



## An Introduction to the Petroleum Geology of Part of the Western Beaufort Sea, Alaska

**Tom Homza**  
*Shell Exploration & Production Company*

*Note: AGS meetings will be at the BP Energy Center for 2008-2009.  
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A significant component of modern hydrocarbon exploration in north Alaska is focused on finding reservoir. This talk discusses the basic geologic elements and risks of the petroleum system in the western Beaufort Sea with a focus on reservoir-presence. Robust reservoirs are interpreted to be present in the western Beaufort Sea, which has the same general resource stratigraphy as the Alaska North Slope.

The area consists of a north-facing rifted margin with rotated fault blocks on the scale of 10s of kilometers, overlain by a post-rift interval of Cretaceous and younger passive margin sequence. Most of the productive reservoirs on the North Slope are interpreted to be porous and permeable in the area. Ellesmerian pre-rift and Beaufortian rift-related reservoirs are each likely involved in both structural and stratigraphic traps. Proven seal rocks unconformably overlie the fault blocks in most areas, but a main sealing unit was disturbed by sub-sea mass wasting in other areas. Multiple source rocks are present in a complex kitchen to the north of the rift margin and have expelled oils of varying maturity, some of which have been biodegraded.

### **Alaska Geological Luncheon**

**Date & Time:** Thursday, Sept. 11<sup>th</sup>, 11:30 am – 1:00 pm

**Program:** Petroleum Geology of the Western Beaufort Sea

**Speaker:** Tom Homza

**Place:** BP Energy Center

**Reservations:** Please make your reservation before noon Tuesday, Sept. 9<sup>th</sup>, 2008.

**Cost:** Seminar only, no meal: Free  
Reserve a box lunch: \$13  
Nonmember: \$15

Reserve a hot lunch: \$20  
Nonmember: \$22

Student Nonmembers: \$5  
No reservation: add \$5 to the above  
(on an "as-available" basis only)

**E-mail reservations:** [vp@alaskageology.org](mailto:vp@alaskageology.org)  
Or phone (907) 230-1672  
(Tom Morahan, AGS VP)

**For more information:** visit the AGS website:

[www.alaskageology.org](http://www.alaskageology.org)

***Speaker's Biography***

Tom Homza received a BS in geology in 1989 from the University of Vermont, his MS and PhD from the University of Alaska Fairbanks in 1992 and 1995, respectively. Tom has studied north Alaskan geology since 1989 in academia and industry. He has worked in the exploration departments at BP and EnCana, and now is employed at Shell Exploration & Production Company. Tom has served as Vice President for the Alaska Geological Society and is current President-elect. He lives in Anchorage with his wife and two sons.