JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

# Kick Detection, Shut-In and Well Kill Operations Training Course

22 – 26 November 2027
Paris

# Kick Detection, Shut-In and Well Kill Operations Training Course

**Ref:** 2674_101938 **Date:** 22 – 26 November 2027 **Location:** Paris **Fees:** 6900 GBP

Kick Detection, Shut-In and Well Kill Operations is a 1-week training course for drillers, rig supervisors and well engineers who build a well control response drill plan for their own rig crews. Formation influx remains the event that most often turns a routine section into a crisis, and crews now drill narrower pressure windows with leaner manning. Jupiter Prime Training runs this course on kick detection, shut-in and well kill operations.

## Why Kick Detection, Shut-In and Well Kill Operations Matters Now

Three pressures shape well control today. Wells are deeper, hotter and drilled through tighter margins between pore and fracture pressure, so a small gain becomes a large influx quickly. Rig crews rotate faster, so drilled responses matter more than individual memory. Operators, insurers and partners also expect proof that barriers are verified, not assumed. An organisation that reads warning signs early keeps a kick small and the well intact; one that hesitates risks equipment, people and its licence to operate. The course rests on the two-barrier principle and on recognised kill methods applied with careful pressure calculation.

## Who Gains Most from Kick Detection, Shut-In and Well Kill Operations

- Rig floor crews who watch pit volumes, flow and pump pressure during every connection and trip
- Shift supervisors who decide when to shut in and who leads the crew through the first minutes
- Well engineers who prepare kill sheets, mud weight schedules and casing shoe limits for each section
- Subsea and surface equipment staff who maintain preventer stacks, chokes and accumulator systems
- Operations coordinators who plan crew drills and record barrier test results

A drilling crew from one rig gains most when its driller, supervisor and engineer attend together and leave with a shared response drill.

## Kick Detection, Shut-In and Well Kill Operations Capabilities

Participants move from reading early influx signs to running a controlled kill and proving barriers afterwards.

- Assess pit gain, flow rate and drilling break signals — the shut-in call on the rig floor
- Apply hard and soft shut-in sequences — the crew response under pressure
- Calculate kill mud weight, initial and final circulating pressure — the engineer's kill sheet
- Weigh the driller's method against the wait and weight method — the supervisor's choice of kill route
-

Test preventer, choke manifold and accumulator readiness — the equipment owner's barrier record
- Design a crew response drill with roles and timings — the rig manager's training calendar

## Key Kick Detection, Shut-In and Well Kill Operations Terms

- Kick — an unplanned flow of formation fluid into the wellbore because formation pressure exceeds the pressure the mud column applies.
- Shut-in drill pipe pressure — the pressure read on the drill pipe after shut-in, used to work out formation pressure.
- Kill mud weight — the mud density needed to balance formation pressure and stop further influx.
- Maximum allowable annular surface pressure — the highest surface casing pressure the weakest exposed formation can bear without fracturing.
- Well barrier envelope — the set of tested elements that together prevent uncontrolled flow from the well.
- Swab and surge — pressure drop or rise in the wellbore caused by moving pipe, which can draw in or push out fluid.

## Kick Detection, Shut-In and Well Kill Operations Day by Day

## Day 1: Pressure Behaviour and Influx Causes

- Hydrostatic, Pore and Fracture Pressure — Setting the Safe Drilling Window
- Primary and Secondary Barrier Roles — Deciding What Holds the Well
- Causes of Influx: Swabbing, Lost Returns, Low Mud Weight — Preventive Crew Habits
- Gas Behaviour and Migration in the Annulus — Timing of Surface Response
- Incident Case Reviews from Land and Offshore Rigs — Lessons for Crew Briefings

## Day 2: Early Warning Signs and Detection

- Pit Volume Totaliser and Trip Tank Monitoring — Flagging Small Gains Early
- Flow Checks at Connections and Trips — The Driller's Go or No-Go Call
- Drilling Breaks, Pump Pressure Drops and Gas Cut Mud — Reading Combined Signals
- Trip Sheets and Fill-Up Records — Spotting Swabbed Influx Before It Grows
- Alarm Settings and Shift Handover Notes — Reducing Missed Warnings

## Day 3: Shut-In Sequences and Kill Calculations

- Hard and Soft Shut-In While Drilling and Tripping — Choosing the Sequence
- Stabilised Pressure Readings and Trapped Pressure — Trusting the Gauges
- Kill Sheet Preparation for Vertical and Deviated Wells — Engineer's Pressure Schedule
- Casing Shoe Limits and Annular Pressure Ceilings — Protecting the Weakest Formation
- Influx Type Estimation from Gradient — Planning Gas or Liquid Handling

## Day 4: Kill Methods and Equipment Readiness

- Driller's Method Circulation Steps — Two Circulations with Existing Mud
- Wait and Weight Method Steps — One Circulation with Weighted Mud
- Volumetric Method and Lubricate and Bleed — Pipe Off Bottom Situations
- Preventer Stack, Choke Manifold and Accumulator Tests — Proving Secondary Barriers
- Mud Gas Separator Capacity and Gas Venting — Handling Returns Safely

## Day 5: Response Drill Practice

- Crew Role Cards for Driller, Supervisor and Derrickman — Clear First Minutes
- Simulated Kick While Drilling Using Earlier Kill Sheets — Applying Calculations
- Choke Operation and Constant Bottom Hole Pressure Exercise — Applying Kill Methods
- Barrier Verification Checklist After the Kill — Applying Equipment Tests
- Well Control Response Drill Plan Completion — Rig Drill Schedule and Scoring

## Applying Kick Detection, Shut-In and Well Kill Operations After the Course

- Run a timed pit drill and trip drill with each crew, scoring detection and shut-in against the targets set in the course
- Rebuild the kill sheet for the current well section with updated shoe limits and share it at the next pre-spud briefing

## Kick Detection, Shut-In and Well Kill Operations Questions FAQ

### What is kick detection, shut-in and well kill operations and why does it matter now?

It is the sequence of spotting a formation influx, closing the well and circulating it out under control. It matters now because tighter pressure windows and faster crew rotation leave less room for slow or uncertain responses on the rig floor.

### Which roles gain most from kick detection, shut-in and well kill operations training?

Drillers, shift supervisors and well engineers gain most. Drillers sharpen detection and shut-in, supervisors lead the response, and engineers prepare the pressure schedules and shoe limits that guide the kill.

### How does kick detection, shut-in and well kill operations differ from a well integrity or drilling design course?

It focuses on the live response to an influx rather than long-term barrier upkeep or well design. You practise detection, shut-in and kill steps, while neighbouring courses cover casing design or integrity through production life.

## What do you bring back from kick detection, shut-in and well kill operations training?

You bring back a drill plan for your crew. It sets roles, timings and scoring for pit and trip drills, links to a worked kill sheet and lists the barrier checks to run after any kill.

## Kick Detection, Shut-In and Well Kill Operations: The Way Forward

The well control response drill plan first informs how often each crew drills and which signals it is scored on. Drillers, supervisors and rig managers use it at handovers and pre-spud meetings. After its first use, revisit the alarm settings and kill sheet assumptions against what the crew actually saw.