

Well Name: Dowdy 4-6-10

Surface Location: Dowdy 8-4-10 Pad Sec.10-T2N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4861.0
Northing 1299619.74 Easting 3240047.98 Latitude 40.152660 Longitude -104.641220 Slot
Original Well Elev WELL @ 4874.0ft (Original Well Elev)

+N/-S +E/-W
0.0 0.0

Northing
1299619.74

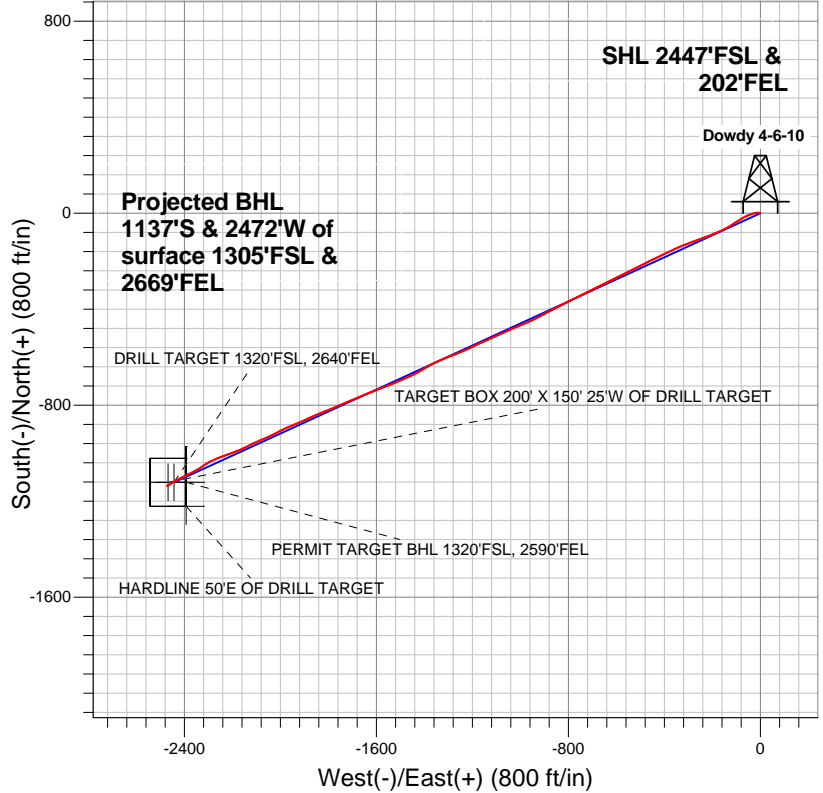
Easting
3240047.98

Latitude
40.152660

Longitude
-104.641220

Slot

EnCana Oil & Gas Weld County CO



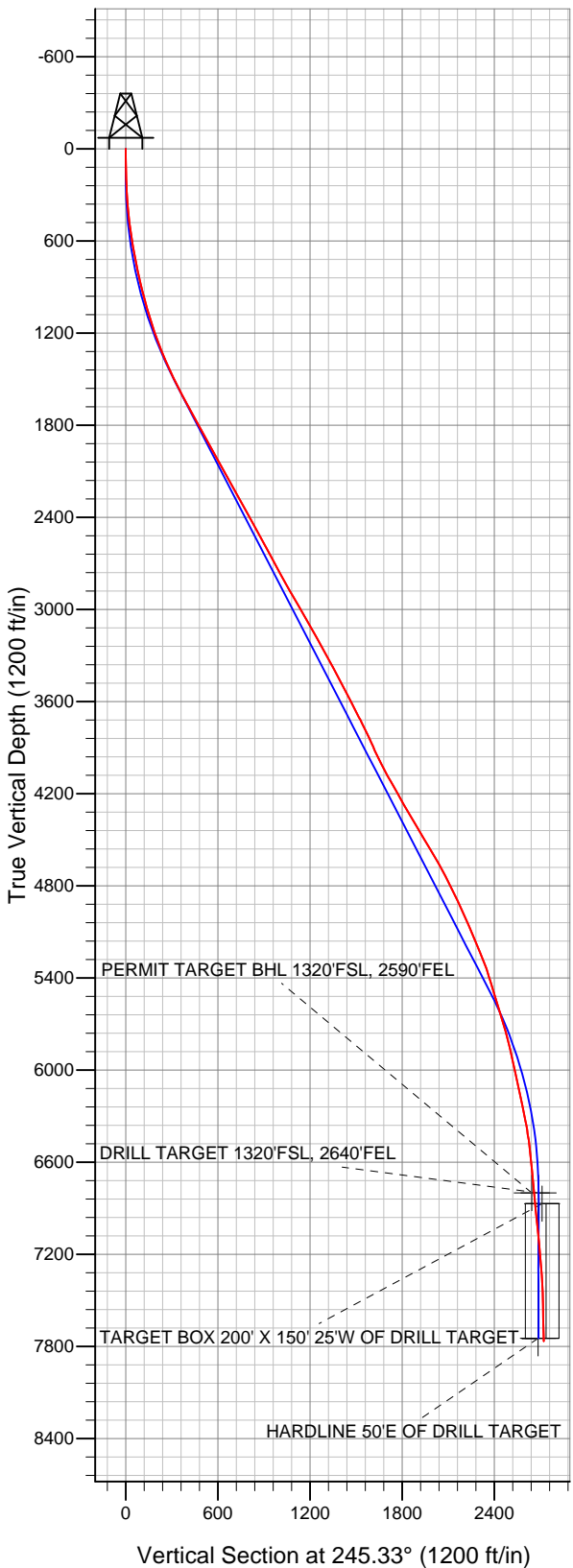
LEGEND

- △ Dowdy 4-6-10, Wellbore #1, Plan #2 (10-10-12) R V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8362'MD & 7767'TVD @ 2721'VS
1.10 deg Inc 221.30 deg AZ

Project: SEC.10-T2N-R65W
Site: Dowdy 8-4-10 Pad Sec.10-T2N-R65W
Well: Dowdy 4-6-10
Plan: Wellbore #1





Directional

EnCana Oil & Gas Weld County CO

SEC.10-T2N-R65W

Dowdy 8-4-10 Pad Sec.10-T2N-R65W

Dowdy 4-6-10

Wellbore #1

Survey: Survey #1

Standard Survey Report

15 October, 2012

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Dowdy 4-6-10
Project:	SEC.10-T2N-R65W	TVD Reference:	WELL @ 4874.0ft (Original Well Elev)
Site:	Dowdy 8-4-10 Pad Sec.10-T2N-R65W	MD Reference:	WELL @ 4874.0ft (Original Well Elev)
Well:	Dowdy 4-6-10	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.10-T2N-R65W, 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	Dowdy 8-4-10 Pad Sec.10-T2N-R65W		
