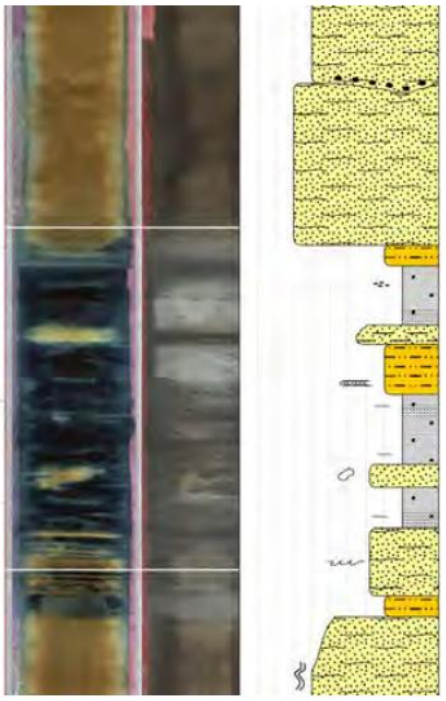
Core Description of Clastic Reservoirs: Tools and Methods

This course introduces participants to the observational skills needed to describe clastic lithofacies, recognize vertical facies stacking patterns, and interpret key stratigraphic surfaces in core. Lectures cover all main clastic environments of deposition (EoD), core descriptions, and methods for core logging. Participants describe and identify facies in core, link core descriptions to rock properties and interpret EoD and sub-EoD. Core exercises are tied to well logs and seismic lines to correlate 1-D core information to 3-D views of reservoir-scale depositional systems. This course provides participants with the necessary skills to integrate core, well-log, and seismic data for generating high-resolution EoD maps. Group discussions and exercises also help participants understand the importance of integrating engineering data and how vital integrating geoscience data when characterizing the reservoir behavior.



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COURSE CONTENT

- Basic concepts in clastic sedimentology
- Sedimentologic techniques for core descriptions and interpretations of lithofacies in core
- Interpret EoD and reservoir architecture for clastic depositional systems
- Interpretation of vertical stacking of facies and identifying sequence stratigraphic surfaces in core
- Interpretation and mapping techniques for core, well-logs, and seismic lines in different clastic settings at different scales
- Evaluation of reservoir geometry and connectivity across EoDs

LEARNING OUTCOMES

- Definition and recognition criteria for different clastic lithofacies, lithofacies associations and vertical stacking patterns of facies
- Recognize key stratigraphic surfaces in clastic depositional systems
- Quantify grain size by visual comparison to grain-size charts
- Qualitatively evaluate provenance, sediment maturity and distance to sediment source based on grain composition, roundness, and sorting
- Understand sedimentary processes and their resulting sedimentary structures and fabric, and how to relate processes to different lithofacies
- Correlate lithofacies described in core to well-logs
- Utilize core data to calibrate well-log and seismic data for the recognition of EoD
- Interpret and map flow units at production scale based on the integration of core, well-log and production data