**Supplementary Materials**

**Figure S1.** The abandoned mine area of Su Suergiu (Cidu et al [34], modified)

**Figure S2.** The linear kinetic plots of the pseudo-first order rate equation of Sb(OH)6− sorption experiments performed without competitors and with coexistent anions performed with (**a**) 2ZC-cal and (**b**) 3HT-cal.

**Figure S3.** The linear kinetic plots of the pseudo-second order rate equation of Sb(OH)6− sorption experiments without competitors and with coexistent SO42- and HCO3− performed with (**a**) 2ZC-cal and (**b**) 3HT-cal, and (**c**) performed with HAsO42-.

**Figure S4.** (**a**) Plot of Ca removed vs HCO3 removed, and concentration of (**b**) Ca and (**c**) HCO3 removed at the end of the experiments performed with 3HT-cal or 2ZC-cal and SU1. The horizontal green lines in the plots (**b**) and (**c**) indicate the starting concentrations of Ca or HCO3, respectively.