

# Basin Modeling Consultancy and Services

## Designing the petroleum systems modeling study

Because OilTracers LLC provides *independent* consultancy services, we will work with you to determine how to best address your petroleum systems modeling needs. We will recommend software and modeling solutions considering among other things:

- **Basin style / plumbing type:** the most appropriate modeling approach depends on the geology of the study area
- **Modeling objectives:** what are the risk factors that are being addressed?
- **Resource constraints:** the most cost- and time-effective way to identify basin, play and/or prospect critical risk factors
- **Staged evaluations:** the potential for high level screening studies followed by detailed prospect-specific fluid flow modeling
- **Data:** the abundance and quality of data for model construction and optimization

## Integrate the reservoir into the basin

Although the focus of petroleum systems modeling studies traditionally has been on exploration applications, in more and more cases our clients are requiring models to cover entire project life cycles: exploration, appraisal, development, production and abandonment.

OilTracers can help you design projects that exploit the huge advances being made in model integration capabilities, allowing you to transport rock and fluid descriptions from basin to prospect and reservoir scale, integrating geoscience and engineering evaluations.

Capturing petroleum charge information from the basin to be used by the reservoir filling/mixing simulators

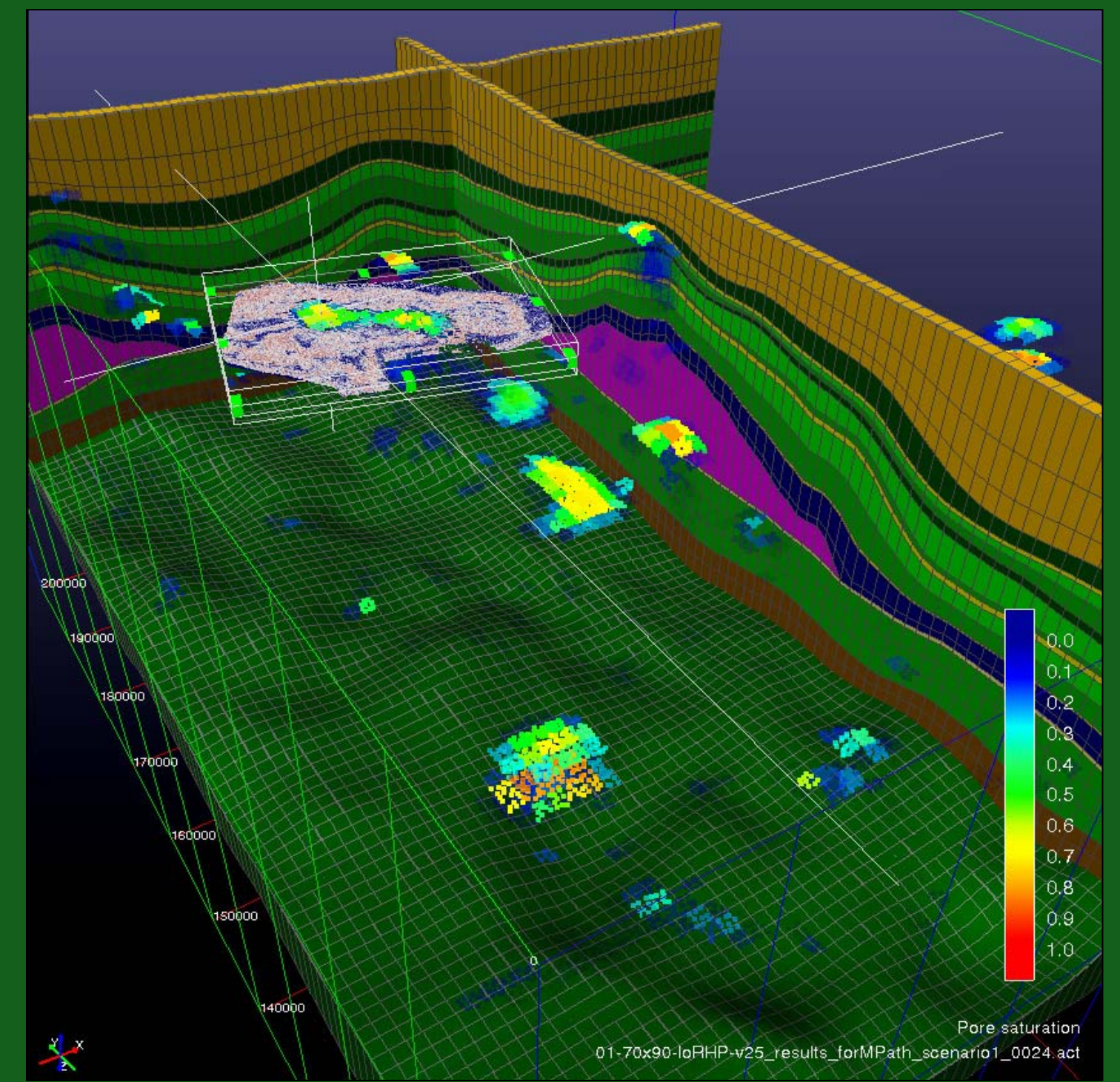
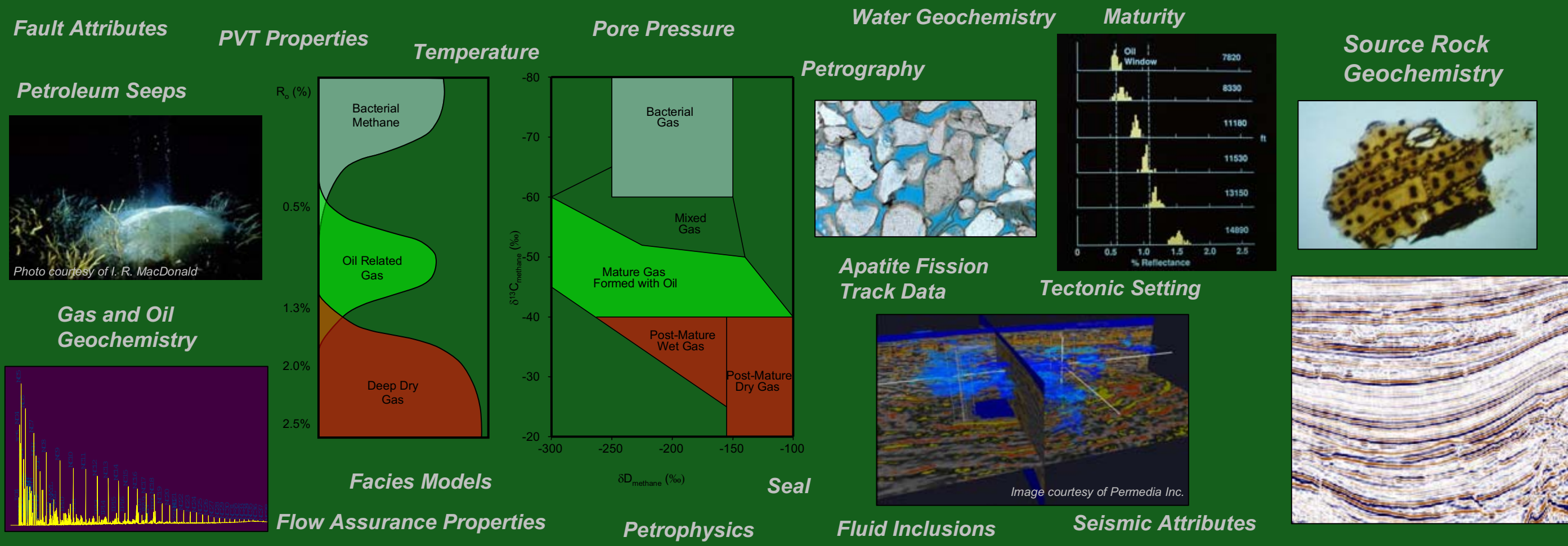


Image courtesy of The Permedia Research Group, Inc.



## Making the pieces fit

Models provide a framework for understanding your petroleum system. OilTracers specializes in the integration of data across disciplines in order to build models and to sensibly interrogate and learn from them.



