

PROJECT MODESTHI: LITHOLOGICAL AND STRUCTURAL CONSTRAINTS OF THE GROUNDWATER CHEMICAL COMPOSITION IN RESENDE BASIN, BRAZIL

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Resende sedimentary basin, located at the westernmost portion of Rio de Janeiro State, Brazil, has been studied within the scope of Project MODESTHI (supported by Brazilian agency PADCTIII/FINEP). A hydrogeological survey has been carried out with two main objectives: (1) general hydrogeological assessment of the basin, with a groundwater budget, potentiometric study and aquifers geometry; and (2) hydrogeochemical investigation and pollution hazard assessment. Water consumption has increased steadily in the last few years in the Resende region due to an important growth in industrial activity and population. Knowledge of the hydrochemical characteristics plays an important role in evaluation of available water resources and their protection. Water chemistry monitoring has been going on recently and has shown some interesting results: the water presents generally low mineralization, typical of unconsolidated and shallow continental aquifers. It has also been observed a relationship between chemical composition of the water with neotectonic and lithological constraints. For example, calcium content in water in the deeper portions of the confined aquifers suggests that the carbonate sediments (calcrete) present in the area have some influence in water mineralization.