



**Figure A1.** Hydrography of core site HU87033-017; (a) temperature [Locarnini *et al.*, 2010], (b) salinity [Antonov *et al.*, 2010], (c) density and (d) delta<sup>18</sup>O of calcite precipitated in isotopic equilibrium with the water [Hillaire-Marcel *et al.*, 2001]. Line colors represent different month averages. Also plotted on (a) is the *N. pachyderma* (s) CT and on (d) is the *N. pachyderma* (s) delta<sup>18</sup>O of calcite for ~0.9 ka (vertical bars reflect uncertainty of +/-1.3 degree C and +/-0.05 per mil, respectively).