



INITIATIVES

EXTERNAL COLLABORATION

UPSTREAM TECHNOLOGY

COMPLETIONS

DRILLING

GEOMECHANICS

GEOPHYSICS

GEOSCIENCES

PETROLEUM SYSTEMS

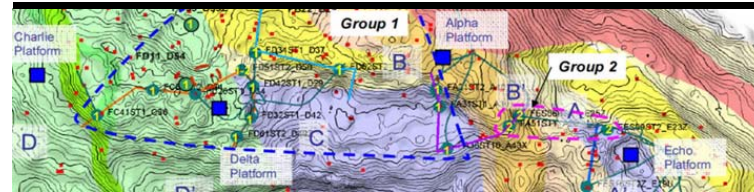
PUBLICATIONS

PETROPHYSICS

RESERVOIR

[HOME](#) > [OPERATIONS](#) > [INNOVATION](#) > [UPSTREAM TECHNOLOGY](#) > [PETROLEUM SYSTEMS](#)

PETROLEUM SYSTEMS



The petroleum system team evaluates key geologic and geochemical elements and processes that are essential for the development of a petroleum accumulation. Our goal is to provide Apache exploration and development geologists, geophysicists and engineers with the basic tools to better understand how best to use petroleum geochemistry in their exploration and development programs, types of samples and analysis required to evaluate a basin/region, and undertake burial history-maturation-migration analysis. In addition, we strive to develop and utilize the latest technology.

CORE TECHNOLOGIES

Apache's petroleum systems specialists utilize key core technologies to assist the regions. They include:

- ▶ Petroleum geochemical evaluation of reservoir fluid and gases to determine hydrocarbon source for resource prediction;
- ▶ Identification and prediction of generative capabilities of organic rich source rocks;
- ▶ Characterization of rock temperature history (maturity) to determine hydrocarbon generation and phase;
- ▶ Best practices for real-time well site geochemistry sampling and analysis program;
- ▶ Reservoir fluid and gas compartmentalization evaluation (segmentation) using detailed geochemical sampling and analysis;
- ▶ Reservoir fluid quality evaluation (low viscosity, waxiness, low gravity, etc.) for field development planning using detailed geochemical sampling and analysis;
- ▶ Production allocation analysis for fields with multiple producing reservoirs;
- ▶ Surface geochemistry evaluation to assist in subsurface hydrocarbons generation and entrapment evaluation in new area exploration programs;
- ▶ Basin burial and temperature history modeling to analyze formation and temperature evolution of sedimentary basins,
- ▶ Regional petroleum generation and migration analysis;
- ▶ Regional petroleum systems charge and phase (gas versus oil) analysis, and Build predictive resource models.

These core technologies have been applied to assist in:

- ▶ Charge and phase analysis in Egypt's Western Desert;
- ▶ Oil quality in eastern Canada;
- ▶ Shale gas exploration in Neuquen, Argentina;
- ▶ Regional exploration in Australia's Northwest Shelf;
- ▶ North Sea reservoir segmentation studies;
- ▶ Onshore Gulf of Mexico shale gas evaluation;
- ▶ Shale gas analysis in the Horn River Basin in British Columbia, Canada;
- ▶ Exploration program in Australia's Gippsland basin;
- ▶ Charge analysis offshore Kenya;
- ▶ Development analysis for Khalda Production Company in Egypt;

FEATURE PUBLICATIONS



Designing a seabed geochemical study

by Michael A. Abrams
World Oil (September 2011)

[DOWNLOAD PDF +](#)



Surface sediment hydrocarbons as indicators of subsurface hydrocarbons

by Michael A. Abrams and Nicola F. Dahdah
AAPG Bulletin (November 2011)

[DOWNLOAD PDF +](#)

[MORE PUBLICATIONS +](#)

- ▶ New ventures petroleum system analysis in Chile;
- ▶ Oil versus gas evaluation in Tierra del Fuergo, Argentina
- ▶ Pre-Cuyo CO₂ evaluation in the Neuquen basin of Argentina;
- ▶ Deep potential study in the Cuyo basin of Argentina;
- ▶ Petroleum systems analysis in Cook Inlet, Alaska;
- ▶ Permian basin well site geochemistry study; and
- ▶ New ventures petroleum system analysis.

The petroleum systems team is also actively involved in developing new technologies as well as being early users of technology developments offered by the industry.

 LIKE +  FOLLOW +  CONNECT +  WATCH +

Copyright © 2012 Apache Corporation. All rights reserved.
This material may not be published, broadcast, rewritten or redistributed.

[Legal](#) | [Site Map](#)