

ENSIGN

Directional

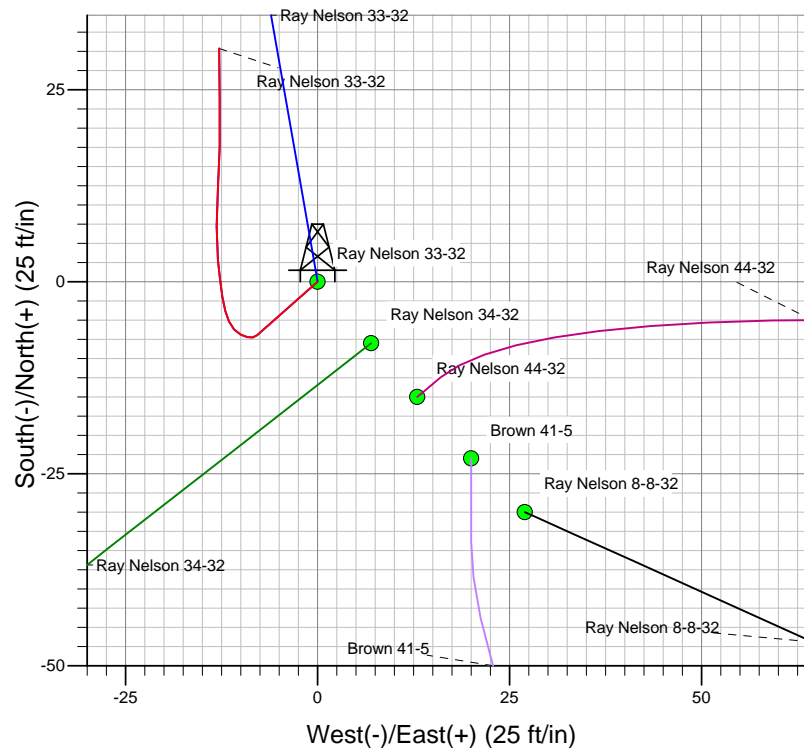
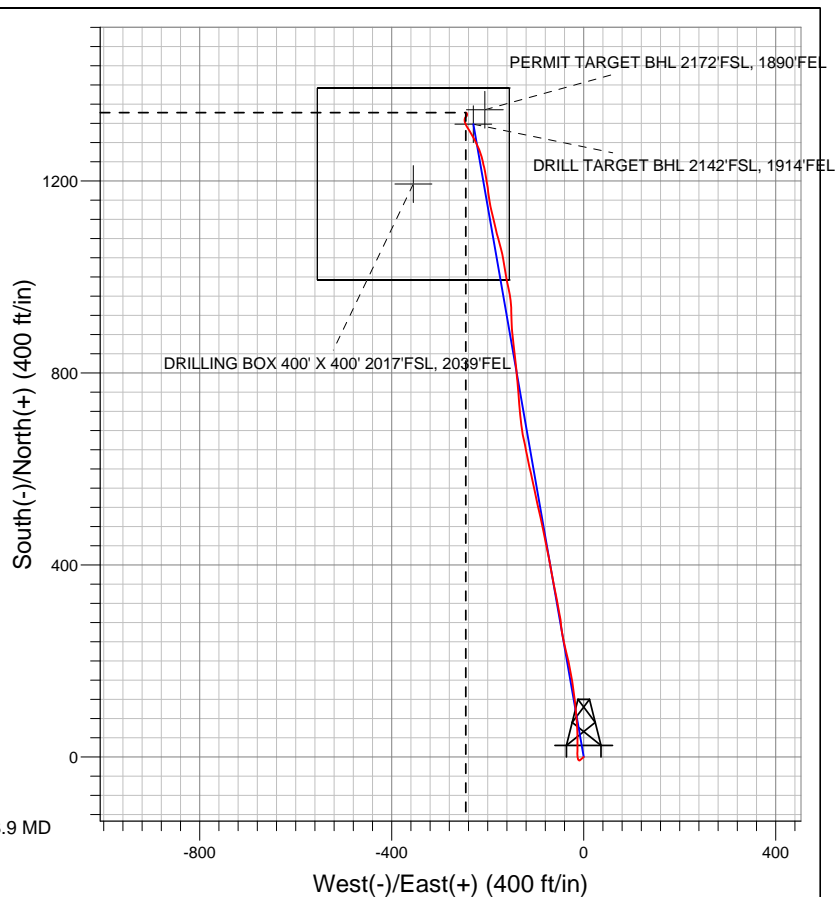
