MERCURY

Workover & Completion Operations

Istanbul - Turkey: +90 539 599 12 06
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Introduction:

Workover is performed after the initial completion to re-establish commercial production or injection, repair of a mechanical problem in the well, or plug and abandon the well. Workover operations are usually initiated as hydrocarbon production rates decline substantially. Undesired fluid production could be the result of a poor primary cement job or water/gas coning. These workovers typically involve a remedial cement job to control the unwanted water/gas production.

Well completion is performed after drilling operations to establish initial production from or injection into a well. Procedures of completion will vary depending on the completion type and the area. For Example, flowing wells can simply be perforated and put on production. Low reservoir pressure areas often require an artificial lift mechanism rod or submersible pump, gas lift valves, etc. to produce at economic rates.

Targeted Groups:

- Production Technologists
- Production Engineers
- Operations Engineers
- Field Technicians
- Work-over Engineers

Course Objectives:

At the end of this course the participants will be able to:

- Plan, design, manage, and execute completion operation
- Improve the overall operational performance during work-over operations
- Select or recommend completion equipment for given field conditions and applications
- Select the most commonly used downhole tools and explain their function

Targeted Competencies:

- Types of Completions
- Reasons for Work-overs and well preparation
- Overview of Surface and Subsurface Well-bore Equipment and Procedures
- Barriers, Completion and Work-over Fluids
- Kick Causes, Warning Signs, kill methods and Risk awareness and Organizing a Well Control Operation

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Unit 1: Types of Completions:

- Wellhead configuration
- Functional Requirements of a Completion
- Completion Equipment
- Flow Control Devices
- Packers
- Tubing
- Circulation Devices
- Expansion joints
- Sub-Surface Safety Valves
- Christmas Trees and its Types
- Surface Equipment

Unit 2: Reasons for Work-overs and Well Preparation:

- Formation damage
- Sand control
- Acidizing
- Corrosion
- Hydraulic fracturing
- Mechanical problems
- Well Preparations for work over
- Tree and BOP Removal/Installation

Unit 3: Overview of Surface and Subsurface Well-bore Equipment & Procedures:

- Blowout Preventer Stacks and Components
- Workstring and Production Tubing
- Auxiliary Well Control Equipment
- Plugs & Packers
- Verification of Shut-in
- Monitoring and Recording During Shut-in
- Preparing for Well Entry
- Wireline Open Hole Operations
- Contingency Procedure for Wireline
- Contingency Procedures for Coiled Tubing
- Contingency Procedure for coiled tubing

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Unit 4: Barriers, Completion and Work-over Fluids :

- Philosophy and Operation of Barrier Systems
- Levels of Barriers
- Types of Barriers
- Barrier Management
- Influx Detection
- Gas Characteristics and Behavior
- Pressure and Volume Relationship Boyles Law
- Workover/ Completion Fluid Functions
- Liquids and Fluid Properties
- Testing of Downhole Completion Equipment
- Testing of Well Control Equipment Connections
- Well Control Drills

Unit 5: Kick Causes, Warning Signs, Kill Methods, Risk Awareness & Organizing a Well Control Operation, Natural Flowing & Artificial Well Work Over Programs:

- Well Shut-in and Well Kill Considerations
- Well Control Problems
- Objective of Well Control Techniques
- Bullheading
- Volumetric Method
- Lube and Bleed
- Forward Circulation
- Driller’s Method
- Reverse Circulation
- Handling Kill Problems
- Potential Impacts of a Well Control Event
- Well Integrity
- Pressure Control Equipment/Barrier Envelope Considerations
- Personnel Assignment
- Plan Responses to Anticipated Well Control Scenarios
- Blockages& Trapped Pressure in Tubing/Well-bore
- Blockage & Restricted Access in Tubing/Well-bore
- Hydrates
- H2S considerations
- Natural flowing and artificial well workover programs
- Case studies