

## **Arsenic mobilization and retention mechanisms along an iron mineral dominated redox gradient in delta sediments of Van Phuc, Vietnam**

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Iron (Fe) minerals are highly reactive and play a major role in controlling the contaminant dynamics in natural environments. In particular, the behaviour of oxyanions like arsenic (As) in near surface aquifers is known to be controlled by redox-sensitive iron phases. In this regard, we investigated Fe mineralogy along a redox gradient within the delta sediments of the Red River in Vietnam, which is known for its patchy distribution of dissolved groundwater As. Despite extensive research investigating As mobilization in the context of redox changes, there is a lack of studies analysing geochemical and mineralogical alterations of ferruginous As host phases in-situ. In this study, a sediment core (50 m) across a redox transition zone (RTZ) was analysed to identify As release and retention mechanisms in relation to iron mineralogy.