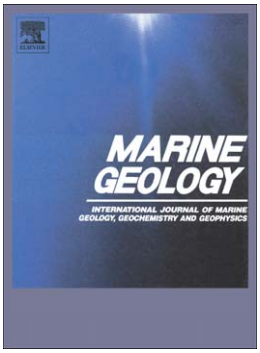

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PII: S0025-3227(16)30021-4
DOI: doi: 10.1016/j.margeo.2016.03.003
Reference: MARGO 5423

To appear in: *Marine Geology*

Received date: 6 October 2015
Revised date: 12 February 2016
Accepted date: 5 March 2016

Please cite this article as: Omosanya, K.O., Harishidayat, D., Marheni, L., Johansen, S.E., Felix, M., Abrahamson, P., Recurrent mass-wasting in the Sørvestsnaget Basin Southwestern Barents Sea: A test of multiple hypotheses, *Marine Geology* (2016), doi: 10.1016/j.margeo.2016.03.003

Recurrent mass-wasting in the Sørvestsnaget Basin Southwestern Barents Sea: A test of multiple hypotheses

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Abstract

Mass-wasting on the NE Atlantic margin is generally attributed to Cenozoic glaciations. Using high-quality 2D seismic datasets and two exploration wells, this study investigates the types and driving mechanisms of mass-wasting in the Sørvestsnaget Basin, Southwestern Barents Sea. The methods include seismic interpretation of shelf margin clinoforms, mass-transport deposits (MTDs), submarine channels and v-shaped canyons. The shelf-edge trajectory provided information about sea-level conditions, paleo-sediment routes, and dispersal patterns during the evolution of the basin. In terms of the internal geometry of seismic reflectors, the major depositional units are five sedimentary packages (P1 to P5) characterised by distinct southwest dipping shelf margin clinoforms. Seven identified MTDs