

Reflection Seismic Investigations of the Beaufort Sea Margin

Christine L. Batchelor¹, Julian A. Dowdeswell¹, and Jeffrey T. Pietras²

¹Scott Polar Research Institute, University of Cambridge, Cambridge, UK

²BP Exploration Calgary, Calgary, Alberta, Canada

Abstract

The seismic stratigraphy and sedimentary architecture of the Mackenzie Trough and the Amundsen Gulf Trough, Beaufort margin, are investigated using high-resolution 2-D seismic reflection data.

The interpretation of eight seismic facies and five sequences from the Mackenzie Trough has provided evidence for two ice advances to the shelf break. The architecture of the adjacent continental slope is characterised by mass wasting and glacial debris flow deposits.

The Amundsen Gulf Trough contains three seismic facies and twelve sequences. Ice is interpreted to have advanced to the shelf break at least five times during the Late Cenozoic, producing a trough-mouth fan on the continental slope.