عنوان مقاله:

Groundwater Vulnerability Assessment of Karaj Aquifer Based on modified Drastic Method

محل انتشار:

دهمین کنگره بین المللی مهندسی عمران (سال: 1394)

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خلاصه مقاله:

Vulnerability assessment of aquifers has become an important application for groundwater resource management. Karaj city groundwater is a major drinking water supply. Meanwhile, the nitrate concentrations exceed the environmental limits. The primary purpose of this study is to analyze the vulnerability of Karaj aquifer using geographic information system (GIS) and DRASTIC method. For DRASTIC approach, in order to evaluate the pollution potential of the study area, two of the variables (topography and soil media) have been omitted and one of them has been modified. Net recharge for this investigation has been estimated using landuse data. Finally the hydraulic and hydrogeological parameters were studied to weigh and overlay five layers of Modified DRASTIC method with definition of four classes of vulnerability and risks. All of the high and moderate to high risk areas are in the urban and crowded regions. It was concluded that the old, central and most populated districts of Karaj with about 30% area is in high vulnerability. In these regions the risk of being polluted is more than the other zones. This research also suggests that for reducing nitrate, the implementation and operation of sewage network should be analyzed according to the vulnerability assessment results.

کلمات کلیدی:

Vulnerability, DRASTIC, Groundwater, Sewage Network, Karaj

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