عنوان مقاله:

Assessment of the quality and quantity of groundwater in Bahadoran plain using neural network methods, geostatistical and multivariate statistical analysis

محل انتشار:

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خلاصه مقاله:

Growing water demand in various sectors including agriculture, industry, drinkingwater and eventually increasing production and risk of pollution have imposedmounting pressure on water resources. The relative stability of renewable waterresources makes it necessary to pay special attention to the conservation andoptimal use of these resources, especially in desert areas such as Iran, and thisrequires careful and principle planning for the optimal use of existing waterresources. In this research, a descriptive-analytical method was adopted. The datawere collected from fifteen wells during an ۸-year period (۲۰۱۰-۲۰۱۷). TheKolmogorov-Smirnov method was recruited to assess the normality of datadistribution. Also, since the classical data (water quality data) did not take intoaccount the spatial distribution of groundwater quality parameters, we used thegeostatistics for this purpose. The results suggested that the dominant groundwatertype in the Bahadoran region was sodium chloride (NaCl), which is highly volatile.This volatility can be attributed to cationic and anionic exchanges as well as thedissolution of salt and gypsum in the neogene formation of the region. On the otherhand, overexploitation and increasing drainage of agricultural, residential and evenindustrial wastewaters in the plain water resources have drastically influenced thegroundwater quality. In the second period of the studied period (۲۰۱۲-۲۰۱۳), thelevel of maximum classes of most parameters has increased compared to the firstperiod, and these changes have increased with a greater slope in the third period.According to the studies, the most important formations in terms of reservoir rock,feed source of alluvial plains and groundwater .quality are lower cretaceouscalcareous sediments of Bahadoran

کلمات کلیدی:

Groundwater, Bahadoran plain, Geostatistics, Water quality, Hydrochemical software, Yazd province