



Drinking Water Monitoring in Catchment Area of River Krishni, Baghpat, Uttar Pradesh, India

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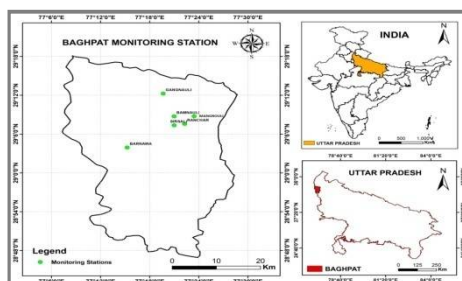
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ABSTRACT

India has an agriculturally based economy. To address the issues of horticultural land water is as mandatory as air for individual. It could be either surface water from the Rivers or ground water from tube wells. Chemical based agrarian practices are in charge of tainting in groundwater aquifer. Substantial number of industries works as add fuel to fire. The water of Krishni River and its catchment have been contaminated due to the same. Krishni River carries blackish water with an unpleasant odor in non-monsoon seasons as no availability of fresh water. Pre-monsoon sampling from the Krishni River catchment was performed as per APHA standard. 26 water Samples were collected from India Mark-II hand pumps. Physiochemical parameter such as pH, Conductivity, Total alkalinity, Total hardness, TDS, TOC and heavy metals like Fe, Mn, Ni, Mg, Pb, Cd, Al, metalloids like B and non-metal like Se have been analysed and the results were compared with BIS-10500. The value of TDS varies from 230-1372 mg L⁻¹ which is above the Acceptable limit at 6 points. Conductivity in the drinking water sample varies from 487-1792 $\mu\text{mhos cm}^{-1}$. The value of TOC varies from 6.24-19.89 mg L⁻¹ indicate the presence of organic components in drinking water. The concentration of Fe varies from 0.012-5.14 mg L⁻¹ which indicates that 16 samples have concentration above the acceptable limit. The value of Cd varies from 0.024-0.061 mg L⁻¹ where the range of Se life from 1.21-1.86 mg L⁻¹. All the drinking water samples have the Cd and Se concentration above the permissible limit. Cd is carcinogenic elements and may be responsible for various lives threatening diseases among the villagers of Krishni River catchment area.

Graphical Abstract



Monitoring Stations

Keywords: Krishni River, Hand pumps, TOC, Heavy Metals.