

GEOLOGY AND MINERAL RESOURCES OF THE VILA DE TEPEQUÉM SHEET, NORTHERN AMAZONIAN CRATON

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RESUMO: The geological mapping of the Vila de Tepequém sheet (NA.20-X-A-III) in the 1:100.000 scale was carried out by the Geological Service of Brazil (CPRM). The sheet is situated in northern Roraima State, in the central part of the Guyana Shield, northern Amazonian Craton. The Trairão Suite is the basement unit and comprises quartz-diorites, tonalites, granodiorites and monzogranites, with compositional banding and magmatic foliation. The suite shows U-Pb ages between 2044Ma and 2026Ma and displays medium to high-K, calc-alkaline affinities, positive $\epsilon_{\text{Nd}}(\text{T})$ values, and Sm-Nd (TDM) model ages between 2024Ma and 2090Ma. A magmatic arc setting was proposed for the Trairão Suite. The Cauarane Group consists of aluminous paragneisses, mica schists, calc-silicate rocks, amphibolites, metachert and gneiss, probably deposited in basins associated with the Trairão magmatic arc. The unit underwent a syn-kinematic M1 metamorphic event under upper amphibolite facies conditions, during which the S-type Amajari Granites were generated, at 1995Ma (U-Pb). M1 probably represents the collisional phase of the Trairão orogen. The amphibolite facies M2 static metamorphic imprint is most likely related to the intense post-collisional magmatism, represented by the Pedra Pintada, Surumu, Aricamã and Cachoeira da Ilha units. The Pedra Pintada Suite and the Surumu Group comprise high-K calc-alkaline rocks. The former is exposed as two bodies exhibiting compositional zoning, varying from quartz-diorites and tonalities to granodiorites and monzogranites, and includes xenoliths of the Cauarane and Trairão rocks. The Surumu Group consists of ignimbrites and subordinated rhyolites, andesites, subvolcanic and sedimentary rocks. The monzo- and syenogranites of the Aricamã Suite and the ignimbrites of the Cachoeira da Ilha Formation show A-type geochemical affinities. The U-Pb and Pb-Pb evaporation ages obtained for the four mentioned units range from 1985Ma to 1991Ma and record the contemporaneity of calc-alkaline and A-type magmatisms, which is typical of post-collisional settings. The Sm-Nd TDM model ages, between 1978Ma and 2273Ma, and the positive ϵ_{Nd} values suggest partial melting of newly-formed juvenile crustal sources, developed in the pre-collisional stage, for the evolution of the studied volcano-plutonic rocks. The sedimentary rocks of the Tepequém Formation, correlated to the base of the Roraima Supergroup, represent the onset of an extensional phase at the end of the Orosirian period, after the stabilization of the Trairão orogen. Small Igarapé Tomas gabbroic bodies, Serra do Cupim lamprophyric dikes and Avanavero Diabase dikes crosscut the older rock units. During the K'mudku episode (1200Ma) ductile-brittle shear zones were developed over the granitoid units whereas folds were formed in the Surumu and Cachoeira da Ilha volcanic rocks as well as in the Tepequém Formation. The presently exhausted diamonds and gold alluvial deposits of the area were derived from paleoplacers of the Tepequém Formation. No primary gold occurrences were found. However, it is suggested that mesothermal, porphyry and epithermal gold may be possibly encountered in the Trairão Suite, Pedra Pintada granites and volcanic domains, respectively. There is potential for greisen-type Sn-W deposits in the Aricamã Suite granites and for Pb-Zn-(Ag) massive sulfides in the Cauarane Group.

PALAVRAS-CHAVE: CRATON AMAZÔNICO; EVOLUÇÃO CRUSTAL; MAPEAMENTO GEOLÓGICO.