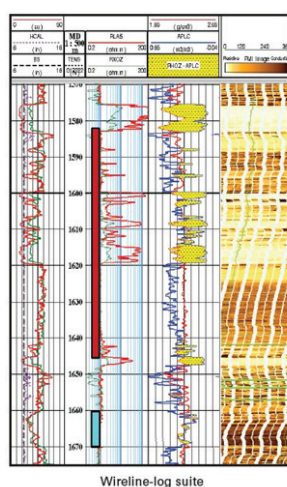
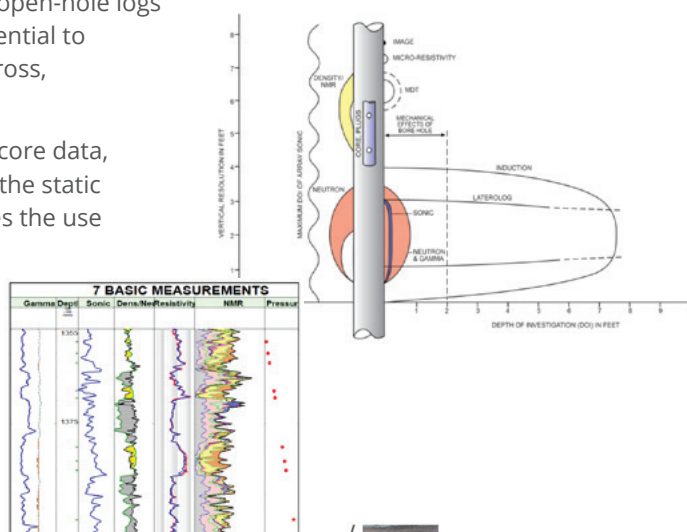
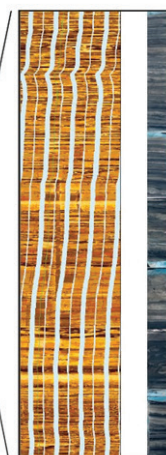


<p>Designed for:</p> <p>The course is designed for petrophysicists and staff working in reservoir engineering, geology and geophysics and other disciplines which interface with petrophysicists in their daily work.</p>	<p>Duration (days)</p> <p>1 2 3 4 5 flexible</p>	<p>Learning Level:</p> <p>Skills <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Knowledge <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>Awareness <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/></p>
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There are seven basic measurements made with open-hole logs and a fundamental understanding of these is essential to derive realistic reservoir properties such as net/gross, porosity and water saturation in reservoirs.

The course concentrates on the principles behind the various logging tools, their limitations and calibration against mudlogs and cores with a combination lectures, individual and group exercises, open discussion and debrief sessions.

Detailed image log over part
of the cored interval

Thin-bedded pay

$$V_{shale} = \frac{GR - GR_{sand}}{GR_{shale} - GR_{sand}}$$

$$\text{Porosity} = \frac{\rho_{ms} - \rho_b}{\rho_{ms} - \rho_a}$$

$$S_v = \sqrt{\frac{aR_v}{\phi^m R_v}}$$



Reservoir Series

Openhole Petrophysical Interpretation continued

Course Content:

Logging Systems and Define the Reservoir

- Introduction to Petrophysics
- Logging Systems and Environment
- Gamma Ray and SP

Pore Systems and Acoustics

- Theory of Pore Systems
- Density and Neutron Logs
- Core Acquisition and Routine Analysis
- Sonic/Acoustic Tools

Saturation and Fluid Distribution

- Resistivity Logging
- Saturation from Logs
- Special Core Analysis
- Fluid Distribution and Saturation Height
- Pressures and Sampling NMR/CMR Tools

Log Interpretation

- The seven basic log measurements and their principles - recap
- The three basic equations - converting logs to reservoir properties
- Distinguishing between rock and fluid effects
- Data resolution - logs always simplify the geology
- Calibration with core - overcoming resolution limitations
- Core Analysis overview
- Geological interpretation from logs
- Interpreting production performance from logs

Course Duration:

Duration is 3 -5 days.

Courses available from this series:

Basic Geoscience
Introduction to Geophysics
Geological Application of Well Logs
Openhole Petrophysical Interpretation
Core Description
Production Geology
Applied Production Geology
Reservoir Model Design
Fractured Reservoir Characterisation
Geology for Drilling Engineers
Reservoir Engineering
Applied Reservoir Engineering
Well Test Design & Analysis
Logging While Drilling
Basin Analysis
Geomechanics

Course Tutors



Jenny Garnham PhD

Main Series tutoring: Reservoir, Open Air

Industry experience: over 20 years, petrophysics

Career background: Enterprise Oil, AGR and TRACS

Personal: Technical author, SPWLA active member, PESGB/SPE



Mark Bramwell BSc, PhD

Main Series tutoring: Reservoir, Early Development, E&P Overview, Open Air

Industry experience: over 25 years, geoscience

Career background: Shell, KUFPEC, AGR and TRACS

Personal: Programme manager for Early Development Series

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