

Study of the Effects of Water Level Depression in Euphrates River on the Water Quality

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Abstract:

The Tigris and Euphrates Rivers are the main sources of water in Iraq. Iraq used to receive 33×10^9 m³ of river water per year at Hit, 200 km downstream from the Syrian border before the 1970s. In 1980s, the discharge decreased to as little as 8×10^9 m³ per year at Hit. The decreasing of discharge and water level in the Euphrates River causes problems of both quantity and quality, such as the increasing salinity in the internal delta downstream, the TDS (total dissolved solids) at Hit has increased from less than 500 ppm to about 700 ppm. By 1989, the Euphrates' salinity at Al Qaim reached 1,000 ppm. Currently, the TDS of the river, at Al Qaim, is greater than 1,000 ppm. The problem of control salinity has received considerable attention particularly when the surface water is extremely limited with poorly available ground water supply. The field measurement has been achieved for TDS, pH (hydrogen ion), EC (electric conductivity), coliform content and heavy metal for three sectors in the Euphrates River basin in Iraq as well as the lakes of Tharthar, Habbaniya, and Al-Razzaza. The statistical analysis was made to relate these parameters with discharge and water level, which are referred to the important effect of the flow in river on the water quality of Euphrates River. The storage of water in the lakes Al-tharthar, Al-habbaniya, and Al-Razzaza has a negative effect on the water quality, and shows that the best method for storage water is the reservoirs along river stream.