Site Position:		Northing:	1,299,627.04 ft
From:	Lat/Long	Easting:	3,240,047.91 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.152680
		Longitude:	-104.641220
		Grid Convergence:	0.55 °

Well	Dowdy 4-6-10		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.152660
		Longitude:	-104.641220
		Ground Level:	4,861.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/10/2012	8.60	66.83	52,875

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	245.33	

Survey Program	Date	10/15/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
105.0	8,362.0	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	
105.0	1.10	278.60	105.0	0.2	-1.0	0.8	1.05	1.05	0.00	
195.0	1.80	285.10	195.0	0.6	-3.2	2.7	0.80	0.78	7.22	
285.0	3.60	280.40	284.9	1.5	-7.4	6.1	2.01	2.00	-5.22	
376.0	5.50	267.00	375.6	1.8	-14.5	12.4	2.38	2.09	-14.73	
467.0	7.00	255.30	466.0	0.2	-24.2	22.0	2.15	1.65	-12.86	
559.0	8.70	250.00	557.2	-3.6	-36.2	34.4	2.01	1.85	-5.76	
649.0	9.60	250.70	646.0	-8.4	-49.7	48.7	1.01	1.00	0.78	
740.0	11.30	243.80	735.5	-14.9	-64.8	65.1	2.32	1.87	-7.58	
831.0	12.40	236.40	824.6	-24.2	-81.0	83.7	2.06	1.21	-8.13	
875.0	13.50	238.60	867.5	-29.5	-89.3	93.5	2.74	2.50	5.00	
931.0	14.20	235.60	921.8	-36.8	-100.6	106.7	1.79	1.25	-5.36	
1,016.0	15.50	237.50	1,004.0	-48.8	-118.7	128.3	1.63	1.53	2.24	

