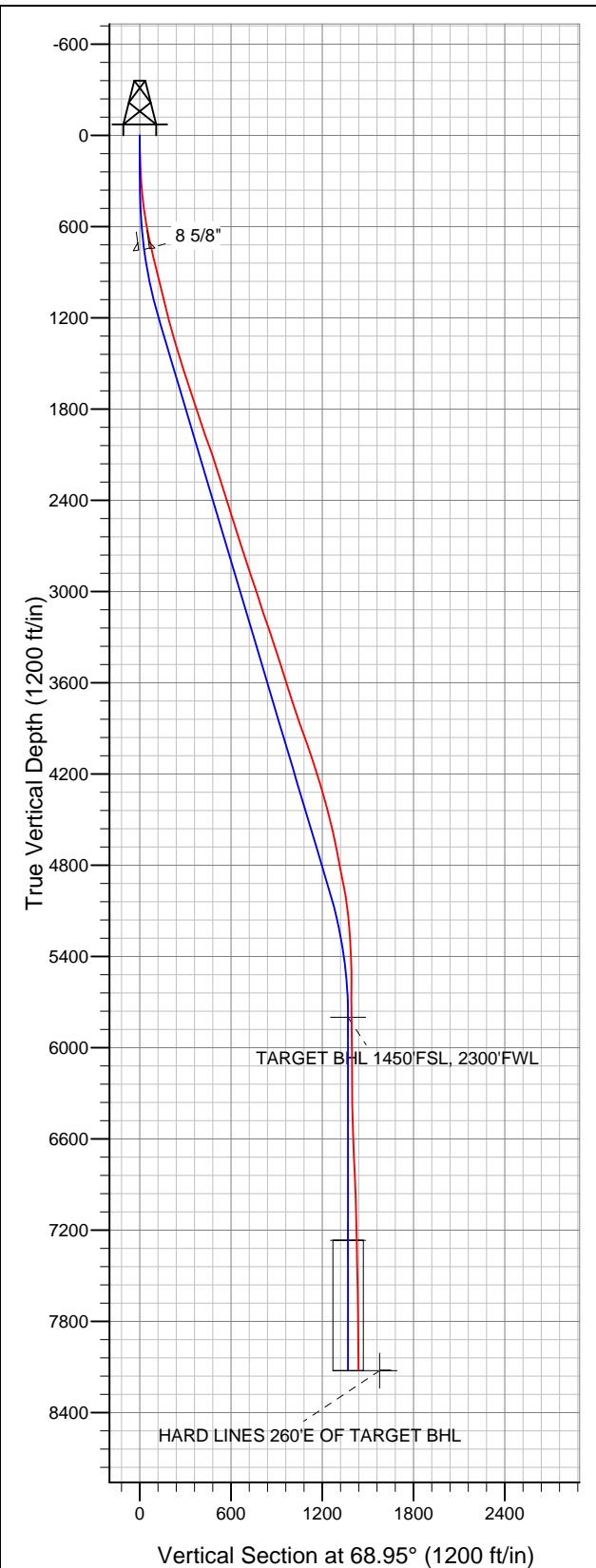
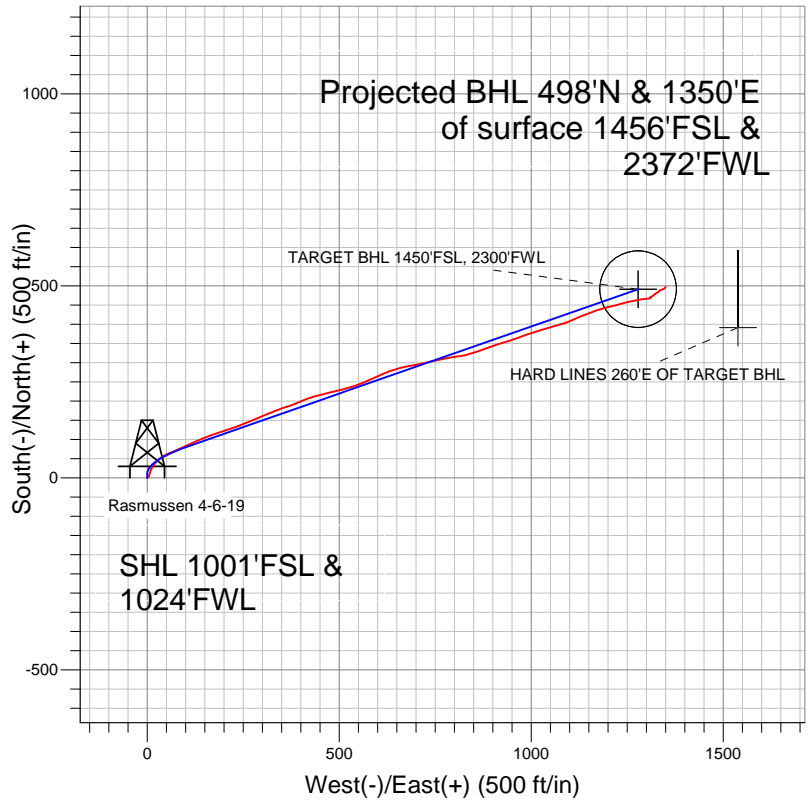


