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Assessment of surface water resources quality in Tehran province, Iran

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ABSTRACT

Karaj and Jajrood rivers are important sources of water supply for Tehran province and special attention should be paid to water quality and its change trends in these rivers. In this study NSFWQI method as well as analytical methods was applied to determine water quality of these rivers. Water quality data sets consist of 9 parameters related to NSFWQI of three years (from April 2006 to March 2009). Parameters in 20 stations of Karaj river and 24 stations of Jajrood river have been examined monthly (except in spring and summer of 2007, as seasonally). On the basis of NSFWQI classification, water quality of two rivers classified as moderate to good quality in this period of time. Results show Karaj river has had better quality, however the WQI of dams' effluent of two rivers are similar. WQI has improved annually over time and the most and the least significant amounts of that occurred during winter and spring, respectively. Correlation analysis showed that DO and temperature have strong negative correlation; however some of other parameters have significant correlation with each other (TS and turbidity). Of the nine parameters, PO_4 has had little effect on deterioration of water quality and BOD_5 and temperature have had the most and least variations, respectively.

Keywords: Surface water; Quality assessment; NSFWQI method; ANOVA analysis; Correlation analysis; Karaj-Jajrood rivers; Iran

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