

ProdDesign — Oil Well Production Optimization



ProdDesign is used to precisely: model production and optimize design parameters for (vertical, inclined and horizontal) oil wells having various lift types such as flowing, beam pump, ESP, gas lift and screw pump. ProdDesign offers rich calculations for well design, including: IPR, multiphase flow and nodal analysis in wellbore as well as PVT, productivity, production index and forecast and optimum design for maximum production rate under a given rate or specific constraints. ProdDesign further enables match and forecast variation of inflow capability parameters (such as formation pressure and fluid productivity index) according to oil rate history.

Main Functions

Accurate matching and calculation of fluid PVT, IPR and wellbore multiphase flow

ProdDesign assists users to find the best appropriate calculation method and tune model parameters by matching lab and field data. ProdDesign provides total 19 types of fluid PVT models, 14 types of IPR models and over 10 types of multiphase flow models.

- Fluid PVT matching and calculation (including black oil and compositional model)
- IPR matching and calculation
- Wellbore pressure and temperature profile matching and calculation

Nodal analysis

- Calculate pressure and flow rate at any node in the wellbore (bottomhole, wellhead, choke) to determine the optimal production point under various production conditions.
- Offer parameter sensitivity analysis

Optimization of well production parameters

- Design at constant rate

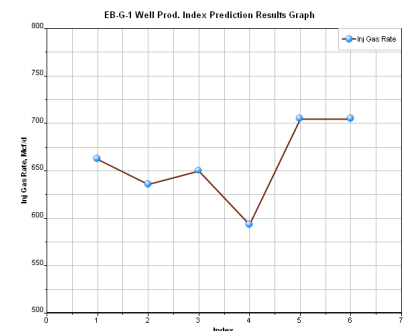
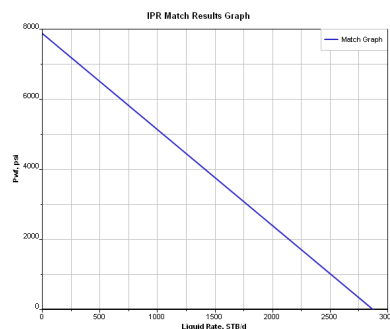
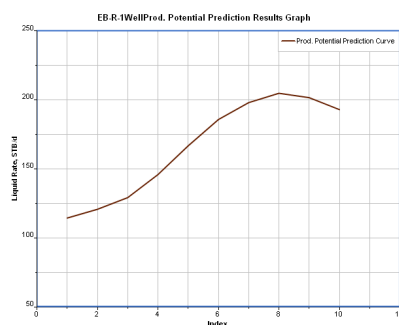
Optimize pumping equipment and production parameters according to given rate and conditions

- Design at maximum rate

Design production parameters at maximum rate subject to constraints

Formation supply forecast

Offer multiple methods to match historical formation supply data and to forecast future formation supply changes.



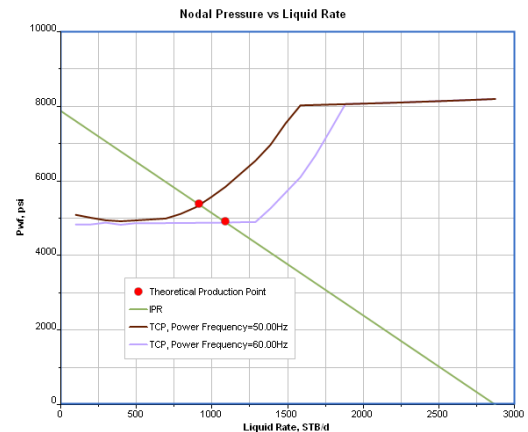
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Production potential forecast

- Analyze variation of well productivity over time
- Compare results with various lift means to assist lift type select

Production index forecast

- Analyze variations of production parameters over time, for example, wellhead tubing pressure and temperature, power consumption of electrical submersible pump, gas consumption in gas lift, etc.



Main Features

- Nodal analysis under rod pumping with accurate and stable calculations
- Unique forecast functionalities including inflow capability, maximum production potential and production index
- Rich fluid PVT, inflow and outflow models with easy matching operations
- Direct access to user's database resulting in enhanced program capabilities
- Metric and Field unit conversion ability
- Applicable to various types of oil well under various lifting mechanisms
- Well Location Map based operation enables to view all well input data, analyzed results and findings on map
- Optimal IPR data, fluid properties and multiphase flow regime can be easily stored for further analysis or exported to other modules
- Versatile reporting. Output can be tabulated and/or be depicted in graphic format, or exported to Microsoft Word and Excel
- Streamlined work flow and user-friendly interface

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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