

Workshop on Petroleum Seismics

Dr.D.M. Nathaniel

Nate Petroleum Development & Research LLP, Navi Mumbai-400705

It is essential for geologists and geophysicists, who are new to interpretation of 2D and 3D seismic data, to learn the skills required to interpret the seismic data into meaningful geological entities. This course is not a lecture class, rather an interactive session that emphasizes hands-on interpretation of seismic data (hard copies) for basin analysis, prospect generation and its evaluation.

The participants are exposed to: concepts of plate tectonics; petroleum geology and geochemistry; petroleum systems and play concepts; qualitative interpretation of well log data; structural and stratigraphic analysis of seismic data in conjunction with well logs and other subsurface data; prospect generation and evaluation.

Who Should Attend?

It is designed for university students of geology and geophysics disciplines or professionals with limited actual work experience in interpreting seismic data for oil & natural Gas. This two-day workshop consists of eight Sessions i.e., four sessions in a day.

Session-1

- 1.1 Essentials of Plate Tectonics and Petroleum Occurrence
- 1.2 Basin classification with reference to Indian Basins
- 1.3 Exercises

Session-2

- 2.1 Concepts of Petroleum Geology (source, reservoir, maturation, trap, migration & entrapment) with a special focus on organic enrichment of sediments; Risk & Uncertainty.
- 2.2 Petroleum System & Play concepts
- 2.2 Exercises

Session-3

- 3.1 Geophysical Methods in Hydrocarbon Exploration and their sampling & accuracies (Gravity, Magnetics, Seismic, Wireline Logs, Core data).
- 3.2 Geological Interpretation of Seismic Data in Hydrocarbon Exploration (structural & stratigraphic aspects)
- 3.3 Exercises

Session-4

- 4.1 Structural Interpretation of Seismic Data (2D & 3D)
- 4.2 Exercises

Session-5

- 5.1 Seismic Stratigraphy
- 5.2 Exercises

Session-6

- 6.1 Exploration Strategy
- 6.2 Exercises

Session 7 and 8

Exploration Game, wherein participants are divided into different teams and each team will be given seismic data (hard copies) to interpret and propose an exploration drill-test location. After that each team would be asked to defend their proposed drill-location (why the team opined to drill that location for hydrocarbons), followed by analysis and evaluation of each proposed location for a logical end.