

Comparing Study Between Water Parameters of the Tide and Ebb Phase in Shatt Al-Arab River

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Abstract. The water (physical, chemical and biological) parameters can vary significantly due to the change of the climate conditions of water samples were collected monthly from four stations along the middle part of the Shatt al-Arab River during the tide and ebb phases from October 2021 – July 2022 to measure the change in eighteen parameters such as (Water temperature , pH , Turbidity , CO₂ , DO , EC, light penetration Secchi disc , water depth , TSS , total hardness , PO₄ , NO₃ , SO₄ , Na , Mg , Ca, K and FC)

Keywords. Shatt Al-Arab, Water characteristics, Tide and Ebb.

1. Introduction

Shatt Al-Arab river is created mainly from the confluence of the Tigris and Euphrates at Qurna town in north of Basrah city southern of Iraq and flows southeastwards to discharge into the Northwestern part of the Arabian Gulf .Shatt Al-arab river is the main source of surface water which it plays an important role in agriculture , industry and transportation . And it is consider the main source of fresh water of Basrah city . The phenomenon of tides is defined as the rise and fall in the water level on a daily basis resulting from the gravitation force of the sun and the moon on the earth, and a horizontal movement called the tidal current accompanies this fluctuation in the surface of the water. The phenomenon of tides is divided into two cases: the state of the tide and the water currents are in the direction of land, and case of the Ebb where the water currents are in the direction of the sea ,as these two cases are repeated twice (the occurrence of two tides and two ebbs in single day it is called the semi-diurnal tide, and when there is one tide and one ebb in single day it is Diurnal Tide [1]. The semi-diurnal-tidal type is the dominant pattern in the Shatt al-Arab river, which is characterized by two tides and two ebbs per day [2].Shatt Al-Arab river faces the danger of shortage of fresh water from its main rivers , the increase of the salt wedge from the Arabian Gulf during tide phase and the increase human influences and the organic and chemical waste dump into the river due to the increase in urbanization , this will effect directly the water quality [3,4].