Well Name: Rasmussen 4-6-19

Surface Location: Rasmussen 0-6-19 Pad Sec.19-T2N-R68W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 5000.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1286636.38 3125358.56 40.119340 -105.051750
Original Well Elev WELL @ 5013.0ft (Original Well Elev)



EnCana Oil & Gas Weld County CO



LEGEND

- △ Rasmussen 4-6-19, Wellbore #1, Wellbore #1 V0
- Plan #1 (2-17-12) R

Final Survey Plot

Projected Final Survey -
8325'MD & 8122'TVD @ 1439'VS
0.9 deg Inc 3.6 deg AZ

Project: SEC.19-T2N-R68W
Site: Rasmussen 0-6-19 Pad Sec.19-T2N-R68W
Well: Rasmussen 4-6-19
Plan: Plan #1 (2-17-12) R



EnCana Oil & Gas Weld County CO

SEC.19-T2N-R68W

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

Rasmussen 4-6-19

Wellbore #1

Design: Wellbore #1

Standard Survey Report

27 February, 2012

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Rasmussen 4-6-19
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5013.0ft (Original Well Elev)
Site:	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5013.0ft (Original Well Elev)
Well:	Rasmussen 4-6-19	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-T2N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	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:	3,125,338.98ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.119340
		Longitude:	-105.051820
		Grid Convergence:	0.29 °

Well	Rasmussen 4-6-19		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.119340
		Longitude:	-105.051750
		Ground Level:	5,000.0ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	2/17/2012	8.90
			Dip Angle (°)
			66.75
			Field Strength (nT)
			52,880

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)
	0.0	0.0	0.0
			Direction (°)
			44.62

Survey Program	Date	2/27/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
102.0	8,325.0	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
102.0	1.10	64.10	102.0	0.4	0.9	0.9	1.08	1.08	0.00
193.0	2.50	39.00	192.9	2.4	2.9	3.7	1.73	1.54	-27.58
285.0	5.60	14.20	284.7	8.3	5.3	9.6	3.79	3.37	-26.96
376.0	8.00	19.50	375.1	18.5	8.5	19.2	2.72	2.64	5.82
468.0	9.40	31.80	466.0	31.0	14.6	32.3	2.52	1.52	13.37
560.0	10.50	44.20	556.6	43.4	24.4	48.0	2.61	1.20	13.48
651.0	11.60	55.80	646.0	54.4	37.7	65.3	2.72	1.21	12.75
746.0	12.80	67.30	738.8	63.9	55.3	84.3	2.85	1.26	12.11
810.0	12.80	67.30	801.2	69.4	68.4	97.4	0.00	0.00	0.00
815.0	14.20	66.70	806.1	69.8	69.5	98.5	28.14	28.00	-12.00
902.0	13.80	65.30	890.5	78.4	88.7	118.1	0.60	-0.46	-1.61
989.0	13.50	67.10	975.1	86.7	107.5	137.2	0.60	-0.34	2.07