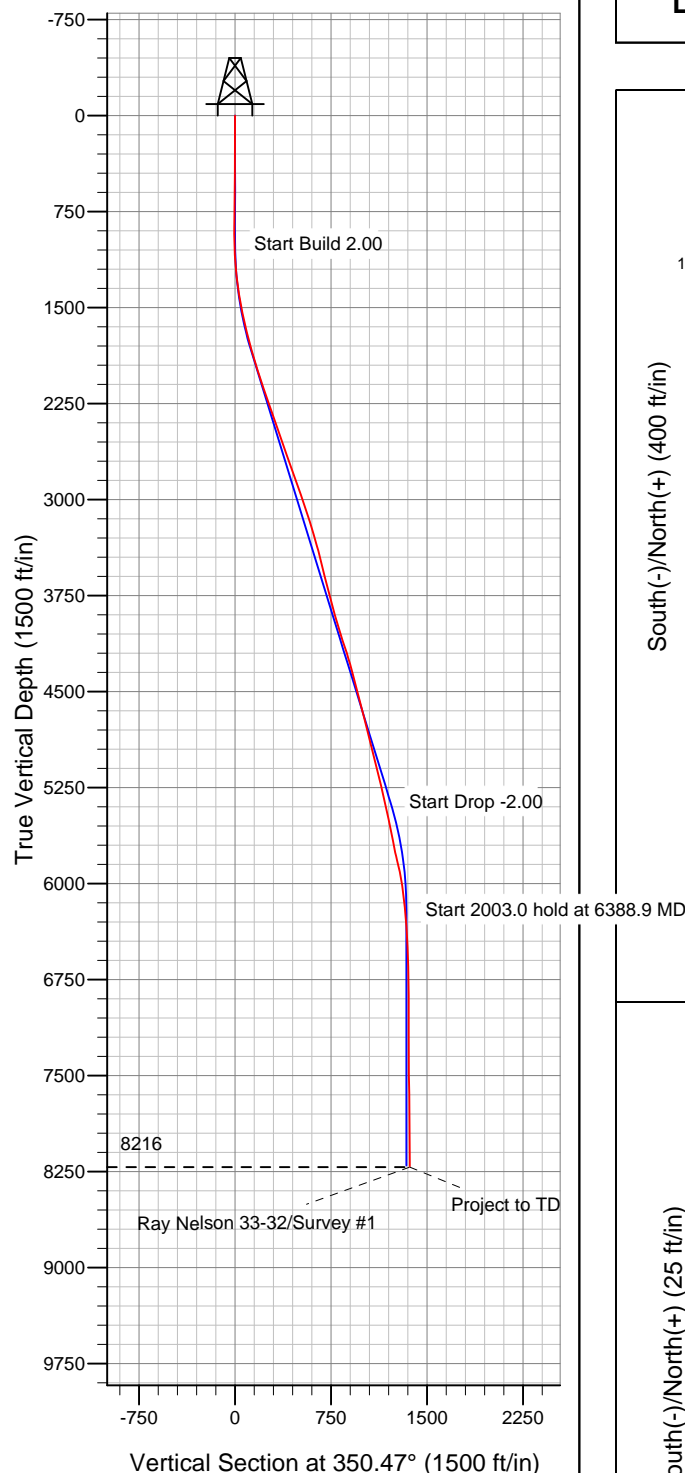
Well Name: Ray Nelson 33-32

