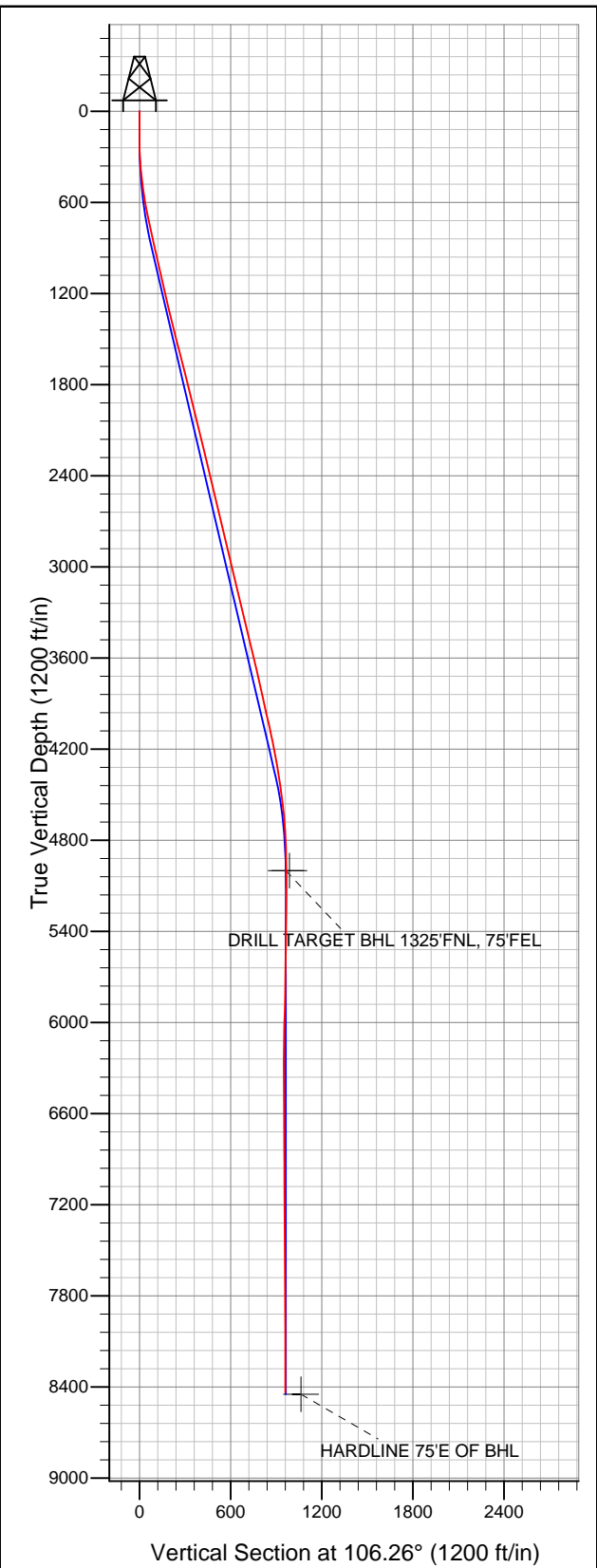


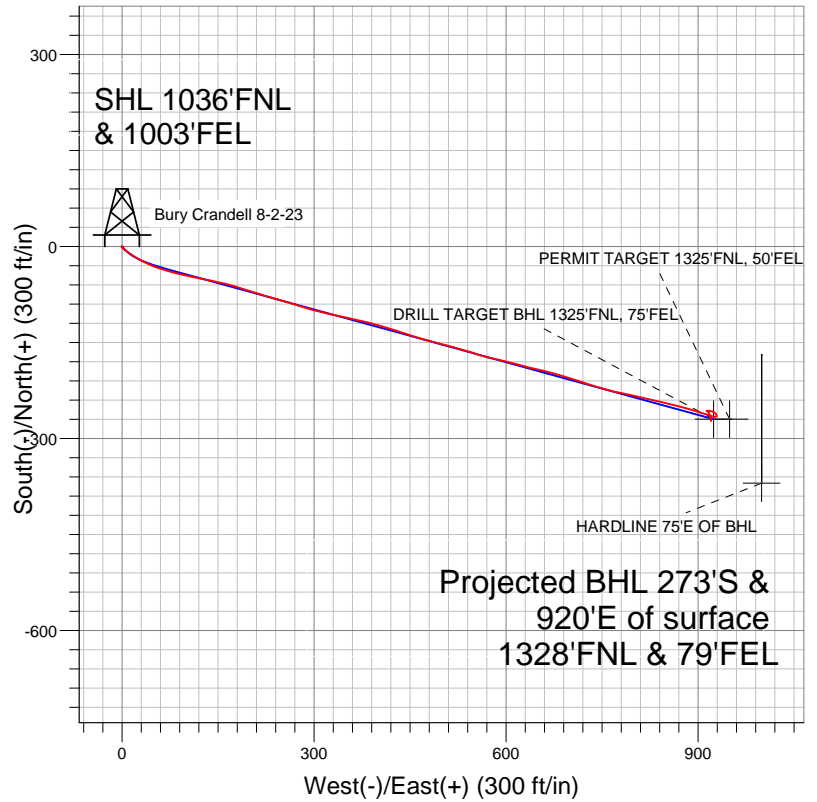


# Well Name: Bury Crandell 8-2-23

Surface Location: Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 5112.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1258354.51 3149849.22 40.041330 -104.964790  
Original Well Elev WELL @ 5125.0ft (Original Well Elev)



## EnCana Oil & Gas Broomfield County, CO



### LEGEND

- Bury Crandell 8-2-23, Wellbore #1, Plan #1 (12-20-11) R V0
- Wellbore #1

## Final Survey Plot

Projected Final Survey -  
8545'MD & 8437'TVD @ 960'VS  
0.7 deg Inc 178.9 deg AZ

Project: SEC.23-T1N-R68W  
Site: Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W  
Well: Bury Crandell 8-2-23  
Plan: Wellbore #1



# **EnCana Oil & Gas Broomfield County, CO**

**SEC.23-T1N-R68W**

**Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W**

**Bury Crandell 8-2-23**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**03 January, 2012**

<b>Company:</b>	EnCana Oil & Gas Broomfield County, CO	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-2-23
<b>Project:</b>	SEC.23-T1N-R68W	<b>TVD Reference:</b>	WELL @ 5125.0ft (Original Well Elev)
<b>Site:</b>	Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W	<b>MD Reference:</b>	WELL @ 5125.0ft (Original Well Elev)
<b>Well:</b>	Bury Crandell 8-2-23	<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.23-T1N-R68W, Broomfield 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

<b>Site</b>	Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W		
<b>Site Position:</b>		<b>Northing:</b>	1,258,365.55 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,149,865.96 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.041360
		<b>Longitude:</b>	-104.964730
		<b>Grid Convergence:</b>	0.35 °

<b>Well</b>	Bury Crandell 8-2-23		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,258,354.51 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,149,849.22 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.041330
		<b>Longitude:</b>	-104.964790
		<b>Ground Level:</b>	5,112.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	12/20/2011	8.87
			<b>Dip Angle (°)</b> 66.71
			<b>Field Strength (nT)</b> 52,864

<b>Design</b>	Wellbore #1		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.0	0.0	0.0
			<b>Direction (°)</b> 106.26

