

# **DJ/Paradox/WTX**

**Wattenberg**

**New Drills**

**Vessels Minerals 22-30**

**Wellbore #1**

**Plan: Vessels Minerals 22-30**

## **Standard Planning Report - Geographic**

**24 August, 2010**

**EnCana Corporation**  
Planning Report - Geographic

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Vessels Minerals 22-30
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 5088.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 5088.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Vessels Minerals 22-30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vessels Minerals 22-30		

<b>Project</b>	Wattenberg,		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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	Vessels Minerals 22-30					
Well Position	+N/-S	221.6 ft	Northing:	1,252,700.37 ft	Latitude:	40° 1' 34.212 N
	+E/-W	5,536.6 ft	Easting:	3,126,163.02 ft	Longitude:	105° 2' 58.164 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,075.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	9.14	66.76	53,074

<b>Design</b>	Vessels Minerals 22-30				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	154.55	

<b>Plan Sections</b>										
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	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,433.3	10.67	154.55	1,430.2	-44.7	21.3	2.00	2.00	0.00	154.55	
6,849.5	10.67	154.55	6,752.8	-949.8	452.0	0.00	0.00	0.00	0.00	
7,382.7	0.00	0.00	7,283.0	-994.5	473.3	2.00	-2.00	0.00	180.00	
8,582.7	0.00	0.00	8,483.0	-994.5	473.3	0.00	0.00	0.00	0.00	Vessels Minerals 22-30

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<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Vessels Minerals 22-30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vessels Minerals 22-30		

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	1,252,700.37	3,126,163.02	40° 1' 34.212 N	105° 2' 58.164 W	
850.0	0.00	0.00	850.0	0.0	0.0	1,252,700.37	3,126,163.02	40° 1' 34.212 N	105° 2' 58.164 W	
Surface										
900.0	0.00	0.00	900.0	0.0	0.0	1,252,700.37	3,126,163.02	40° 1' 34.212 N	105° 2' 58.164 W	
1,433.3	10.67	154.55	1,430.2	-44.7	21.3	1,252,655.79	3,126,184.51	40° 1' 33.770 N	105° 2' 57.891 W	
4,674.1	10.67	154.55	4,615.0	-586.2	279.0	1,252,115.54	3,126,445.01	40° 1' 28.418 N	105° 2' 54.577 W	
Sussex										
5,297.8	10.67	154.55	5,228.0	-690.5	328.6	1,252,011.56	3,126,495.15	40° 1' 27.388 N	105° 2' 53.940 W	
Shannon										
6,849.5	10.67	154.55	6,752.8	-949.8	452.0	1,251,752.90	3,126,619.87	40° 1' 24.826 N	105° 2' 52.353 W	
7,382.7	0.00	0.00	7,283.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
7,562.7	0.00	0.00	7,463.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
Niobrara										
8,002.7	0.00	0.00	7,903.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
Codell										
8,432.7	0.00	0.00	8,333.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
J Sand										
8,477.7	0.00	0.00	8,378.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
A Marker										
8,582.7	0.00	0.00	8,483.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
Production - Vessels Minerals 22-30										

