

The background of the slide is a photograph of an offshore oil rig at sea. The rig is a complex structure with multiple towers and cranes, situated in the middle of the ocean. The sky is a pale, hazy blue, and the water is a calm, light blue. The rig is positioned on the left side of the frame, with the rest of the slide being white space.

# Wellsite and Operations Geology Training

Scheduled Open Courses Handbook 2024

# Global Locations



## Head Office (Europe & Americas)

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Calleva Park, Aldermaston  
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Tel: +44 (0) 118 982 0151  
stag@stag-geological.com

## Aberdeen (North Sea)

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Prospect Road  
Arnhall Business Park  
Westhill  
AB32 6FJ  
Tel: +44 (0) 1224 766 948  
stag@stag-geological.com

## Qatar (Middle East)

Al-Jaidah Square Building  
Airport Road, Doha  
PO Box 55743 Qatar  
Tel: +974 4426 7432  
stag@stag-geological.com

## Perth (Oceania)

Suite 22, Como Corporate Centre  
11 Preston Street, Como  
WA 6152  
Australia  
Tel: +61 8 9368 7468  
stag@stag-geological.com

# Wellsite & Operations Training 2024



Since 1995 Stag has been providing **Wellsite and Operations Geology Training** for personnel from major operators, service companies and independent clients throughout the world. Our courses have long been regarded as a foundation stone for careers in **Wellsite Geology, Operations Geology** and allied Subsurface disciplines.

Courses are offered in classroom locations or can be delivered online.

Our **Scheduled Open courses** are open to all who wish to attend at the location and rate published in this handbook.

Each course can also be delivered to corporate clients on an **exclusive basis**, either at a Stag training location or a client's premises. Rates for exclusive delivery depend upon location, course length, number of participants and any requirement for bespoke content.



# Wellsite & Operations Training 2024

Scheduled Open Courses



Book at <https://www.stag-geological.com/book-online/>

Course	Dates	Pricing (per attendee)*	Location
Operations and Wellsite Geologist	Jan 22 – Jan 25, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Drilling and Wellsite Geology	Feb 19 – Feb 23, 2024	£2,500 ex VAT (£3,000 inc)	Aldermaston, UK
Operations and Wellsite Geologist	Mar 11 – Mar 14, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Basic Log Interpretation	Apr 29 – May 1, 2024	£2,150 ex VAT (£2,580 inc)	Aldermaston, UK
Operations and Wellsite Geologist	May 20 – May 23, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Formation Pressure Evaluation	Jun 18 – Jun 20, 2024	£2,150 ex VAT (£2,580 inc)	Aldermaston, UK
Operations and Wellsite Geologist	Jul 2 – Jul 5, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Drilling and Wellsite Geology	Jul 22 – Jul 26, 2024	£2,500 ex VAT (£3,000 inc)	Aldermaston, UK
Operations and Wellsite Geologist	Aug 13 – Aug 16, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Basic Log Interpretation	Sep 24 – Sep 26, 2024	£2,150 ex VAT (£2,580 inc)	Aldermaston, UK
Operations and Wellsite Geologist	Oct 22 – Oct 25, 2024	£2,250 ex VAT (£2,700 inc)	Aldermaston, UK
Formation Pressure Evaluation	Nov 4 – Nov 6, 2024	£2,150 ex VAT (£2,580 inc)	Aldermaston, UK

\*UK VAT at 20%.

