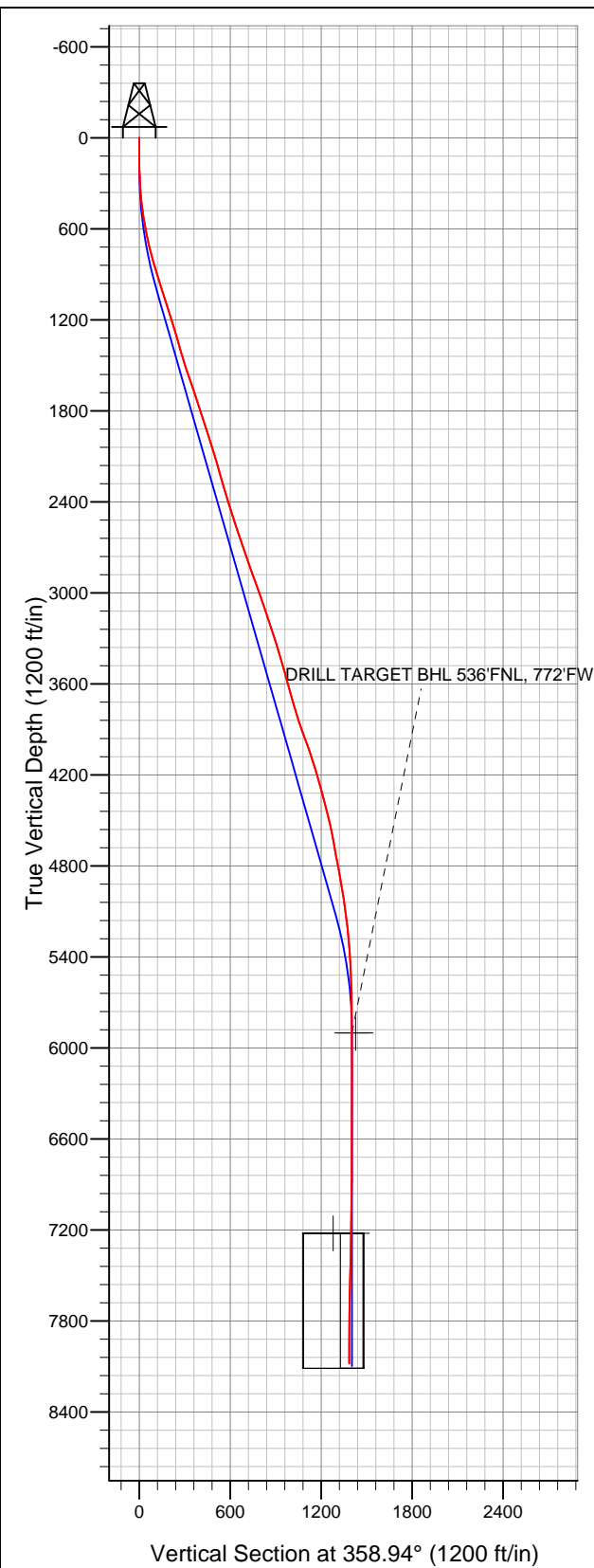




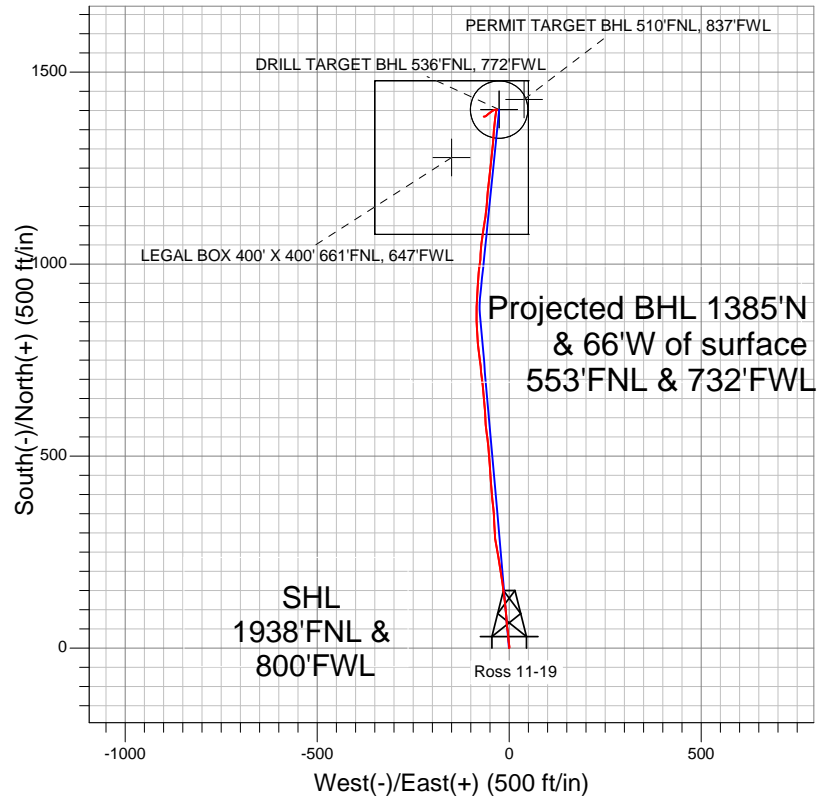
# Well Name: Ross 11-19

Surface Location: Ross 11-19 Pad Sec.19-T2N-R68W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4988.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1288988.51	3125131.35	40.125800	-105.052520	
		Original Well Elev	WELL @ 5001.0ft (Original Well Elev)			



## EnCana Oil & Gas Weld County CO



### LEGEND

- Survey #1
- Ross 11-19, Wellbore #1, Plan #1 (1-30-12) R V0
- Wellbore #1

## Final Survey Plot

Projected Final Survey -  
8282'MD & 8079'TVD @ 1386'VS  
0.70 deg Inc 272.60 deg AZ

Project: SEC.19-T2N-R68W  
Site: Ross 11-19 Pad Sec.19-T2N-R68W  
Well: Ross 11-19  
Plan: Wellbore #1



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

**SEC.19-T2N-R68W**

**Ross 11-19 Pad Sec.19-T2N-R68W**

**Ross 11-19**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**07 February, 2012**

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Ross 11-19
<b>Project:</b>	SEC.19-T2N-R68W	<b>TVD Reference:</b>	WELL @ 5001.0ft (Original Well Elev)
<b>Site:</b>	Ross 11-19 Pad Sec.19-T2N-R68W	<b>MD Reference:</b>	WELL @ 5001.0ft (Original Well Elev)
<b>Well:</b>	Ross 11-19	<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		Ross 11-19 Pad Sec.19-T2N-R68W			
Site Position:		Northing:		1,288,988.53ft	
From:	Lat/Long	Easting:		Longitude:	
