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Assessment of Groundwater Quality in Aundha Nagnath Town, Maharashtra using Water Quality Index

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Abstract

Present study is focused on determining the drinking water suitability of groundwater resources by applying Water Quality Index (WQI) method and assessment of seasonal variations in groundwater quality. Most of the population in Aundha Nagnath town of Marathwada, Maharashtra, a famous pilgrim place, uses groundwater for drinking and domestic needs. Total 14 representative groundwater samples were collected from the dug well/borewell sources and analysed for their major ions using the standard procedure of APHA. The Bureau of Indian Standards (BIS) for drinking water was used for calculation of WQI values. TDS is found to exceed the permissible limits of BIS in 64.29 and 14.29% groundwater samples and EC in 57.14 and 35.71% samples in post and pre-monsoon seasons, respectively. The values for Mg and K in groundwater samples make it unsuitable for drinking in majority of samples. The WQI classification using BIS depicts poor to excellent water quality categories. As per the WQI classification, the groundwater quality of the area is marginally good in pre-monsoon as compared to post-monsoon season. The study provides baseline information on groundwater quality, which will certainly help the local planners for sustainable management of water resources.

Keywords: Groundwater, Water Quality Index, Physicochemical parameters, Aundha Nagnath Town, Maharashtra.