# Operations and Wellsite Geology

Course G2 | 4 days | £2,250 + VAT



## Course Aims

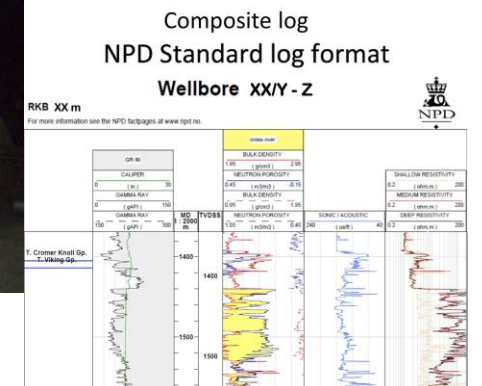
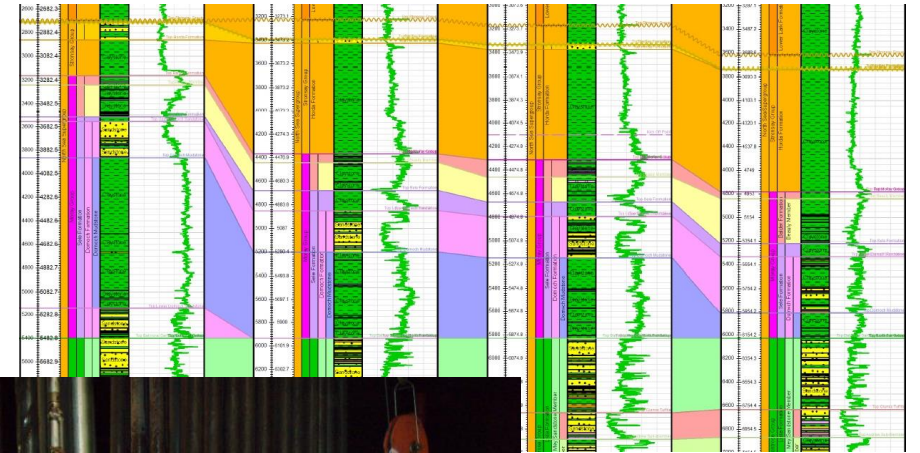
To provide an overview of the role of Operations and Wellsite Geologists in Well Planning and Drilling Surveillance phases. To provide practical instruction in wellsite geological techniques and geosteering co-ordination.

## Target Audience

Wellsite Geologists, Operations Geologists, Reservoir and Development Geologists, Drilling Engineers, Mudloggers, LWD Engineers, Directional Drillers, Support Staff.

## Delegates Will Learn:

- How to describe & Evaluate drill cuttings
- How to produce a Formation Pressure Profile to include estimated pore pressure and fracture gradient data
- How to determine Lithology and Reservoir information from well logs
- How to use Mudlogging and MWD data to perform real-time geosteering co-ordination.



# Operations and Wellsite Geology

Course G2 | 4 days | £2250 + VAT



## Course Content

### Well Planning Processes

- G&G Chapter of Drilling Programme
- Geology & Stratigraphy
- Pressure Profile
- Site Survey & Shallow Gas
- Geological Hazards

### Data Acquisition Procedures

- Provision of Wellsite Services
- Identification & Selection
- Logging Programmes
- Data management and distribution
- Technical Support

### Wellsite Geology

- Duties and Responsibilities

### Supervision of Wellsite Services

- Mudlogging Units
- Sensors
- Data Acquisition
- Gas Detection
- Sampling and Cuttings Evaluation
- Depth and ROP

### Coring Services

- Conventional
- Sidewall
- Coring Procedures
- Retrieval and Packing

### Wireline Logs

- Witnessing & QA Procedures
- Quick-Look Log Interpretation

### MWD/LWD Services

- Directional Surveys
- Formation Evaluation Services

### Documentation & Reports

- Daily/Weekly
- Lithlog & Composite Log Preparation
- End-of-Well Report

### Practical Wellsite Geology

- Description & Evaluation of Drill Cuttings
- Oil Show Evaluation
- Basic Log Interpretation
- Construction of Lithlog from cuttings and log data

### Geosteering & Geological Control

- Strategies and teamwork
- Horizontal and ERD Formation Evaluation
- Geological Targets
- Structural & Well Path control
- Landing the Well
- Drilling the Reservoir
- Calling T.D

### Geosteering Case Study

- Real-time case study using MWD, LWD and mudlogging data in a role-play exercise

## Schedule 2024

Jan 22, 2024 – Jan 25, 2024 (Aldermaston, UK)

Mar 11, 2024 – Mar 14, 2024 (Aldermaston, UK)

