



Oil and Gas Workover & Completion of Operations



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Introduction:

Well oil and gas workover is performed after the initial completion of commercial production or injection, the repair of a mechanical problem in the well, or the plugging and abandonment of the well. The oil and gas workover and completion operation will begin as hydrocarbon production rates decline significantly.

Undesired fluid production could result from a poor primary cement job or water/gas coning. These workovers typically involve a remedial cement job to control the unwanted water/gas production. Understanding the meaning of oil and gas workovers is key for anyone involved.

After drilling operations, an oil and gas workover and completion of operations will be performed to establish initial production from or injection into a well. The completion procedures will vary depending on the completion type and the area.

For example, flowing wells oil and gas workover can be perforated and put into production. Low reservoir pressure areas often require an artificial lift mechanism rod or submersible pump, gas lift valves, etc. to produce at economical rates.

Through extensive oil and gas workover training, participants have gained practical insights into what a workover entails. By addressing the question, "What is workover in oil and gas?" the course has clarified the essential processes and techniques involved in oil and gas workover operations.

Participants will have the knowledge and skills to manage workover operations in oil and gas effectively, ensuring these critical tasks' efficiency and safety. The training emphasized the importance of completion and workover operations, highlighting their role in maintaining and enhancing oil well productivity.

Targeted Groups:

- Production Technologists.
- Production Engineers.
- Operations Engineers.
- Field Technicians.
- Workover Engineers.

Course Objectives:

At the end of this oil and gas workover and completion operation course, participants will be able to:

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

Targeted Competencies:

By the end of this oil and gas workover and completion of operation training, participants' competencies will be able to improve:

- Types of Completions.
- Reasons for workovers oil and gas wells.
- Overview of Surface and Subsurface Well-bore Equipment and Procedures.
- Barriers, Completion, and Workover Fluids.
- Kick Causes, Warning Signs, kill methods, Risk awareness, and Organizing a Well Control Operation.

Understanding Workover Operations in Oil and Gas:

Comprehending what a workover in oil and gas entails is essential in the context of this course. Workover operations in oil and gas can range from simple interventions to enhance production to complex well overhauls involving replacing major downhole equipment. These efforts are critical for extending the life of a well and ensuring optimal production.

The oil and gas workover and completion of the operations training course marks a significant milestone for participants. This comprehensive program has thoroughly explored the intricacies of oil well workover, providing an in-depth understanding of the workover oil and gas meaning.

Course Content:

Unit 1: Types of Completions:

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

Unit 2: Reasons for Workovers and Well Preparation:

- Formation damage.
- Sand control.
- Acidizing.
- Corrosion.
- Hydraulic fracturing.
- Mechanical problems.
- Well, oil and gas preparations for workover.
- Tree and BOP Removal/Installation.

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

- Blowout Preventer Stacks and Components.
- Working and Production Tubing.
- Auxiliary Well Control Equipment.
- Plugs and 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.

Unit 4: Barriers, Completion, and Workover 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 Boyle's Law.
- Workover/Completion Fluid Functions.
- Liquids and Fluid Properties.
- Testing of Downhole Completion Equipment.
- Testing of Well Control Equipment Connections.
- Oil and gas well Control Drills.

Unit 5: Kick Causes, Warning Signs, Kill Methods, Risk Awareness and Organizing a Well Control Operation, Natural Flowing, and Artificial Oil and Gas Well Workover Programs:

- Oil and gas well Shut-in and Well Kill Considerations.
- Oil and gas well Control Problems.
- The objective of Well Control Techniques.
- Bullhead.
- 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 and Trapped Pressure in Tubing/Well-bore.
- Blockage and Restricted Access in Tubing/Well-bore.
- Hydrates.
- H₂S considerations.
- Natural flowing and artificial well workover programs.
- Case studies.

Conclusion:

By the end of this oil and gas workover and completion of operations course, attendees understood what workover in oil and gas is and mastered the strategic approaches required for successful workover interventions.

This oil and gas workover and completion of operations training have prepared them to tackle real-world challenges, making them valuable assets in the industry.