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Rasmussen 4-6-19
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5013.0ft (Original Well Elev)
Site:	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5013.0ft (Original Well Elev)
Well:	Rasmussen 4-6-19	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
1,077.0	14.10	64.10	1,060.5	95.3	126.6	156.8	1.06	0.68	-3.41
1,164.0	13.70	69.20	1,145.0	103.6	145.8	176.1	1.48	-0.46	5.86
1,251.0	14.70	70.60	1,229.3	110.9	165.8	195.4	1.22	1.15	1.61
1,339.0	15.70	71.10	1,314.2	118.5	187.6	216.1	1.15	1.14	0.57
1,426.0	16.40	72.70	1,397.8	126.0	210.5	237.5	0.95	0.80	1.84
1,513.0	17.30	68.30	1,481.1	134.4	234.2	260.2	1.79	1.03	-5.06
1,600.0	19.10	67.10	1,563.8	144.7	259.4	285.2	2.11	2.07	-1.38
1,688.0	19.10	67.80	1,646.9	155.8	286.0	311.7	0.26	0.00	0.80
1,775.0	18.20	67.30	1,729.3	166.4	311.7	337.3	1.05	-1.03	-0.57
1,862.0	16.60	69.60	1,812.4	176.0	335.9	361.1	2.00	-1.84	2.64
1,950.0	18.50	71.70	1,896.3	184.7	360.9	385.0	2.28	2.16	2.39
2,037.0	19.90	67.40	1,978.4	194.8	387.7	410.9	2.29	1.61	-4.94
2,124.0	19.70	69.00	2,060.3	205.7	415.0	437.9	0.66	-0.23	1.84
2,212.0	18.50	73.80	2,143.4	214.9	442.3	463.6	2.25	-1.36	5.45
2,299.0	18.20	80.10	2,226.0	221.1	468.9	486.7	2.30	-0.34	7.24
2,386.0	17.80	76.20	2,308.8	226.6	495.2	509.1	1.46	-0.46	-4.48
2,473.0	17.20	71.10	2,391.7	234.0	520.3	532.0	1.89	-0.69	-5.86
2,561.0	16.60	71.50	2,475.9	242.2	544.5	554.8	0.69	-0.68	0.45
2,648.0	17.90	68.30	2,559.0	251.0	568.8	578.2	1.85	1.49	-3.68
2,735.0	17.50	65.00	2,641.9	261.5	593.0	602.7	1.24	-0.46	-3.79
2,823.0	18.40	66.20	2,725.6	272.7	617.7	628.0	1.11	1.02	1.36
2,910.0	18.70	72.90	2,808.1	282.4	643.6	653.0	2.47	0.34	7.70
2,997.0	18.70	77.60	2,890.5	289.5	670.6	677.0	1.73	0.00	5.40
3,085.0	18.90	80.50	2,973.8	294.8	698.4	700.4	1.09	0.23	3.30
3,172.0	17.60	76.20	3,056.5	300.3	725.1	723.0	2.15	-1.49	-4.94
3,259.0	19.00	79.00	3,139.1	306.1	751.8	745.9	1.90	1.61	3.22
3,346.0	19.60	77.80	3,221.2	311.9	779.9	769.8	0.83	0.69	-1.38
3,434.0	17.50	83.80	3,304.6	316.5	807.5	792.4	3.22	-2.39	6.82
3,521.0	18.20	74.30	3,387.4	321.6	833.6	814.4	3.44	0.80	-10.92
3,608.0	18.60	71.70	3,470.0	329.6	859.9	838.5	1.05	0.46	-2.99
3,696.0	18.10	69.60	3,553.5	338.8	886.0	863.4	0.94	-0.57	-2.39
3,783.0	17.80	72.40	3,636.3	347.5	911.3	887.4	1.05	-0.34	3.22
3,870.0	17.00	73.20	3,719.3	355.2	936.2	910.4	0.96	-0.92	0.92
3,958.0	18.70	69.60	3,803.1	363.8	961.7	934.5	2.30	1.93	-4.09
4,045.0	19.80	71.10	3,885.2	373.5	988.7	960.3	1.39	1.26	1.72
4,132.0	20.40	73.10	3,966.9	382.6	1,017.2	986.8	1.05	0.69	2.30
4,219.0	19.30	72.90	4,048.7	391.3	1,045.4	1,012.8	1.27	-1.26	-0.23
4,307.0	17.60	74.80	4,132.2	399.1	1,072.2	1,037.1	2.05	-1.93	2.16
4,394.0	16.80	68.70	4,215.3	407.1	1,096.6	1,060.0	2.27	-0.92	-7.01
4,481.0	17.30	67.10	4,298.5	416.7	1,120.2	1,083.4	0.79	0.57	-1.84
4,569.0	14.60	65.90	4,383.1	426.3	1,142.4	1,105.8	3.09	-3.07	-1.36
4,656.0	14.90	71.10	4,467.2	434.4	1,163.0	1,126.0	1.56	0.34	5.98
4,743.0	13.40	75.00	4,551.6	440.6	1,183.3	1,144.8	2.04	-1.72	4.48
4,831.0	11.30	77.80	4,637.6	445.1	1,201.6	1,160.8	2.48	-2.39	3.18
4,916.0	11.20	72.70	4,720.9	449.3	1,217.6	1,175.0	1.18	-0.12	-6.00
5,005.0	11.70	74.50	4,808.2	454.3	1,234.6	1,190.5	0.69	0.56	2.02
5,092.0	11.10	78.30	4,893.4	458.3	1,251.3	1,205.1	1.10	-0.69	4.37
5,180.0	10.10	78.00	4,979.9	461.7	1,267.1	1,218.6	1.14	-1.14	-0.34
5,267.0	8.20	80.10	5,065.8	464.3	1,280.7	1,230.0	2.22	-2.18	2.41
5,354.0	5.40	83.10	5,152.2	465.9	1,290.9	1,238.3	3.24	-3.22	3.45
5,442.0	4.00	80.80	5,239.9	466.9	1,298.0	1,244.0	1.60	-1.59	-2.61
5,529.0	3.30	96.80	5,326.7	467.0	1,303.5	1,248.0	1.41	-0.80	18.39
5,616.0	3.00	51.30	5,413.6	468.2	1,307.8	1,251.8	2.82	-0.34	-52.30
5,703.0	0.90	73.10	5,500.6	469.8	1,310.2	1,254.6	2.52	-2.41	25.06