May 20, 2024 – May 23, 2024 (Aldermaston, UK)

Jul 2, 2024 – Jul 5, 2024 (Aldermaston, UK)

Aug 13, 2024 – Aug 16, 2024 (Aldermaston, UK)

Oct 22, 2024 – Oct 25, 2024 (Aldermaston, UK)

Alternative dates on request

# Introduction to Drilling & Wellsite Geology

Course WO1 | 5 days | £2,500 + VAT



## Course Aims

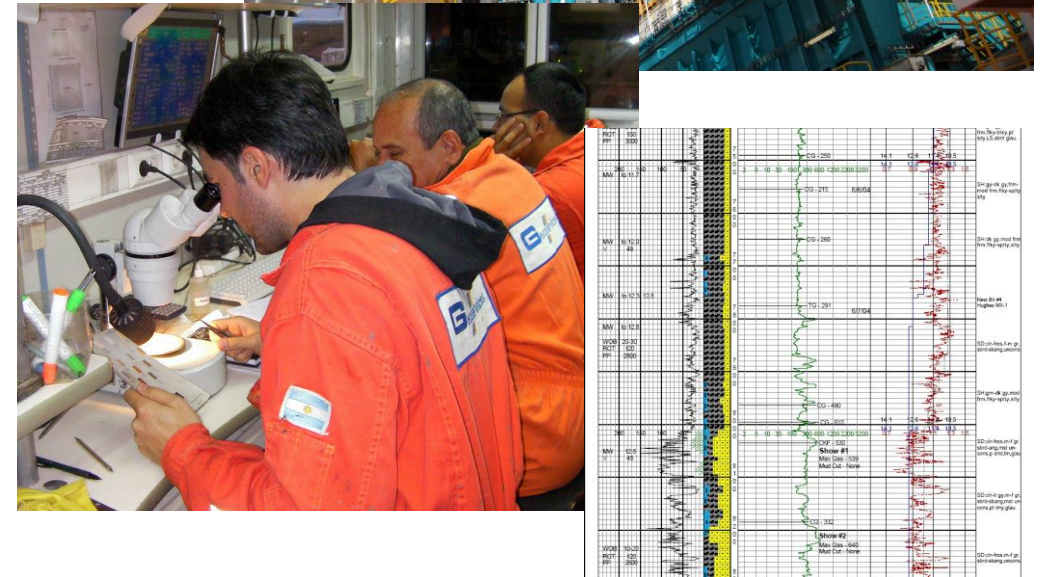
To provide an introduction to drilling technology and wellsite formation evaluation techniques for those personnel new to the industry or transferring from non-operational roles.

## Target Audience

Wellsite Geologists, Operations Geologists, Reservoir and Development Geologists, Drilling Engineers, Mudloggers, LWD Engineers, Directional Drillers, Support Staff.

## Delegates Will Learn:

- Well planning and Rig selection
- About the drillstring, bits, drilling fluids, casing and cementing, completions, well control and directional drilling
- How wellsite geologists & mudloggers collect & interpret geological & drilling data
- About Coring, Wireline Logs and MWD Services
- How to evaluate and describe drill cuttings and oil shows from practical work



# Introduction to Drilling & Wellsite Geology

Course WO1 | 5 days | £2500 + VAT



## Course Content

### Drilling Technology

- Well Planning & Rig Selection
- Drilling Equipment & Techniques Drillstring Design & Bit Technology
- Drilling Fluids & Well Control
- Casing & Cementing
- Directional Drilling

### Wellsite Geology & Mudlogging

- Well Planning & Rig Selection
- Evaluation of Drill Cuttings
- Gas Detection and Interpretation
- Lithology Logs
- Safety Monitoring

### Formation Evaluation

- Well Planning & Rig Selection
- Coring Procedures
- Wireline Logging
- Logging While Drilling
- Oil & Gas Show Evaluation
- Geosteering Techniques

### Drilling Rigs

- Land Rigs
- Jack-Up Rigs
- Semi-Submersible Rigs

### Bit Technology

- Bit Design: Roller Cone & Fixed Cutter
- Drilling Applications
- Formation Evaluation Consideration

