ProdForecast — Production Forecast for Oil Reservoir

PEOffice®
Petroleum Engineering Office

ProdForecast provides a variety of reservoir engineering applications to estimate reserves and forecast production from primary and secondary recovery. Functions include: Arps'decline curves, waterflood type curve, Tong type curve statistical and stream tube models, etc. Additionally, Prod Forecast's material balance analysis can compute OOIP, water influx, drive mechanism identification and replacement contribution factor.

Main Functions

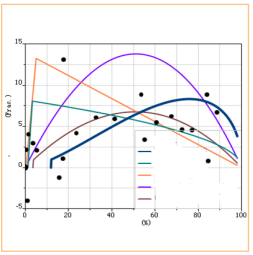
Reserve, Recovery and Production Rate Analyses by Well, Groups or Field

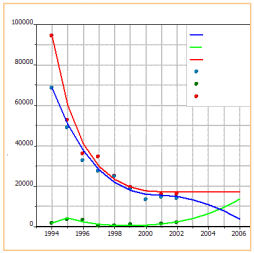
OOIP

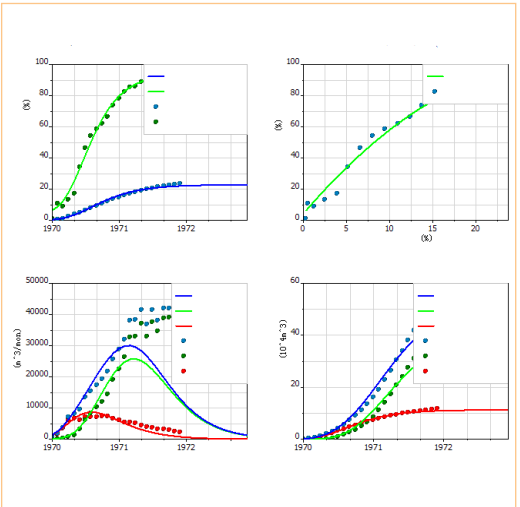
- Volumetric analysis
- Waterflood type curve analysis

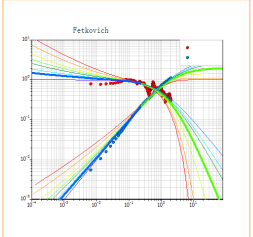
Recovery

- Empirical analysis, such as Guthrie & Greenberger, API, Koxaknh, etc.
- Waterflood type curve analysis, including dual-period type curve post-treatment analysis
- Waterflood type curve analysis with constant production rate
- Decline curve analysis for multi-periods as well as forecast with parameters setting option for Each analysis period
- Various statistical model analyses (Weibull, Logistic, Gaussian, etc.)
- Stream Tube analysis with production forecast under waterflood conditions
- Tong Type Curve
- Joint solution analysis with displacement efficiency and relative permeability. Water cut analysis with varying recovery
- Oil rate (PD) and water cut analysis
- Waterflood type curve analysis
- Decline curve analysis
- Statistical model analysis
- Joint solution analysis
- Stream tube analysis
- Waterflood type curve analysis with constant production rate









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Reserve, Recovery and Production Rate Analyses for Single Well

Oil rate (PD)

- Decline curve analysis
- Waterflood type curve analysis with constant production rate
- Recovery
- Decline curve analysis
- Waterflood type curve analysis

IPR

- Traditional IPR Analysis (under single-phase, two-phase and three-phase flow)
- Analytical formulas model
- Fractured well model (Infinite and finite conductivity)
- Heavy oil well model (With / without kickoff pressure)
- Horizontal well model (Various completion types)

Material Balance Analysis

- OOIP calculation without water influx, including FE, Campbell and Havlena & Odeh models
- Pseudo steady-state flow: Pot and Schilthus aquifer (radial, linear and hemispherical flow)
- Unsteady state flow: bottom aquifer (Chatas), radial aquifer (Van Everdingen & Hurst) and linear aquifer (Nabor-Barham).
- Three types of unsteady state aquifer boundaries: finite closed, infinite and finite open.
- Drive mechanism identification with Dake, PE and Campbell type curves
- Simultaneous calculation of OOIP, water influx and replacement contribution factor

Main Features

- Advanced reservoir engineering models coupled with strict robust algorithm to ensure accurate production forecast
- Users can perform various analysis and comparison for the same production index using different methods
- Sensitivity analysis capability
- Multiple Units of Measure with unit conversion between Metric and Imperial units
- Recommended Input data value range

PEOffice® is a PC/network-based software platform for integrating oil and gas reservoir management, production analysis and design. PEOffice® provides systematic computations and comprehensive analysis for reservoir model management, reservoir performance analysis, production problem diagnosis, optimized design of production parameters and analysis of oil/gas gathering and transportation system. PEOffice is widely utilized by petroleum engineers onsite and in the back office to resolve production problems and to manage oil and gas field development.

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