

Reservoir Quality Analysis When the pore-scale matters

One day course tailored to your needs

badley ashton

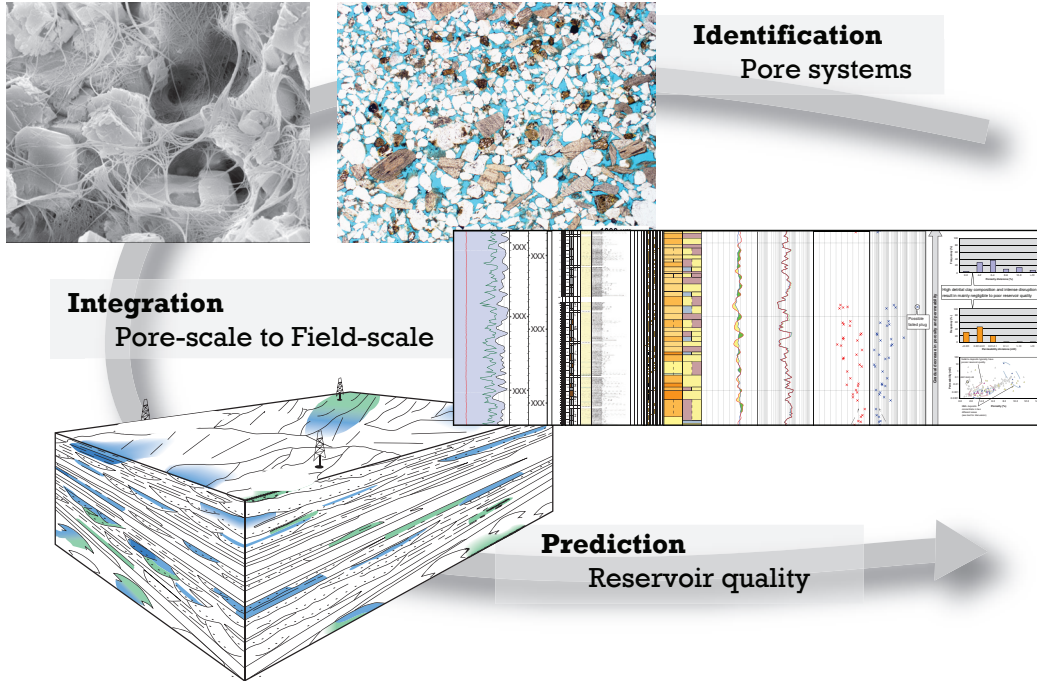
Reservoir Geoscience



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Pore-scale knowledge is becoming ever more important for risk assessment in siliciclastic reservoirs. At the same time it is often the weakest link in a model. Don't blame it on complexity. Never overlook the critical detail again.

This one-day awareness course is designed to help attendees to understand every geological aspect of the decision trees involved in clastic reservoir pore system analysis. The course covers the controls on pore system evolution from deposition to present day, contrasting the roles of depositional attributes and diagenetic processes, with a special emphasis on predictability. Pore system degradation pathways will be discussed and visualised with the help of representative diagrams and photomicrographs. The final session will provide further opportunity for re-enforcing the understanding with a series of case studies.

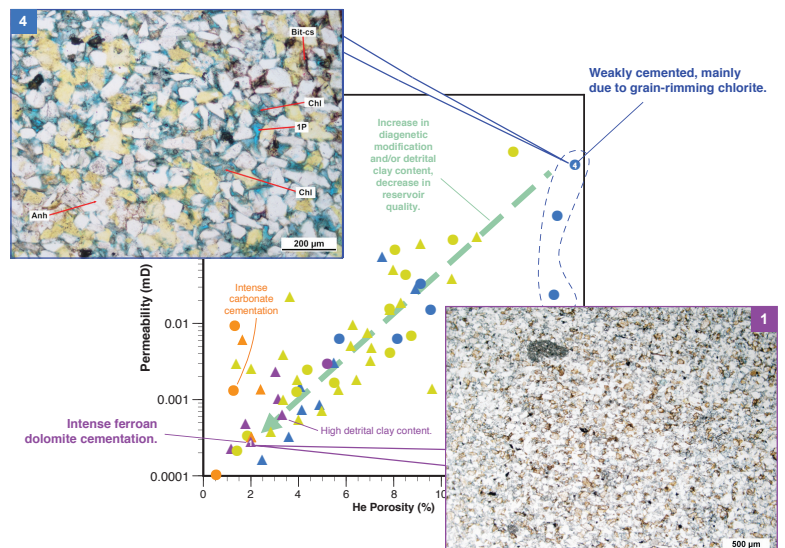
Summary outline

The workshop is organised into three parts spread over four sessions;

- Reservoir quality analysis - what it is and how to approach it (Session 1)
- Controls on Reservoir quality - from deposition to present day (Sessions 2-3)
- Case studies and discussion (Session 4)

Bespoke courses to suit your requirements

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Course outline

Session 1: Reservoir quality analysis - what it is and how to approach it?

