

**Fig. S1. Mineralized sulfur fractions from Gypsum Hill Spring sediments.** *y*-axis extraction fractions include Milli-Q water extraction of aqueous sulfates ( $\text{SO}_4^{\text{sol}}$ ), methanol extraction of elemental sulfur ( $\text{S}^0$ ), hydrochloric acid extraction of acid volatile sulfides (AVS), acidic chromium extraction of chromium reducible sulfur (CRS), Thode solution extraction of CRS-soluble sulfur ( $\text{CRS}_{\text{sn}}$ ), and Thode solution extraction of CRS-insoluble sulfates ( $\text{SO}_4^{\text{insol}}$ ).

