

Diagenetic history of the Late Jurassic-Cretaceous Carbonate Series of Lalla Fatna Area, Safi Basin, Morocco

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The diagenetic history of Lalla Fatna Upper Jurassic – cretaceous carbonates series reflects a number of different diagenetic environments.

Early stages of diagenesis took place in the marine environment with solutions of normal marine chemistry. Major diagenetic features include the formation of micritic envelopes and a minor amount of cementation in the marine environment. Petrographic evidence from this study supports the hypothesis that Lalla Fatna dolomite series were formed by at least two episodes of dolomitization. The first episode was very early, produced from hypersaline brines, with location being controlled by depth.

According to the fresh-water-mixing hypothesis, chemically more perfect dolomite forms from dilute solutions. Fresh- and saline-mixed waters also were capable of dolomitizing by themselves, without having hypersaline cores on which to build.