
Hydrothermal Argillation of Volcanic pipes in Limestone in Mexico

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Abstract: Previously reported deposits of kaolin of hydrothermal origin in Mexico have been described from igneous parent rocks dominantly extrusive in occurrence. Recently observed evidence from other localities confirms an intrusive mode of occurrence, however, for hydrothermally kaolinized agglomerate and tuff within limestone host rock. Three such occurrences have been recognized near Jasso-Calera, north of Mexico City, and near Coacoyula, Guerrero, and Sombrerete, Zacatecas.

The contacts of these clay deposits with limestone show regularly a concentration of iron-rich minerals such as red to brown oxides and/or nontronite, but less commonly an irregular development of grossularite, and bands or pockets of endellite. Silica gossans indicate that hypogene altering solutions were active into the current geomorphic cycle. Kaolinite at the center of the clay body and endellite at the border zones are interpreted as originating, respectively, from in situ alteration of solid rock and deposition from ambient solutions.

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