

FRIDGE, JUDITH, Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803 and ARNOLD H. BOUMA, Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803

Comparisons between compacted and decompacted turbidite systems, Tanqua Karoo, South Africa

Fan 3, one of the five fine-grained fans of the Permian Tanqua Karoo fan complex in South Africa, displays a complete set of sub-environments, comprised of the base-of-slope, channel complex (leveed channels and distributary channels), and distal sheet sands. Measured vertical sections were decompacted in order to analyze how depositional characteristics change after compaction. Compaction varies among the sub-environments due to variability in the sand/mud ratio across the sub-environments.

On average, the silty mud-rich overbank deposits of the channel complex decompact the most. The distal sheet sands were second. Base-of-slope deposits commonly are shale/mudstone poor, making them the least affected by decompaction. However, the difference in compaction between each sub-environment is small. This could be the result of the high amount of compaction due to overburden pressure, or the high percentage of quartz in the Permian shales separating the sandstone layers.