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VARIATIONS OF CHEMICAL QUALITY FOR DRINKING WATER SOURCES IN ZARAND PLAIN

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Abstract:

A comprehensive investigation was conducted in order to evaluate the quality of the groundwater in Zarand plain of Chatrood region which supplies drinking water of Zarand city. Zarand plain with longitude of 55°, 46- 57°, 7 and latitude of 30°, 20 -31°, 44 is one of Iran's plains located in sub-basin of Daranjir desert. Groundwater of Zarand plain supplies drinking water of many cities and villages located in and near the plain. Samples were collected from 11 water wells used as drinking water sources in Zarand plain "Chatrood region", at least once at the middle of each month. By means of the standard methods, a number of parameters were analyzed for each sample for the period of 7 years from 1996 to 2003. Tests included measuring pH, electrical conductivity, total dissolved solid, total hardness, calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, and nitrate ions. Data analysis was done by using t and Z-Test. Results indicated that water quality of water wells during studied period did not show any undesirable change. The quality of each parameter in drinking water wells of Zarand plain was within permissible limit and did not exceed neither the Iran's standards nor WHO guidelines. Meanwhile, the quality of raw water resources of the plain in the final year of experiment was within "good" potability limit based on Schuller's diagram; it means raw water resources still kept its quality. Although the quality of Zarand plain water resources comply with Iran's standards and WHO guidelines increasing trend of water consumption and consecutive droughts in the studied region as well as severe water shortage, ask for conservation, preservation and monitoring of water resources.

Keywords:

[Chemical quality](#) . [Zarand plain](#)

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