

EnCana Corporation

Planning Report - Geographic

Database:	EDM	Local Co-ordinate Reference:	Well Liberty 22-21
Company:	DJ/Paradox/WTX	TVD Reference:	WELL @ 5040.0ft (Original Well Elev)
Project:	Wattenberg	MD Reference:	WELL @ 5040.0ft (Original Well Elev)
Site:	New Drills	North Reference:	True
Well:	Liberty 22-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Liberty 22-21		

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:	1,278,589.08ft	Latitude:	40° 5' 49.848 N	
From:	Lat/Long	Easting:	3,130,247.44ft	Longitude:	105° 2' 3.912 W	
Position Uncertainty:		ft	Slot Radius:	in	Grid Convergence:	0.30 °

Well	Liberty 22-21					
Well Position	+N-S	43,505.2 ft	Northing:	1,322,131.99 ft	Latitude:	40° 12' 59.796 N
	+E-W	6,960.3 ft	Easting:	3,136,967.00 ft	Longitude:	105° 0' 34.344 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,027.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.14	66.92	53,180

Design	Liberty 22-21				
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	188.42	

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,418.9	13.38	188.42	1,412.8	-76.9	-11.4	2.00	2.00	0.00	188.42	
6,269.9	13.38	188.42	6,132.2	-1,187.2	-175.7	0.00	0.00	0.00	0.00	
6,938.7	0.00	0.00	6,795.0	-1,264.1	-187.1	2.00	-2.00	0.00	180.00	
7,988.7	0.00	0.00	7,845.0	-1,264.1	-187.1	0.00	0.00	0.00	0.00	Liberty 22-21

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Wellbore:	Wellbore #1		
Design:	Liberty 22-21		

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	1,322,131.99	3,136,967.00	40° 12' 59.796 N	105° 0' 34.344 W
700.0	0.00	0.00	700.0	0.0	0.0	1,322,131.99	3,136,967.00	40° 12' 59.796 N	105° 0' 34.344 W
Surface									
750.0	0.00	0.00	750.0	0.0	0.0	1,322,131.99	3,136,967.00	40° 12' 59.796 N	105° 0' 34.344 W
1,418.9	13.38	188.42	1,412.8	-76.9	-11.4	1,322,055.03	3,136,956.04	40° 12' 59.036 N	105° 0' 34.491 W
4,052.5	13.38	188.42	3,975.0	-679.7	-100.6	1,321,451.77	3,136,870.15	40° 12' 53.079 N	105° 0' 35.641 W
Sussex									
4,561.3	13.38	188.42	4,470.0	-796.1	-117.8	1,321,335.23	3,136,853.56	40° 12' 51.928 N	105° 0' 35.863 W
Shannon									
6,269.9	13.38	188.42	6,132.2	-1,187.2	-175.7	1,320,943.87	3,136,797.84	40° 12' 48.064 N	105° 0' 36.609 W
6,938.7	0.00	0.00	6,795.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
7,118.7	0.00	0.00	6,975.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
Niobrara									
7,393.7	0.00	0.00	7,250.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
Codell									
7,838.7	0.00	0.00	7,695.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
J Sand									
7,908.7	0.00	0.00	7,765.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
A Marker									
7,988.7	0.00	0.00	7,845.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
Production - Liberty 22-21									