<b>Survey Program</b>	<b>Date</b>	1/3/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
47.0	8,545.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
47.0	0.30	295.90	47.0	0.1	-0.1	-0.1	0.64	0.64	0.00
138.0	0.40	275.40	138.0	0.2	-0.6	-0.7	0.17	0.11	-22.53
229.0	1.30	157.20	229.0	-0.7	-0.6	-0.3	1.68	0.99	-129.89
320.0	3.70	125.60	319.9	-3.4	2.2	3.1	2.95	2.64	-34.73
411.0	6.10	124.70	410.6	-7.9	8.6	10.5	2.64	2.64	-0.99
502.0	8.20	125.40	500.8	-14.4	17.9	21.2	2.31	2.31	0.77
593.0	9.80	117.70	590.7	-21.7	30.0	34.9	2.20	1.76	-8.46
684.0	11.60	114.50	680.1	-29.1	45.2	51.5	2.08	1.98	-3.52
776.0	12.00	104.70	770.2	-35.4	62.9	70.3	2.22	0.43	-10.65
870.0	13.00	105.40	862.0	-40.7	82.5	90.6	1.08	1.06	0.74
963.0	13.00	102.90	952.6	-45.8	102.8	111.5	0.60	0.00	-2.69
1,055.0	12.80	101.50	1,042.3	-50.1	122.9	132.0	0.40	-0.22	-1.52

