The PLT Production Logging Tool - Principle and Interpretation

Course Overview:
Production logging tools (PLTs) provide valuable insights into the flow of fluids and gases within wellbores, enabling operators to optimize production strategies and enhance reservoir understanding
This comprehensive 5-day professional training course will equip engineers and geoscientists with the essential knowledge and skills to effectively apply PLT principles, interpret PLT data, and make informed subsurface decisions

Course Objectives:
By the end of this course, participants will be able to:
1
Understand the fundamental principles of PLT and its applications in wellbore evaluation and production optimization
2
Identify and describe various PLT tools and their measurement capabilities, including pressure, temperature, flow rate, fluid properties, and acoustic sensors
3
Apply PLT data interpretation techniques to analyze fluid flow patterns, identify production problems, and characterize reservoir properties
4
Integrate PLT results with other subsurface data, such as well logs and seismic data, for comprehensive reservoir evaluation
5
Utilize PLT findings to optimize well placement, production strategies, and field development plans

Course Agenda:
Day 1: Introduction to Production Logging Tools (PLTs)
• Delve into the history, principles, and objectives of PLT in subsurface evaluation and production optimization
• Explore the different types of PLTs, their components, and their measurement capabilities
• Discuss the importance of PLT planning, preparation, and execution
• Understand the factors affecting PLT data quality and interpretation
Day 2: PLT Tool Operation and Data Acquisition
• Learn about the operation of various PLT tools, including pressure gauges, temperature sensors, flowmeters, fluid property sensors, and acoustic sensors
• Explore data acquisition systems used to capture PLT data during well logging operations
• Discuss the importance of data quality control and error analysis in PLT data interpretation
• Apply data processing tools to handle real-world PLT data
Day 3: PLT Data Interpretation Fundamentals
• Understand the principles of fluid flow in wellbores and the impact of flow regimes on PLT measurements
• Delve into the interpretation of PLT data, including pressure, temperature, flow rate, fluid properties, and acoustic logs
• Explore techniques for identifying fluid flow patterns, such as gas lift, water influx, and crossflow
• Apply PLT data interpretation to detect production problems, such as wellbore damage, formation damage, and reservoir heterogeneities
Day 4: Advanced PLT Interpretation Techniques
• Discuss the application of PLT interpretation in multiphase flow scenarios, fractured reservoirs, and unconventional resources
• Explore the use of advanced PLT interpretation techniques, such as deconvolution, multirate logging, and interpretation of production data
• Analyze the impact of wellbore conditions, such as skin factor and wellbore geometry, on PLT results

• Apply advanced PLT analysis tools to interpret complex PLT data

Day 5: Integration of PLT Data with Reservoir Modeling and Subsurface Evaluation

• Integrate PLT results with reservoir modeling and seismic data to enhance subsurface understanding
• Utilize PLT data to validate reservoir models, refine reservoir property estimates, and improve production forecasts
• Discuss the role of PLT analysis in reservoir management decisions, such as well placement, production optimization, and field development planning
• Explore the future trends and advancements in PLT interpretation, reservoir modeling, and subsurface data integration

Who Should Attend:

• Reservoir engineers and geoscientists involved in production logging, wellbore evaluation, and reservoir characterization
• Production engineers responsible for well performance optimization, field development planning, and production strategies
• Project managers and decision-makers overseeing production logging operations and subsurface evaluation projects
• Students and professionals interested in pursuing a career in reservoir engineering, production logging, and subsurface analysis

Course Benefits:

• Develop a comprehensive understanding of PLT principles, data acquisition, interpretation methods, and applications in subsurface evaluation and production optimization
• Gain hands-on experience in applying PLT interpretation software to analyze real-world PLT data
• Enhance your ability to identify fluid flow patterns, detect production problems, and characterize reservoir properties using PLT data
• Effectively utilize PLT findings to validate reservoir models, improve subsurface understanding, and inform reservoir development decisions