HPHT Well Planning

One of the major keys to the success of HPHT wells is first-class planning. We must be as sure as possible that we know what the pore pressure gradient is, the fracture pressure gradient is, the temperatures we are going to face and, if we are not sure what these gradients are then we must ascribe a range (“low” to “high”).

There is also the often difficult to manage “Transition Zone” where the margin between pore pressure and fracture pressure can reduce quite dramatically. This must be planned for, with surge pressures and casing shoe setting depths being key.

Often there can be a disconnect between sub-surface personnel and drilling engineers, with uncertainties only being revealed at workshops for example.

"So it is crucial that the sub-surface experts, if they are uncertain about any values, give the drilling engineer an accurate range, especially for exploration wells"
HPHT Well Planning

IDEAS personnel specialise in HPHT Well Planning and problem-solving. For example, with respect to several operators in the North Sea and South-East Asia, we have been able to advise on HPHT Well Planning optimisation, risk reduction and in several cases, help re-structure and develop the planning process for Operators which were struggling with certain HPHT issues.

Typically, if HPHT Well Planning is not right, the rig and its crew will be fighting to reach Target Depth all the way. Also, as Case Histories show, the well may not actually be able to be drilled as it may have run out of kick tolerance for example (as experienced on so-called “lean casing” designs).

The cost to an Operator in not getting their HPHT Well Planning right can run into, literally, millions of dollars. And may also mean that the well cannot be drilled / achieve its objectives.