Advanced Skills for Well Testing & Pressure Transient Analysis

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Introduction:

This course provides participants with the advanced skills and understanding required to interpret and analyze complex pressure transient tests in oil, gas and water injection wells. Simple models are used to illustrate principles and to analyze real reservoirs. More complicated models are introduced as extensions of the simple models.

The course addresses identification of both simple and complex reservoir models and quantification of important reservoir properties in homogeneous-acting, bounded and infinite-acting, naturally and hydraulically fractured reservoirs, and analysis of both vertical and horizontal wells.

Objectives

By the end of this BTS training course, participants will be able to:

- Estimate depth o investigation achieved during transient tests
- Identify wellbore-storage distorted well-test data
- Identify flow regimes during transient tests and establish the likely reservoir model to use in test interpretation
- Estimate well and reservoir properties including permeability, skin factor, average drainage area pressure, and distance to important heterogeneities

- Estimate reservoir properties in complex wells and reservoirs, including horizontal wells, hydraulically fractured wells, and naturally fractured reservoirs
- Establish appropriate well test objectives and design tests to achieve those objectives

Who should attend?

Geologists, Geophysicists, Reservoir Engineers, Production Engineers, Petro physicists, Petroleum Engineers, Drilling Engineers, Field Development Engineers, Managers, Asset Managers, Oil & Gas Engineers, Reservoir Operators, Surveillance Engineers, Technicians, Engineering Trainees, Technical Managers, Technical Assistants, Technicians, Chemists, Physicists, Technical Supervisors, Service Company Personnel responsible for improving the performance of petroleum reservoirs

Course Outline:

- Basic concepts - fluid flow through porous media
- Type curve analysis
- Formation damage and stimulation
- Modification for gases and multiphase flow

- Diagnostic plots
- Buildup tests and the diagnostic plot
- Phase redistribution
- Bounded reservoirs
- Multiwell testing

- Estimating average reservoir pressure
- Hydraulically fractured wells
- Naturally fractured reservoirs
- Pressure transient analysis for horizontal wells
- Effects of errors in input data
- Well test design
- Integrated well test interpretation