Surface Location: Ray Nelson/Brown Pad Sec.32-T2N-R68W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

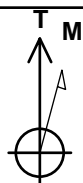
Ground Elevation: 4980.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1275978.51 3133246.49 40° 5' 23.892 N 105° 1' 25.500 W
 Original Well Elev WELL @ 4993.0ft (Original Well Elev)

EnCana Oil & Gas Weld County CO



Ray Nelson 33-32
 Wellbore #1
 10:15, March 01 2010



Azimuths to True North
 Magnetic North: 9.13°
 Magnetic Field
 Strength: 53111.4snT
 Dip Angle: 66.81°
 Date: 12/31/2009
 Model: IGRF200510



EnCana Oil & Gas Weld County CO

SEC.32-T2N-R68W

Ray Nelson/Brown Pad Sec.32-T2N-R68W

Ray Nelson 33-32

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 March, 2010

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ray Nelson 33-32
Project:	SEC.32-T2N-R68W	TVD Reference:	WELL @ 4993.0ft (Original Well Elev)
Site:	Ray Nelson/Brown Pad Sec.32-T2N-R68W	MD Reference:	WELL @ 4993.0ft (Original Well Elev)
Well:	Ray Nelson 33-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Project	SEC.32-T2N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Ray Nelson/Brown Pad Sec.32-T2N-R68W		
Site Position:		Northing:	1,275,978.53ft
From:	Lat/Long	Easting:	3,133,246.49ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 5' 23.892 N
		Longitude:	105° 1' 25.500 W
		Grid Convergence:	0.31 °

Well	Ray Nelson 33-32		
Well Position	+N-S	0.0 ft	Northing:
	+E-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.13	66.81	53,111

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	350.47	

Survey Program	Date	3/1/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
926.0	8,400.0	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	
926.0	1.30	228.50	925.9	-7.0	-7.9	-5.6	0.14	0.14	0.00	
1,013.0	2.10	297.70	1,012.9	-6.9	-10.0	-5.1	2.34	0.92	79.54	
1,100.0	3.20	346.00	1,099.8	-3.8	-12.0	-1.7	2.75	1.26	55.52	
1,188.0	5.50	355.30	1,187.5	2.8	-13.0	4.9	2.73	2.61	10.57	
1,275.0	6.80	3.80	1,274.0	12.1	-13.0	14.1	1.82	1.49	9.77	
1,362.0	8.40	358.90	1,360.3	23.6	-12.7	25.4	1.98	1.84	-5.63	
1,450.0	10.30	0.30	1,447.1	37.9	-12.8	39.5	2.17	2.16	1.59	
1,537.0	11.00	358.10	1,532.6	54.0	-13.1	55.4	0.93	0.80	-2.53	
1,624.0	13.10	355.20	1,617.7	72.1	-14.2	73.4	2.51	2.41	-3.33	
1,712.0	14.50	354.10	1,703.1	93.0	-16.1	94.4	1.62	1.59	-1.25	
1,799.0	14.90	353.10	1,787.3	114.9	-18.6	116.4	0.54	0.46	-1.15	
1,886.0	16.50	352.80	1,871.0	138.3	-21.5	139.9	1.84	1.84	-0.34	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ray Nelson 33-32
Project:	SEC.32-T2N-R68W	TVD Reference:	WELL @ 4993.0ft (Original Well Elev)
Site:	Ray Nelson/Brown Pad Sec.32-T2N-R68W	MD Reference:	WELL @ 4993.0ft (Original Well Elev)
Well:	Ray Nelson 33-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

