



Title: Contribution to the Study of the Origin of Salinity in Alluvial Aquifer System in the Ain chabro-Hammamet (North-East ALGERIA)

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Abstract: Tebessa is located in the Algerian North East. It is characterized by a semi-arid continental climate with an average interannual precipitation of less than 400 mm. It belongs to the Eastern Saharian Atlas field along the Tunisian borders. It is drained by a certain number of the wouady of which Chabro and Bouakous are the most important. The surface area of the region extends over 420.6 km². This region has been a very intense drought during the last 20 years (1980/2000). This drought has generally led to: a general lowering of the water table; the draining water from low depth wells; in particular, the unwatering of the pumping equipment, involving a reduction of the flow drillings; and the drying-up of the natural springs. Therefore, the quantitative and qualitative repercussions were shown on groundwater resources in the area. Four sampling of two years (2005, 2006) has been realized during the high and low waters period. The chemical analysis and the piezometric measures have been done to raise up representative quality and the chart piezometric of the current water table state. The hydro-chemical survey of the groundwater quality, as well as its evolution in the time and the space becomes very necessary; especially when the water was destined to the supply of drinking water is continuously deteriorating. It was proved that, the salinity was about 4 g/l, and the electric conductivity was varied between (997-9120 $\mu\text{S}/\text{cms}$ in the wells and 468-2500 $\mu\text{S}/\text{cms}$ in drillings). Thus, by the chemical and geochemical behaviour of the groundwater, and the application of the investigation methods, the results were obtained show that, the origin of water salinity were associated with the dissolution of geological formations (evaporate and carbonated), as well as the effects of anthropogenic surface pollution.