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COURSE BROCHURE

Geological CO2 Storage Site Characterisation Training Course

26 – 30 September 2027
Muscat

jupiterprime.uk

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

Geological CO2 Storage Site Characterisation Training Course

Ref: 2366_88779 **Date:** 26 – 30 September 2027 **Location:** Muscat **Fees:** 6500 GBP

Geological CO2 Storage Site Characterisation is a 1-week training course for geoscientists and reservoir engineers working on carbon storage projects, built around a storage site characterisation report. As capture projects multiply, investors and permitting bodies want proof that injected CO2 will stay underground for centuries. Jupiter Prime Training delivers this course on geological CO2 storage site characterisation.

Why Geological CO2 Storage Site Characterisation Matters Now

Three groups now press on storage geology. Emitters in power, cement and gas processing need a secure sink before capture spending makes sense. Permitting bodies and insurers ask for evidence of containment, capacity and monitoring before injection starts. A developer that characterises a site well secures injection rights, financing and public trust; one that does it badly faces pressure surprises, stranded wells and liability that lasts for generations. The course rests on a staged screening, selection and characterisation workflow, static and dynamic reservoir models and a risk-based monitoring, measurement and verification MMV design.

Who Gains Most from Geological CO2 Storage Site Characterisation

- Geoscientists who map storage formations, seals and faults
- Reservoir engineers who estimate injectivity, pressure build-up and capacity
- Geomechanics specialists who judge caprock and fault stability
- Petrophysicists who interpret core and log data from saline aquifers and depleted fields
- Monitoring specialists who design seismic, well and surface surveillance

A subsurface group moving a storage prospect from screening to an injection application gains most when its geology, engineering and monitoring members attend side by side.

Geological CO2 Storage Site Characterisation Capabilities

Participants trace a prospect from regional screening to a defensible containment case, testing each line of evidence against injection and leakage questions.

- Apply screening criteria to rank saline aquifers and depleted fields — prospect selection
- Assess caprock sealing capacity and fault reactivation risk — containment sign-off
- Calculate theoretical, effective and practical storage capacity — investment sizing
- Test injectivity with well tests and near-wellbore models — well count decisions
- Build plume and pressure forecasts with reservoir simulation — area of review definition
- Design a risk-based MMV plan with leakage response triggers — permitting bodies and communities

Key Geological CO2 Storage Site Characterisation Terms

- Caprock — a low-permeability layer above the storage formation that stops buoyant CO2 rising towards shallower aquifers or the surface.
- Injectivity — the rate at which CO2 can be pumped into a formation for a given pressure difference at the well.
- Residual Trapping — immobilisation of CO2 as isolated droplets held in pore spaces after the plume moves on.
- Plume — the body of injected CO2 spreading through the formation, shaped by buoyancy, heterogeneity and injection rate.
- Area of Review — the zone around the injection site where pressure or CO2 could reach wells or faults and must be assessed.
- Supercritical CO2 — CO2 above its critical temperature and pressure, dense like a liquid yet flowing like a gas.

Geological CO2 Storage Site Characterisation Day by Day

Day 1: Storage Geology and Screening

- Trapping Mechanisms From Structural To Mineral — Long-Term Security Expectations
- Saline Aquifer Versus Depleted Field Types — Prospect Type Choice
- Regional Screening Criteria And Basin Maps — Shortlist Of Candidate Sites
- CO2 Phase Behaviour And Density With Depth — Minimum Storage Depth
- Staged Site Selection Workflow — Go Or No-Go Gates

Day 2: Containment and Caprock Integrity

- Seal Capillary Entry Pressure Testing — Column Height Limits
- Fault Seal And Reactivation Analysis — Maximum Injection Pressure
- Geomechanical Stress Models — Fracture Gradient And Uplift Risk
- Legacy Well Inventory And Cement Evaluation — Leakage Pathway Ranking
- CO2-Brine-Rock Geochemistry — Seal Degradation And Mineral Reactions

Day 3: Capacity, Injectivity and Plume Modelling

- Capacity Pyramid From Theoretical To Matched — Investment Sizing Decisions
- Static Model Of Storage Formation Heterogeneity — Pore Volume Estimates
- Injection Well Testing And Skin Analysis — Well Count And Spacing
- Dynamic Plume And Pressure Simulation — Area Of Review Boundary
- Uncertainty Ranges With Multiple Realisations — Confidence In Forecasts

Day 4: Monitoring and Leakage Risk

- Time-Lapse Seismic And Well Logging — Plume Tracking Choices
- Pressure And Soil Gas Surveillance — Early Leakage Detection
- Bow-Tie Leakage Risk Assessment — Prevention And Mitigation Barriers
- Risk-Based MMV Design — Baseline, Operational And Closure Phases
- Corrective Measures And Response Triggers — Stakeholder Communication Rules

Day 5: Practising the Storage Site Characterisation Report

- Screening Scorecard For Two Candidate Sites — Applying Day 1 Criteria
- Caprock And Fault Containment Case — Applying Day 2 Evidence
- Capacity And Plume Forecast Summary — Applying Day 3 Models
- Monitoring Plan Outline With Thresholds — Applying Day 4 Design
- Storage Site Characterisation Report — Containment Case For Injection Application

Applying Geological CO2 Storage Site Characterisation After the Course

- Score a current storage prospect against the screening criteria and flag the data gaps that block a go decision.
- Run a bow-tie leakage risk session on legacy wells and faults inside the area of review and assign barrier owners.

Geological CO2 Storage Site Characterisation Questions FAQ

What is geological CO2 storage site characterisation, and why does it matter now?

It is the work of proving that a rock formation can take injected CO2 and hold it securely. Growing capture projects need storage that permitting bodies, insurers and investors accept, so evidence on seals, capacity and monitoring decides whether projects proceed.

Which roles gain most from geological CO2 storage site characterisation training?

Geoscientists, reservoir engineers and geomechanics specialists gain most.

How does geological CO2 storage site characterisation training differ from a carbon capture course?

It stays below ground. A capture course follows separation plants and compression; this one follows the storage formation, from screening and seal testing to capacity, plume forecasts and the monitoring that proves containment.

What do you bring back from geological CO2 storage site characterisation training?

You bring back a worked characterisation report structure, a screening scorecard, capacity and plume forecasting steps and a monitoring plan outline you can apply to your own prospect.

Geological CO2 Storage Site Characterisation: The Way Forward

The storage site characterisation report joins screening scores, caprock and fault evidence, capacity estimates, plume forecasts and the monitoring outline into one containment case. Its first use informs whether a prospect moves to an injection application. Subsurface leads, project sponsors and permitting advisers read it. After first injection, revisit the plume forecast against monitoring data and update the area of review.