

# Directive 008

## Surface Casing Depth Calculation



To determine the minimum surface casing depths in the specified areas. See section 2.5 if the well is in the Senex, Kidney, Trout, or associated areas; the high-hazard area of southeastern Alberta; or the surface mineable area.

UWI:	TVD:	KB Elevation:
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Part I: Water Well Search	
A: Depth of deepest water well within 200 m: _____ m TVD	B: Minimum surface casing depth required: [A]+25 = _____ m TVD

Part II: Surface Casing Required	
1. Representative pressure measurement in area: _____ kPa	
2. Depth of pressure measurement: _____ m TVD	
3. Reference well(s): _____ / _____ - _____ - _____ W	
4. Higher pressures were found but were discounted: _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
Reason:	
5. Maximum gradient: [1] ÷ [2] = _____ kPa/m	
6. Surface casing (SC) depth required: _____ m TVD	
Option 1: Calculate surface casing depth. SC depth = $\frac{\text{Maximum gradient} \times \text{TVD} \times (0.5 - 0.0000625 \text{ TVD})}{22 \text{ kPa/m}}$	
Option 2: Calculate SC depth for each zone. SC depth = $\frac{\text{Maximum gradient (at zone)} \times \text{TVD (at zone)} \times (0.5 - 0.0000625 \text{ TVD (at zone)})}{22 \text{ kPa/m}}$	
7. 10% of TVD = _____ m TVD	
8. Surface casing depth required: _____ m TVD (must be the greater value of [B], [6], or [7])	
If surface casing depth = [B], no surface casing reduction is allowed.	

Part III: Surface Casing Reduction	
Type 1—Reduction for Wells Drilled with Well Control Enhancements	
Surface casing depth required: _____ m TVD ([8])	
Reduced surface casing depth: Surface casing depth x 0.913 = _____ m TVD (must be ≥[B])	
Indicate which one of the following two options will be used:	
1. A PVT system will be installed with a probe in each active drilling fluid compartment; the system will be accurate to ±0.5 m <sup>3</sup> and will alarm at ±0.2 m <sup>3</sup> _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
2. A formation leak-off test or a formation integrity test will be performed, in accordance with Appendix C _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
Type 2—Reduction for Low-Risk Wells	
Surface casing depth required: _____ m TVD ([8])	
Reduced surface casing depth: ([8]) x 0.707 = _____ m TVD (must be ≥[B])	
Indicate which of the following criteria will be met (at least three must be selected):	
1. The well is in an established area (see Appendix A) _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
2. The well is low risk _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
The field kick rate is less than 3% of wells drilled to a formation not exceeding the terminating formation of this well _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>(continued on next page)</i>	