<b>Company:</b>	EnCana Oil & Gas Broomfield County, CO	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-2-23
<b>Project:</b>	SEC.23-T1N-R68W	<b>TVD Reference:</b>	WELL @ 5125.0ft (Original Well Elev)
<b>Site:</b>	Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W	<b>MD Reference:</b>	WELL @ 5125.0ft (Original Well Elev)
<b>Well:</b>	Bury Crandell 8-2-23	<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)	
1,152.0	12.70	100.60	1,136.9	-54.2	143.9	153.3	0.23	-0.10	-0.93	
1,246.0	13.00	104.30	1,228.5	-58.7	164.3	174.2	0.93	0.32	3.94	
1,339.0	13.80	107.80	1,319.0	-64.7	185.0	195.7	1.22	0.86	3.76	
1,433.0	13.90	107.80	1,410.3	-71.6	206.4	218.2	0.11	0.11	0.00	
1,526.0	14.30	106.10	1,500.5	-78.2	228.1	240.8	0.62	0.43	-1.83	
1,620.0	14.90	106.60	1,591.4	-84.9	250.8	264.5	0.65	0.64	0.53	
1,713.0	14.10	106.10	1,681.5	-91.4	273.1	287.8	0.87	-0.86	-0.54	
1,807.0	14.10	105.70	1,772.6	-97.7	295.2	310.7	0.10	0.00	-0.43	
1,900.0	14.10	104.50	1,862.8	-103.6	317.0	333.4	0.31	0.00	-1.29	
1,994.0	13.50	102.00	1,954.1	-108.8	338.9	355.8	0.90	-0.64	-2.66	
2,087.0	13.50	101.20	2,044.5	-113.1	360.1	377.4	0.20	0.00	-0.86	
2,181.0	13.50	102.70	2,136.0	-117.7	381.6	399.3	0.37	0.00	1.60	
2,274.0	14.00	107.70	2,226.3	-123.5	402.9	421.4	1.39	0.54	5.38	
2,368.0	13.70	106.80	2,317.6	-130.1	424.4	443.9	0.39	-0.32	-0.96	
2,461.0	13.50	108.40	2,408.0	-136.8	445.2	465.7	0.46	-0.22	1.72	
2,555.0	14.30	106.80	2,499.2	-143.6	466.8	488.3	0.94	0.85	-1.70	
2,648.0	13.90	104.30	2,589.4	-149.6	488.6	510.9	0.78	-0.43	-2.69	
2,742.0	12.80	105.00	2,680.9	-155.1	509.6	532.6	1.18	-1.17	0.74	
2,835.0	11.70	105.00	2,771.7	-160.2	528.6	552.4	1.18	-1.18	0.00	
2,928.0	14.10	108.70	2,862.4	-166.3	548.5	573.1	2.73	2.58	3.98	
3,022.0	13.80	103.50	2,953.6	-172.6	570.2	595.7	1.37	-0.32	-5.53	
3,115.0	13.60	102.70	3,044.0	-177.6	591.7	617.7	0.30	-0.22	-0.86	
3,209.0	13.70	105.60	3,135.3	-183.0	613.2	639.9	0.74	0.11	3.09	
3,304.0	13.10	104.30	3,227.7	-188.7	634.4	661.9	0.71	-0.63	-1.37	
3,398.0	13.40	101.70	3,319.2	-193.5	655.4	683.4	0.71	0.32	-2.77	
3,491.0	13.90	105.20	3,409.6	-198.7	676.8	705.3	1.04	0.54	3.76	
3,585.0	14.20	109.30	3,500.8	-205.4	698.5	728.1	1.11	0.32	4.36	
3,678.0	13.50	107.10	3,591.1	-212.4	719.7	750.4	0.94	-0.75	-2.37	
3,772.0	13.00	107.00	3,682.6	-218.7	740.3	771.9	0.53	-0.53	-0.11	
3,865.0	12.40	104.90	3,773.3	-224.3	759.9	792.4	0.81	-0.65	-2.26	
3,960.0	12.30	99.80	3,866.1	-228.7	779.8	812.6	1.15	-0.11	-5.37	
4,055.0	12.70	103.60	3,958.9	-232.9	799.9	833.1	0.96	0.42	4.00	
4,149.0	13.00	103.30	4,050.5	-237.7	820.2	854.0	0.33	0.32	-0.32	
4,243.0	11.70	102.90	4,142.3	-242.3	839.8	874.0	1.39	-1.38	-0.43	
4,336.0	10.50	102.70	4,233.6	-246.2	857.3	891.9	1.29	-1.29	-0.22	
4,430.0	9.70	106.40	4,326.1	-250.4	873.2	908.4	1.10	-0.85	3.94	
4,523.0	8.00	104.20	4,418.0	-254.2	887.0	922.7	1.86	-1.83	-2.37	
4,617.0	7.70	109.60	4,511.1	-257.9	899.3	935.5	0.85	-0.32	5.74	
4,710.0	6.20	104.90	4,603.5	-261.3	910.0	946.8	1.72	-1.61	-5.05	
4,803.0	4.70	108.70	4,696.0	-263.8	918.5	955.6	1.66	-1.61	4.09	
4,897.0	2.80	103.80	4,789.8	-265.6	924.3	961.7	2.05	-2.02	-5.21	
4,991.0	1.60	73.40	4,883.8	-265.7	927.8	965.1	1.74	-1.28	-32.34	
5,084.0	0.40	27.50	4,976.7	-265.1	929.2	966.3	1.45	-1.29	-49.35	
5,107.2	0.38	17.41	5,000.0	-264.9	929.3	966.3	0.31	-0.09	-43.48	
PERMIT TARGET 1325'FNL, 50'FEL - DRILL TARGET BHL 1325'FNL, 75'FEL										
5,178.0	0.40	345.10	5,070.7	-264.5	929.3	966.2	0.31	0.03	-45.64	
5,271.0	0.30	324.20	5,163.7	-264.0	929.1	965.8	0.17	-0.11	-22.47	
5,365.0	0.60	343.70	5,257.7	-263.3	928.8	965.4	0.35	0.32	20.74	
5,458.0	0.80	329.00	5,350.7	-262.3	928.3	964.6	0.29	0.22	-15.81	
5,552.0	0.80	326.50	5,444.7	-261.2	927.6	963.6	0.04	0.00	-2.66	
5,645.0	0.80	322.50	5,537.7	-260.1	926.9	962.6	0.06	0.00	-4.30	
5,739.0	0.80	295.80	5,631.7	-259.3	925.9	961.4	0.39	0.00	-28.40	
5,832.0	1.00	294.70	5,724.7	-258.7	924.5	960.0	0.22	0.22	-1.18	
5,926.0	1.20	288.90	5,818.7	-258.0	922.9	958.2	0.24	0.21	-6.17	