## How we work

Petroleum systems modeling studies are especially valuable in integrating disciplines, drawing on the expertise and interpretations of both the core asset team and specialists in various engineering and geological sub-disciplines. The process of building and interrogating a model provides a means by which data quality and consistency of interpretations can be checked.

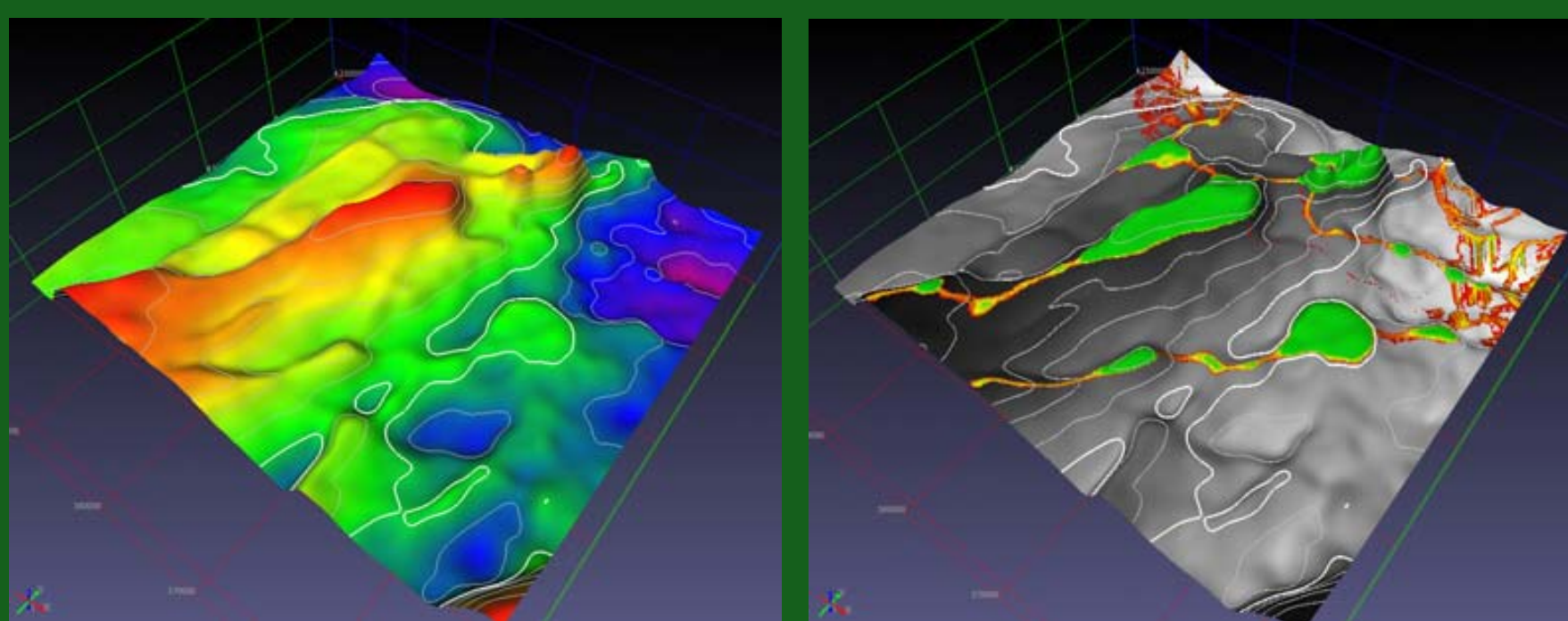
In order to maximize the value of a basin modeling study we will typically:

- In cooperation with the client, interpret and integrate geochemical data with other data for model construction, e.g., wireline logs, petrographic analyses and stratigraphic models
- Identify key uncertainties in model inputs and/or optimization data
- Develop a series of most likely cases and perform appropriate sensitivity analyses that allow the impact of uncertainty to be quantified
- Work with the client in order to extract the relevant interpretations out of the models