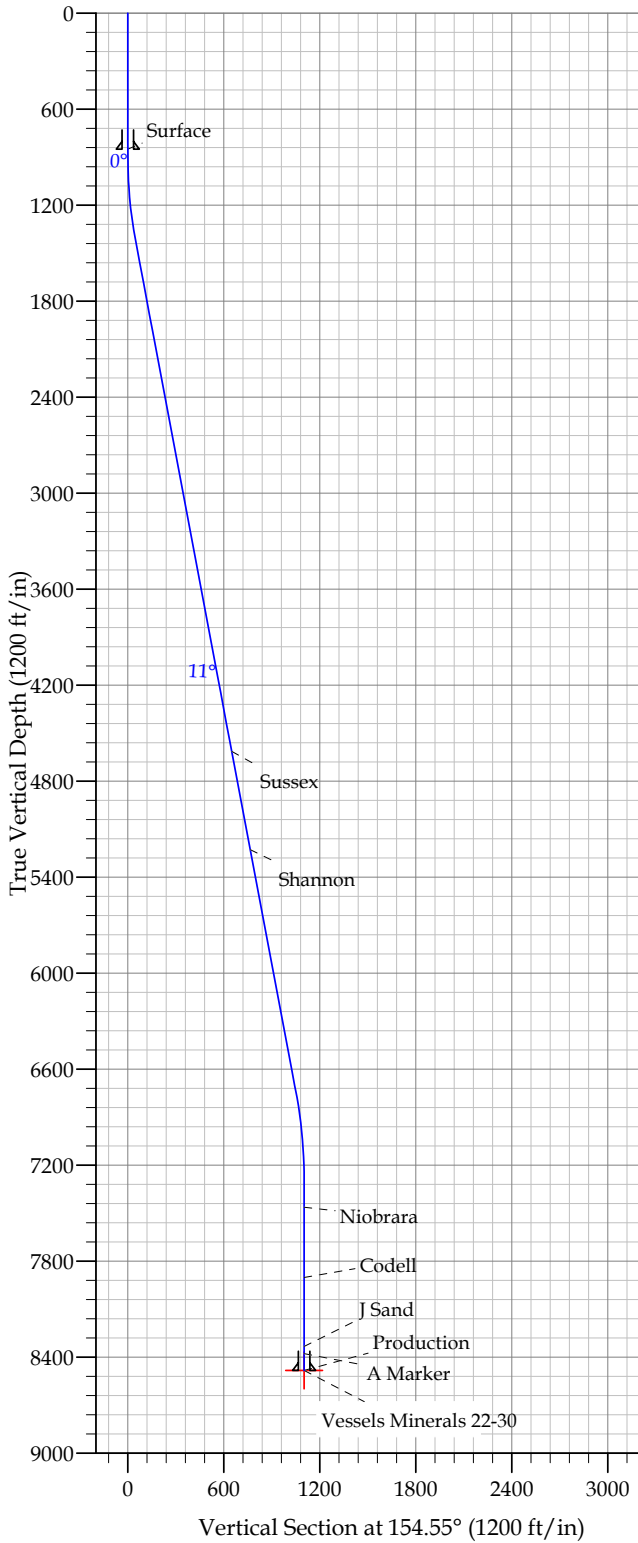
Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Vessels Minerals 22-30	0.00	0.00	8,483.0	-994.5	473.3	1,251,708.33	3,126,641.36	40° 1' 24.384 N	105° 2' 52.080 W	
- plan hits target										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
850.0	850.0	Surface	8.625	12.250		
8,582.7	8,483.0	Production	4.500	7.785		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,674.1	4,615.0	Sussex		0.00		
5,297.8	5,228.0	Shannon		0.00		
7,562.7	7,463.0	Niobrara		0.00		
8,002.7	7,903.0	Codell		0.00		
8,432.7	8,333.0	J Sand		0.00		
8,477.7	8,378.0	A Marker		0.00		

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<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 5088.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Vessels Minerals 22-30	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vessels Minerals 22-30		



## REFERENCE INFORMATION

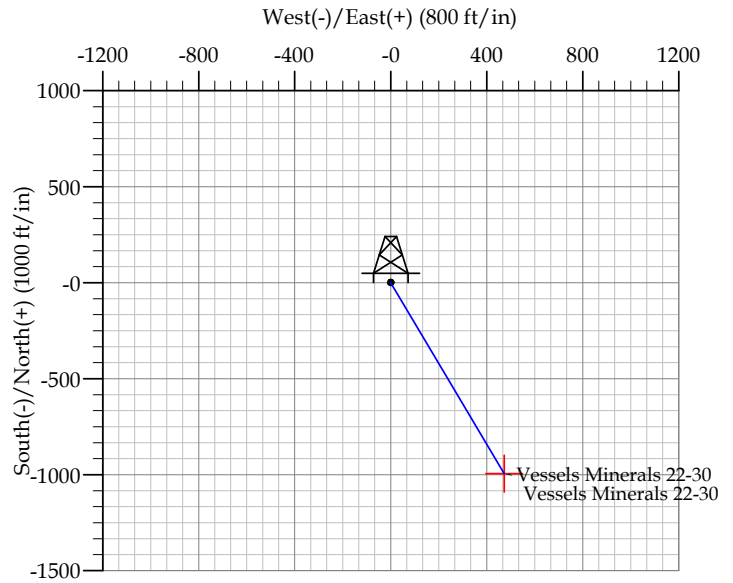
Co-ordinate (N/E) Reference: Well Vessels Minerals 22-30, True North  
Vertical (TVD) Reference: WELL @ 5088.0ft (Original Well Elev)  
Section (VS) Reference: Slot - (0.0N, 0.0E)  
Measured Depth Reference: WELL @ 5088.0ft (Original Well Elev)  
Calculation Method:

## WELL DETAILS: Vessels Minerals 22-30

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.0	0.0	1252700.37	5075.0	3126163.02	40° 1' 34.212 N	05° 2' 58.164 W	

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1433.3	10.67	154.55	1430.2	-44.7	21.3	2.00	154.55	49.5	
4	6849.5	10.67	154.55	6752.8	-949.8	452.0	0.00	0.00	1051.9	
5	7382.7	0.00	0.00	7283.0	-994.5	473.3	2.00	180.00	1101.3	
6	8582.7	0.00	0.00	8483.0	-994.5	473.3	0.00	0.00	1101.3	Vessels Minerals 22-30



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4615.0	4674.1	Sussex
5228.0	5297.8	Shannon
7463.0	7562.7	Niobrara
7903.0	8002.7	Codell
8333.0	8432.7	J Sand
8378.0	8477.7	A Marker

## CASING DETAILS

TVD	MD	Name	Size
850.0	850.0	Surface	8.625
8483.0	8582.7	Production	4.500