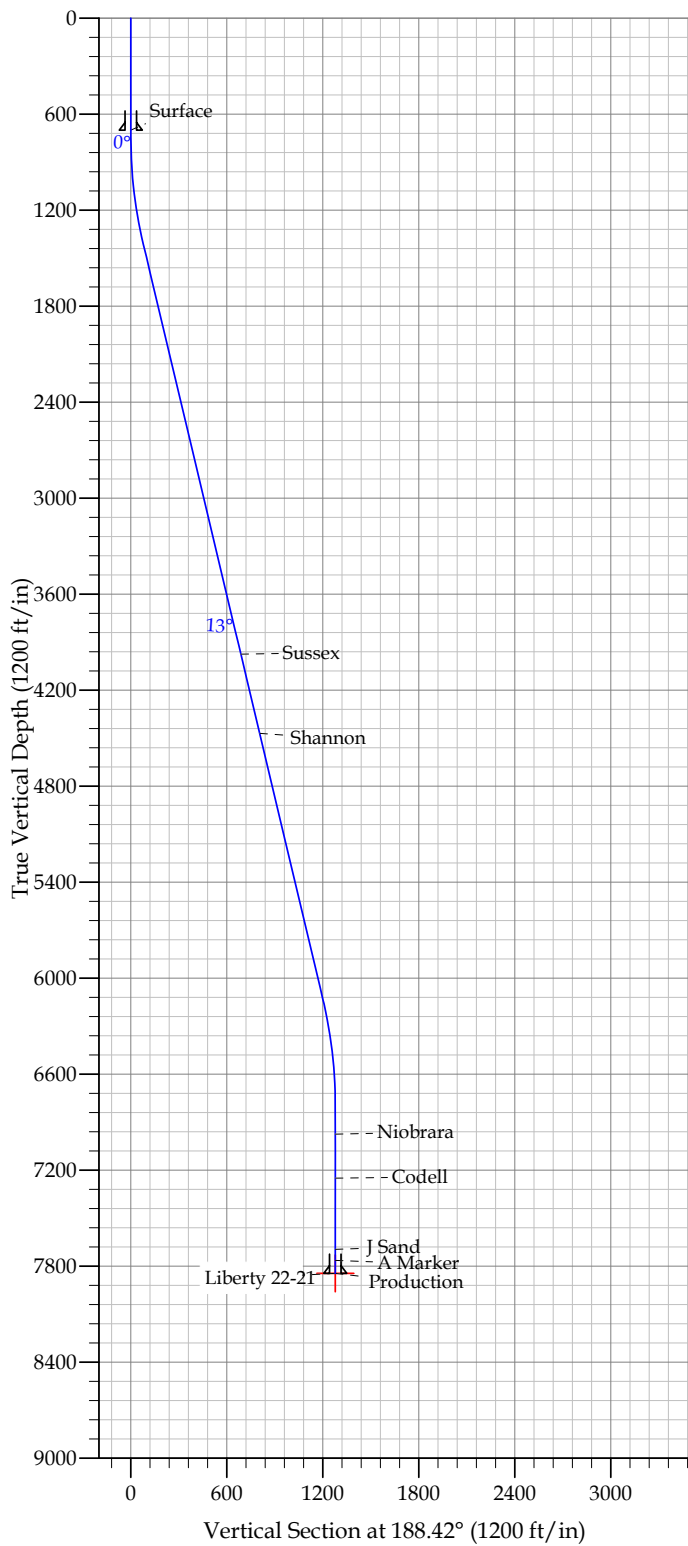
Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Liberty 22-21	0.00	0.00	7,845.0	-1,264.1	-187.1	1,320,866.91	3,136,786.88	40° 12' 47.304 N	105° 0' 36.756 W
- plan hits target									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
700.0	700.0	Surface	8.625	12.250	
7,988.7	7,845.0	Production	4.500	7.785	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,052.5	3,975.0	Sussex		0.00		
4,561.3	4,470.0	Shannon		0.00		
7,118.7	6,975.0	Niobrara		0.00		
7,393.7	7,250.0	Codell		0.00		
7,838.7	7,695.0	J Sand		0.00		
7,908.7	7,765.0	A Marker		0.00		

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Company:	DJ/Paradox/WTX	TVD Reference:	WELL @ 5040.0ft (Original Well Elev)
Project:	Wattenberg	MD Reference:	WELL @ 5040.0ft (Original Well Elev)
Site:	New Drills	North Reference:	True
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Wellbore:	Wellbore #1		
Design:	Liberty 22-21		



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Liberty 22-21, True North

Vertical (TVD) Reference: WELL @ 5040.0ft (Original Well Elev)

Section (VS) Reference: Slot - (0.0N, 0.0E)

Measured Depth Reference: WELL @ 5040.0ft (Original Well Elev)

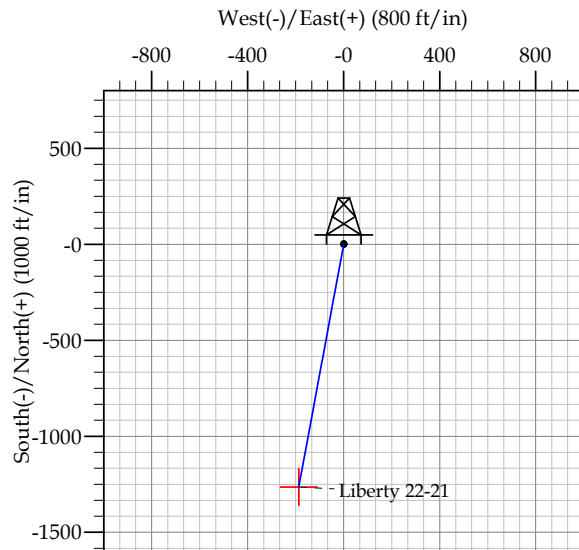
Calculation Method:

WELL DETAILS: Liberty 22-21

+N/-S	+E/-W	Northing	Ground Level:	5027.0		
0.0	0.0	1322131.99	Easting	3136967.00	40° 12' 59.796 N	105° 0' 34.344 W
			Latitude			
			Longitude			

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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1418.9	13.38	188.42	1412.8	-76.9	-11.4	2.00	188.42	77.7	
4	6269.9	13.38	188.42	6132.2	-1187.2	-175.7	0.00	0.00	1200.1	
5	6938.7	0.00	0.00	6795.0	-1264.1	-187.1	2.00	180.00	1277.8	
6	7988.7	0.00	0.00	7845.0	-1264.1	-187.1	0.00	0.00	1277.8	Liberty 22-21



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3975.0	4052.5	Sussex
4470.0	4561.3	Shannon
6975.0	7118.7	Niobrara
7250.0	7393.7	Codell
7695.0	7838.7	J Sand
7765.0	7908.7	A Marker

CASING DETAILS

TVD	MD	Name	Size
700.0	700.0	Surface	8.625
7845.0	7988.7	Production	4.500