

# ABSTRACT

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This report deals with the geological mapping on the Sumé Sheet (S B.24-Z-D-V), located between the coordinates 7°30'-8°00'S and 36°30'-37°00'W.Gr.

The area of work is positioned at the Pajeu-Paraíba Fold Belt, and comprises the Gnáissico-Aluminoso/Sertânia Complex, Sumé Complex, and the Surubim-Caroalina Complex, probable belonging to the end of the Mesoproterozoic age, submitted to thrust and transcurrent tectonics. Several magmatic bodies were also recognised.

The Gnáissico-Aluminoso/Sertânia Complex is formed by aluminous metasediments (biotite gnaisses with garnet and sillimanite), with narrow intercalations of calc-silicate rocks, marble, and orthoamphibolites.

The Sumé Complex is composed by light gnaisses and aluminous gnaisses, with innumerable intercalations of orthoamphibolites, calc-silicate/metaultramafic rocks, and with narrow iron formations. The presence of granulitic rocks (probable retrometamorphic eclogites) and metapiroxenite had been detected near the Surocuru village (Paraíba State).

The Surubim-Caroalina Complex is formed by biotite-schist/aluminous gnaisses, biotite gnaisses and calc-silicate gnaisses.

Three deformation phases were recognised; the two ones ( $D_1/D_2$ ) thrust movements followed by pre-Brazilian magmatism, while the third one corresponds to Neoproterozoic deformation denoting the dominant transcurrent movement, also succeeded by magmatism.

The plutonic rocks were separated in three distinct groups, correlated to tectonic events that affected the region.

Based on aerogamaspectrometric data several granitic rock types were identified and mapped, while the aeromagnetometric information made possible the recognition of 11 magnetic units related to geological data. A gravimetric profile gave support to identify a probable suture between Pernambuco-Alagoas Massif and the Pajeu-Paraíba Fold Belt.

Due to the dominance of cristaline rocks, 99,5% of the area presents fractured aquifers, while only 0,5% of the area comprises alluvionar aquifers. These aquifers are separated in five classes depending on their hidrogeologic importance.

The water in the fractured aquifers has its use restricted to cattle and sheeps, while the alluvionar aquifers contain a better quality water that can be used for agriculture purposes and sometimes to human consume.