### BHA and Drill String Design

- Hoisting, Rotating, Motion Compensation
- Well Control Equipment

### Drilling Fluids

- Properties & Specification
- Water Based Systems
- Oil Based Systems
- Synthetic Fluids
- Fluid Circulation System
- Hydraulics Calculations
- Casing & Cementing

### Directional Drilling

- Applications
- Steering Systems
- Formation Evaluation
- Survey Tools /Calculations

### Surface Returns Logging

- Mudlogging Services
- Cuttings Recovery
- Lag Time Calculations
- Depth and ROP Recording
- Hydrocarbon Gas Evaluation Total Gas
- Chromatograph
- Enhanced Gas Evaluation
- Interpretation of Gas Data

### Wellsite Geology

- Cuttings Sampling and Preparation
- Cuttings Description Clastics
- Cuttings Description Carbonates
- Cuttings Description Evaporites
- Reporting Procedures
- Lithology Logs
- Oil & Gas Show Evaluation with UV Light and Solvent Tests

### Coring Operations

- Conventional Coring
- Sidewall Cores

### Formation Evaluation

- Wireline Logging Operations
- LWD Operations

## Schedule 2024

Feb 19, 2024 – Feb 23, 2024 (Aldermaston, UK)

Jul 22, 2024 – Jul 26, 2024 (Aldermaston, UK)

Alternative dates on request



# Formation Pressure Evaluation

Course P1 | 3 days | £2,150 + VAT



## Course Aims

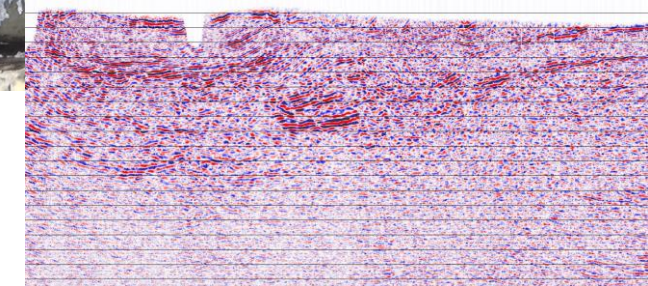
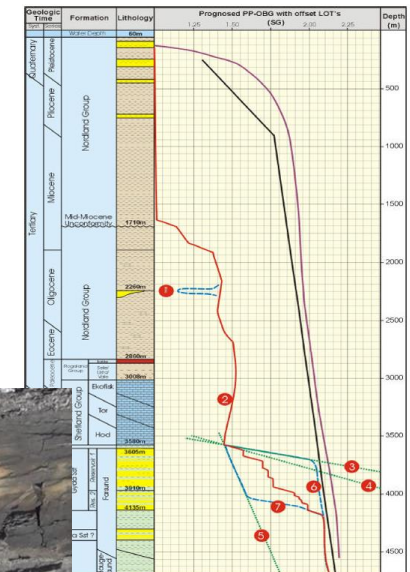
To familiarize delegates with the challenges of planning and drilling wells in a safe operating window to minimise Health and Safety Incidents and Non-Productive Time.

## Target Audience

Wellsite Geologists, Operations Geologists, Reservoir and Development Geologists, Drilling Engineers, Mudloggers, LWD Engineers, Directional Drillers, Support Staff.

## Delegates Will Learn:

- How to calculate and plot normal hydrostatic pore pressure and overburden pressure
- About the mechanisms that generate abnormal pore pressures
- How to calculate fracture pressure from LOT data and mathematical models
- How to produce PPFG plots from offset well data



# Formation Pressure Evaluation

Course P1 | 3 days | £2,150 + VAT



## Course Content

### Introduction

- Well Planning Requirements
- Safe Operating Window (PP-FG)
- Pore Pressure prediction and detection
- Wellbore Stability
- Fracture Pressure

### Pressure Concepts and Gradients

- Definitions and Normal Pore Pressure
- Overburden Pressure Calculations
- Pressure Gradient Calculations
- Fracture Pressure Estimations & Modelling

