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Part 1

Well control: principles and practices



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- Well Engineering DLP, Section 8, Part 4: Rig instrumentation
- EP 88-1000 Shallow gas procedure guidance manual
- EP 89-1500 Pressure control manual
- EP 92-2000 Casing design guide
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- Production Handbook, Volume 2, Chapter 1
- Drilling Engineers Notebook, Section F.
- IIFP Drilling Data Handbook, Section K.



Resumé

This Part is one of four that will provide the theoretical knowledge of Well Control Equipment, Principles and Practise required to sit the International Well Control Forum (IWCF) Well Control Exam to Supervisor's Level in either Land or Sub-Sea format. The others are:

- Part 2 - Well control equipment
- Part 3 - Sub-sea well control equipment
- Part 4 - Sub-sea well control principles and practices

It explains what pore pressures are and describes the mechanisms by which normal, over- and under-pressures can arise. A very brief summary of basic rock mechanics is given - sufficient to provide an understanding of the critical importance of the relationship between formation strength, drilling fluid density and surface pressure during well control operations.

The concepts of primary, secondary and tertiary well control are presented, with detailed explanations of the practices which allow primary control to be maintained and the secondary control procedures to be followed if a kick (an inflow) should occur. The latter are illustrated by worked examples.