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Well:	Dowdy 4-6-10	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)
1,102.0	17.10	240.50	1,086.5	-61.2	-139.4	152.2	2.10	1.86	3.49
1,188.0	18.20	245.60	1,168.5	-73.0	-162.7	178.3	2.21	1.28	5.93
1,273.0	20.10	248.50	1,248.8	-83.8	-188.4	206.1	2.50	2.24	3.41
1,359.0	23.00	250.00	1,328.8	-95.0	-217.9	237.6	3.43	3.37	1.74
1,444.0	24.20	250.30	1,406.7	-106.5	-249.9	271.6	1.42	1.41	0.35
1,530.0	25.40	248.40	1,484.7	-119.3	-283.6	307.5	1.67	1.40	-2.21
1,616.0	26.90	247.20	1,561.9	-133.6	-318.7	345.4	1.85	1.74	-1.40
1,701.0	28.70	246.10	1,637.1	-149.3	-355.1	385.0	2.20	2.12	-1.29
1,787.0	28.80	244.00	1,712.5	-166.8	-392.6	426.4	1.18	0.12	-2.44
1,872.0	28.50	244.70	1,787.1	-184.4	-429.4	467.1	0.53	-0.35	0.82
1,958.0	28.40	244.90	1,862.7	-201.8	-466.4	508.1	0.16	-0.12	0.23
2,044.0	29.80	241.90	1,937.9	-220.6	-503.8	549.9	2.35	1.63	-3.49
2,129.0	29.00	243.50	2,011.9	-239.7	-540.9	591.6	1.32	-0.94	1.88
2,215.0	28.80	244.70	2,087.2	-257.9	-578.3	633.1	0.71	-0.23	1.40
2,300.0	28.80	243.60	2,161.7	-275.7	-615.1	674.1	0.62	0.00	-1.29
2,386.0	28.30	242.40	2,237.2	-294.4	-651.7	715.1	0.88	-0.58	-1.40
2,472.0	28.50	243.30	2,312.9	-313.1	-688.1	756.0	0.55	0.23	1.05
2,557.0	29.80	245.10	2,387.1	-331.1	-725.4	797.4	1.84	1.53	2.12
2,643.0	30.20	243.60	2,461.6	-349.7	-764.2	840.4	0.99	0.47	-1.74
2,728.0	28.80	243.30	2,535.6	-368.4	-801.6	882.2	1.66	-1.65	-0.35
2,814.0	28.20	241.70	2,611.2	-387.3	-838.0	923.2	1.13	-0.70	-1.86
2,900.0	28.00	242.10	2,687.0	-406.4	-873.7	963.6	0.32	-0.23	0.47
2,985.0	28.10	242.20	2,762.0	-425.1	-909.1	1,003.5	0.13	0.12	0.12
3,071.0	28.80	244.70	2,837.6	-443.4	-945.7	1,044.5	1.61	0.81	2.91
3,156.0	29.90	247.30	2,911.7	-460.3	-983.8	1,086.1	1.98	1.29	3.06
3,242.0	30.20	247.30	2,986.2	-476.9	-1,023.5	1,129.2	0.35	0.35	0.00
3,328.0	29.90	245.10	3,060.6	-494.3	-1,062.9	1,172.2	1.33	-0.35	-2.56
3,413.0	29.40	247.30	3,134.5	-511.3	-1,101.4	1,214.2	1.41	-0.59	2.59
3,499.0	29.50	244.50	3,209.4	-528.5	-1,140.0	1,256.5	1.60	0.12	-3.26
3,584.0	28.90	244.70	3,283.6	-546.3	-1,177.4	1,298.0	0.72	-0.71	0.24
3,670.0	29.20	244.70	3,358.8	-564.2	-1,215.2	1,339.7	0.35	0.35	0.00
3,756.0	27.20	248.50	3,434.6	-580.3	-1,252.4	1,380.3	3.12	-2.33	4.42
3,841.0	26.30	249.30	3,510.5	-594.1	-1,288.1	1,418.5	1.14	-1.06	0.94
3,927.0	27.90	246.10	3,587.0	-609.0	-1,324.3	1,457.7	2.52	1.86	-3.72
4,012.0	27.80	245.10	3,662.2	-625.4	-1,360.5	1,497.4	0.56	-0.12	-1.18
4,098.0	26.60	237.80	3,738.7	-644.1	-1,395.0	1,536.5	4.12	-1.40	-8.49
4,184.0	25.70	242.10	3,815.9	-663.1	-1,427.8	1,574.2	2.44	-1.05	5.00
4,269.0	23.70	245.20	3,893.1	-678.9	-1,459.6	1,609.7	2.80	-2.35	3.65
4,355.0	26.20	246.20	3,971.1	-693.8	-1,492.6	1,646.0	2.95	2.91	1.16
4,440.0	28.30	248.60	4,046.6	-708.7	-1,528.6	1,684.9	2.79	2.47	2.82
4,526.0	29.50	247.30	4,121.9	-724.3	-1,567.1	1,726.4	1.57	1.40	-1.51
4,612.0	29.50	248.90	4,196.8	-740.1	-1,606.4	1,768.7	0.92	0.00	1.86
4,697.0	29.10	249.10	4,270.9	-755.0	-1,645.2	1,810.2	0.48	-0.47	0.24
4,783.0	31.10	246.20	4,345.3	-771.5	-1,685.1	1,853.3	2.87	2.33	-3.37
4,868.0	30.30	248.00	4,418.4	-788.4	-1,725.1	1,896.7	1.43	-0.94	2.12
4,954.0	30.50	246.10	4,492.6	-805.3	-1,765.1	1,940.1	1.14	0.23	-2.21
5,040.0	31.00	248.00	4,566.5	-822.5	-1,805.6	1,984.1	1.27	0.58	2.21
5,125.0	30.70	248.00	4,639.5	-838.8	-1,846.0	2,027.6	0.35	-0.35	0.00
5,211.0	27.70	244.80	4,714.5	-855.5	-1,884.5	2,069.6	3.93	-3.49	-3.72
5,296.0	26.50	246.80	4,790.2	-871.4	-1,919.8	2,108.3	1.77	-1.41	2.35
5,382.0	25.60	247.70	4,867.5	-886.0	-1,954.6	2,146.0	1.14	-1.05	1.05
5,468.0	23.50	243.50	4,945.7	-900.7	-1,987.1	2,181.7	3.17	-2.44	-4.88
5,553.0	23.70	242.80	5,023.6	-916.1	-2,017.5	2,215.7	0.41	0.24	-0.82
5,639.0	24.60	246.50	5,102.1	-931.1	-2,049.3	2,250.9	2.05	1.05	4.30

