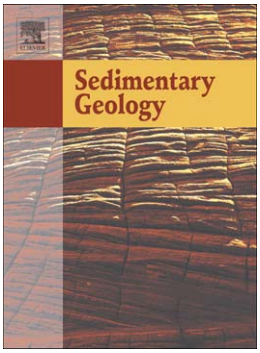

Giant scour-fills in ancient channel-lobe transition zones: Formative processes and depositional architecture

M. Hofstra, D.M. Hodgson, J. Peakall, S.S. Flint

PII: S0037-0738(15)00183-9
DOI: doi: 10.1016/j.sedgeo.2015.09.004
Reference: SEDGEO 4905

To appear in: *Sedimentary Geology*

Received date: 13 July 2015
Revised date: 7 September 2015
Accepted date: 8 September 2015

Please cite this article as: Hofstra, M., Hodgson, D.M., Peakall, J., Flint, S.S., Giant scour-fills in ancient channel-lobe transition zones: Formative processes and depositional architecture, *Sedimentary Geology* (2015), doi: 10.1016/j.sedgeo.2015.09.004

Giant scour-fills in ancient channel-lobe transition zones: formative processes and depositional architecture

M. Hofstra[1]*, D.M. Hodgson[1], J. Peakall[1], S.S. Flint[2]

[1] Stratigraphy Group, School of Earth and Environment, University of Leeds, Leeds, LS2 9JT, UK

[2] Stratigraphy Group, School of Earth, Atmospheric and Environmental Sciences, University of Manchester, Manchester, Oxford Road, M13 9PL, UK

*Corresponding author: Menno Hofstra; eemh@leeds.ac.uk; phone: +44 (0) 7979 870 252 7

Co-authors emails: D.Hodgson@leeds.ac.uk; J.Peakall@leeds.ac.uk; Stephen.flint@manchester.ac.uk

Abstract

Scours are common features of modern deep-marine seascapes, particularly downstream of the mouths of slope channels within channel-lobe transition zones (CLTZs). Their dimensions can exceed hundreds of metres in width and length, and tens of metres in depth. However, the stratigraphic architecture of large (>100 m width) scours have not been described in detail from exhumed CLTZs. Here, the infill of two erosional features (0.5-1 km long and 15-20 m thick) from the Permian Karoo Basin succession, South Africa, are presented from palaeogeographically well-constrained CLTZs; one from Fan 3 in the Tanqua depocentre and one from Unit A5 in the Laingsburg depocentre. The basal erosion surfaces of the features are asymmetric with steep, undulating, and composite