بحث في مؤتمر لا يوجد رابط

Evaluation of Groundwater Suitability for Human Consumption in Terms of Water Quality Index (HWQI), Rutba – Dhabaa Area, West of Iraq

Qusai Y. Al-Kubaisi[1], Mahmood H. Al-Kubaisi[2]

[1]Department of Geology, College of Science, University of Baghdad, Baghdad, Iraq.

Email: qusaikubs@yahoo.co.uk

[2]Department of Applied Geology, College of Science, University of Anbar, Ramadi, Iraq.

Email: mahmoodgeologist@uoanbar.edu.iq

ABSTRACT

The study area located at Al Rutba city, in Al-Anbar Governorate, western Iraq. The water samples were collected from twenty wells in the study area during September 2017. The analysis of the concentration of cations (Ca^{2+}, Mg^{2+}, Na^{+} and K^{+}), anions (Cl^{-}, SO_4^{2-}) and the Minor compounds of Nitrate (NO_3^{-}) in addition to measure the (Hydrogen Number pH and Total Dissolved Solids TDS). The average of Hydrogen Number (pH), Total Dissolved Solids (TDS), calcium (Ca^{2+}), magnesium (Mg^{2+}), sodium (Na^{+}), potassium (K^{+}), chlorine (Cl^{-}), sulfate (SO_4^{2-}) and nitrate (NO_3^{-}) are 7.43, 718.25 ppm, 120.8 ppm, 40.875 ppm, 32.865 ppm, 2.93 ppm, 103.527 ppm, 195.9 ppm and 4.275 ppm respectively in the dry period, while it averages 7.33, 664.2375 ppm, 114.25 ppm, 35.8 ppm, 29.28 ppm, 2.33 ppm, 90.3 ppm, 181.1 ppm and 3.6 ppm respectively in the wet period. The water samples are considered to be fresh water to slightly water in both periods. The HWQI for all groundwater

samples in two periods are (<50) and indicate that all groundwater samples are excellent water for human drinking, except (W-17, W-18 and W-20) in dry period and (W-17) in wet period have a raise very little about class I, which mean that the wells are good water for human drinking. Consequently, the groundwater quality was considered as homogeneous water varied from excellent water to good water for human drinking due to the short range of HWQI.

Keywords: Evaluation of Groundwater, Human Consumption, Water Quality Index (HWQI), West Iraq.