

ABSTRACT

This report is the result of hydrogeological mapping and geological updating of the Irauçuba sheet (SA.24-Y-D-V) in the 1:100.000 scale, located at the north of Ceara State, NE of Brazil. It occupies an area of 3.000 sq. km, limited by coordinates 3°30'- 4°00'S and 39°30' - 40°00'W.

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The hydrogeological studies carried out in the area have been based in the information provided by analyses of 144 water-points (wells and springs) and their correlations with geological and structural aspects.

The main aquifer systems are related with the Quaternary covers and fractured rocks of the Ceará complex, despite the existence, in the second, of several wells with discharge between 1,00 - 2,00m³/h.

The waters generally have a high salinity and those from Precambrian associations are subject to potability restrictions relative to human uses. For irrigation uses, restrictions may be required, since the results of analytical data showed a considerable scattering, due to the high anisotropy degree presented in precambrian rocks.

The geological aspects, after the realization of the present studies, in the region show a new view about the distribution and grouping of the lithological assemblage.

The rocks present in Irauçuba sheet were grouped into three regional geological domains. The older one is represented by Pré-Brasilian or metaplutonic rocks, of paleoproterozoic age, com-

posed by deformed coarse orthogneisses of granodioritic to tonalitic composition.

The second one, comprises Pre-Brasiliano supracrustal sequences, correlated to the rocks of Ceara complex, of paleoproterozoic age. It contains metasedimentary rocks, formed by quartzites, micaschists, gneisses, calcisilicates and metalimestone lenses, with metamorphism range from medium to high amphibolite facies.

At last, to complete the Precambrian stratigraphic frame, also occur plutonic rocks related to Brasilian cycle, with the presence of deformed and/or undeformed granitoids, classified according to their emplacement age relatively to the transcurrent deformational phase.

The rock veins are represented by acid types of dubious chronologic age, probably related to the late events of intrusion of brasiliano granitic rocks; and basic dykes of mesozoic age.

The phanerozoic sedimentary cover is represented by quaternary detrital sediments that form the alluvia that follow the main rivers of the region.

The studied area has a geodynamic history characterized by the presence of intense and successive ductile shear zones that characterize the predominance of a compressional tectonic regime with masses moving from north to southward. It occurs, also, evidences of a rifting extensional phase, of mesozoic age, characterized by the presence of faults, fractures and joints of relative importance to the hydrogeological studies.