

Interactions among microbes, iron minerals and organic matters in arsenic contamination of groundwater

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Arsenic contamination in groundwater is serious health problem in Asia. We examined interactions among microbes, iron hydroxides and organic matters in the process of arsenic contamination of groundwater. Groundwater has seriously ill water quality.

Iron oxidizing bacteria are forming amorphous - very poorly crystalline Fe-P minerals in the groundwater. Dissolution experiments were carried out to check the arsenic dissolution by bacterial activity. Arsenic is really dissolved by adding nutrients. However dissolution patterns were different by the nutrient types. Sand filter (AAN) for remediation was checked by TEM and bacterial activity were found in the surface of the sand filter. Thus, bacterial activities are essential for arsenic contamination cycles. Organic matter is also important in the accumulation of arsenic in the sediments.