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Research papers

Vertical variability of arsenic concentrations under the control of iron-sulfurarsenic interactions in reducing aquifer systems

Kunfu Pi, Yanxin Wang, Dieke Postma, Teng Ma, Chunli Su, Xianjun Xie

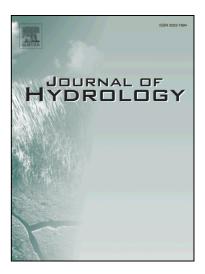
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ACCEPTED MANUSCRIPT

Vertical variability of arsenic concentrations under the

of iron-sulfur-arsenic interactions in control reducing

aquifer systems

Kunfu Pi a, b, Yanxin Wang a, Dieke Postma c, Teng Ma a, Chunli Su a, Xianjun Xie a,

^a School of Environmental Studies & State Key Laboratory of Biogeology and

Environmental Geology, China University of Geosciences, 430074 Wuhan, China

^b Ecohydrology Research Group, Department of Earth and Environmental Sciences

and Water Institute, University of Waterloo, Waterloo, Canada

^c Geological Survey of Denmark and Greenland, Øster Voldgade 10, DK-1350

Copenhagen, Denmark

*Corresponding author:

Email: yx.wang@cug.edu.cn (Y. Wang); xjxie@cug.edu.cn (X. Xie).

Abstract:

High spatial variability of arsenic (As) concentration in geogenic As-contaminated

groundwater has been commonly observed worldwide, but the underlying reasons

remain not well understood. Selecting a sulfate-containing, As-affected aquifer at the

Datong Basin, northern China as the study area and combining hydrogeochemical

investigation and sediment extraction with reactive transport modeling, this work

elucidated the roles of Fe-S-As interactions in regulating the vertical variation of As

concentration in the groundwater. Dissolved As concentration varied between 0.05

and 18 μ mol/L, but generally increased in the depth of 20 – 25 m and then decreased

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