

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Richard W. Saltus¹, Kenneth J. Bird² (1) U.S. Geological Survey, Denver, CO (2) U.S. Geological Survey, Menlo Park, CA

North Alaska Petroleum System Analysis: The Regional Map Compilation

The U.S. Geological Survey has initiated an effort to model north Alaskan petroleum systems. The geographic and geologic basis for modeling systems is provided by a set of regional digital maps that allow evaluation of the widest possible extent of each system. Accordingly, we laid out a rectangular map grid 1300 km (800 miles) east-west and 600 km (375 miles) north-south. The resulting map area extends from the Yukon Territory of Canada on the east to the Russian-U.S. Chukchi Sea on the west and from the Brooks Range on the south to the Canada basin-Chukchi borderland on the north.

Within this map region, we have combined disparate types of publicly available data to produce structure contour maps. Data types range from seismic-based mapping as in the National Petroleum Reserve to well penetrations in areas of little or no seismic data where extrapolation was required. With these types of data, we have produced structure contour maps on three horizons: top of pre-Mississippian (basement), top of Triassic (Ellesmerian sequence), and top of Neocomian (Beaufortian sequence). These horizons, when combined with present-day topography and bathymetry, provide the bounding structural/stratigraphic surfaces of the north Alaskan petroleum province that mark major defining moments of the region's geologic history and allow regional portrayal of preserved sediment accumulations.