HPHT Drilling Operations

Following HPHT Well Planning, one of the major keys to the success of HPHT wells is first-class Drilling Operations. This involves the whole rig team – from the OIM, Operator’s Representative through to the Driller, Assistant Driller, Derrickman and Pump-man etc. HPHT Drilling Operations require advanced team / tool-box talks, operational planning, discussion and training, for there are many aspects which are different to conventional drilling operations.

Operational issues which should be considered are things like thermal effects, trapped pressure, mud weight variations with pressure and temperature, equivalent circulating density (and reasons for its variation), wellbore breathing (or “charging”), lost circulation material effects, finger-printing, flow-back volume, mud compression, swab & surge, gas behavior, bubble point, drill-pipe to annulus pressure effect, gas migration, gas readings, what cavings tell the rig crew etc.

Generally, these issues are covered in overview by the DWOP (Drilling the Well on Paper) Exercise, which typically involves the relevant Operator, Drilling Contractor & Service / Equipment Supply personnel. However, they are covered in detail in IDEAS’
HPHT Drilling Operations

HPHT Drilling Operations Course, which has been conducted for a number of Operators and Drilling Contractors throughout Asia. This course can also be made “bespoke” for the Operator’s well and can also be made “bespoke” for the Drilling Contractor’s rig. IDEAS also takes calls from the rig, the Rig Manager or the Operator at any time.

Typically, if the rig’s crew hasn’t been trained regarding HPHT Drilling Operations, 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 drilled as it may have run out of kick tolerance for example due to a poor cement job around the 13 3/8” or 9 5/8” / 9 7/8” casing shoe for example / cement / formation is fractured due to RIH too fast / surge pressure.

A well-trained crew is essential for HPHT drilling operations success

"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."