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Well:	Dowdy 4-6-10	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)
5,724.0	22.90	245.60	5,179.9	-945.0	-2,080.6	2,285.1	2.04	-2.00	-1.06
5,810.0	21.50	245.90	5,259.5	-958.4	-2,110.2	2,317.6	1.63	-1.63	0.35
5,896.0	19.40	242.90	5,340.1	-971.3	-2,137.3	2,347.7	2.73	-2.44	-3.49
5,981.0	16.60	245.40	5,420.9	-982.8	-2,160.9	2,373.9	3.42	-3.29	2.94
6,067.0	17.10	248.70	5,503.2	-992.5	-2,183.9	2,398.8	1.25	0.58	3.84
6,152.0	17.00	250.50	5,584.5	-1,001.2	-2,207.2	2,423.7	0.63	-0.12	2.12
6,238.0	17.20	250.20	5,666.7	-1,009.7	-2,231.0	2,448.9	0.25	0.23	-0.35
6,324.0	15.00	249.10	5,749.3	-1,018.0	-2,253.4	2,472.6	2.58	-2.56	-1.28
6,409.0	14.20	244.50	5,831.5	-1,026.4	-2,273.1	2,494.0	1.66	-0.94	-5.41
6,495.0	12.40	245.90	5,915.2	-1,034.7	-2,291.1	2,513.8	2.13	-2.09	1.63
6,580.0	12.90	238.40	5,998.2	-1,043.4	-2,307.5	2,532.4	2.02	0.59	-8.82
6,666.0	13.00	233.50	6,082.0	-1,054.2	-2,323.4	2,551.4	1.28	0.12	-5.70
6,752.0	11.40	242.60	6,166.1	-1,063.9	-2,338.7	2,569.3	2.90	-1.86	10.58
6,837.0	11.50	241.20	6,249.4	-1,071.8	-2,353.6	2,586.2	0.35	0.12	-1.65
6,923.0	11.10	240.50	6,333.7	-1,080.0	-2,368.3	2,603.0	0.49	-0.47	-0.81
7,008.0	8.60	242.90	6,417.4	-1,086.9	-2,381.1	2,617.5	2.98	-2.94	2.82
7,094.0	7.10	242.10	6,502.6	-1,092.4	-2,391.5	2,629.2	1.75	-1.74	-0.93
7,180.0	5.50	242.40	6,588.1	-1,096.7	-2,399.9	2,638.6	1.86	-1.86	0.35
7,265.0	5.40	242.40	6,672.7	-1,100.5	-2,407.0	2,646.7	0.12	-0.12	0.00
7,351.0	5.30	245.20	6,758.3	-1,104.0	-2,414.2	2,654.7	0.33	-0.12	3.26
7,391.4	5.30	245.39	6,798.5	-1,105.6	-2,417.6	2,658.4	0.04	0.00	0.47
PERMIT TARGET BHL 1320'FSL, 2590'FEL									
7,395.6	5.30	245.41	6,802.7	-1,105.8	-2,418.0	2,658.8	0.04	0.00	0.47
DRILL TARGET 1320'FSL, 2640'FEL									
7,436.0	5.30	245.60	6,843.0	-1,107.3	-2,421.4	2,662.5	0.04	0.00	0.47
7,467.5	5.41	245.68	6,874.3	-1,108.5	-2,424.1	2,665.5	0.35	0.35	0.24
TARGET BOX 200' X 150' 25'W OF DRILL TARGET									
7,522.0	5.60	245.80	6,928.6	-1,110.7	-2,428.8	2,670.7	0.35	0.35	0.23
7,608.0	6.00	244.40	7,014.2	-1,114.3	-2,436.7	2,679.4	0.49	0.47	-1.63
7,693.0	6.20	235.60	7,098.7	-1,118.8	-2,444.5	2,688.4	1.12	0.24	-10.35
7,779.0	5.10	236.10	7,184.3	-1,123.6	-2,451.5	2,696.7	1.28	-1.28	0.58
7,864.0	4.50	238.70	7,269.0	-1,127.4	-2,457.5	2,703.8	0.75	-0.71	3.06
7,952.0	3.00	239.80	7,356.8	-1,130.4	-2,462.4	2,709.5	1.71	-1.70	1.25
8,040.0	2.50	241.90	7,444.7	-1,132.4	-2,466.1	2,713.7	0.58	-0.57	2.39
8,127.0	1.40	242.40	7,531.6	-1,133.8	-2,468.7	2,716.6	1.26	-1.26	0.57
8,215.0	0.90	229.40	7,619.6	-1,134.8	-2,470.2	2,718.4	0.64	-0.57	-14.77
8,320.0	1.10	221.30	7,724.6	-1,136.1	-2,471.5	2,720.1	0.23	0.19	-7.71
8,342.7	1.10	221.30	7,747.2	-1,136.4	-2,471.8	2,720.5	0.00	0.00	0.00
HARDLINE 50'E OF DRILL TARGET									
8,362.0	1.10	221.30	7,766.6	-1,136.7	-2,472.0	2,720.8	0.00	0.00	0.00