<b>Company:</b>	EnCana Oil & Gas Broomfield County, CO	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-2-23
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<b>Site:</b>	Bury Crandell 6-0-23 Pad Sec.23-T1N-R68W	<b>MD Reference:</b>	WELL @ 5125.0ft (Original Well Elev)
<b>Well:</b>	Bury Crandell 8-2-23	<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)	
6,020.0	1.30	284.90	5,912.7	-257.4	920.9	956.1	0.14	0.11	-4.26	
6,113.0	1.20	289.10	6,005.6	-256.8	919.0	954.1	0.15	-0.11	4.52	
6,207.0	1.10	275.50	6,099.6	-256.4	917.1	952.3	0.31	-0.11	-14.47	
6,300.0	1.20	268.20	6,192.6	-256.4	915.3	950.4	0.19	0.11	-7.85	
6,394.0	0.80	251.50	6,286.6	-256.6	913.7	949.0	0.52	-0.43	-17.77	
6,488.0	0.40	120.30	6,380.6	-257.0	913.3	948.8	1.18	-0.43	-139.57	
6,581.0	1.30	108.20	6,473.6	-257.5	914.6	950.1	0.98	0.97	-13.01	
6,675.0	0.50	127.70	6,567.6	-258.0	916.0	951.6	0.90	-0.85	20.74	
6,769.0	0.40	137.70	6,661.6	-258.5	916.5	952.2	0.13	-0.11	10.64	
6,862.0	0.40	175.90	6,754.6	-259.1	916.7	952.6	0.28	0.00	41.08	
6,956.0	0.40	176.40	6,848.5	-259.8	916.8	952.8	0.00	0.00	0.53	
7,050.0	0.70	154.60	6,942.5	-260.6	917.1	953.3	0.38	0.32	-23.19	
7,143.0	0.60	159.90	7,035.5	-261.6	917.5	954.0	0.13	-0.11	5.70	
7,236.0	0.70	159.00	7,128.5	-262.6	917.8	954.6	0.11	0.11	-0.97	
7,330.0	0.80	181.80	7,222.5	-263.8	918.0	955.1	0.33	0.11	24.26	
7,423.0	0.70	186.90	7,315.5	-265.0	917.9	955.4	0.13	-0.11	5.48	
7,517.0	0.60	173.60	7,409.5	-266.0	917.9	955.7	0.19	-0.11	-14.15	
7,610.0	0.40	175.30	7,502.5	-266.8	918.0	956.0	0.22	-0.22	1.83	
7,704.0	0.50	136.00	7,596.5	-267.5	918.3	956.5	0.34	0.11	-41.81	
7,798.0	0.50	136.00	7,690.5	-268.0	918.9	957.2	0.00	0.00	0.00	
7,891.0	0.60	127.50	7,783.5	-268.6	919.5	958.0	0.14	0.11	-9.14	
7,985.0	0.30	142.00	7,877.5	-269.1	920.1	958.6	0.34	-0.32	15.43	
8,078.0	0.30	134.00	7,970.5	-269.5	920.4	959.1	0.05	0.00	-8.60	
8,172.0	0.40	148.10	8,064.5	-269.9	920.8	959.5	0.14	0.11	15.00	
8,265.0	0.30	218.60	8,157.5	-270.4	920.8	959.7	0.44	-0.11	75.81	
8,390.0	0.40	207.00	8,282.5	-271.1	920.4	959.5	0.10	0.08	-9.28	
8,495.0	0.70	178.90	8,387.5	-272.0	920.2	959.6	0.38	0.29	-26.76	
8,545.0	0.70	178.90	8,437.5	-272.6	920.2	959.8	0.00	0.00	0.00	
HARDLINE 75'E OF BHL										

Checked By: _____	Approved By: _____	Date: _____
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