

Advanced Managed Pressure Drilling Operations Training Course

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Overview

Advanced Managed Pressure Drilling Operations Training Course is a one-week advanced course for drilling engineers, wellsite supervisors, contractors, and well-control specialists who need an MPD Execution Plan. Participants connect managed pressure drilling operations, the annular pressure profile, surface backpressure control, rotating control device selection, and real-time pressure evidence. The course turns narrow operating windows into planned equipment, procedures, limits, handovers, and contingencies. Agile Leaders Training Center presents managed pressure drilling execution practice.

Who Should Attend

- Drilling engineering teams responsible for pressure-window analysis and MPD program design
- Wellsite supervision teams responsible for coordinated rig and MPD execution
- Drilling contractors responsible for equipment integration, procedures, and interfaces
- Well-control specialists responsible for influx boundaries and handover decisions
- MPD service and operations teams responsible for pressure-control equipment and data

The course assumes participants work with drilling hydraulics, well-control barriers, rig procedures, or wellsite data, and it leaves out introductory drilling, basic drilling-fluid engineering, and general quality assurance.

Departments and Industries

The course supports departments and industries that plan, supply, supervise, or assure managed pressure drilling.

- Onshore, offshore, deepwater, and high-pressure drilling operations
- Operators, drilling contractors, and MPD service providers
- Drilling engineering, well engineering, and wellsite operations departments
- Well control, process safety, technical assurance, and risk functions
- Equipment, instrumentation, automation, and real-time operations teams

Learning Objectives

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

- Analyze pressure windows and annular hydraulic limits
- Compare MPD modes and equipment configurations
- Build operating procedures for drilling, connections, and trips
- Diagnose gains, losses, pressure deviations, and data quality
- Evaluate well-control interfaces and contingency triggers
- Build an MPD Execution Plan

Course Agenda

Day 1: Define the Pressure Strategy

- IADC Managed Pressure Drilling Definition and Application Map
- Pore-Pressure and Fracture-Gradient Window Plot
- Annular Pressure Profile and Equivalent Circulating Density Model
- Constant Bottomhole Pressure and Mud-Cap Mode Selection Matrix
- MPD Basis of Design and Assumption Register

Day 2: Configure the MPD System

- Rotating Control Device Selection and Limit Sheet
- Automated Choke Manifold Function Diagram
- Surface Backpressure Pump and Flowline Configuration
- Flowmeter, Pressure Sensor, and Data Validation Table
- Control System Setpoint, Alarm, and Interlock Matrix

Day 3: Write Operating Procedures

- Preoperation Fingerprinting and Baseline Procedure
- Drilling and Circulation Pressure Schedule
- Pump Ramp and Connection Backpressure Sequence
- Tripping, Stripping, and Static Pressure Procedure
- MPD Operations Matrix and Well-Control Handover Criteria

Day 4: Control Deviations and Risk

- Early Influx and Loss Detection Decision Tree
- Hydraulics Model Calibration and Trend Review
- Pressure Excursion Cause and Response Table
- Equipment Failure and Contingency Action Plan
- API Recommended Practices 92 Series Planning Checklist

Day 5: Practice MPD Execution

- Suggested Exercise: Select an MPD Mode for a Narrow Window
- Suggested Exercise: Configure the Pressure-Control Equipment
- Suggested Exercise: Manage a Connection Pressure Transition
- Suggested Exercise: Diagnose an Influx and Handover Trigger
- Capstone Exercise: Complete the MPD Execution Plan

Practical Exercises

The course uses suggested activities to convert well and equipment evidence into controlled MPD decisions.

- Suggested activity: plot pore, fracture, hydrostatic, friction, and backpressure components across an operating window.
- Suggested activity: match MPD modes, equipment, sensors, setpoints, limits, and procedures to well objectives.
- Suggested activity: interpret pressure and flow trends during drilling, connections, trips, gains, and losses.
- Suggested activity: present an execution plan with responsibilities, handovers, contingencies, and decision triggers.

FAQs

Who suits advanced managed pressure drilling operations training, and what does it assume?

Drilling engineers, supervisors, contractors, MPD specialists, well-control personnel, and technical-assurance teams suit the course. It assumes working knowledge of drilling hydraulics, barriers, rig operations, or wellsite data.

How does managed pressure drilling operations training differ from conventional well-control training?

Managed pressure drilling operations training plans proactive annular-pressure control during normal drilling and transitions. Conventional well-control training focuses on recognizing and controlling an influx after defined well-control conditions arise.

What is a managed pressure drilling operating window?

A managed pressure drilling operating window is the usable range between pressure limits where hydrostatic pressure, circulating friction, surface backpressure, surge, and swab effects must be managed without inducing an influx or losses.

How does surface backpressure control bottomhole pressure during MPD?

Surface backpressure adds a controlled pressure component through the closed-return system and choke. Operators adjust it with pump-rate and hydraulic changes to maintain the planned annular pressure profile during drilling and transitions.

What evidence supports an MPD well-control handover decision?

An MPD handover decision uses agreed operating boundaries, flow and pressure trends, gain or loss indicators, equipment status, barrier condition, model confidence, alarms, and the approved operations matrix.

Conclusion

Participants take back an MPD Execution Plan linking pressure windows, equipment, setpoints, procedures, monitoring, handovers, and contingencies. It changes separate engineering calculations and rig instructions into one controlled operating record. Teams can update the plan as well data, hydraulic behavior, equipment condition, and operating boundaries change.

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