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)	
1,974.0	16.80	352.20	1,955.4	163.3	-24.8	165.1	0.39	0.34	-0.68	
2,061.0	17.80	347.20	2,038.4	188.7	-29.4	191.0	2.06	1.15	-5.75	
2,149.0	19.60	345.80	2,121.8	216.1	-36.0	219.1	2.11	2.05	-1.59	
2,236.0	18.90	348.80	2,203.9	244.1	-42.3	247.8	1.39	-0.80	3.45	
2,323.0	19.00	353.50	2,286.2	272.0	-46.7	276.0	1.76	0.11	5.40	
2,410.0	18.90	349.30	2,368.5	299.9	-50.9	304.2	1.57	-0.11	-4.83	
2,497.0	18.90	349.40	2,450.8	327.6	-56.1	332.4	0.04	0.00	0.11	
2,584.0	19.10	349.00	2,533.1	355.4	-61.4	360.7	0.27	0.23	-0.46	
2,671.0	19.60	348.70	2,615.1	383.7	-67.0	389.5	0.59	0.57	-0.34	
2,759.0	20.20	349.90	2,697.9	413.2	-72.5	419.5	0.82	0.68	1.36	
2,846.0	19.70	348.10	2,779.7	442.3	-78.2	449.1	0.91	-0.57	-2.07	
2,933.0	19.50	348.60	2,861.6	470.9	-84.1	478.3	0.30	-0.23	0.57	
3,021.0	18.80	347.20	2,944.8	499.1	-90.1	507.1	0.95	-0.80	-1.59	
3,108.0	18.60	347.70	3,027.2	526.3	-96.2	535.0	0.29	-0.23	0.57	
3,195.0	18.50	348.20	3,109.7	553.4	-102.0	562.6	0.22	-0.11	0.57	
3,282.0	17.80	347.90	3,192.3	579.9	-107.6	589.7	0.81	-0.80	-0.34	
3,370.0	16.00	346.50	3,276.5	604.9	-113.2	615.3	2.10	-2.05	-1.59	
3,457.0	15.40	349.30	3,360.3	627.9	-118.2	638.8	1.11	-0.69	3.22	
3,544.0	14.40	348.00	3,444.3	649.8	-122.6	661.1	1.21	-1.15	-1.49	
3,632.0	14.00	350.20	3,529.7	671.0	-126.7	682.7	0.76	-0.45	2.50	
3,719.0	13.90	352.50	3,614.1	691.7	-129.8	703.7	0.65	-0.11	2.64	
3,806.0	14.30	354.10	3,698.5	712.8	-132.3	724.8	0.64	0.46	1.84	
3,893.0	14.90	355.60	3,782.7	734.6	-134.3	746.7	0.82	0.69	1.72	
3,981.0	15.30	356.00	3,867.6	757.5	-135.9	769.5	0.47	0.45	0.45	
4,068.0	16.40	353.80	3,951.3	781.1	-138.1	793.2	1.44	1.26	-2.53	
4,155.0	18.20	355.20	4,034.4	806.9	-140.5	819.0	2.12	2.07	1.61	
4,243.0	18.10	353.60	4,118.0	834.2	-143.2	846.4	0.58	-0.11	-1.82	
4,330.0	17.30	352.90	4,200.9	860.4	-146.3	872.8	0.95	-0.92	-0.80	
4,417.0	15.80	354.70	4,284.3	885.1	-149.0	897.5	1.82	-1.72	2.07	
4,505.0	14.10	359.10	4,369.3	907.7	-150.3	920.1	2.32	-1.93	5.00	
4,592.0	14.10	358.90	4,453.7	928.9	-150.6	941.0	0.06	0.00	-0.23	
4,679.0	15.60	353.10	4,537.8	951.1	-152.3	963.2	2.43	1.72	-6.67	
4,766.0	16.10	347.50	4,621.5	974.5	-156.3	986.9	1.85	0.57	-6.44	
4,854.0	13.80	349.40	4,706.5	996.7	-160.8	1,009.6	2.67	-2.61	2.16	
4,941.0	12.90	350.90	4,791.1	1,016.5	-164.3	1,029.7	1.11	-1.03	1.72	
5,028.0	14.50	350.30	4,875.7	1,036.9	-167.7	1,050.3	1.85	1.84	-0.69	
5,116.0	14.40	345.00	4,960.9	1,058.3	-172.3	1,072.2	1.51	-0.11	-6.02	
5,203.0	14.80	344.60	5,045.1	1,079.4	-178.1	1,094.0	0.47	0.46	-0.46	
5,290.0	14.00	347.10	5,129.3	1,100.4	-183.4	1,115.6	1.16	-0.92	2.87	
5,377.0	13.00	346.70	5,213.9	1,120.2	-188.0	1,135.9	1.15	-1.15	-0.46	
5,464.0	11.80	345.90	5,298.9	1,138.3	-192.4	1,154.5	1.39	-1.38	-0.92	
5,551.0	13.00	351.60	5,383.9	1,156.7	-196.0	1,173.1	1.97	1.38	6.55	
5,639.0	13.00	353.00	5,469.6	1,176.3	-198.7	1,192.9	0.36	0.00	1.59	
5,730.0	11.70	350.00	5,558.5	1,195.5	-201.5	1,212.4	1.59	-1.43	-3.30	
5,817.0	10.30	351.30	5,643.9	1,211.9	-204.2	1,229.0	1.63	-1.61	1.49	
5,897.3	11.22	347.31	5,722.7	1,226.6	-207.0	1,244.0	1.48	1.15	-4.98	
PERMIT TARGET BHL 2172°FSL, 1890°FEL										
5,904.0	11.30	347.00	5,729.4	1,227.9	-207.3	1,245.3	1.48	1.18	-4.54	
5,992.0	14.10	344.30	5,815.2	1,246.6	-212.2	1,264.5	3.25	3.18	-3.07	
6,079.0	12.70	340.90	5,899.8	1,265.9	-218.2	1,284.5	1.85	-1.61	-3.91	
6,166.0	9.20	330.80	5,985.2	1,281.0	-224.7	1,300.5	4.57	-4.02	-11.61	
6,254.0	7.80	330.40	6,072.3	1,292.3	-231.1	1,312.7	1.59	-1.59	-0.45	
6,341.0	6.90	328.30	6,158.6	1,301.9	-236.7	1,323.1	1.08	-1.03	-2.41	
6,383.3	6.08	328.63	6,200.6	1,306.0	-239.2	1,327.5	1.93	-1.93	0.78	

