8	0.20	-0.20	0.00
<b>HARD LINES 100'S OF TARGET BHL</b>									
8,240.0	3.80	64.30	8,124.4	-888.3	281.0	931.7	0.20	-0.20	0.00

Checked By: _____	Approved By: _____	Date: _____
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