

## **Mapping Middle Triassic Doig Sandstone Reservoirs in Northeast British Columbia using Seismic Attributes**

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### **Abstract**

The Doig sandstone reservoirs have historically produced oil and gas in northeast British Columbia and northwest Alberta, Canada. These reservoirs occur in the study area as N-S trending linear sandstone geobodies 10-30 m in thickness at many places, and some tens of kilometers long. The challenge is the determination of the reservoir sands 20m in thickness from seismic data that has an average bandwidth of 10-60 Hz. In the area under study, comprising the Fireweed, Buick Creek West and the Stoddard areas in northeast British Columbia, the reactivation of the deeper fault structures also have some tectonic control on the Doig sandstones of interest. Therefore, the challenge is to identify not only the spatial variability of these Doig sands but also crosscutting faults and fractures.

We address these challenges by first enhancing the bandwidth of the available seismic data using spectral inversion to estimate thin bed reflectivity, followed by relative acoustic impedance and unconstrained waveform classification to map the reservoir heterogeneity. This is followed by generation of coherence and curvature attributes to detect minor faults and fractures.