

## Hydrochemistry of Fluoride Contaminated Groundwater from Rajura and Korpana Tahsils of Chandrapur District, Maharashtra

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### Abstract

During the present study, hydrogeochemical investigations were carried out in the hard rock aquifers of Rajura and Korpana Tahsil of Chandrapur district, Maharashtra during post-monsoon season of 2013. A total of 100 water samples were collected and high F<sup>-</sup> concentrations have been identified in these samples. It was found that rock-water interaction is probably the main reason for high concentration of F<sup>-</sup> in groundwater of these areas. The concentration of F<sup>-</sup> in groundwater is positively correlated with HCO<sub>3</sub><sup>-</sup> and Na<sup>+</sup>, indicating that groundwater with high HCO<sub>3</sub><sup>-</sup> and Na<sup>+</sup> content helps in dissolving fluoride rich minerals. Moreover, the study of groundwater samples on Piper's tri-linear diagram indicates presence of Na<sup>+</sup> and HCO<sub>3</sub><sup>-</sup> as predominant cation and anion, respectively. It was found that alkaline water is depleted in calcium and longer residence times of water in the aquifer zone are favorable factors for the dissolution of fluorine bearing minerals in groundwater.

**Keywords:** Hydrochemistry, Fluoride, Groundwater, Hard rock aquifers, Rajura and Korpana Tahasil, Maharashtra