



Fundamentals of Development Geology

The Key to Successful Reservoir Modelling
(Two to three days)

Presenter: John H Martin MA PhD

Modern reservoir modelling uses 3D computer techniques often used to construct large and complex models. This modular workshop, at basic or cross-over level, focuses on principles which the geologist should not lose sight of, regardless of computing power available.

It demonstrates the principles of effective field evaluation for development studies, ranging from appraisal to engineered recovery operations. It focuses on the controls that geological heterogeneities exert on subsurface fluid flow, and shows how an understanding of reservoir characteristics will improve the reliability of geological and reservoir engineering models.

Exercises and demonstrations form important parts of the workshop modules.



What you'll learn

Introduction to reservoir modelling

- Reservoir/Development Geology
- The Petroleum Engineering environment - study requirements for field appraisal, development and engineered recovery projects
- Data sources - review of geological, geophysical, engineering and petrophysical data

Geological models

- Core description for reservoir studies
- Basic reservoir rock properties and application of special core measurements
- Clastic reservoir models; reservoir aspects of clastic diagenesis
- Carbonate reservoir models and diagenesis
- Production and reservoir geological correlation, subsurface data manipulation, reservoir mapping, volumetrics

Integrated models

- Geological aspects of reservoir simulation modelling; types of simulation models (e.g. single well, cross-section, full field): their objectives, strengths and weaknesses. Differing input requirements.
- Evaluation of complex reservoirs: non-conventional modelling of poorly correlatable reservoirs and permeability barriers.
- Case studies of field appraisal, development and enhanced recovery operations.

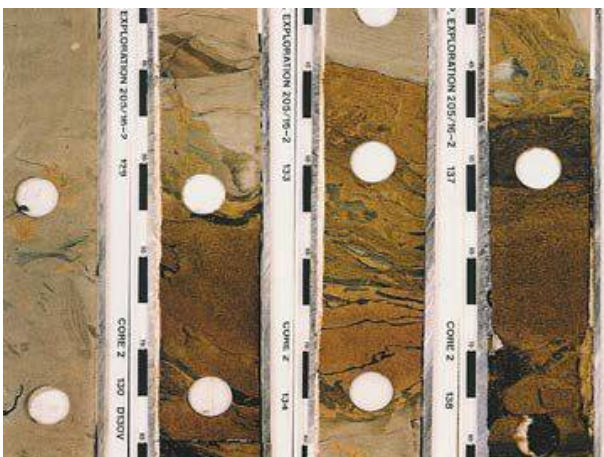
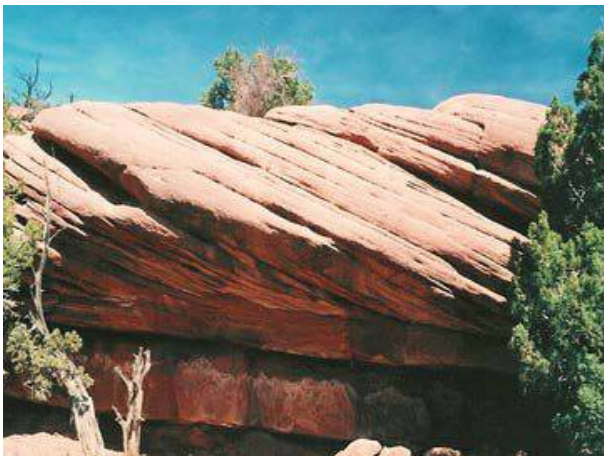


Fundamentals of Development Geology

The Key to Successful Reservoir Modelling

Who should attend?

The workshop will be suitable for reservoir and petroleum engineers, who will learn how geological insight can improve understanding of the reservoir. It will also be suitable for geologists and geophysicists, who will gain a greater insight into the work of the reservoir engineer, and in particular how to tailor the results of geological studies into a format most useful to the requirements of field development planning. The specific content may be varied to suit the needs of the participants, and their levels of experience – though best regarded as basic or cross-over training.



Presenter

John H Martin graduated with a first class honours degree in Geology from Oxford University in 1977, and obtained a PhD in Sedimentology and Economic Geology at the University of Edinburgh (1981). He worked as a Reservoir Geologist in the Production Geology Department of Shell Research Laboratories in The Hague, specialising in the study of complex clastic reservoirs in Oman, including support for EOR projects. From 1985–1989, as Senior, later Principal Geologist with International Petroleum Engineering Consultants Ltd in London, his responsibilities included reservoir geological evaluation, input to integrated field studies and, latterly, the management of engineering projects.

He has authored, edited and reviewed several papers concerning integrated geological and engineering evaluation of complex reservoirs. Till 1992 he held the post of Senior Lecturer in Development Geology at Imperial College, London, where he taught reservoir geology at MSc level.

Since 1989 he has been an independent reservoir development consultant/advisor; Director of John H Martin Associates Ltd since 1996. Roles include responsibility for technical management, presentation and reporting of major integrated field studies and assists clients with asset acquisition and divestment/farm-outs. He is regularly involved in North Sea and international unitisation and equity redeterminations, both in Expert and advisory roles.

His worldwide project experience includes more than 30 countries and he has presented around 100 public and in-house training workshops and courses in over two dozen locations.

Further information: www.jhma-reservoir.com

John H Martin Associates Ltd
RESERVOIR DEVELOPMENT CONSULTANTS