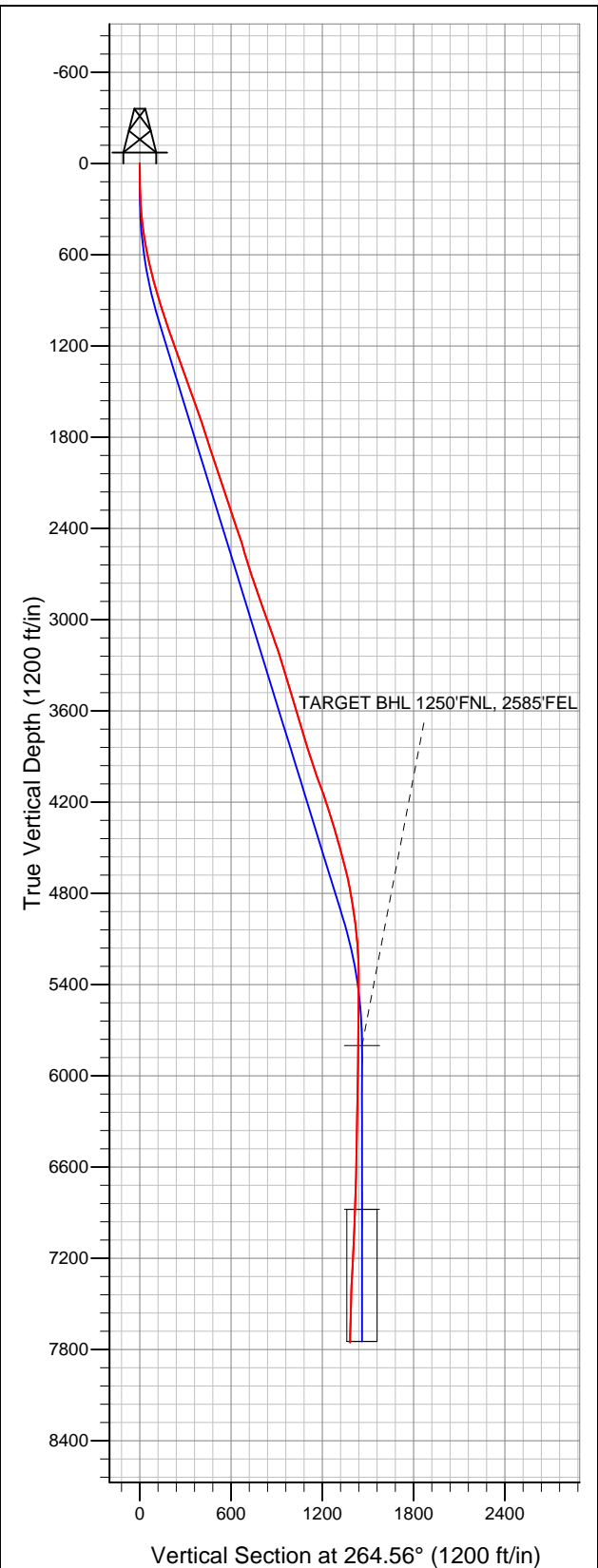


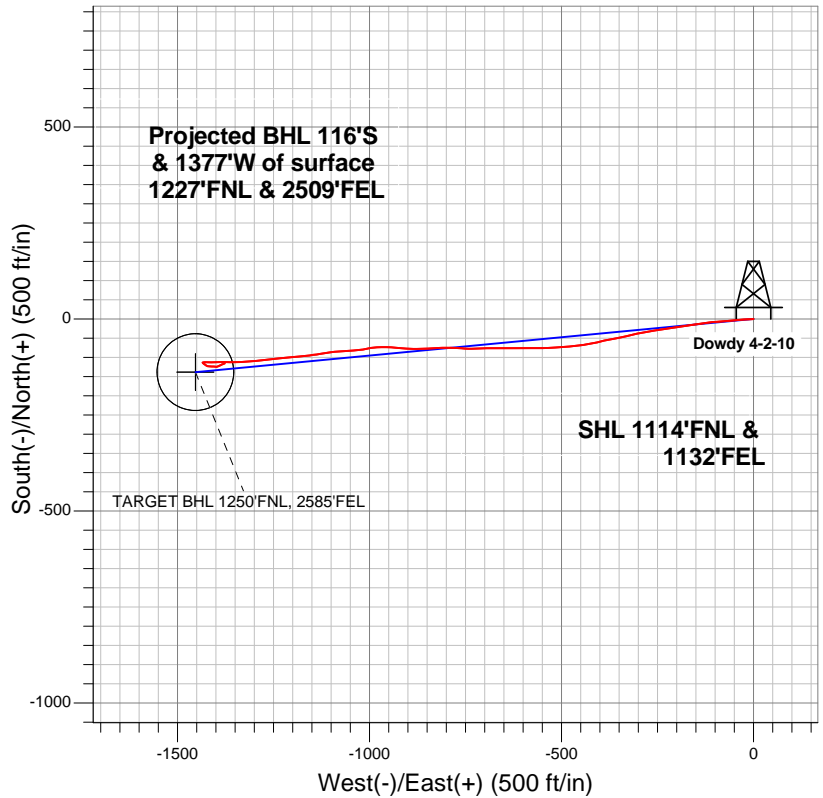


## Well Name: Dowdy 4-2-10

Surface Location: Dowdy 4-2-10 Pad Sec.10-T2N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4858.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1301352.01 3239108.79 40.157440 -104.644520  
Original Well Elev WELL @ 4870.0ft (Original Well Elev)



## EnCana Oil & Gas Weld County CO



### LEGEND

- Dowdy 4-2-10, Wellbore #1, Plan #1 (10-30-12) R V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7973'MD & 7754'TVD @ 1382'VS  
1.00 deg Inc 73.30 deg AZ

Project: SEC.10-T2N-R65W  
Site: Dowdy 4-2-10 Pad Sec.10-T2N-R65W  
Well: Dowdy 4-2-10  
Plan: Wellbore #1



## **Directional**

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

**SEC.10-T2N-R65W**

**Dowdy 4-2-10 Pad Sec.10-T2N-R65W**

**Dowdy 4-2-10**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**09 November, 2012**

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dowdy 4-2-10
<b>Project:</b>	SEC.10-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	Dowdy 4-2-10 Pad Sec.10-T2N-R65W	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Well:</b>	Dowdy 4-2-10	<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.10-T2N-R65W, 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		Dowdy 4-2-10 Pad Sec.10-T2N-R65W			
Site Position:		Northing:	1,301,352.02 ft	Latitude:	40.157440
