**Assessment of the water quality of Diwaniyah River**

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**Abstract**

The reduction of environmental pollutants in the river is one of the most important priorities for the production of drinking water. In this study, a river known as Shatt Al-Diwaniyah (Qadissyia, Iraq) was selected to demonstrate the potential environmental impacts of various pollutants in the area from Sunni (north of the city of Diwaniyah, about 15 km). There are 15 sites selected for the period from March 2014 until the end of October 2014. This study includes the measurements of pH, TDS, EC, Do, BOD, NO3, and PO4. The results showed that the water temperature at all sites ranged between 28.98-31.2OC while, the pH values was in the range of constraints in all the sites (between 7.50 to 8.06). In addition, recorded EC values ranged from 1195 to 990µ/cm, TDS values ranged from 1323 to 890 mg/L, DO values ranged between (6.30 to 8.01) mg/L. The study recorded a high concentration of vital oxygen requirement beyond the conditions allowed in most of the sites studied. Nutrients also observed which fluctuated in a narrow range and a clear concentration especially nitrate. The Nitrate concentration ranged from 0.15 to 6.34 mg/L. The effective phosphate concentration is higher in some sites, than the permissible limits. The results showed that the presence of rubber and textile factory as well as the fever and kidney hospital may deteriorate the quality of the river's water. Also, the abuses of the networks in the rain by the citizens living on both sides of river. In most cases, the efficiency of the treatment plants may be affected by the deterioration of the effluent water.