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Site:	Ray Nelson/Brown Pad Sec.32-T2N-R68W	MD Reference:	WELL @ 4993.0ft (Original Well Elev)
Well:	Ray Nelson 33-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

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)
DRILL TARGET BHL 2142'FSL, 1914'FEL									
6,429.0	5.20	329.10	6,246.1	1,309.8	-241.6	1,331.7	1.93	-1.93	1.03
6,516.0	3.90	336.30	6,332.8	1,315.9	-244.8	1,338.3	1.63	-1.49	8.28
6,603.0	3.30	340.60	6,419.6	1,321.0	-246.8	1,343.6	0.76	-0.69	4.94
6,691.0	2.30	350.60	6,507.5	1,325.1	-247.9	1,347.9	1.26	-1.14	11.36
6,778.0	2.00	9.90	6,594.5	1,328.3	-247.9	1,351.0	0.90	-0.34	22.18
6,865.0	1.00	25.70	6,681.4	1,330.5	-247.3	1,353.1	1.23	-1.15	18.16
6,953.0	1.00	21.10	6,769.4	1,331.9	-246.7	1,354.4	0.09	0.00	-5.23
7,040.0	0.30	74.00	6,856.4	1,332.7	-246.2	1,355.1	0.98	-0.80	60.80
7,215.0	0.40	39.30	7,031.4	1,333.3	-245.4	1,355.5	0.13	0.06	-19.83
7,302.0	0.60	46.70	7,118.4	1,333.8	-244.9	1,356.0	0.24	0.23	8.51
7,477.0	0.50	32.60	7,293.4	1,335.1	-243.8	1,357.0	0.10	-0.06	-8.06
7,520.0	0.52	27.54	7,336.4	1,335.4	-243.6	1,357.3	0.11	0.05	-11.77
DRILLING BOX 400' X 400' 2017'FSL, 2039'FEL									
7,651.0	0.60	14.60	7,467.4	1,336.6	-243.2	1,358.4	0.11	0.06	-9.88
7,826.0	0.60	359.30	7,642.4	1,338.4	-243.0	1,360.2	0.09	0.00	-8.74
8,001.0	0.60	337.20	7,817.4	1,340.2	-243.3	1,362.0	0.13	0.00	-12.63
8,175.0	0.40	325.70	7,991.4	1,341.5	-244.0	1,363.4	0.13	-0.11	-6.61
8,348.0	0.50	289.00	8,164.4	1,342.3	-245.1	1,364.3	0.17	0.06	-21.21
8,400.0	0.50	289.00	8,216.3	1,342.4	-245.5	1,364.5	0.00	0.00	0.00
Project to TD									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,400.0	8,216.3	1,342.4	-245.5	Project to TD

Checked By: _____ Approved By: _____ Date: _____