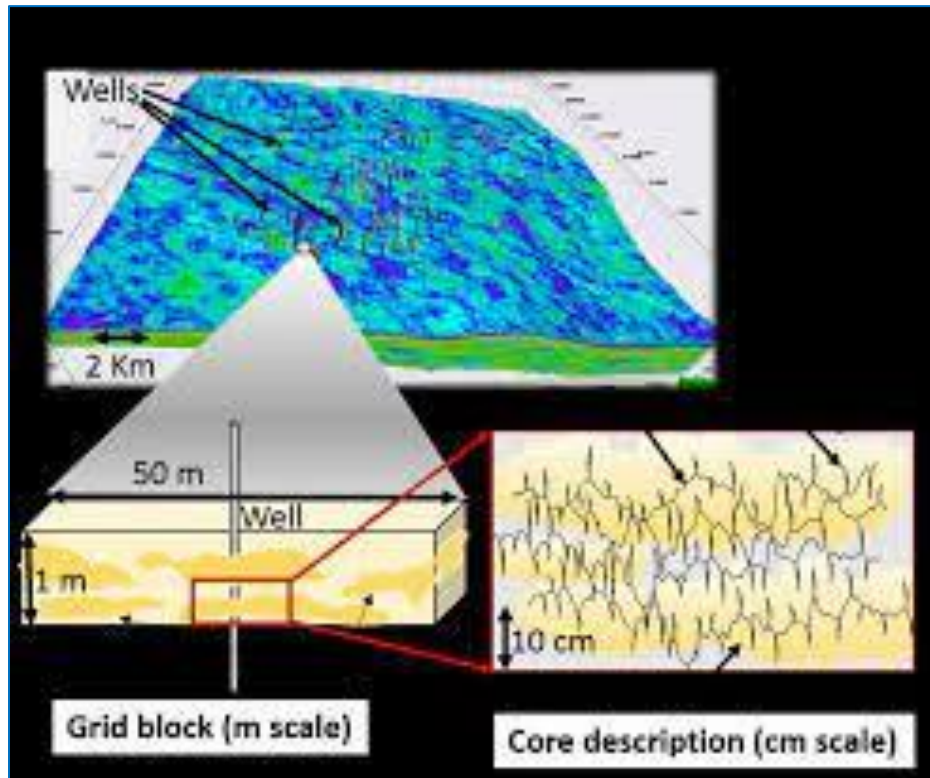




DE504: MICP and Deterministic Rock Typing

Training Description:

Carbonates form a major oil and gas play around the world; however, their complex deposition, texture, pore and fracture network contribute to the difficulties of modelling their heterogeneity. The training course describes the different types, controlling factors, geometries and facies of Carbonates specifically looking at pinnacle and platform reefs, which are characteristic of Asia and the Middle East. The connection between porosity and permeability are fundamental to the success of understanding a carbonate reservoir.

Some of the difficulties of understanding log data is due to microporosity, fractures and karst development inherent in the formation. Some of the key petrophysical measurements will be discussed and how to interpret the borehole images associated with carbonates. As well as looking at different methods of rock typing and best practices to building a static carbonate model.

Training Designed for:

This course is intended for Petrophysicists, Geologists and Reservoir Engineers with some Oil & Gas experience.

Prerequisite:

A proficient knowledge in Geology, petrophysics or reservoir engineering, with a basic knowledge of Formation Evaluation preferable.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- ❖ Introduction
- ❖ The Origin of Carbonates
 - The controls on the types of carbonates are discussed and the evolution of the fossil record and their relationship to sea level change.
 - The different types of carbonate depositional systems and platforms and the facies they produce.
 - Look at karst and fracturing in carbonate systems

DAY TWO:

- ❖ Identifying Different Carbonates from Core and Borehole images
 - Learn how to classify carbonates from thin section, core and mud logs
 - Identify electrofacies from borehole images
 - Incorporate important core data such as MICP data, porosity and permeability as well as thin sections.

- Utilization of the theory of Representative Elementary Volume (REV) to upscale data from micron to metric scale.
- Discuss how fractures and bioturbation influence porosity and permeability

DAY THREE:

❖ Rock Typing Carbonates from Log Data

- Look at the different techniques of rock typing from Lorentz plots, Winland-R35, Flow Zone Indicators etc.
- Understand how to integrate different logs such as NMR, ECS, Sonic and Borehole Images and validate with core.
- Understand the difference between facies, rock type, flow units, flow capacity and storage capacity.

DAY FOUR:

❖ Pinnacle Reefs – Examples from reservoirs of SE Asia

- Understand the origin of Pinnacle Reefs
- Look at the Facies of pinnacle and patch reefs
- Characterization of Framework Corals and Coral Talus
- Impact of fractures and karst on the reservoir
- Discussion on the importance of Core, advance petrophysical tools and image data in pinnacle reef facies analysis
- Review best practice of logging, rock typing and interpreting and building a static model

DAY FIVE:

❖ Platform Carbonates – Examples from the Middle East

- Understand the origin and development of Platform Carbonates
- Review the types of facies and facies association in platform reefs
- Learn how to identify different carbonate facies and facies associations
- Understand the impact of Bioturbation, fractures and karst on the reservoir
- Review best practice of logging, rock typing and interpreting and building a static model

❖ Course Conclusion

❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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