From:	Lat/Long	Easting:	3,239,108.79 ft	Longitude:	-104.644520
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Dowdy 4-2-10					
Well Position	+N/-S	0.0 ft	Northing:	1,301,352.01 ft	Latitude:	40.157440
	+E/-W	0.0 ft	Easting:	3,239,108.79 ft	Longitude:	-104.644520
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,858.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/30/2012	8.59	66.83	52,872

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	264.56	

Survey Program		Date	11/9/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
106.0	7,973.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Wellbore Data									
	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)
Survey Data	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	106.0	0.60	284.00	106.0	0.1	-0.5	0.5	0.57	0.57	0.00
	197.0	2.00	251.20	197.0	-0.3	-2.5	2.5	1.68	1.54	-36.04
	287.0	3.80	266.50	286.9	-1.0	-7.0	7.0	2.16	2.00	17.00
	377.0	6.20	271.00	376.5	-1.0	-14.8	14.8	2.70	2.67	5.00
	469.0	8.90	264.90	467.7	-1.6	-26.9	26.9	3.06	2.93	-6.63
	560.0	9.90	264.90	557.5	-2.9	-41.7	41.8	1.10	1.10	0.00
	651.0	12.60	265.60	646.7	-4.4	-59.4	59.5	2.97	2.97	0.77
	742.0	14.60	266.30	735.2	-5.9	-80.7	80.9	2.21	2.20	0.77
	833.0	15.70	264.60	823.0	-7.8	-104.4	104.7	1.30	1.21	-1.87
	875.0	16.70	263.00	863.3	-9.0	-116.1	116.4	2.61	2.38	-3.81
	949.0	17.70	262.30	934.0	-11.8	-137.8	138.3	1.38	1.35	-0.95
	1,035.0	19.00	260.50	1,015.7	-15.9	-164.5	165.3	1.65	1.51	-2.09

