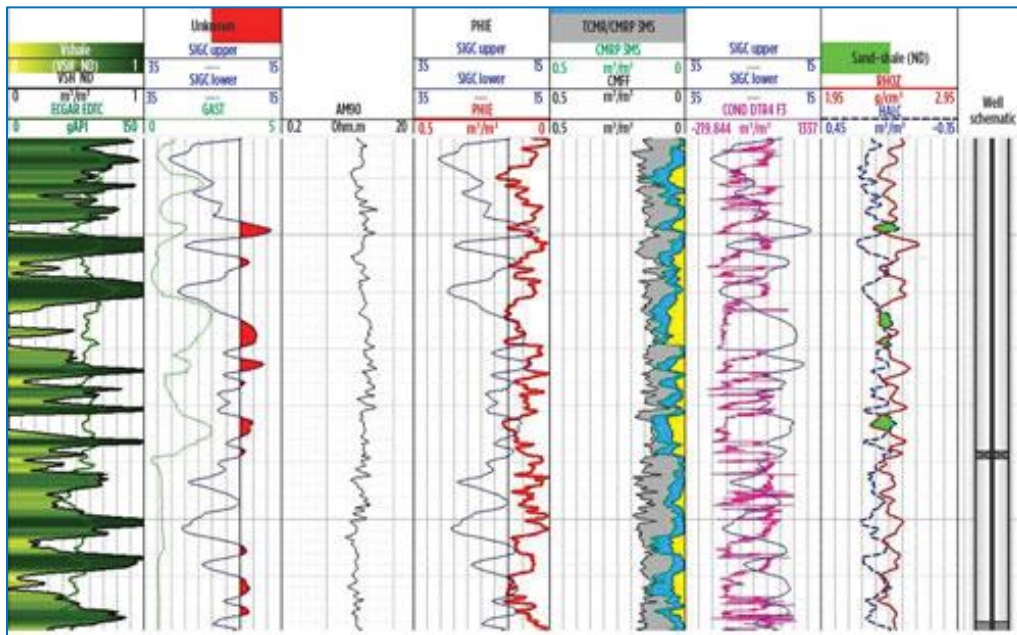




DE301: Logging Methods, Interpretation and Implementation - Advanced

Training Description:

This intensive training course will highlight the techniques and principles of the main open and cased hole logging tools used in the oil industry for professionals who needs to deal with wireline logs in their daily job.

This interactive training course will explore the tools response explained from their physical principles as well as their relationship with the rock and fluid properties, most common open and cased hole logging technologies will be covered explaining their main applications and limitations. Interpretation methods and implementation will be discussed with examples and exercises.

The training course will highpoint:

- Discussions on open hole tools physical principles and applications
- Tool limitations on different borehole environments
- Tips and examples to identify and understand common logging issues
- Explanation of petrophysical concepts and techniques for log interpretation and implementation
- Cement and corrosion evaluation tools principles and applications
- Cased hole resistivity, porosity and saturation tools
- Application of interpretation methods and implementation in some examples and exercises

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the physical principles of main open and cased hole logging tools
- ✓ Know the main applications and limitations of the different tool readings
- ✓ Perform a quantitative formation evaluation on a simple lithology
- ✓ Understand the uses and interpretation and implementation of open and cased hole logging tools
- ✓ Obtain a full understanding of logging tools principles and applications
- ✓ Learn the principles and key indicators for log quality assurance and quality control
- ✓ Learn basic and advanced methods and techniques for log interpretation and implementation
- ✓ Get awareness of the safety policies involved on operations with explosives

Training Designed for:

This course is intended for Engineers in exploration and production departments, Geologists, Geophysicist and Petrophysicist, Petroleum, Reservoir and Drilling Engineers. In general, all other oil & gas industry professionals who are involved in logging data interpretation and validation.

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:

- ❖ PRE-TEST
- ❖ Basic Concepts Review, Resistivity and Conductivity Tools
 - Basic Well Logging Concepts
 - Auxiliary Measurements, Applications and Common Issues
 - Basic Measurements: Gamma Ray and Spontaneous Potential
 - Resistivity Theory, Principles and Applications of Laterologs
 - Microresistivity Devices, Principles and Applications
 - Conductivity Tools, Uses and Limitations
 - RT and Invasion Profile Determination

DAY TWO:

- ❖ Nuclear, Acoustic and Geological Logging Tools
 - Formation Density Tools - *Principles and Applications*
 - Neutron Tools Principles and Applications
 - Porosity Determination from Density and Neutron Logs
 - Lithology Determination and Calibrations
 - Basic Sonic Tools - *Borehole Compensation*
 - Dipole Sonic Tools - *Applications*
 - Mechanical Properties - *Determination and Uses*
 - Dipmeter Interpretation Principles
 - Geological Image (*resistivity and ultrasonic*) Logging Tools
 - Structural and Stratigraphic Interpretation Principles
 - Facies Analysis for Reservoir Characterization with Image Logs

DAY THREE:

- ❖ Advanced Logging Tools and Formation Testers
 - Nuclear Magnetic Resonance - Applications and Limitations
 - Relaxation Mechanisms and their Association with Fluid and Rock Properties
 - Porosity, Irreducible Water Saturation and Permeability Determination
 - Advanced Fluid Determination Methods: 3D map T1-T2-Diffusion
 - Dielectric Tools Principles and Applications
 - Saturation Determination Parameters, m, n and CEC
 - Geochemical Logging Tools - *uses and limitations*
 - Reservoir Pressure Determination Tools
 - Pre-test Interpretation - *common issues*
 - Pressure Gradient Interpretation and Examples
 - Fluid Sampling, Optical and Composition Fluid Analyzers
 - Advanced Orobres for Special Well and Reservoir Conditions
 - Permeability Determination

DAY FOUR:

- ❖ Cased Hole Logging Tools
 - Cement Evaluation Logs: CBL-VDL. Interpretation and LQC
 - Ultrasonic Cement Evaluation Tools

- Corrosion Logging Tools
- Saturation Determination in Cased Hole
- Pulsed Neutron and Carbon / Oxygen Tools
- Cased Hole Resistivity and Porosity Tools
- Comparison with Open Hole Logs
- Formation Testers in Cased Hole
- Basic Production Logging Sensors
- One and Two-phase Fluid Analysis
- Multi-phase Fluid Analysis with Advanced Sensors

DAY FIVE:

- ❖ **Well Perforating and Basic Formation Evaluation Techniques**
 - Well Perforating Principles and Techniques
 - Formation Evaluation Principles
 - R_w Determination Methods
 - Crossplots Utilization, Hingle and Pickett Plots
 - Graphical Interpretation Techniques for Porosity and Lithology
 - Saturation Determination Equations and Techniques
 - Complete Formation Evaluation for Simple Lithology
- ❖ **Course Conclusion**
- ❖ **POST-TEST 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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