PetroSkills

Reservoir Material Balance Fundamentals

MODULE

About the Skill Module

This skill module reviews and expands on the Material Balance Core module. Included in this skill module is a detailed review of Dry and Wet Gas Reservoirs, Black Oil Reservoir, Volatile Oil and Retrograde Condensate Reservoir, and Water Influx.

See demo online learning module

Target Audience

Engineers or geoscientists who will occupy the position of reservoir engineer, and any other technically trained individual who desires a more in-depth foundation in reservoir engineering.

You Will Learn

Participants will learn how to:

- Discuss the basic material balance equation and the assumptions
- Understand how the equations can be simplified based on certain assumptions and importance of mechanisms
- Relate material balance equation to different types of reservoirs
- Understand the application of material balance equation for gas reservoirs
- Consider the simplifications of material balance equation for absence or presence of different mechanisms
- Evaluate the uncertainties associated with mischaracterization of different mechanisms
- Apply various straight line manipulations for determining the gas in place for gas reservoirs
- Understand important drive mechanisms for black oil reservoirs
- Estimate the oil in place in oil reservoirs when the reservoir is above bubble point
- Estimate the oil in place in oil reservoirs when the reservoir is producing below bubble point
- Estimate the oil in place in oil reservoirs when the reservoir is influenced by gas cap
- Quantify the uncertainties in oil place based on the assumptions in the strength of drive mechanisms
- Understand important drive mechanisms for retrograde condensate and volatile oil reservoirs
- Estimate the oil in place in both these types of reservoirs under different mechanisms
- Quantify the uncertainties in oil place based on the assumptions in the strength of drive mechanisms
- Understand the importance of water influx in the material balance calculations
- Learn how to estimate the water influx using pot aquifer as well as pseudo-steady state methods

- Understand trial and error procedure required to estimate the aquifer influx
- Recognize the uncertainties associated with the estimation of aquifer size and the strength

Product Details

Categories: Upstream

Disciplines: Reservoir Engineering

Levels: Foundation

Product Type: Individual Skill Module

Format: On-Demand

Duration: 6.5 hours (approx.)

$795.00