### Abnormal Pressure

- Causes of Abnormal Pore Pressure
- Pore Pressure Estimates from:
  - Dxc, ROP, Mud-Gas relationships
  - Petrophysics
  - Borehole Stability

### Origin of Abnormal Pore Pressure

- Compaction Disequilibrium
- Aquathermal Processes
- Clay Diagenesis
- Stratigraphic Processes
- Tectonic Processes
- Fluid Expansion

### Fracture Pressure & Well Planning

- Evaluation of Rock Fracture Pressure:
- Leak-Off Tests
- Mathematical Modelling
- Borehole Stability
- Kick Tolerance
- Well Control Procedures
- Well Planning Issues

### HP/HT Drilling: Definitions & Challenges

- Definitions of HPHT
- High Fluid Density
- High Formation Temperature
- Narrow Operating Windows
- Managed Pressure Drilling

### Formation Pressure Evaluation

- Fundamentals
- Hydrostatic Pressures
- Pressure Gradients
- Elevations and Datums
- Formation Balance Gradient
- RFT data and PZ plots
- Overburden Pressure Gradient
- Data Sources
- Calculation methods

### Practical Formation Pore Pressure Evaluation

- Seismic Data
- ROP and Dxc
- Formation Gas Evaluation
- Borehole Behaviour
- Drilling Parameters
- Drill Cuttings and Cavings
- Geothermal Gradients
- Wireline/MWD Data

### Health, Safety, Security, Environment

- Requirements and Well Planning
- Recent Incidents
- Operator Responsibilities
- Individuals' Responsibility
- General Duty

### Pore Pressure Methods

- Trend Line Methods

### Fracture Pressure Gradients

- Leak-off Tests
- Mathematical Modelling
- High Angle well
- Kick Tolerance

## Schedule 2024

Jun 18, 2024 – Jun 20, 2024 (Aldermaston, UK)

Nov 4, 2024 – Nov 6, 2024 (Aldermaston, UK)

