

WellSHARP Oil & Gas Operator Representative

Workover/Intervention Well Control Course Outline



5 DAYS

Completion

- Design
- Fracturing
- Drilling plugs

Workover

- Operations
- Mechanical failures
- Reservoir issues
- Possible well control risks
- Risks compared to drilling operations
- Use of gases in fluids

Simulator Practice

- Demonstrate U-tube principles
- Visualize the well as a U-tube

Downhole

- Fluid gradient
- Hydrostatic pressure
- Formation pressure
- Surface pressures
- Bottom hole pressure, status of well
- Well as a U-tube, fluid density
- Formation characteristics
- Formation damage
- MASP
- MACP
- MAFW

Influx Fundamentals

- Influx fluid types
- Kick detection

- Causes of kicks
- Pump rate to overcome gas migration rate
- Shut in procedures
- Gas behavior

Barriers

- Barrier types
- Barrier classifications
- Barrier hierarchy
- Barrier envelope

Workover fluids

- Fluid properties
- Testing fluid properties
- Purpose of workover and completion fluids
- Fluid monitoring
- Solids settling
- Contaminants
- Brine characteristics
- Temperature effects
- Saturation point
- Environmental concerns
- Types of fluids

BOPs

- Annulars
- Rams
- Locking devices
- Stack configurations
- HCR valves
- Accumulator system
- Driller panel
- BOP failures

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- Ring gaskets
- Function tests
- Pressure tests

Simulator Practice

- Demonstrate accumulator system functions
- Remote control panels
- Loss of rig air to bop panel
- Manifolds and backup systems

Surface/Subsurface Equipment

- Surface and subsurface equipment
- Production tree
- Closing/opening sequence
- Tree/BOP removal
- Tubing hangers
- Wellhead bowls
- VRPs and BPVs
- Removable wellhead equipment
- Tubing degradation
- Testing downhole equipment

Downhole Complications

- Casing
- Equipment degradation and failure
- Stuck pipe
- Blockages
- Incorrect practices
- Human error
- Trapped pressure
- Fluid complications
- Wellbore communication
- Bacteria
- Gases

Simulator Practice

- Demonstrate risk of over-displacement
- Bullhead operation simulation

Circulating Well Kill Methods

- Downhole communication
- Friction
- Pump pressure
- ECD
- Reverse circulation
- Forward circulation
- Lag time
- Complications during kill

Simulator Practice

- Demonstrate proper pump start up and shut down procedure
- Reverse circulation simulation
- Interpret pressures on gauges

Simulator Practice

- Demonstrate proper pump start up and shut down procedure
- Forward circulation simulation
- Interpret pressures on gauges

Volumetric and Lubricate and Bleed

- Procedures for volumetric method
- Procedures for lubricate and bleed
- Safety margins
- Advantages and disadvantages of methods

Simulator Practice

- Practice volumetric method
- Lubricate and bleed

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Stripping

- Importance of using a pressure chart during operation
- Pipe light
- Pipe heavy
- Force relative to area and pressure
- Buoyancy factor
- Operational considerations

Simulator Practice

- Demonstrate valve lineups to trip tank
- Stripping operation simulation

Well Servicing: Snubbing

- Live well vs. dead well operations
- Types of snubbing units
- Snubbing well control equipment
- Snubbing complications

Well Servicing: Coiled Tubing

- Coiled tubing units
- Coiled tubing well control equipment
- Complications with coiled tubing
- Emergency operations with coiled tubing

Well Servicing: Wireline

- Wireline units
- Wireline operations
- Wireline well control equipment

Unconventional Well Control

- Pill and kill
- Top kill
- Rolling the hole
- Responding to complications during well kill operations

Crew Responsibilities

- Teamwork
- Pre-job planning
- Importance of good handover notes
- Well control drills
- Organizing well control operations
- Locations of documentation
- Emergency response plan
- Roles and responsibilities of crew during well control operations