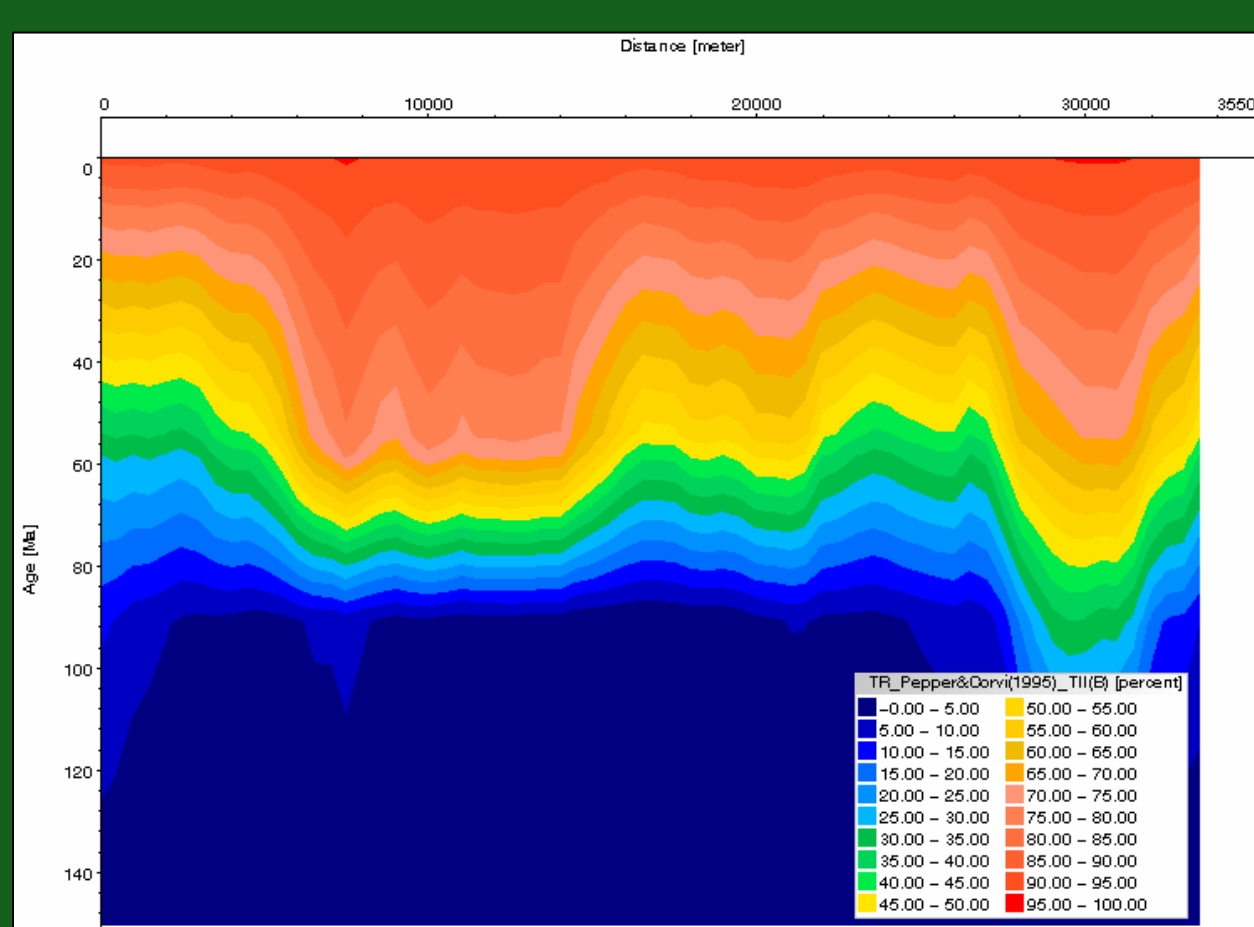
## Early identification of critical risk elements

Basin modeling is increasingly finding application at the earliest stages of basin, play and prospect assessments. Screening and quick-look tools can identify the need for (and help quantify the value of) acquisition of new data and/or special studies.

Risk elements identified during early-stage evaluations will always help guide the planning of the subsequent basin modeling program.



A quick-look evaluation of potential charge trajectories and spill pathways in a laterally drained system using Permedia MPath.



A 2-D time versus distance extraction from a 3-D IES PetroMod model shows the timing of hydrocarbon generation varies considerably across the model.

**OilTracers** L.L.C.

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