- What is reservoir quality analysis?
- Introduction to clastic rock pore systems
- What controls the reservoir quality of clastic systems?
- Commonly used analytical tools and new developments
- Work flow and decision trees

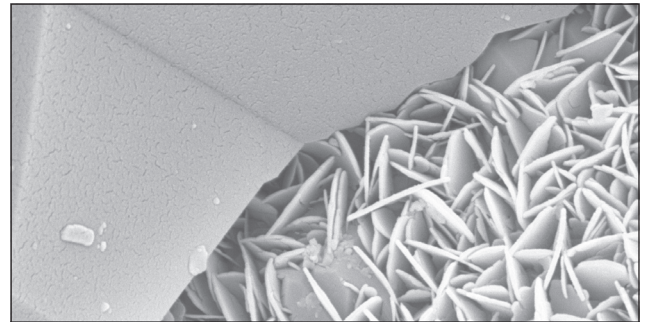
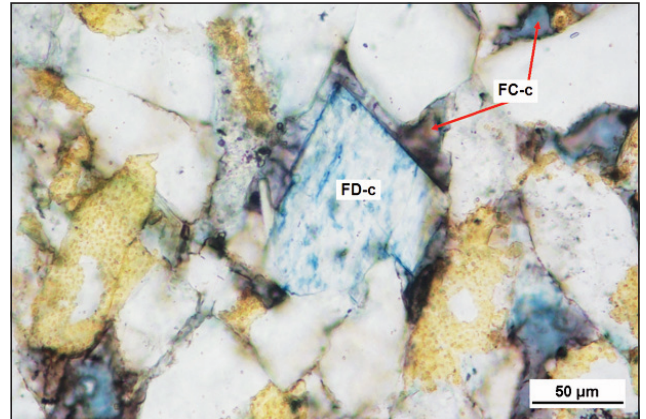
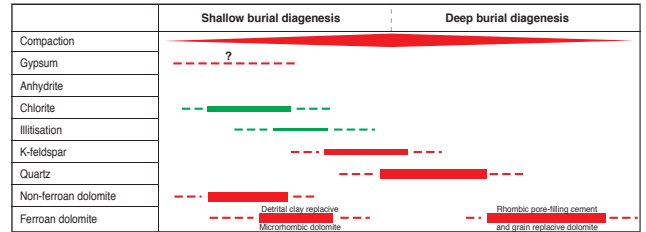
Sessions 2-3: Controls on Reservoir Quality - from deposition to present day

- Depositional controls on reservoir quality
 - depositional environment and reservoir quality
 - texture and fabric; their influence on porosity and permeability
 - matrix, pseudomatrix and organic matter
 - effects of detrital composition on early diagenesis and compaction
- Burial and compaction
 - mechanical and chemical compaction
 - what to learn from compaction analysis?
- Early diagenetic processes
 - environmental control on early burial geochemistry
 - early cement phases
- Burial diagenesis: cementation and dissolution
 - authigenic mineralogy; common cement phases and grain replacements
 - secondary porosity formation by dissolution
 - hydrocarbon charge and its effects on diagenesis
- Pore system evolution and the predictability of porosity degradation

Session 4: Case studies and discussion

This session can be tailored to client wishes. For example;

- Case studies focusing on the reservoirs whose porosity and permeability are predominantly controlled by depositional environment and their further pore system evolution with burial.
- Multiwell examples illustrating the spatial variations in pore-system degradation.



Assumptions

- The course has an approximate duration of 8 hours, which includes 20 minute coffee breaks in the mid-morning and mid-afternoon as well as an hour lunch break.
- The course can be held at the client's location or in the Badley Ashton offices: in Houston (up to 6 participants) or Winceby (Lincolnshire), UK (up to 10 participants).
- The data used for the illustrations and 'case studies' may be supplemented with more specific examples from the client's own portfolio (assuming a previous project with Badley Ashton). The client would be responsible for obtaining any internal permission with regard to their use in the course.
- The presenters will be drawn from Badley Ashton's petrographic group including Markus Hoppe, Sanem Acikalin and Phillip Hayward (see below)
- The course will be delivered via a PowerPoint presentation supplemented by handouts provided in hardcopy at the beginning of the course.

Presenters

Markus Hoppe - Markus is a senior clastic reservoir geologist at Badley Ashton, specialising in microanalysis and pore-scale reservoir evaluation and with a wide range of senior responsibilities at the company. His professional experience includes clastic plays in Europe, the Middle East, North and East Africa, North America and Australia, with special emphasis on the North West Shelf of Australia in recent years. Markus is interested in integrated reservoir studies and regional diagenetic evaluations and has a multidisciplinary academic background in tight gas reservoir research.

Sanem Acikalin - Sanem is one of Badley Ashton's UK based reservoir geologist with an interest in clastic petrography and sedimentology. Following her previous experience on the Middle East and North Sea reservoirs, she is currently working on single and multiwell reservoir quality evaluation studies, dealing with clastic plays of East Africa and predominantly tight gas reservoirs of the Middle East. These projects cover a wide range of depositional environments from paralic, sabkha to glacial. She has a research background and several years teaching experience.

Philip Hayward - Philip is a clastic reservoir geologist with Badley Ashton America deepwater team in Houston. His professional experience includes single and multiwell/multi-field reservoir quality evaluation studies involving the detailed petrographical and integrated sedimentological and petrophysical characterisation and evaluation of a number of tight gas and oil plays from a wide range of depositional settings and geographical regions. These include the Gulf of Mexico, East and North Africa, Middle East, East Asia and the UK continental and Norwegian North Sea. Areas of special interest include sandstone and clay mineral diagenesis, formation damage, petrophysical formation evaluation and the microstructural characterisation of deformation bands.

Participants

The course is targeted at geoscientists, petrophysicists and engineers with a mutual interest in pore-scale reservoir quality prediction in siliciclastic plays.