Alternative dates on request

# Basic Log Interpretation

Course FE1 | 3 days | £2,150 + VAT



## Course Aims

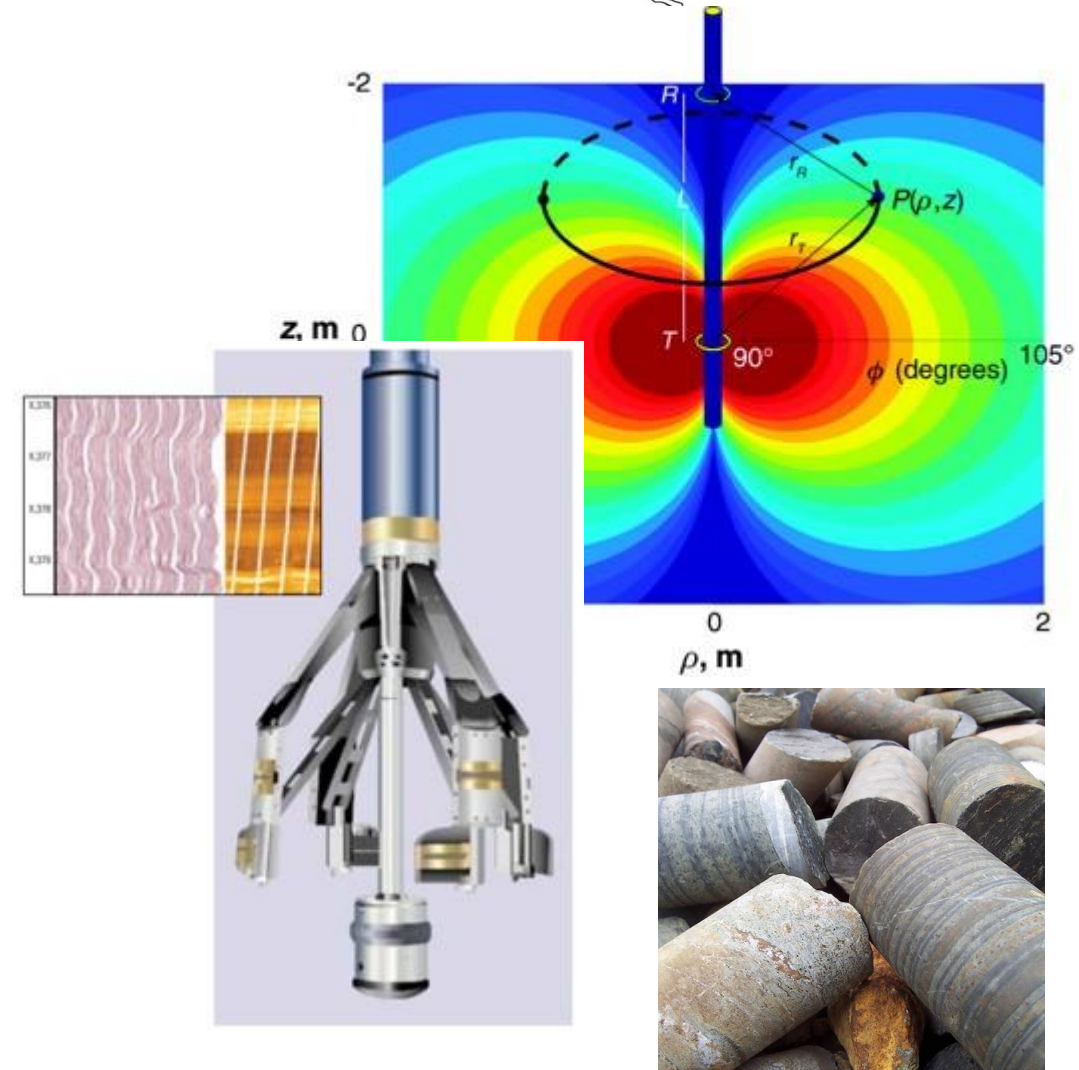
To provide an overview of Quick-Look Interpretation from traditional open-hole wireline and LWD logs. This practical course uses worked examples and a final Case Study to allow students to practise and become familiar with basic geological and reservoir evaluation techniques.

## Target Audience

Wellsite Geologists, Operations Geologists, Reservoir and Development Geologists, Drilling Engineers, Mudloggers, LWD Engineers, Directional Drillers, Support Staff.

## Delegates Will Learn:

- About the reasons for geophysical logging and information required
- About the basic theory of operation of traditional open hole logging tools
- How to interpret lithology from well logs
- How to identify reservoir rocks and the location and type of fluids present
- How to determine Porosity from Sonic, Density and Neutron Porosity tools and make simple corrections for lithology, shaliness and gas effects
- How to identify hydrocarbon-bearing zones and calculate water saturation using the basic Archie Formula while making corrections for environmental effects
- About the differences between Wireline and LWD tools.



# Basic Log Interpretation

Course FE1 | 3 days | £2,150 + VAT



## Course Content

### Obtaining Well Logs

- The Nature of Well logs
- Conveyance Methods
- Borehole Environment
- Invasion
- Log Scales and Presentation

### Theory of Operation

- Gamma Ray
- Resistivity
- Neutron Porosity
- Density
- Sonic

### Log Interpretation

- Log QC
- Lithology Determination
- Gamma Ray and S.P.
- Density/Neutron
- Crossplots

### Reservoir Evaluation

- Recognition of Permeability
- Identification of Hydrocarbons
- Fluid types & contacts
- Porosity and Permeability Determination
- Water Saturation ( $S_w$ ) estimation

### Wireline Logs: Basic Concepts

- Types of Open Hole Logs
- Information Required
- Log Header
- Relationships
- Borehole Environment
- Invasion Profiles
- $R_w$  &  $R_{mf}$
- Porosity and Permeability
- Resistivity and Water Saturation
- Temperature Corrections