		3,125,131.35ft		-105.052520	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		0.29 °	

<b>Well</b>	Ross 11-19				
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,288,988.51 ft	<b>Latitude:</b> 40.125800
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,125,131.35 ft	<b>Longitude:</b> -105.052520
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 4,988.0 ft

Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/11/2012	8.92	66.76	52,894

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 (°)	
	0.0	0.0	0.0	358.94	

Survey Program		Date	2/7/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
132.0	8,282.0	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
132.0	0.20	120.90	132.0	-0.1	0.2	-0.1	0.15	0.15	0.00
224.0	1.30	8.90	224.0	0.8	0.5	0.8	1.51	1.20	-121.74
315.0	3.70	351.70	314.9	4.8	0.2	4.8	2.73	2.64	-18.90
407.0	5.90	355.70	406.6	12.4	-0.6	12.4	2.42	2.39	4.35
499.0	8.40	356.60	497.8	23.8	-1.3	23.9	2.72	2.72	0.98
590.0	10.60	351.00	587.6	38.7	-3.0	38.8	2.62	2.42	-6.15
682.0	12.10	354.90	677.8	56.7	-5.2	56.8	1.83	1.63	4.24
788.0	15.50	354.70	780.7	81.9	-7.5	82.0	3.21	3.21	-0.19
852.0	15.50	354.70	842.4	98.9	-9.1	99.1	0.00	0.00	0.00
902.0	18.00	354.00	890.3	113.2	-10.5	113.4	5.02	5.00	-1.40
989.0	18.10	352.00	973.0	140.0	-13.8	140.2	0.72	0.11	-2.30
1,076.0	17.40	354.30	1,055.8	166.3	-16.9	166.6	1.14	-0.80	2.64

