

Structural evolution and shear-related metamorphism of the Borrachudos Granitic Suite during the Brasiliano Orogeny

¹KLUMB-OLIVEIRA, A.A.; ²NOCE, C.M. and ²LOBATO, L.M.

¹Geological Survey of Brazil - CPRM, Belo Horizonte, Brazil;

²Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

The area is located 200km from Belo Horizonte, Minas Gerais, Brazil, within the Guanhães Complex.

Borrachudos-Suite granites intruded orthogneisses and greenstone-belt-type sequences of the Archean-Paleoproterozoic Guanhães Complex at ca. 1.76Ga. The Suite comprises alkaline and subalkaline compositions. Regionally, granites display significant evidence of Brasiliano-age deformation. Jointly the Guanhães Complex and the Borrachudos Suite constitute the basement of the Neoproterozoic Araçuaí Mobile Belt.

Granites show a granular to granoblastic texture. They are composed of quartz, K-feldspar, plagioclase, biotite and hornblende. Allanite, titanite, zircon, monazite and opaque minerals are minor constituents. Chlorite, epidote and carbonate occur locally. A gneissic foliation is pervasively overprinted on the rocks of the Borrachudos Suite in the area.

Slices of different rock units are tectonically imbricated along NNE-oriented thrust faults. Structural inversion is understood to relate to back thrusting and shearing associated with the later Brasiliano Orogeny. Shear-related, amphibolite-facies, metamorphic associations characterize NNE-trending, porphyroblastic, mafic rocks that display a schistose to mylonitic matrix, dipping to the NW. Centimetric garnet porphyroblasts are embedded by a biotite-hornblende matrix containing cordierite, sillimanite, plagioclase, quartz and staurolite. Preliminary REE data of shear-zone rocks suggest that they are derived from the metasomatism of Borrachudos-type granites.