### Wireline Logs: Theory of Operation

- Spontaneous Potential
- Gamma Ray
- Resistivity Logs
- Laterologs
- Induction Logs
- Microresistivity Logs
- Neutron Porosity
- Sonic
- Formation Density
- Dipmeter Tools

### MWD & LWD Logging

- Theory of Operation
- Transmission Systems
- Tool Configuration
- Sensors
- Operating Procedures and Practice
- MWD/Wireline Response Comparison

### Geological Interpretation

- Log QC Procedures
- Identification of Lithology
- Environment and Facies
- Identification of Permeability
- Identification of Porosity
- Geosteering Applications

### Reservoir Evaluation

- Quick Look Porosity Calculations
- Identification of Hydrocarbon Bearing Zones
- Hydrocarbon Type Evaluation

### Saturation Calculations

- Archie
- Shaly sands
- Carbonates
- Resistivity Ratio
- Cross-Plots

## Schedule 2024

Apr 29, 2024 – May 01, 2024 (Aldermaston, UK)

Alternative dates on request

# Instructor profiles



**Mick Simpson** has over 45 years' experience in the Oil and Gas Industry with more than 25 years' experience in Operations and Development. Beginning his career as a mudlogger in worldwide locations including North America, the North Sea and the Middle East, Mick later pioneered some of the earliest **geosteering** techniques as a wellsite geologist for **Maersk Oil** in both Qatar and Denmark. As an **operations geologist** he has specialized in the planning and delivery of horizontal and ERD chalk wells for operators including Maersk Oil (**Total**) and **AkerBP**, but Mick has led operations in diverse geological environments such as Rotliegend tight gas, Jurassic HPHT, deepwater West Africa and Palaeocene turbidites for operators including **Petrocanada, ConocoPhillips, Dana** and **BP**.

Recently Mick has delivered renewable energy projects including Carbon Capture and Storage (CCS) planning activities for **Neptune Energy** in the Netherlands.

Mick continues active involvement in the wellsite and operations geology community, presenting at conferences including **EAGE** and **FORCE**.



**Martin Saunders** has over 40 years' experience as a Wellsite Geologist and technical training manager. He specializes in wellsite operations and Petroleum Geology training and has been teaching oilfield courses for 25 years. Martin holds a BSc (Hons) degree in Geology from the University of Wales, Aberystwyth and began his career with EXLOG (now part of Baker Hughes) in 1974, working at wellsite before joining the training department of Baker Hughes in 1982. He was responsible for all internal training for Baker Hughes in the Europe/Africa/Middle East Division and was also responsible for the expansion of external commercial training.

Martin has presented courses throughout the world to to personnel from major operators and service companies including **BP, Exxon, Anadarko, MOL, Chevron, Maersk, Total, Wintershall, Perenco, ADNOC, Saudi Aramco, GDF Suez, Tullow Oil, Spirit Energy, Ophir Energy, Baker Hughes** and **Halliburton** among many others.

# Training Locations



Classroom training for clients from Europe, Africa, the Middle East and the Americas is undertaken in our dedicated training facilities at our head office in Aldermaston, UK.

Classroom training for clients in Asia and Oceania is undertaken in our office in Perth, Australia.

Online and remote course delivery can be arranged to suit client requirements.



# Travel and logistics



Stag operates a bespoke **personal travel service** which can be available to attendees travelling to our **Aldermaston** headquarters from any home location worldwide.

Accommodation can be found to suit all budgets and Stag has access to preferential corporate rates with several hotels near Aldermaston.

Our training facilities are 15 minutes by car from the **M4 motorway junction 12** and less than an hour from Heathrow Airport.

Train services to **Heathrow** take approximately **1 hour 15 minutes** from Aldermaston Station, with the new Elizabeth Line providing a direct connection from Reading to Heathrow.

Access to **Central London** (Paddington) can be achieved in as little as **45 minutes** from Aldermaston Station by connecting to non-stop GWR trains at Reading.



## Contact us

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[www.stag-geological.com/training](http://www.stag-geological.com/training)

[www.stag-geological.com/book-online/](http://www.stag-geological.com/book-online/)