

WELL SHARP - WELL CONTROL

DRL054

COURSE OVERVIEW

This course will teach participants about the physical principles and concepts related to maintaining and regaining pressure control of wells while drilling. Starting from concepts of formation pressure, fracture pressure, and factors which affect inflow, participants will gain an understanding of the elements of primary and secondary well control methods. Well design concepts to improve pressure containment and reduce risk of secondary well control situations will be covered in detail. By listening to the well, participants will learn how to identify potential well control situations in advance of their occurrence. Well control equipment, their operation, and testing will be covered to the extent necessary for the participants to identify requirements in the well planning phase. Classical well control methods will be covered and several well control problems will be worked using several standard well control worksheets.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Rules and regulations related to well control
- The sources of abnormal formation pressures and how to quantify their magnitude.
- The prediction of formation pressure and pressure while drilling techniques (PWD)
- The causes of kick and its warning signs
- Well control procedures and shallow gas kick.
- Well control procedures and kill methods
- Problems associated with well control
- Well control equipment
- Unusual methods of well control
- Select the well control equipment

WHO SHOULD ATTEND

Drilling, production, petroleum engineers and everyone who might be working on a rig.

COURSE DURATION

5 Working Days

COURSE OUTLINES

- Pre course evaluation
- Introduction
- Gas Behavior and Hydrostatics
- Kicks and Gas Migration
- Gas Solubility
- Pore Pressure
 - Origins of Normal, Subnormal, and Abnormal Pore Pressure
 - Casing Setting Depth
 - Pore Pressure Prediction before, while and after drilling
- Fracture Gradients
 - Allowable Wellbore Pressures
 - Rock Mechanics Principles
 - Fracture Gradient Determination
 - Formation Integrity Test
- Kick Causes and Detections
 - Kick causes and warnings
 - Primary and secondary well control
 - Lost circulation and kick detection
 - What Constitutes a Kick
 - Shut-in procedures and shallow gas
 - Kill sheet basics and usage
- Off Bottom Kicks
 - Slugging of drillpipe
 - Hole fill-up during trips
 - Surge and Swab pressures
 - Kick detection during trips
 - Shut-In Procedures
 - Blowout Case History
- Circulation Kill Techniques
 - Shut-In Pressures
 - Actions and Data Required Before the Kill

- Kill Rate Circ. Pressure
- Subsea Well Control Considerations
- Principles of Kill Methods
- Subsea Kill Procedures
- Weighting Up the Mud
- Driller's Method
- Wait and Weight Method
- Concurrent Method
- Problems During Well Control Operations
- Kicks in Oil-Based Mud
- Well Control Methods
 - Drillers method
 - Wait and weight method
 - Volumetric Well Control
- Off Bottom Well Control
- Special Well Control Applications
 - Underbalanced Drilling
 - Well Control in Unconventional Hole Programs
 - Casing and Cementing Operations
- Well Control Equipment
 - Well Control Equipment
 - Subsea Well Control
 - Subsea BOP System
 - Deepwater Well Control
- Snubbing /Stripping and Blowouts Control
- Firefighting, Capping, Freezing and Hot Tapping
- Relief Well Design and Operations
- Case Study
- Post course evaluation.

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