

Figure S1. Mixed-layer clays classification. Natural state (a), glycolated (b) and heated (c) XRPD data of sample in Figure 5c-d of the main paper (depth: 80.6 to 81 m) and natural state (d), glycolated (e) and heated (f) XRPD data of sample in Figure 5e-f of the main paper (depth: 85 to 85.4 m). The black curve represents the measured data. Yellow, green, pale-green, brown and blue curves refer to the trends of illite, chlorite, chlorite-smectite mixed-layer, illite-smectite mixed-layer and smectite respectively. The calculated percentages of each mineralogical phase are reported next to the name of the phase for each sample. The resulting curves (deriving from the convolution of the 5 clay families in the reported percentages) are reported in red. Rp and Rwp values for each sample are reported.

