

BASIC PETROPHYSICS

General:

Discipline: Petrophysics

Level: Basic

Duration: 5 days

Instructor(s): Gonzalo Ruiz, Jesús Sotomayor

Purpose:

Petrophysics is fundamental to all aspects of the petroleum business. Principles, applications, and integration of petrophysical information for reservoir description will be discussed in depth. Through a combination of class discussion and exercises, participants will learn how to conduct competent quick-look evaluations. Using data from open hole logs, logging while drilling, and core data you will evaluate porosity, permeability, and saturation in a variety of reservoirs. Knowing how to integrate petrophysical information with other data sources will improve participants' ability to assess technical risk when examining hydrocarbon opportunities.

Designed for:

Beginners geoscientists and engineers using petrophysical data and other technical staff at all experience levels wanting a fundamental background in the petrophysical discipline.

You Will Learn:

How to:

- ✓ Understand and apply at a basic level the theory and operation of major industry tools.
- ✓ Estimate the critical earth parameters for the estimation of hydrocarbon volumes
- ✓ Calibrate porosity and permeability values from core and log sources for improved saturation calculations.
- ✓ Apply basic open hole logging,
- ✓ Understand borehole seismic, image, and LWD/MWD.
- ✓ Analyze and Integrate log, core, geoscience, and engineering well data for well and field development projects.
- ✓ Select petrophysical tool combinations for specific applications.
- ✓ Assess the impact of petrophysical analyses in technical uncertainty estimates of reservoirs

Course Content:

- Critical petrophysical aspects of a field evaluation
- Fundamental concepts of petrophysics
- Petrophysical rock parameters
- Depositional environment and petrophysics
- Mudlogging use in petrophysics
- Core analysis, acquisition, interpretation, and quality checks
- Basic rock properties
- Theory and basics of resistivity, radioactivity, acoustic tools
- Quick-look techniques
- LWD/MWD versus open hole logging
- Assessment of rock quality using core and logs
- Petrophysical impact and uncertainty, and tool selection
- Use of open hole tools to other geoscience and engineering areas
- Overview of cased hole logging and use by another geoscientist