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Rasmussen 4-6-19
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5013.0ft (Original Well Elev)
Site:	Rasmussen 0-6-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5013.0ft (Original Well Elev)
Well:	Rasmussen 4-6-19	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)	
5,791.0	1.00	272.10	5,588.6	470.0	1,310.1	1,254.7	2.13	0.11	-182.95	
5,878.0	0.40	71.30	5,675.6	470.2	1,309.6	1,254.5	1.59	-0.69	182.99	
6,002.3	0.53	44.85	5,799.9	470.7	1,310.4	1,255.4	0.20	0.10	-21.27	
TARGET BHL 1450'FSL, 2300'FWL										
6,053.0	0.60	37.90	5,850.5	471.1	1,310.7	1,255.9	0.20	0.14	-13.72	
6,227.0	0.50	99.90	6,024.5	471.7	1,312.1	1,257.3	0.33	-0.06	35.63	
6,402.0	0.30	35.00	6,199.5	471.9	1,313.1	1,258.2	0.26	-0.11	-37.09	
6,576.0	1.10	47.80	6,373.5	473.4	1,314.6	1,260.3	0.47	0.46	7.36	
6,751.0	2.00	52.20	6,548.5	476.4	1,318.2	1,265.0	0.52	0.51	2.51	
6,926.0	2.30	59.90	6,723.3	480.0	1,323.7	1,271.4	0.24	0.17	4.40	
7,100.0	3.00	48.50	6,897.1	484.8	1,330.1	1,279.3	0.50	0.40	-6.55	
7,275.0	1.10	51.10	7,072.0	488.9	1,334.8	1,285.5	1.09	-1.09	1.49	
7,449.0	1.60	86.40	7,246.0	490.1	1,338.6	1,289.0	0.54	0.29	20.29	
7,469.8	1.51	83.19	7,266.7	490.1	1,339.1	1,289.4	0.60	-0.42	-15.45	
TARGET CIRCLE 1450'FSL & 2300'FWL										
7,624.0	1.10	46.00	7,420.9	491.4	1,342.2	1,292.5	0.60	-0.27	-24.11	
7,799.0	1.10	78.30	7,595.9	492.9	1,345.1	1,295.6	0.35	0.00	18.46	
7,973.0	0.80	43.90	7,769.9	494.1	1,347.5	1,298.2	0.36	-0.17	-19.77	
8,148.0	0.40	31.60	7,944.9	495.5	1,348.7	1,300.0	0.24	-0.23	-7.03	
8,275.0	0.90	3.60	8,071.9	496.9	1,349.0	1,301.2	0.46	0.39	-22.05	
8,325.0	0.90	3.60	8,121.9	497.7	1,349.1	1,301.8	0.00	0.00	0.00	
HARD LINES 260'E OF TARGET BHL										

Checked By: _____ Approved By: _____ Date: _____