

UNUSUALLY PLASTIC PRECAMBRIAN PELITE IN BUENOS AIRES PROVINCE, ARGENTINA.

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In Buenos Aires Province, above a Precambrian basement, several Proterozoic sedimentary sequences that are mined for the ceramic industry outcrop. This study is focused on the pelite of the oldest sequence, Fm. Villa Mónica, since its unique plastic characteristics make them different from the others. The pelite (silty claystone and clayey siltstone) is composed of illite, quartz and iron oxides with red veins of kaolinite and hematite. A phillite without iron oxides is interlayered. The illitic material is a mixture of I+ISII and the polytypes are 1M and 2M1. The Kubler Index, 0,51-0,48, shows deep diagenesis to low-grade metamorphism. The iron oxides, up to 13%, occur as hematite and goethite coatings. The pelite shows detrital card house textures, quartz and mica authigenic crystals and silica dissolution and precipitation are present as post depositional features. Quartz crystals up to 7 cm. long are aleatory distributed. The fluid inclusion homogenization temperature, 120°-142°, indicates a diagenetic origin for the crystals. The presence of organisms first replaced by S₂Fe and then oxidized suggests an oxic and shallow water environment near to the coast. The fine grain size distribution along with the mixed layered illite -smectite give to the material the unusual high plasticity. The conditions of diagenesis and metamorphism as well as the fluid types that could have migrated through the pelite should have been different from those in the upper sequences. These peculiarities gave Fm. Villa Mónica pelite the mineralogical and plastic characteristics that make them different from the other Precambrian sequences.