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CONCEPTUAL MODEL OF THE FRACTURED AQUIFER OF THE URANIUM MINE IN CAETITÉ, BRAZIL: IMPLICATIONS FOR UNDERGROUND WATER FLOW

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The studied area is the uraniferous district of Lagoa Real in Brazil. The region is set in a semiarid climate context, with hydric deficit along all months of the year and high aridity index. Groundwater represents the main supply source considering that most surface water sources are temporary and only exhibit flow in rainy periods.

The main aquifer system present on the region is fractured, and the presence of groundwater flow occurs through the discontinuities of the rock considering that the rock mass corresponds to the set formed by the rock matrix and all its discontinuities (fractures, foliations and discordances). In this sense, the main purpose was to develop a conceptual model for the aquifer system, through the geotechnical characterization of discontinuities, once these structures allow the secondary porosity of the medium. Hydrochemical data hand out as complement for physical characterization for the behavioral interpretation of the aquifer. The aquifer system is unconfined, however, presents points of stagnation of flow forming compartments without communication with the surrounding areas.

Results showed that discontinuity distribution were not a predominant factor to the concentrations homogenization of the chemical parameters. The composition of the rock was revealed as the most important factor.

Country or International Organization

Brazil

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