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dowdy 4-2-10
<b>Project:</b>	SEC.10-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	Dowdy 4-2-10 Pad Sec.10-T2N-R65W	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Well:</b>	Dowdy 4-2-10	<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)
1,120.0	18.40	260.00	1,096.2	-20.5	-191.4	192.5	0.73	-0.71	-0.59
1,206.0	18.80	263.80	1,177.7	-24.4	-218.5	219.8	1.48	0.47	4.42
1,292.0	20.00	261.20	1,258.8	-28.1	-246.8	248.4	1.72	1.40	-3.02
1,377.0	19.90	260.00	1,338.7	-32.9	-275.4	277.3	0.50	-0.12	-1.41
1,463.0	19.80	257.70	1,419.6	-38.5	-304.1	306.4	0.92	-0.12	-2.67
1,548.0	19.20	256.30	1,499.7	-44.9	-331.7	334.5	0.89	-0.71	-1.65
1,634.0	20.20	259.10	1,580.7	-51.0	-360.1	363.3	1.60	1.16	3.26
1,720.0	19.60	258.70	1,661.5	-56.7	-388.8	392.4	0.72	-0.70	-0.47
1,805.0	18.40	256.60	1,741.9	-62.6	-415.8	419.9	1.62	-1.41	-2.47
1,891.0	16.80	261.50	1,823.9	-67.6	-441.3	445.7	2.53	-1.86	5.70
1,976.0	18.50	265.40	1,904.9	-70.5	-466.9	471.5	2.44	2.00	4.59
2,062.0	18.70	266.10	1,986.4	-72.5	-494.3	498.9	0.35	0.23	0.81
2,148.0	18.80	264.70	2,067.8	-74.7	-521.8	526.5	0.54	0.12	-1.63
2,233.0	18.60	270.70	2,148.3	-75.8	-549.0	553.7	2.27	-0.24	7.06
2,319.0	18.40	269.50	2,229.9	-75.8	-576.3	580.9	0.50	-0.23	-1.40
2,404.0	18.20	268.40	2,310.6	-76.2	-603.0	607.5	0.47	-0.24	-1.29
2,490.0	19.10	272.30	2,392.1	-76.1	-630.5	634.8	1.79	1.05	4.53
2,576.0	18.60	268.40	2,473.5	-75.9	-658.2	662.5	1.58	-0.58	-4.53
2,661.0	16.40	270.50	2,554.5	-76.1	-683.8	687.9	2.69	-2.59	2.47
2,747.0	17.30	266.60	2,636.9	-76.8	-708.7	712.8	1.68	1.05	-4.53
2,832.0	17.10	270.50	2,718.1	-77.4	-733.8	737.8	1.38	-0.24	4.59
2,918.0	19.70	273.50	2,799.7	-76.4	-760.9	764.7	3.22	3.02	3.49
3,004.0	20.80	271.70	2,880.3	-75.1	-790.7	794.2	1.47	1.28	-2.09
3,089.0	19.20	266.20	2,960.2	-75.6	-819.7	823.2	2.90	-1.88	-6.47
3,175.0	19.30	267.40	3,041.4	-77.2	-848.0	851.5	0.47	0.12	1.40
3,260.0	20.00	270.00	3,121.5	-77.8	-876.6	880.0	1.32	0.82	3.06
3,346.0	17.90	273.90	3,202.8	-76.9	-904.5	907.7	2.85	-2.44	4.53
3,432.0	17.80	274.90	3,284.7	-74.9	-930.7	933.7	0.37	-0.12	1.16
3,517.0	17.00	270.70	3,365.8	-73.6	-956.1	958.8	1.75	-0.94	-4.94
3,603.0	16.40	267.20	3,448.1	-74.1	-980.8	983.4	1.36	-0.70	-4.07
3,688.0	17.00	258.90	3,529.6	-77.0	-1,005.0	1,007.8	2.89	0.71	-9.76
3,774.0	16.30	263.10	3,612.0	-80.9	-1,029.3	1,032.4	1.62	-0.81	4.88
3,860.0	16.90	267.00	3,694.4	-83.0	-1,053.8	1,056.9	1.47	0.70	4.53
3,945.0	17.50	267.00	3,775.6	-84.3	-1,078.9	1,082.0	0.71	0.71	0.00
4,031.0	16.70	261.20	3,857.8	-86.9	-1,104.0	1,107.3	2.19	-0.93	-6.74
4,116.0	17.40	260.00	3,939.1	-91.0	-1,128.6	1,132.1	0.92	0.82	-1.41
4,202.0	20.00	263.80	4,020.5	-94.8	-1,155.9	1,159.7	3.34	3.02	4.42
4,288.0	20.80	264.40	4,101.1	-97.9	-1,185.7	1,189.6	0.96	0.93	0.70
4,373.0	18.50	265.90	4,181.2	-100.3	-1,214.2	1,218.2	2.77	-2.71	1.76
4,459.0	16.60	261.70	4,263.2	-103.1	-1,239.9	1,244.1	2.65	-2.21	-4.88
4,544.0	17.90	262.60	4,344.3	-106.5	-1,264.9	1,269.3	1.56	1.53	1.06
4,630.0	16.30	265.90	4,426.5	-109.1	-1,290.1	1,294.6	2.18	-1.86	3.84
4,716.0	14.60	266.80	4,509.4	-110.5	-1,312.9	1,317.5	2.00	-1.98	1.05
4,801.0	14.90	268.20	4,591.6	-111.5	-1,334.5	1,339.1	0.55	0.35	1.65
4,887.0	13.60	267.50	4,675.0	-112.3	-1,355.7	1,360.2	1.52	-1.51	-0.81
4,972.0	10.90	274.20	4,758.0	-112.1	-1,373.7	1,378.1	3.58	-3.18	7.88
5,058.0	9.30	267.90	4,842.7	-111.8	-1,388.8	1,393.1	2.26	-1.86	-7.33
5,144.0	8.90	266.80	4,927.6	-112.4	-1,402.3	1,406.7	0.51	-0.47	-1.28
5,229.0	6.70	269.60	5,011.8	-112.8	-1,413.9	1,418.2	2.63	-2.59	3.29
5,315.0	5.50	274.00	5,097.3	-112.5	-1,423.0	1,427.3	1.50	-1.40	5.12
5,400.0	2.90	262.10	5,182.1	-112.5	-1,429.2	1,433.4	3.21	-3.06	-14.00
5,486.0	1.80	261.90	5,268.0	-113.0	-1,432.7	1,436.9	1.28	-1.28	-0.23
5,572.0	0.70	122.20	5,439.0	-114.0	-1,434.5	1,438.8	1.39	-0.64	-81.70
5,828.0	1.10	136.70	5,610.0	-115.7	-1,432.4	1,437.0	0.27	0.23	8.48

