

# ***QUALITATIVE STATE OF WATER RESOURCES IN A CRYSTALLINE SOLID***

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## **ABSTRACT**

This work has focused on the quality status of water resources in a massive crystallophyllian. The massive crystallophyllian the Edough consists mainly of gneisses and migmatites intercalated marbles and amphibolites. This massif contains in its basement water potential important. The use of this hydrogeological system (water supply and irrigation) occurs through many sources localized mainly to emerging areas of agglomeration and Bouzizi Seraidi. The methodological approach followed also allowed us to review the hydrogeochemical characteristics of this system. Flow measurements and synthesis of geological, climatological carried out massive Edough have clarified the influence of environmental conditions on the mineralization of water withdrawn (precipitation, characterization lithological formations, natural contamination, leaching soil ...). The chemical evolution of mineralization of water is natural, it is related to the alteration of the reservoir (mainly by hydrolysis of silicates). The study of water saturation indices shows that the mineralization process is mainly due to quartz, chalcedony, to amorphous silica, silica glass and to a lesser extent calcite, anhydrite, aragonite and dolomite. The chemical evolution of waters studied on the basis of thermodynamic calculations, shows a very significant increase in mineralization dry period resulting in that the tendency of water to be balanced with respect to these minerals in the presence of carbon dioxide. Finally, the infiltration of meteoric waters is responsible for the dilution of the chemical elements and increased levels of potassium due to the alteration of feldspar and feldspathoids.

**Keywords:** Water Resources, Quality, Solid crystalline Edough, NE Algeria.