# Salt wedge determination using electrical sounding method in the region of Oued Nador (Tipaza, Algeria)

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The marine intrusion of freshwater aquifers by salt water results in soil degradation due to their salinization. The present survey aims to study the position of the fresh water – salt water interface using electric sounding method in the region of Oued Nador (Tipaza, Algeria). It is important to know the position of this interface for the continuation of the aquifer exploitation.

For this, we conducted, in this zone, seven electric soundings oriented north-west south-east, with Schlumberger electrodes configuration. The inversion of the apparent resistivity data via the IP2Win software allowed us to recover the true values of electrical resistivity.

The exploitation of obtained data requires the implementation of a geo-electric section, and for the interpretation, the results of a standard electrical sounding, acquired near the study area, are used.

The results of this geophysical study allowed us to locate the freshwater - salt water contact with resistivity values that can reach 50 ohm m for freshwater formation, and less than 10 ohm m for saturated saltwater formation. The depth of the contact between fresh water and salt water increases gradually from 38 m to 40 m near the coast, and this over a distance of 0 m to 500 m, and then rises abruptly beyond a distance of 500 m at the borehole N°3 where it reaches the maximum depth of 97 m.

Key words: Electrical survey - Salt wedge - Electrical resistivity - Aquifer - Intrusion.