TRAINING TITLE

FORMATION EVALUATION (FE) LOG QUALITY CONTROL

Training Duration

5 days

Training Venue and Dates

Ref. No. DE069	Formation Evaluation (Fe) Log Quality Control	5	27-31 Jan. 2025	$5,750	Dubai, UAE

In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees

- **$5,750 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch**

Training Certificate

Define Management Consultants Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

In the E&P business, integrated petroleum engineering studies and field development plans are management tools which are used to maximize economic recovery of hydrocarbons. Petrophysical engineers fulfill a key role in analyzing and interpreting subsurface reservoir data, which form the basis for reservoir models. E&P technical staff and team leaders involved in integrated studies require more than general skills in petrophysical and interpretation techniques to produce quality input to development plans.

TRAINING OBJECTIVES

- **Drive a consistent and effective Petrophysics inputs to improve oil recovery.**
- **Understand rock properties and pore geometry.**
- **Capitalize on integration reservoir and petrophysical data to maximize economic recovery of hydrocarbons.**
- **Attain the knowledge and practical use of total and effective porosity calculation.**
- **Determine and understand new techniques and tools in well logging.**
- **Acquire knowledge on permeability and rock quality interpretation.**
- **Learn and practice integration of core analysis and open-hole logs.**

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WHO SHOULD ATTEND?

Petro physicists, Geologists, Geophysicists, Engineers and Log interpreters.

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work& Practical Exercises**
- **20% Videos& General Discussions**

COURSE PROGRAM

✓ **Introduction to Petrophysics:**

- **What is Petrophysics?**
- **What are the Rock Physical properties?**
- **What is Well Logging?**

✓ **Reservoir Petrophysics (Petrophysical Rock Properties):**

- **Porosity Types & Calculations.**
- **Permeability.**
- **Permeability and Porosity Relationships.**
- **Boundary Tension & Wettability.**
- **Electrical resistivity (Formation factor & Resistivity index).**
- **Cation exchange capacity (CEC).**
- **Capillary pressure (Pc) & Saturation Height Modeling (SHM).**
- **Pore size distribution (PSD).**
- **Relative Permeability & Fluid Saturation.**
- **Core-Log Relationship & Integration.**

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✓ Logging Operations and Quality Control:

- Logging Tools Operations.
- Log Quality Control.

✓ Open-Hole Logging Tools:

- Definition, measurements, application, equations of the following tools:
- Lithology Tools: GR, NGT, SP.
- Porosity Tools: BHC, FDC, CNL.
- Resistivity Tools: DLL, DIL, MSFL.
- Other Tools: EPT, Dipmeter, RFT.

✓ Logging While Drilling (LWD):

- Lithology Tools.
- Resistivity Tools.
- Porosity Tools.

✓ Cased Hole and Production Log Evaluation:

- Definition, measurements, application, equations of the following tools:
- Thermal Decay Time (TDT, RST).
- Cement Bond (CBL-VDL).
- Production Logging (PLT).

✓ Recent and Advanced Tools:

- Definition, measurements, application, equations of the following tools:
- Geological Tools: FMS, FMI.
- Resistivity Tools: HRLA, ARI, AIT.
- Porosity Tools: APS, LDT, DSI.
- Other Tools: NMR, CMR, MDT, ECS (Litho-scanner).

✓ Reservoir Petrophysical Evaluation (Techlog):

✓ Examples applied to (Clastics & Non-clastics reservoirs (Tight)).

✓ Examples applied to (Oil & Gas reservoirs).

- Database setup, Quality Control data and Loading data (from DLIS or LAS files).
- Data presentation.

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- **Depth Match between different well data (WL, LWD,…).**
- **Curve Splicing (merge) between different log runs.**
- **Lithology identification from wireline logs & using different cross plots.**
- **Different methods for Reservoir zonation.**
- **Create temperature curve & temperature gradient.**
- **Determination of fundamental petrophysical parameters (Rw, m,n,..)**
- **Shale volume calculations.**
- **Determination of clay minerals using different cross plots.**
- **Porosity models & calculation methods.**
- **Saturation models & calculation methods.**
- **Cut-off and Summation.**
- **Cross plots for Lithology, porosity and oil/water/gas saturation.**
- **Initialization.**
- **Construction of Formation Evaluation models.**
- **Combining formation evaluation model.**
- **Post Processing.**

NOTE:
Pre-& Post Tests will be conducted.
Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.

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