ABSTRACT

The Caxias sheet (SB.23-X-B) at the scale 1:250,000 limited the geographic coordinates 42°00' - 43°30' WGr and 4°00' - 5°00' S encompasses an area of 18,400 sq.km. in the domain of the intracratonic Phanerozoic Parnaíba Basin formed by sedimentary terrains.

The geologic survey adopted an approach based into the interpretation of depositional systems. After the study of the mineral occurrences, were determined the units with higher economic potential. The hydrogeologic survey identified 3 zones defined within the hidrogeologics conditions. Were listed 597 water sources (drilling wells and dug wells). These data are presented as the geologic, where are the data with the mineral resources of the sheet and hydrogeologic charts.

The sedimentation is essentially siliciclastic, formed by quartz-sandstones, interbedded siltstones, claystones and shales; limestones and cherts are subordinated. Eleven formations had been mapped: Cabeças, Longá, Poti, Piauí, Pedra de Fogo and Motuca from Paleozoic; Corda and Itapecuru from Mesozoic and early Cretaceous intrusive rocks; Tertiary covers and alluvial Quaternary deposits. The sedimentary rocks represent transgressive-regressive cycles with deposits of continental, transition and marine origin, as well as, lagunar sediments associated to local evaporític basins, deposited in a highly arid environment.

The stratigraphic units are subhorizontal with NW trending dips. The structural fabric, although very simple, presents good geometric coherence in regional terms copared with the structural frame of the basin.

The metalogenetic-previsional analysis determined Piauí and Motuca formations as the best units for prospecting, so that they must be considered by governamental programs with the aim of regional economic development.

About 72% of the water samples (68) have good potability, being within the limits of the quality standards of water for human utilization. In 28 samples, 64% are bicarbonat and 28% are cloretads. Regarding their use for irrigation, most of them present low to medium salnity, so, may be used for several types of cultures and soils, and for animal use.