Underbalanced Operation & well control

Table of Contents:

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Introduction:

This course will provide a comprehensive understanding of the technology and engineering required for successfully designing and executing an underbalanced drilling operation.

Objectives:

On completion of this course, the student will be able to: Prepare a detailed drilling engineering programme for underbalanced drilling operations. Have a broad knowledge of the technologies involved in underbalanced drilling operations and have a good understanding of the associated reservoir, safety, environmental and economic implications of an underbalanced drilling project. Make an informed selection of all equipment required to carry out an underbalanced drilling operation. Present underbalanced design criteria for multiphase flow operations including optimum lift gas and drilling fluid selections.

Who should attend?

Drilling engineers, drilling supervisors, trainee drillers, rig engineers and service company personnel with basic drilling engineering.

Methodology

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

Course Outline:

Day 1

1. Economic aspects of underbalanced operations
2. Project management of UBD operations
3. Reservoir aspects of underbalanced drilling
4. Damage mechanisms, well productivity, PI Curves

Day 2

1. Technique selection for UBD wells
2. Gaseous fluids, two phase fluids, foam systems, gaslift systems, fluid selection, UBD Engineering
3. Circulation design calculations

Day 3

1. Injection pressures
2. Kicking off the UBD process
3. Drill string design, Hole cleaning, well kill options
4. Process Engineering, Surface equipment, Separator systems, Solids removal, Erosion Predictions, Velocity calculations

Day 4

1. Well control, controlling the inflow
2. Tripping underbalanced and balanced
3. Corrosion & Erosion, Equipment Selection, Drilling systems
4. Equipment Selection, Rotating BOP systems

Day 5

1. HAZOP requirements for UBD,
2. Environmental considerations,
3. Live well aspects of UBD Operations,
4. Process design, Automation, HSE issues, case studies, project questions;
5. Flare systems and heat /noise calculations, Procedures and documentation, Limitations of UBD,
6. Technical Economic Safety