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# Well Plugging and Abandonment Barrier Design Training Course

30 November – 4 December 2026
Madrid

# Well Plugging and Abandonment Barrier Design Training Course

**Ref:** 2897_110568 **Date:** 30 November – 4 December 2026 **Location:** Madrid **Fees:** 6200 GBP

Well Plugging and Abandonment Barrier Design is a 1-week training course for well engineers and well integrity specialists who decide how a well is sealed for ever, and who leave with a well abandonment barrier plan for one well. Growing backlogs of idle wells, ageing casing and closer scrutiny of long-term leakage make every permanent plug a decision that outlives the operator. Jupiter Prime Training delivers this plugging and abandonment course.

## Why Well Plugging and Abandonment Barrier Design Matters Now

Three groups now press on abandonment decisions. Asset owners carry growing lists of shut-in wells and want them closed out before liabilities grow. Integrity specialists find corroded casing, poor primary cement and sustained casing pressure that complicate plug placement. Landowners, partners and authorities expect evidence that no fluid will migrate to surface or between zones long after the operator has gone. A well sealed with a verified barrier is closed for good; one sealed on assumption may need costly re-entry years later, often with no rig access and no records.

## Who Gains Most from Well Plugging and Abandonment Barrier Design

- Engineers who design permanent barriers and select plug depths for each well
- Specialists who assess casing, cement and annulus condition before abandonment
- Supervisors who place cement plugs, mill casing and run verification tests at the wellsite
- Planners who sequence abandonment campaigns and choose between rig and rigless units
- Estimators who prepare abandonment time and resource forecasts for each well

A well engineering department that sends its design, integrity and operations staff together gains most.

## Well Plugging and Abandonment Barrier Design Capabilities

Participants learn to turn a well's history and condition into a sealing design that can be placed and proven.

- Assess casing, cement bond and annulus pressure records to locate flow paths — barrier depth selection
- Design primary and secondary permanent barriers across each permeable zone — well integrity sign-off
- Specify cement plug length, slurry and placement method for each barrier — wellsite supervisors
- Choose between section milling, perforate-wash-cement and casing cut-and-pull — campaign planners
- Apply tagging, pressure and inflow tests to verify each plug — abandonment acceptance
- Calculate abandonment duration and resources for rig and rigless options — asset budget holders

## Key Well Plugging and Abandonment Barrier Design Terms

- Permanent barrier — a sealing element, usually cement, intended to isolate a zone indefinitely without maintenance.
- Cross-sectional barrier — a plug that seals the full well bore, including every annulus, at one depth.
- Cap rock — the impermeable formation against which a permanent plug is set to stop upward flow.
- Sustained casing pressure — annulus pressure that rebuilds after bleed-off, showing a leak path behind casing.
- Section milling — removing a length of casing downhole so cement can contact the formation.
- Rigless abandonment — plugging work done with wireline, coiled tubing or hydraulic units instead of a drilling rig.

## Well Plugging and Abandonment Barrier Design Day by Day

### Day 1: Abandonment Objectives and Well Condition

- Barrier Philosophy for Permanent Abandonment — Primary, Secondary and Surface Barriers
- Well File Reconstruction — Casing, Cement and Intervention History
- Sustained Casing Pressure Diagnosis — Locating Leak Paths Behind Pipe
- Flow Potential of Each Zone — Reservoirs, Shallow Gas and Water Sands
- Abandonment Categories and Well Grouping — Planning Multi-Well Campaigns

### Day 2: Permanent Barrier Design

- Cap Rock Identification and Formation Strength — Setting Plug Depths
- Barrier Envelope Diagrams — Showing Every Element per Zone
- Cement Slurry Selection for Long-Term Sealing — Shrinkage, Gas Migration and Temperature
- Alternative Barrier Materials — Resins, Bismuth Alloys and Formation Creep
- Cross-Sectional Plug Requirements — Sealing Annuli as Well as Bore

## Day 3: Plug Placement and Casing Work

- Balanced Plug and Dump Bailer Methods — Choosing Placement Technique
- Section Milling Operations — Swarf Handling and Window Length
- Perforate, Wash and Cement Systems — Annulus Access Without Milling
- Casing Cut and Pull — Freepoint, Cutting Tools and Retrieval Limits
- Rigless Units and Light Intervention Vessels — Matching Method to Well Access

## Day 4: Verification and Abandonment Forecasting

- Plug Tagging and Weight Tests — Confirming Top of Cement
- Positive and Inflow Pressure Tests — Proving Seal Integrity
- Annulus Cement Logging Behind Casing — Qualifying Existing Cement as Barrier
- Abandonment Time and Resource Estimates — Rig Days, Materials and Crews
- Surface Wellhead Removal and Site Closure — Final Cut and Records

## Day 5: Writing the Well Abandonment Barrier Plan

- Onshore Oil Well With Corroded Casing — Applying Condition Review and Barrier Depths
- Offshore Gas Well With Annulus Pressure — Applying Milling and Verification Choices
- Water Injection Well in a Mature Field — Applying Rigless Placement Options
- Peer Review of Barrier Envelopes — Challenging Plug Lengths and Materials
- Well Abandonment Barrier Plan — Issuing Barrier Diagram, Sequence and Tests

## Applying Well Plugging and Abandonment Barrier Design After the Course

- Rebuild the well file and barrier envelope diagram for the next well on the abandonment list.
- Screen the idle well inventory for sustained casing pressure and group wells by likely abandonment method.

## Well Plugging and Abandonment Barrier Design Questions FAQ

### What is well plugging and abandonment barrier design, and why does it matter now?

It is the selection, placement and proof of permanent seals that close a well for ever. Growing numbers of idle wells and closer scrutiny of long-term leakage make verified barriers essential.

### Which roles gain most from well plugging and abandonment barrier design?

Well engineers and well integrity specialists gain most. Wellsite supervisors, campaign planners and estimators who prepare abandonment work also benefit.

## How does well plugging and abandonment barrier design differ from a primary cementing course?

It deals with sealing a well at the end of its life, often through existing casing and old cement. A primary cementing course covers cementing new casing strings while drilling.

## What do you bring back from well plugging and abandonment barrier design?

You bring back a well abandonment barrier plan for one well. It sets plug depths, barrier envelope, placement method, verification tests and an abandonment duration estimate.

## Well Plugging and Abandonment Barrier Design: The Way Forward

The well abandonment barrier plan first informs whether existing annulus cement can count as a barrier or casing must be milled. Well engineers, integrity specialists and wellsite supervisors use it to agree plug depths and tests. After the first well is closed, revisit the grouping of the remaining idle wells.