Mathematical Model of the Salt Water Intrusion in Rhis Nekor Coastal Aquifer (El Hoceima Region, Morrocco)

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The plain of Rhis-Nekor, located at the north of Morocco, has an important agricultural potential for the Al Hoceima province. It stores on all its area a groundwater considered as one of the most important aquifers of the Rif belt.

The thickness of the aquifer witch is made by plioquartarnay alluvia was identified by the geological, geophysical and groundwater studies. It' is roughly about 240 meters.

The chemical study of the aquifer shows a strong mineralization of its water due to the high concentration of chlorides and sulphates. This salt enrichment is related to the irrigation practices of the Rhis-Nekor perimeter by strengthening of pumping wells, whereas in the coastal part, the salt concentration at the bottom is allotted to the salt water intrusion witch was confirmed by geophysical studies.

Indeed, this work supplements the recent groundwater studies, by integrating the modelling of the salt water intrusion (which was not approached before). Using the current model we specified and corrected the hydraulic assessment of the aquifer, the quantities of salt intruding the aquifer, the extension of salted level, and the optimum abstraction without a large risk of salt water intrusion in the aquifer.

Key words: Groundwater, model, marine intrusion