

Monday, May 23, 2011

Joint HGS International and North American Dinner Meeting

Westchase Hilton • 9999 Westheimer

Social Hour 5:30–6:30 p.m.

Dinner 6:30–7:30 p.m.

Cost: \$28 Preregistered members; \$35 non-members & walk-ups

To guarantee a seat, you must pre-register on the HGS website and pre-pay with a credit card.

Pre-registration without payment will not be accepted.

You may still walk up and pay at the door, if extra seats are available.

Carol Law

*Exploration Manager East Africa
Anadarko Petroleum*

Northern Mozambique True Wildcat Exploration Success

The petroleum systems of East Africa has gained a lot of attention in the last few years with most of the offshore area from the Mozambique Rovuma basin north into Kenya being locked up by both large and small companies in hopes of finding the next big petroleum frontier. Hints of active petroleum systems have been seen in numerous seeps along coastal region for decades. Exploration successes by Tullow Oil in the modern grabens of the East Africa Rift system of Uganda as

well as the 2006 southern Tanzania Mnazi Bay discoveries by the Artumas Group gave hope to those of us brave enough to venture there.

Anadarko Petroleum operates two concessions in the remote reaches of northern Mozambique: the Rovuma Offshore Area 1 and Onshore blocks. Until last year the Rovuma basin was one of the few largely unexplored Tertiary deltas in the world. The two

HGS International Dinner *continued on page 32*

concessions cover a combined area of approximately 25822 km² (6.38MM acres) along the border with Tanzania (Figure 1). Anadarko Petroleum committed to an eight well drilling campaign in its' entry to this frontier area in December of 2006.

During the ensuing four year period Anadarko Petroleum and joint-venture partners took an aggressive approach, shooting 3300 km² of 3D seismic and approximately 6900 line km of 2D data. The drilling campaign began in the fall of 2009 with one well drilled in the onshore concession, immediately followed by six deepwater wells in offshore Area 1 in 2010.

The Rovuma basin is dominated by a Tertiary delta deposited on relatively undeformed Cretaceous and older sediments. It is a classic example of a linked extensional-contractional system. Early Tertiary to present-day deformation is interpreted to be in response to up-dip sediment loading and

regional tilting, above a master detachment in the late Cretaceous to early Tertiary age strata.

The deepwater portion of Area 1 is dominated by the complex interplay of two, east – west trending fold and thrust belts, converging near the center of the 3D dataset in coalescing strike-slip collapse systems. The northern and southern extents of the Area 1 block are relatively undeformed allowing for interpretation of sequence stratigraphic depositional systems to be carried in to the structurally complex portions of the block. The shallow water portion of the block is dominantly extensional.

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The remoteness of the area adds a level of complexity rarely found in today's exploration concessions. Environmental concerns and lack of existing infrastructure have made this much more than a

HGS International Dinner continued on page 37

conventional exploration opportunity. Some of the world's most pristine eco-tourism resorts are found on islands in the offshore area. And, the northern most regions of Mozambique have been completely untouched by the modern technology and conveniences we all are accustomed to. Anadarko is committed to working in concert with the people of Mozambique to protect the environment.

Anadarko Petroleum and its partners are excited to be leading the hunt for "elephants" in remote northern Mozambique with four successful, potentially commercial, deep water wildcats drilled in 2010. We are currently executing an extensive appraisal program and two new 3D seismic acquisition programs, with plans for an aggressive second round of exploration wells to follow. ■

Biographical Sketch

CAROL LAW is currently the Exploration Manager for East Africa and the Caribbean at Anadarko Petroleum in The Woodlands, Texas. She has worked international and Gulf of Mexico exploration projects for the past twenty-seven years with several major and independent oil and gas companies. Her primary areas of technical expertise are petroleum systems modeling and geochemistry. She authored the "Evaluating Source Rocks" chapter of the AAPG Treatise of Petroleum Geology Handbook of Petroleum Geology – Exploring for Oil and Gas Traps.

