

REFERENCE INFORMATION

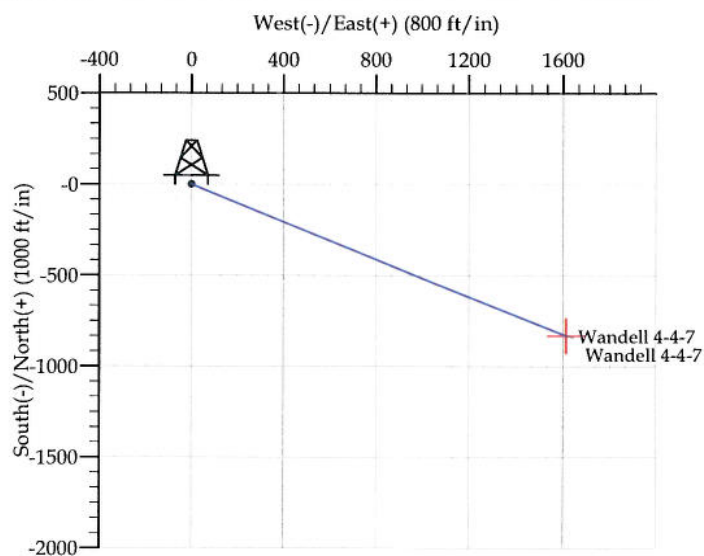
Co-ordinate (N/E) Reference: Well Wandell 4-4-7, True North
 Vertical (TVD) Reference: WELL @ 4889.0ft (Original Well Elev)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: WELL @ 4889.0ft (Original Well Elev)
 Calculation Method:

WELL DETAILS: Wandell 4-4-7

+N/-S	+E/-W	Northing	Ground Level:	4874.0	Longitude	Slot
0.0	0.0	1299896.20	Easting	3156703.91	40° 9' 18.900	104° 56' 21.732 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1636.4	18.73	117.20	1619.8	-69.3	134.9	2.00	117.20	151.7	
4	6349.3	18.73	117.20	6083.2	-761.2	1480.7	0.00	0.00	1664.9	
5	7285.7	0.00	0.00	7003.0	-830.5	1615.7	2.00	180.00	1816.6	
6	8285.7	0.00	0.00	8003.0	-830.5	1615.7	0.00	0.00	1816.6	Wandell 4-4-7



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4269.0	4433.7	Sussex
4794.0	4988.1	Shannon
7174.0	7456.7	Niobrara
7429.0	7711.7	Codell
7853.0	8135.7	J Sand
7913.0	8195.7	A Marker

CASING DETAILS

TVD	MD	Name	Size
650.0	650.0	Surface	8.625
8003.0	8285.7	Production	4.500

EnCana Corporation
Planning Report - Geographic

Database: EDM
Company: DJ/Paradox/WTX
Project: Wattenberg
Site: New Drills
Well: Wandell 4-4-7
Wellbore: Wellbore #1
Design: Wandell 4-4-7

Local Co-ordinate Reference: Well Wandell 4-4-7
TVD Reference: WELL @ 4889.0ft (Original Well Elev)
MD Reference: WELL @ 4889.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	Wattenberg,		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	New Drills				
Site Position:		Northing:	1,252,450.66 ft	Latitude:	40° 1' 32.016 N
From:	Lat/Long	Easting:	3,120,627.66 ft	Longitude:	105° 4' 9.336 W
Position Uncertainty:	ft	Slot Radius:	in	Grid Convergence:	0.28 °

Well	Wandell 4-4-7					
Well Position	+N/-S	47,216.6 ft	Northing:	1,299,896.20 ft	Latitude:	40° 9' 18.900 N
	+E/-W	36,375.6 ft	Easting:	3,156,703.91 ft	Longitude:	104° 56' 21.732 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	4,874.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.09	66.88	53,156

Design	Wandell 4-4-7			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	117.20

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,636.4	18.73	117.20	1,619.8	-69.3	134.9	2.00	2.00	0.00	117.20	
6,349.3	18.73	117.20	6,083.2	-761.2	1,480.7	0.00	0.00	0.00	0.00	
7,285.7	0.00	0.00	7,003.0	-830.5	1,615.7	2.00	-2.00	0.00	180.00	
8,285.7	0.00	0.00	8,003.0	-830.5	1,615.7	0.00	0.00	0.00	0.00	Wandell 4-4-7

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Planning Report - Geographic

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Site: New Drills
Well: Wandell 4-4-7
Wellbore: Wellbore #1
Design: Wandell 4-4-7

Local Co-ordinate Reference: Well Wandell 4-4-7
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MD Reference: WELL @ 4889.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,299,896.20	3,156,703.91	40° 9' 18.900 N	104° 56' 21.732 W
650.0	0.00	0.00	650.0	0.0	0.0	1,299,896.20	3,156,703.91	40° 9' 18.900 N	104° 56' 21.732 W
Surface									
700.0	0.00	0.00	700.0	0.0	0.0	1,299,896.20	3,156,703.91	40° 9' 18.900 N	104° 56' 21.732 W
1,636.4	18.73	117.20	1,619.8	-69.3	134.9	1,299,827.71	3,156,839.26	40° 9' 18.215 N	104° 56' 19.994 W
4,433.7	18.73	117.20	4,269.0	-480.0	933.7	1,299,422.16	3,157,640.65	40° 9' 14.156 N	104° 56' 9.706 W
Sussex									
4,988.1	18.73	117.20	4,794.0	-561.3	1,092.0	1,299,341.78	3,157,799.46	40° 9' 13.352 N	104° 56' 7.668 W
Shannon									
6,349.3	18.73	117.20	6,083.2	-761.2	1,480.7	1,299,144.43	3,158,189.44	40° 9' 11.377 N	104° 56' 2.661 W
7,285.7	0.00	0.00	7,003.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
7,456.7	0.00	0.00	7,174.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
Niobrara									
7,711.7	0.00	0.00	7,429.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
Codell									
8,135.7	0.00	0.00	7,853.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
J Sand									
8,195.7	0.00	0.00	7,913.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
A Marker									
8,285.7	0.00	0.00	8,003.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
Production - Wandell 4-4-7									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Wandell 4-4-7	0.00	0.00	8,003.0	-830.5	1,615.7	1,299,075.94	3,158,324.79	40° 9' 10.692 N	104° 56' 0.924 W
- plan hits target									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
650.0	650.0	Surface	8.625	12.250
8,285.7	8,003.0	Production	4.500	7.785

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,433.7	4,269.0	Sussex		0.00	
4,988.1	4,794.0	Shannon		0.00	
7,456.7	7,174.0	Niobrara		0.00	
7,711.7	7,429.0	Codell		0.00	
8,135.7	7,853.0	J Sand		0.00	
8,195.7	7,913.0	A Marker		0.00	