

Accepted Manuscript

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PII: S2352-1864(18)30169-X
DOI: <https://doi.org/10.1016/j.eti.2018.09.004>
Reference: ETI 273

To appear in: *Environmental Technology & Innovation*

Received date: 10 April 2018
Revised date: 19 September 2018
Accepted date: 19 September 2018

Please cite this article as: Kumar M., et al., Hydrogeo-morphological influences for arsenic release and fate in the central Gangetic Basin, India. *Environmental Technology & Innovation* (2018), <https://doi.org/10.1016/j.eti.2018.09.004>

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Hydrogeo-morphological influences for arsenic release and fate in the central Gangetic Basin, India

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Abstract

Geochemical influences on arsenic (As) and other solutes along with regional groundwater flow path were inferred in parts of the central Gangetic Basin. The median concentration of As in groundwater was higher (0.046 mg/L) in Piedmont and (0.006 mg/L) in younger alluvium while very low (0.002 mg/L) in older alluvium. The median As concentrations in core sediments of Piedmont, older alluvium and younger alluvium were observed as 5.12, 11.2 and 11.6 mg/kg, respectively. Approximately 70% of the samples fell in As(OH)₃ or As(III) field and 30% samples fell in HAsO₄²⁻ or field of As(V) in Eh-pH plots. In contrast ~60% of the samples fell in the FeOOH field and 40% in Fe(II) field in the Eh-pH plots. Cation exchange in Piedmont

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