

TRAINING TITLE

LOGGING METHODS, INTERPRETATION AND IMPLEMENTATION - ADVANCED

Training Duration

5 days

Training Venue and Dates

Ref. No. DE059	Logging Methods, Interpretation and Implementation - Advanced	5	13-17 Jan. 2025	\$5,750	Dubai, UAE
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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

This course requires no prior knowledge of logs or log interpretation. Attendees will learn basic interpretation techniques needed to interpret open hole well logs. Both quick-look qualitative interpretations and more rigorous quantitative interpretations are covered. The course is generic in technical scope, no specific software is used. Equations are solved by hand with a calculator. Both the theory and practice of practical, applied interpretation are covered as well as practical advice, applied exercises, discussions and the study of actual logs. The accompanying manual provides a useful reference for attendees to use after the conclusion of the course.

TRAINING OBJECTIVES

By end of course will be able to understand

- Determination of main lithologies and volumes of each.
- Calculation of porosity.
- Detection of hydrocarbons, and quantification.
- Learn systematic log interpretation procedure & real world practicalities.
- Uses and limitations of main specialty logging tools.

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WHO SHOULD ATTEND?

Reservoir engineers, petroleum engineers, production engineers, geologists, geophysicists, managers, independent operators, marketing personnel and anyone who needs a practical understanding of open hole log interpretation.

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

Day 1: Petrophysical Characteristics of Rocks & Open Hole Logging

Petrophysical Characteristics of Rocks

1. Volume of Shale
2. Clay Mineralogy
3. Cation Exchange Capacity
4. Siliciclastic rocks
5. Carbonate rocks
6. Simple cubic packing
7. Hexagonal packing
8. Rhombohedral packing
9. Secondary Porosity
10. Permeability
11. Matrix Mineral Constituents
12. Resistivity
13. Saturation
14. Archie's models

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15. The Waxman-Smits model
16. Movable Oil
17. Reserves and Estimated Ultimate Recovery (EUR)

Open Hole Logging

1. Types of Boreholes
2. Types of Well Logs
3. Uses of Well Logs
 - Open Hole
 - Cased Hole
4. Environmental Effects and Corrections
5. Logging uncertainties

Day 2: Caliper & SP Measurement

Caliper Measurement

1. Applications
2. Physics of Measurement
3. Caliper Tool and new developments
4. Strengths and limitations
5. Measurement Names
6. Caliper Interpretation
7. Factors influencing Caliper Responses
8. Quality Control

SP Measurement

1. Electrolytes
2. Physics of Measurement
 - Streaming Potential
 - Electrochemical Potential
3. Applications
4. SP Tool and new developments
5. Volume of Investigation
6. Strengths and limitations
7. Static Spontaneous Potential (SSP)
8. Environmental Effects
 - Bed Thickness
 - Borehole and Invasion
 - Shale Content
 - Hydrocarbon Content

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9. Environmental Corrections
10. Quality Control
11. Interpretation

Day 3: Gamma Ray & Density Measurements

Gamma Ray Measurement

1. Applications
2. Gamma Ray Tool and new developments
3. Physics of the Measurement
4. Volume of Investigation
5. Strengths and limitations
6. Measurement Names
7. Environmental Effects
8. Environmental Corrections
9. Quality Control
10. Interpretation

Density Measurement

1. Applications
2. Density Tool and new developments
3. Physics of the Measurement
 - High Energy (RHOB)
 - Low Energy (PEF)
4. Volume of Investigation
5. Strengths and limitations
6. Measurement Names
7. Secondary Measurements (e.g., Caliper)
8. Environmental Effects
9. Environmental Corrections
10. Quality Control
11. Interpretation

Day 4: Neutron, Sonic & Resistivity Measurements

Neutron Measurement

1. Applications
2. Neutron Tool and new developments
3. Physics of the Measurement
 - GRN

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- SNP
- CNL
- 4. Volume of Investigation
- 5. Strengths and limitations
- 6. Measurement Names
- 7. Environmental Effects
- 8. Environmental Corrections
- 9. Quality Control
- 10. Interpretation

Sonic Measurement

- 1. Applications
- 2. Sonic Tool and new developments
- 3. Physics of the Measurement
- 4. Volume of Investigation
- 5. Strengths and limitations
- 6. Measurement Names
- 7. Environmental Effects
- 8. Environmental Corrections
- 9. Quality Control
- 10. Interpretation

Day 5: Specialized Measurements & Cased Hole Tools

Resistivity Measurement

- 1. Induction Measurement
 - Applications
 - Induction Tool and new developments
 - Physics of the Measurement
 - Volume of Investigation
 - Strengths and limitations
 - Environmental Effects
 - Environmental Corrections
 - Quality Control
- 2. Laterolog Measurement
 - Applications
 - Laterolog Tool and new developments
 - Physics of the Measurement
 - Volume of Investigation
 - Strengths and limitations

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- Environmental Effects
 - Environmental Corrections
 - Quality Control
3. Microresistivity (Rxo)
- Applications
 - Tool and new developments
 - Physics of the Measurement
 - Volume of Investigation
 - Strengths and limitations
 - Environmental Effects
 - Environmental Corrections
 - Quality Control
4. Resistivity Interpretation

Cased Hole Tools & Cement Evaluation

1. Cased Hole Logging
- Environment and Applications
 - Cased Hole Measurements
 - Shared Measurements in Open and Cased Holes
2. Cement Evaluation Measurements
- Cement Bond (CbL) & Variable Density (Vdl) Measurements
 - Ultrasonic Pulse-Echo Measurements
 - CET Measurements
 - Ultra Sonic Image Measurements
3. Selection Criteria of Cased Hole Tools

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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