

## GEOPHYSICAL AND HYDROCHEMICAL CHARACTERIZATION OF HAMMAMET AQUIFER IN N.E OF ALGERIA

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The paper reports a study of the plio-quadernary aquifer in Hammamet plain using, geoelectric surveys, Six profiles were oriented transversely in this plain of Hammamet in a direction NE-SW. Different surveys were conducted annually AB = 1000 meters, with a depth of investigation from 2500 to 300 meters.

The geophysical interpretation of the data is valuable for determining the depth to and thickness of the potential plio-quadernary aquifer and for identifying the position of potential recharge zones.

After sampling and measurement operations, the quantity of chemical components was determined. Thus, the study of the hydrochemical characteristics of this groundwater shows on the Piper's diagram that the majority of them are mainly HCO<sub>3</sub><sup>-</sup> and Ca<sup>2+</sup> water type. The ionic speciation and mineral dissolution/precipitation was calculated by PHREEQC package software (Parkhurst and Apello 1999). The Chemical composition of the water is influenced by the dissolution and/or precipitation processes during the water-rock interaction and to the cationic exchange reactions between groundwater and alluvial sediments. The high content of CO<sub>2</sub> in the water samples suggests that they circulate in a geochemical opened system.

**Key words:** Aquifer, Geophysical, Hydrochemistry, Hammamet, Algeria