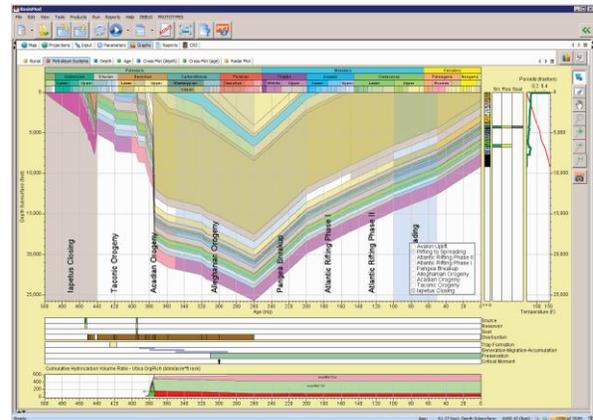


BasinMod® Overview

PRA is an industry leader in providing the best petroleum systems solutions for both conventional and unconventional resources. These solutions have been tested and proven time and again throughout our 35 year history in the oil and gas community. PRA software is unique in that it performs full physics calculations yielding accurate and dependable results. Most often used to model maturity and hydrocarbon generation and expulsion through time, a wide range of other values are calculated including porosity, permeability, pressure and temperature, all of which are critical parameters of the petroleum system.

Burial History:

- Model complex stratigraphy, including uplift and erosion
- Model matrix porosity and organic porosity through time
- Select lithologies from an industry standard lithology library
- Mix lithologies or mineral components to create an unlimited number of custom lithologies
- Model changes in formation thickness due to salt or shale movement (diapirs).



PETROLEUM SYSTEM PLOT WITH CUMULATIVE HC

Pressure and Diagenesis:

- Calculate pore pressure (or gradient), excess pressure and generation pressure to predict the timing and/or depth of abnormal pressure regions and possible fracturing
- Enhance porosity reduction by means of quartz cementation in sand and smectite-illite conversion in shales.

Thermal History:

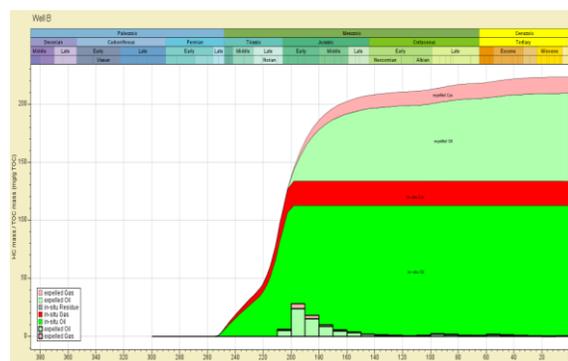
- Model thermal maturation and predict timing of hydrocarbon generation/expulsion
- Model basement heat flow, radiogenic heat flow, and rifting heat flow
- Model surface temperature and heat flow through time
- Multiple BHT correction methods (Empirical, Horner, Percent, Absolute, Factor)
- Calculate Heat Flow from BHT

Source Rock Organic Richness:

- Determine Total Organic Carbon (TOC) from logs of resistivity and porosity (Passey method)
- Calculate Initial TOC from Measured TOC

Models of hydrocarbon generation:

- Model oil and gas using simple LLNL kinetics or organofacies kinetics (Pepper and Corvi, 1995).
- Model multiple components of oil, gas, and residue using compositional kerogen
- Access a library of kerogens (Types I, II, and III) and Organofacies or use custom kerogens.
- Model methane adsorption using Langmuir isotherms



CUMULATIVE HC GENERATED AND EXPELLED WITH EXPULSION INTERVAL

Maturity:

- Use multiple maturity indicators for calibration, such as %Ro, TMAX, HI, S2, TOC, CAI and others
- New Easy %Ro type kinetic models for maturity modeling

Erosion:

- Estimate the amount of surface erosion using a sonic travel time log or maturity data trend.

BasinMod Risk

- There is usually uncertainty associated with some critical values of a model. BasinMod Risk is a stochastic or probabilistic modelling program which allows uncertainty to be taken into account. Instead of a single value for a parameter, a range of values, or a distribution, is used for the parameter. The program then calculates not just a single value for a given result, but a performs a Monte Carlo simulation with the distribution, producing a reverse cumulative probability curve, which can supply P10, P50, and P90 values for single wells or maps.

Logs:

- Drag and drop logs in LAS format into the Log Organizer to review and select which curves to use
- Display logs adjacent to stratigraphy column to edit formation tops
- Pick porosity points from a porosity log for use in calibration.
- Calculate TOC from logs of resistivity and porosity (Passey method)
- Calculate Brittleness Index, Poisson's Ratio and Young's Modulus from Bulk Density and Sonic Travel Time

Bridge and Globalizer:

- Models can be created by dragging and dropping relevant data from industry-standard data bases and augmenting them in BasinMod using a globalizing utility. Multiple models can be constructed from a data base and made ready for modelling in a matter of minutes.

Output:

- Display burial history plots with wide range of overlays (lithology, isotherms, maturity and kinetic windows, subsidence curves, biodegradation curves)
- Plot any calculated value versus time or depth or as cross plots
- Display any calculated or measured value using a multiple map options (continuous color, value windows, dot maps) and contour options.
- Display radar plots for comparison of calculated values against an ideal case
- CrossPlot any calculated value or measured data against any value or data
- Display and QC geochemical logs of pyrolysis data with REESA
- Trigger maps display the time or depth to a significant event, such as Depth to Main Phase of Oil generation
- BasinMod Risk maps
- Flash calculator to predict liquid and vapor HC phases in the reservoir and at surface conditions.
- Reports, PowerPoint Generator and automated animations
- Multi-core processing for increased speed
- 64-bit application for handling larger data sets



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