

# **HPHT Wells**



training & consultancy

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# Introduction:

This course covers all major aspects of HPHT well construction projects. It covers the theories, technicalities and practicalities of HPHT wells complete with impending risks and challenges. This course is also equipped with case studies on both successful HPHT well projects and the mistakes of past projects.

Special emphasis is placed on Geopressure detection analysis. There are also practical exercises and assessments throughout this course with interactive discussion to meet the specific needs of all the participants.

This course aims to equip participants with the knowledge and understanding on ways to overcome the challenges and risks in HPHT wells while elevating the effectiveness of their HPHT wells practices, giving special emphasis on methods to detect and analyse Geopressures in HPHT wells.

This focus of this training is more than merely imparting technical knowledge; it works on improving communications and personal focus. At the end of this HPHT training, the attendees will have obtained a much improved understanding of the challenges which will be faced and the mitigations required to minimize the probability of failure. Team building, safety leadership and communication skills are key elements addressed in the course.

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# **Topics Covered:**

- Defining the HPHT environment
- Managing HPHT wells effectively
- Geological and Geophysical aspects of abnormal pressure
- Casing design for HTHP wells
- Well logging in HTHP wells

- Well data collection
- New technology
- Downhole equipment
- Drilling fluids and cementing challenges
- Well control in an HTHP environment
- Gas solubility
- HTHP drilling procedures
- Fingerprinting the well
- Special operational considerations
- HPHT well testing



# Who is it for?

Engineers and technical staff who have experience of drilling and completions, but wish to understand the challenges and solutions for HPHT developments. This course is also highly beneficial to leaders and managers who want to gain a better understanding of the requirements of HPHT wells.

Attendees who are actively planning HPHT projects are particularly suitable, and participants are invited to bring along specific problems they have encountered for expert recommendations from the trainer.

## **Course Outline:**

#### Day 1

- Introduction
- HPHT Overview Defining the HPHT Environemnt
- Geological & Geophysical Aspects of Abnormal Pressures
- Highlights of Previous Challenges Faced in HPHT Wells
- Understanding the Differences Between HPHT Drilling and Normal Well Operations
- Domino Theory

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### Day 2

- Operational Front End Planning Requirements
- **HPHT Drilling Practices**
- HPHT Specific Equipment Overview
- Ensuring Mitigation of Challenges Faced in Earlier
  HPHT Wells
- Losses/Gains Understanding Supercharging, Frac Fills, Ballooning
- HPHT Well Control on bottom, while stripping, out of hole

### Day 3

- Drilling Defintions
- Water versus Oil Based Muds
- Gas Solubility Effects in an Oil Based Mud
- Fingerprinting the Well
- Alternative Drilling Fluids
- Pit Discipline

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## Day 4

- Ensuring a Highly Visible Safety Culture
- Managed Pressure Drilling
- Applications in HPHT Operations
- Case History Lessons Learned from Macondo
- WellCasing Design Considerations in HPHT Wells

## Day 5

- HPHT New Technology for Formation Evaluation
- Cementing Practices
- HPHT Testing Practices
- Course Review and Wrap Up