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dowdy 4-2-10
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<b>Site:</b>	Dowdy 4-2-10 Pad Sec.10-T2N-R65W	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Well:</b>	Dowdy 4-2-10	<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)	
6,000.0	1.10	122.20	5,781.9	-117.8	-1,429.9	1,434.6	0.16	0.00	-8.43	
6,018.0	1.03	122.68	5,799.9	-118.0	-1,429.6	1,434.4	0.42	-0.41	2.65	
<b>TARGET BHL 1250'FNL, 2585'FEL</b>										
6,171.0	0.40	133.90	5,952.9	-119.1	-1,428.1	1,433.0	0.42	-0.41	7.33	
6,342.0	0.50	120.90	6,123.9	-119.9	-1,427.0	1,432.0	0.08	0.06	-7.60	
6,513.0	1.30	128.80	6,294.9	-121.5	-1,424.9	1,430.0	0.47	0.47	4.62	
6,684.0	1.40	98.60	6,465.9	-123.0	-1,421.3	1,426.6	0.42	0.06	-17.66	
6,856.0	1.80	93.00	6,637.8	-123.5	-1,416.5	1,421.8	0.25	0.23	-3.26	
7,027.0	1.90	92.30	6,808.7	-123.7	-1,411.0	1,416.4	0.06	0.06	-0.41	
7,094.9	1.90	93.81	6,876.6	-123.8	-1,408.8	1,414.2	0.07	0.00	2.22	
<b>TARGET CIRCLE 1250'FNL &amp; 2585'FEL</b>										
7,198.0	1.90	96.10	6,979.6	-124.1	-1,405.4	1,410.8	0.07	0.00	2.22	
7,369.0	2.60	87.90	7,150.5	-124.3	-1,398.7	1,404.1	0.45	0.41	-4.80	
7,540.0	3.70	60.80	7,321.2	-121.5	-1,390.0	1,395.2	1.07	0.64	-15.85	
7,712.0	1.70	68.40	7,493.0	-117.8	-1,382.8	1,387.7	1.18	-1.16	4.42	
7,931.0	1.00	73.30	7,712.0	-116.1	-1,377.9	1,382.7	0.32	-0.32	2.24	
7,973.0	1.00	73.30	7,754.0	-115.9	-1,377.2	1,382.0	0.00	0.00	0.00	

Wellbore Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- Shape										
TARGET BHL 1250'F	0.00	0.00	5,800.0	-138.4	-1,453.5	1,301,199.62	3,237,656.75	40.157060	-104.649720	
- survey misses target center by 31.4ft at 6017.9ft MD (5799.8 TVD, -118.0 N, -1429.6 E)										
- Point										
TARGET CIRCLE 1250'F	0.00	0.00	6,878.0	-138.4	-1,453.5	1,301,199.62	3,237,656.75	40.157060	-104.649720	
- survey misses target center by 47.1ft at 7094.9ft MD (6876.5 TVD, -123.8 N, -1408.8 E)										
- Circle (radius 100.0)										

Checked By: _____	Approved By: _____	Date: _____
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