

## ASSESSING OF WATER QUALITY INDEX USING GEOGRAPHIC INFORMATION SYSTEM IN KONYA CITY CENTER

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### ABSTRACT

The objective of this study is estimating the groundwater quality for Konya city center and mapping their spatial variation in terms of suitability for drinking purposes, about 184 groundwater wells data had been taken from Konya city municipality during 2014 for Konya city center that involving pH, electrical conductivity (EC), Turbidity, calcium (Ca<sup>2+</sup>), magnesium (Mg<sup>2+</sup>), chloride (Cl<sup>-</sup>), sulphate (SO<sub>4</sub><sup>2-</sup>), nitrate (NO<sub>3</sub><sup>-</sup>), total alkalinity (TA) and total hardness (TH), and analyzed with reference to the World Health Organization (WHO) limits and (TS266) Turkish Standards, The geographic information system-based spatial distribution maps of different major parameters had been created by testing Geostatistical analyses within ArcGIS version 10.5 environment, the analyzed data was validated by the best-fitted models. The WQI values of the study area were found in the range of 27.28 and 72.99 that classified between good and poor water quality, about 93.413% of the total groundwater samples fall in the suitable limited for drinking water as good water quality, whereas 6.587% of the total groundwater samples get poor water quality.

**Key words:** GIS, Geostatistical analysis, Kriging, Inverse distance weighting, Water quality index.