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Wellbore Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PERMIT TARGET BH - survey misses target center by 29.6ft at 7391.4ft MD (6798.5 TVD, -1105.6 N, -2417.6 E) - Point	0.00	0.00	6,800.0	-1,121.9	-2,393.0	1,298,474.76	3,237,666.11	40.149580	-104.649780
DRILL TARGET 1320 - survey misses target center by 29.9ft at 7395.6ft MD (6802.7 TVD, -1105.8 N, -2418.0 E) - Point	0.00	0.00	6,800.0	-1,121.9	-2,443.0	1,298,474.29	3,237,616.07	40.149580	-104.649959
TARGET BOX 200' X - survey misses target center by 46.1ft at 7467.4ft MD (6874.3 TVD, -1108.5 N, -2424.0 E) - Rectangle (sides W200.0 H150.0 D877.0)	0.00	0.00	6,870.0	-1,121.9	-2,468.0	1,298,474.04	3,237,591.07	40.149580	-104.650048
HARDLINE 50'E OF L - survey misses target center by 116.3ft at 8342.7ft MD (7747.2 TVD, -1136.4 N, -2471.8 E) - Polygon	0.00	0.00	7,747.0	-1,221.9	-2,393.0	1,298,374.78	3,237,667.03	40.149306	-104.649780
Point 1			7,747.0	0.0	0.0	1,298,374.78	3,237,667.03		
Point 2			7,747.0	250.0	0.0	1,298,624.76	3,237,664.61		

Checked By: _____ Approved By: _____ Date: _____