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Ross 11-19
<b>Project:</b>	SEC.19-T2N-R68W	<b>TVD Reference:</b>	WELL @ 5001.0ft (Original Well Elev)
<b>Site:</b>	Ross 11-19 Pad Sec.19-T2N-R68W	<b>MD Reference:</b>	WELL @ 5001.0ft (Original Well Elev)
<b>Well:</b>	Ross 11-19	<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)	
1,164.0	18.10	350.10	1,139.7	192.9	-20.6	193.2	1.66	0.80	-4.77	
1,251.0	17.00	351.00	1,222.6	218.8	-24.9	219.2	1.30	-1.26	1.03	
1,338.0	16.80	348.40	1,305.9	243.6	-29.4	244.1	0.90	-0.23	-2.99	
1,426.0	16.40	350.30	1,390.2	268.3	-34.1	268.9	0.77	-0.45	2.16	
1,513.0	17.50	357.00	1,473.4	293.5	-36.8	294.1	2.57	1.26	7.70	
1,600.0	18.80	357.50	1,556.1	320.6	-38.1	321.2	1.50	1.49	0.57	
1,687.0	19.20	355.60	1,638.3	348.9	-39.8	349.5	0.85	0.46	-2.18	
1,775.0	18.20	353.50	1,721.7	376.9	-42.5	377.7	1.37	-1.14	-2.39	
1,862.0	16.90	354.90	1,804.6	403.0	-45.2	403.8	1.57	-1.49	1.61	
1,949.0	18.60	357.70	1,887.5	429.5	-46.9	430.3	2.19	1.95	3.22	
2,037.0	18.60	354.70	1,970.9	457.5	-48.7	458.3	1.09	0.00	-3.41	
2,124.0	17.30	355.70	2,053.7	484.2	-51.0	485.1	1.54	-1.49	1.15	
2,211.0	15.80	354.80	2,137.1	508.9	-53.0	509.8	1.75	-1.72	-1.03	
2,299.0	16.20	355.40	2,221.7	533.1	-55.1	534.0	0.49	0.45	0.68	
2,385.0	16.20	351.70	2,304.2	556.9	-57.8	557.9	1.20	0.00	-4.30	
2,473.0	16.40	354.90	2,388.7	581.4	-60.7	582.4	1.05	0.23	3.64	
2,560.0	18.10	357.30	2,471.8	607.2	-62.4	608.2	2.12	1.95	2.76	
2,648.0	19.30	356.10	2,555.1	635.3	-64.0	636.4	1.43	1.36	-1.36	
2,735.0	19.10	354.50	2,637.3	663.8	-66.4	664.9	0.65	-0.23	-1.84	
2,822.0	17.60	351.50	2,719.9	691.0	-69.7	692.2	2.04	-1.72	-3.45	
2,910.0	19.50	355.60	2,803.3	718.8	-72.8	720.0	2.62	2.16	4.66	
2,997.0	20.40	352.40	2,885.1	748.3	-75.9	749.6	1.63	1.03	-3.68	
3,084.0	20.30	353.10	2,966.7	778.3	-79.7	779.7	0.30	-0.11	0.80	
3,172.0	18.90	356.10	3,049.6	807.7	-82.5	809.1	1.96	-1.59	3.41	
3,259.0	18.10	357.50	3,132.1	835.3	-84.0	836.7	1.05	-0.92	1.61	
3,346.0	18.40	359.30	3,214.7	862.5	-84.8	863.9	0.73	0.34	2.07	
3,433.0	18.50	1.70	3,297.2	890.0	-84.6	891.4	0.88	0.11	2.76	
3,521.0	17.10	3.60	3,381.0	916.9	-83.3	918.3	1.72	-1.59	2.16	
3,608.0	14.90	5.40	3,464.6	940.8	-81.5	942.2	2.59	-2.53	2.07	
3,695.0	16.10	1.70	3,548.5	964.0	-80.1	965.3	1.79	1.38	-4.25	
3,783.0	15.90	8.60	3,633.1	988.1	-77.9	989.4	2.17	-0.23	7.84	
3,870.0	16.00	6.50	3,716.7	1,011.8	-74.8	1,013.0	0.67	0.11	-2.41	
3,957.0	17.30	1.20	3,800.1	1,036.7	-73.1	1,037.8	2.30	1.49	-6.09	
4,045.0	19.00	8.40	3,883.7	1,063.9	-70.8	1,065.1	3.19	1.93	8.18	
4,132.0	21.60	9.80	3,965.3	1,093.7	-66.0	1,094.8	3.04	2.99	1.61	
4,219.0	19.10	7.70	4,046.9	1,123.6	-61.3	1,124.6	2.99	-2.87	-2.41	
4,306.0	17.10	4.90	4,129.6	1,150.5	-58.3	1,151.3	2.51	-2.30	-3.22	
4,394.0	16.00	4.70	4,213.9	1,175.4	-56.2	1,176.3	1.25	-1.25	-0.23	
4,481.0	15.70	4.50	4,297.6	1,199.1	-54.3	1,199.9	0.35	-0.34	-0.23	
4,568.0	14.90	7.90	4,381.5	1,221.9	-51.9	1,222.7	1.38	-0.92	3.91	
4,656.0	14.10	5.60	4,466.7	1,243.8	-49.3	1,244.5	1.12	-0.91	-2.61	
4,743.0	11.90	6.60	4,551.5	1,263.3	-47.2	1,263.9	2.54	-2.53	1.15	
4,830.0	10.60	6.30	4,636.8	1,280.1	-45.3	1,280.8	1.50	-1.49	-0.34	
4,918.0	10.00	5.20	4,723.4	1,295.8	-43.7	1,296.4	0.72	-0.68	-1.25	
5,005.0	10.80	5.80	4,809.0	1,311.4	-42.2	1,312.0	0.93	0.92	0.69	
5,092.0	10.30	4.30	4,894.5	1,327.3	-40.8	1,327.8	0.66	-0.57	-1.72	
5,179.0	9.10	3.80	4,980.2	1,341.9	-39.8	1,342.4	1.38	-1.38	-0.57	
5,267.0	7.90	3.10	5,067.3	1,354.9	-39.0	1,355.4	1.37	-1.36	-0.80	
5,354.0	7.10	7.50	5,153.5	1,366.2	-38.0	1,366.7	1.13	-0.92	5.06	
5,441.0	6.00	4.70	5,240.0	1,376.1	-36.9	1,376.5	1.32	-1.26	-3.22	
5,529.0	4.40	15.60	5,327.6	1,383.9	-35.6	1,384.3	2.13	-1.82	12.39	
5,616.0	3.50	9.30	5,414.4	1,389.7	-34.3	1,390.1	1.15	-1.03	-7.24	
5,703.0	2.70	4.20	5,501.3	1,394.4	-33.7	1,394.8	0.97	-0.92	-5.86	
5,791.0	2.00	357.80	5,589.2	1,398.0	-33.6	1,398.4	0.85	-0.80	-7.27	

