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Data Article

Data on assessment of groundwater quality for drinking and irrigation in rural area Sarpol-e Zahab city, Kermanshah province, Iran

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ABSTRACT

In present study 30 groundwater samples were collected from Sarpol-e Zahab area, Kermanshah province of Iran in order to assess the quality of groundwater in subjected area and determining its suitability for drinking and agricultural purposes. Also the variations in the quality levels of groundwater were compared over the years of 2015 and 2016. Statistical analyses including Spearman correlation coefficients and factor analysis display good correlation between physicochemical parameters (EC, TDS and TH) and Na^+ , Mg^{2+} , Ca^{2+} , Cl^- and SO_4^{2-} ionic constituents. Also in order to assess water quality for irrigation we used the United States Department of Agriculture (USDA) classification which is based on SAR for irrigation suitability assessment. In addition, the residual sodium carbonate (RSC), %Na, PI, KR, SSP, MH, EC characteristics were calculated for all samples and used for assessment of irrigation suitability. Based on these indicators, for every two years, the quality of water for agriculture is in good and excellent category. The Piper classification for hydro geochemical facies indicates that the water in the study area is of Ca-HCO_3^- type.

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However, the study of water hardness shows that more than 80% of samples are in hard and very hard water class. Therefore, there is a need for decisions to refine and soften the water.

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Specifications Table

Subject area	Chemistry
More specific subject area	Describe narrower subject area
Type of data	Tables and figures
How data was acquired	Experiments have been done in two total categories of system tests and titrimetric tests including temporary and permanent hardness, calcium, magnesium and chloride. Also system tests including pH and electrical conductivity (EC) measured by pH meter device (pHwtw model) and Esi meter (wbw), respectively. The analysis of anions and cations of sulfate was also done by spectrophotometer Hatch (DR 5000 model) in water and wastewater laboratory of Kermanshah. Total hardness was determined by EDTA titrimetric method and TDS was measured gravimetrically.
Data format	Raw, Analyzed
Experimental factors	All water samples in polyethylene bottles were stored in a dark place at room temperature until the metals analysis
Experimental features	The mentioned parameters above, in abstract section, were analyzed according to the standards for water and wastewater treatment handbook.
Data source location	Sarpol-e Zahab, Kermanshah province, Iran
Data accessibility	Data are included in this article and supplement file excel

Value of the data

- Determination of the physical and chemical parameter including EC, pH, TDS, TH, Ca, Mg, CO₃, HCO₃, Na, K, Cl and SO₄ in ground water was investigated in rural area, Sarpol-e Zahab city, Iran.
- Due to limited studies in the study area, the data of this study can help to better understand the quality of groundwater in the area and provide further studies.
- The result of data analysis shows that water in this area is suitable for agricultural according to calculated indices.

1. Data

The data presented here deal with monitoring of physical and chemical characteristics of groundwater including pH, EC, TDS, HCO₃, CO₃, SO₄, Cl, Ca, Mg, and Na as well as in Sarpol-e Zahab city, Kermanshah, Iran. The study area and the sampling points are shown in Fig. 1. Also a summary of water quality characteristics are presented in Tables 1 and 2. Results of quality assessment of groundwater samples from rural area in city for drinking purpose (BIS standard) are presented in Table 3 and 4 [1]. Also classification of groundwater samples for irrigation use on the basis of EC, SAR, RSC, KR, SSP, PI, MH, Na%, T.H are presented in Table 5. Finally, the Piper diagram indicates that the

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