



HARNESS THE POWER
OF KNOWLEDGE

Well Imaging, Interpretation and Analysis

TRAIN



Introduction

Well imaging, interpretation, and analysis are crucial aspects of subsurface exploration and evaluation. These techniques provide invaluable insights into geological formations, fluid distribution, and potential hydrocarbon reservoirs.

This comprehensive 5-day professional training course will equip you with the essential knowledge and skills to effectively interpret and analyze well imaging data from various logging tools.

Course Objectives

By the end of this course, you will be able to:

- Understand the principles and applications of various well logging tools, including wireline logging, LWD (logging while drilling), and MWD (measurement while drilling)
- Interpret and analyze well log data, including gamma ray logs, resistivity logs, neutron logs, sonic logs, and density logs
- Identify and characterize geological formations based on well log signatures
- Evaluate fluid properties, such as porosity, saturation, and permeability, using well log data
- Integrate well log data with other geological and geophysical data for comprehensive subsurface interpretation

Course Agenda

Day 1: Introduction to Well Imaging and Logging Tools

- Explore the history and evolution of well logging and its role in subsurface exploration
- Understand the principles and applications of various well logging tools, including wireline logging, LWD, and MWD
- Review the data acquisition, processing, and calibration procedures for well logging

Day 2: Gamma Ray Log Interpretation

- Delve into the principles of gamma ray logging and its applications in lithology identification
- Interpret gamma ray log responses to distinguish between various rock types, such as sandstones, shales, carbonates, and evaporites
- Utilize gamma ray logs to identify shale intervals, delineate formation boundaries, and assess potential hydrocarbon reservoirs

Day 3: Resistivity Log Interpretation

- Explore the principles of resistivity logging and its applications in fluid identification and saturation estimation
- Interpret resistivity log responses to differentiate between saline and hydrocarbon-bearing formations
- Calculate porosity and saturation using resistivity logs and apply Archie's equation for quantitative analysis

Day 4: Neutron and Sonic Log Interpretation

- Understand the principles of neutron logging and its applications in porosity determination
- Interpret neutron log responses to estimate porosity and evaluate hydrocarbon potential
- Delve into the principles of sonic logging and its applications in acoustic impedance estimation
- Utilize sonic logs to determine porosity, identify fractures, and assess reservoir quality

Day 5: Well Log Integration and Subsurface Interpretation

- Learn to integrate well log data from various tools to enhance subsurface interpretation
- Utilize crossplots and correlation techniques to identify formation trends and fluid distribution
- Develop detailed subsurface geological models based on well log data and other geological and geophysical information
- Apply well log interpretation and analysis to guide exploration and development decisions

Who Should Attend

This course is designed for:

- Aspiring and experienced geologists seeking to enhance their understanding of well logging and its applications in subsurface interpretation

- Geophysicists involved in seismic interpretation and well log analysis for hydrocarbon exploration and evaluation
- Petroleum engineers utilizing well log data for reservoir characterization, well placement, and production optimization
- Environmental scientists applying well logs to assess subsurface conditions and identify potential contamination risks

Course Benefits

- Develop a comprehensive understanding of well imaging techniques, data interpretation, and subsurface analysis
- Gain hands-on experience in interpreting and analyzing well log data from various logging tools
- Enhance your ability to identify and characterize geological formations, evaluate fluid properties, and assess hydrocarbon potential
- Apply well log interpretation knowledge to integrate subsurface data and make informed exploration and development decisions
- Stay updated on the latest advancements and techniques in well logging technology and data analysis