



## SPE-Iran Section Technical Workshop

# HPHT Operational Awareness and Drilling Challenges - DR-TC2-OTH13900

### Course Description

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.

### Audience

Well Construction Professionals with 5 years or more well construction experience with an understanding of HTHP issues.

### Prerequisites

At least 5 years of experience in well construction and understanding of of HTHP well issues.

### Course Schedule

#### 1 Introduction

HPHT Overview - Defining the HPHT Environment

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

#### 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

3 Drilling Definitions

Water versus Oil Based Muds

Gas Solubility Effects in an Oil Based Mud

Fingerprinting the Well

Alternative Drilling Fluids

Pit Discipline

4 Ensuring a Highly Visible Safety Culture

Managed Pressure Drilling

Applications in HPHT Operations

Case History - Lessons Learned from Macondo

Well Casing Design Considerations in HPHT Wells

5 HPHT New Technology for Formation Evaluation

Cementing Practices

HPHT Testing Practices

Course Review and Wrap Up