

Apatite Fission Track Results from the Southern Nechako Basin: Cretaceous to Neogene Thermal History and Implications for Hydrocarbon Prospectivity

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The Nechako Basin, one of several large Intermontane Basins found along the Canadian Cordillera, covers some 70,000 km² and contains over 3000 m of Mesozoic and Cenozoic clastics. These represent overlap successions deposited after accretion of volcano-sedimentary terranes along the western edge of North America. Jurassic and Cretaceous sequences are composed of marine and fluvial-deltaic clastics whereas Cenozoic sediments represent fluvial and possibly lacustrine environments.

Apatite fission track (AFT) data was collected from surface samples and subsurface cuttings from 6 wells in southern Nechako Basin. Data from surface samples suggests several periods of uplift and cooling, including the Paleocene, the late Eocene to Oligocene and the Miocene.

New subsurface data will be presented and incorporated with data from surface samples. This data will be integrated with other information (thermal maturation and stratigraphic) to help constrain burial and uplift histories, and timing of hydrocarbon generation.

The cooling history of the Nechako Basin will be compared with those of the Bowser and Sustut basins, and Coast Belt.