**Company:** EnCana Oil & Gas Weld County CO  
**Project:** SEC.19-T2N-R68W  
**Site:** Ross 11-19 Pad Sec.19-T2N-R68W  
**Well:** Ross 11-19  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Ross 11-19  
**TVD Reference:** WELL @ 5001.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5001.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
5,878.0	0.90	47.00	5,676.2	1,400.0	-33.2	1,400.4	1.80	-1.26	56.55
5,965.0	0.40	66.90	5,763.2	1,400.6	-32.4	1,400.9	0.62	-0.57	22.87
6,052.0	0.30	71.50	5,850.2	1,400.8	-31.9	1,401.1	0.12	-0.11	5.29
6,101.9	0.30	68.51	5,900.0	1,400.8	-31.6	1,401.2	0.03	0.00	-5.99
<b>DRILL TARGET BHL 536'FNL, 772'FWL</b>									
6,102.2	0.30	68.49	5,900.4	1,400.8	-31.6	1,401.2	0.03	0.00	-6.01
<b>PERMIT TARGET BHL 510'FNL, 837'FWL</b>									
6,227.0	0.30	61.00	6,025.1	1,401.1	-31.0	1,401.5	0.03	0.00	-6.00
6,402.0	0.30	295.40	6,200.1	1,401.5	-31.1	1,401.9	0.30	0.00	-71.77
6,576.0	0.50	282.10	6,374.1	1,401.9	-32.2	1,402.3	0.13	0.11	-7.64
6,751.0	0.70	272.80	6,549.1	1,402.1	-34.0	1,402.5	0.13	0.11	-5.31
6,925.0	0.90	257.50	6,723.1	1,401.9	-36.4	1,402.3	0.17	0.11	-8.79
7,100.0	1.20	245.90	6,898.1	1,400.8	-39.4	1,401.3	0.21	0.17	-6.63
7,275.0	2.20	237.60	7,073.0	1,398.3	-43.9	1,398.8	0.59	0.57	-4.74
7,422.3	2.11	232.47	7,220.2	1,395.1	-48.5	1,395.8	0.14	-0.06	-3.48
<b>TARGET CIRCLE 536'FNL, 772'FWL</b>									
7,428.7	2.11	232.24	7,226.6	1,395.0	-48.7	1,395.6	0.14	-0.05	-3.62
<b>LEGAL BOX 400' X 400' 661'FNL, 647'FWL</b>									
7,449.0	2.10	231.50	7,246.9	1,394.5	-49.3	1,395.2	0.14	-0.05	-3.65
7,624.0	1.80	229.20	7,421.8	1,390.7	-53.8	1,391.5	0.18	-0.17	-1.31
7,798.0	1.70	228.80	7,595.7	1,387.2	-57.9	1,388.1	0.06	-0.06	-0.23
7,973.0	1.20	247.80	7,770.6	1,384.8	-61.5	1,385.7	0.39	-0.29	10.86
8,148.0	0.80	255.90	7,945.6	1,383.8	-64.4	1,384.8	0.24	-0.23	4.63
8,232.0	0.70	272.60	8,029.6	1,383.7	-65.5	1,384.7	0.28	-0.12	19.88
8,282.0	0.70	272.60	8,079.6	1,383.7	-66.1	1,384.7	0.00	0.00	0.00

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