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Abstracts

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HEAVY METALS INTERACTIONS WITH ORGANIC MATTER IN FRESHWATER SEDIMENTS

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Interactions involving some trace metals (Cd, Cu, Pb, Zn) and the organic matter present in freshwater sediments from the Paranoá Lake (Brasília), the Tiete River (São Paulo) and the Taquaral Lake (Campinas) were investigated.

Some kinetics aspects of the adsorption/desorption for cadmium of these sediments were also studied using both Ion Selective Electrodes (ISE) and Anodic Stripping Voltametry (ASV) techniques.
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HYDROGEOCHEMICAL STUDY OF THE NON-SATURATED AND SATURATED ZONE IN HUMID SUBTROPICAL TERRANES

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An Experimental Site was installed on the campus of the University of São Paulo in order to study the dynamics and the evolution of the chemical composition of water percolating the unsaturated zone as far as aquifer, in a region with a humid subtropical climate. It represents the first investigation of this kind carried out in Brazil.

The results of the chemical analyses of a weekly monitoring lasting 14 months (October 1985 - January 1987) were plotted on PIPER diagrams for classification. In accordance with these diagrams, the waters are classified as sodium-chlorated to mixed chlorated in the upper part of the unsaturated zone, passing to mixed-bicarbonated, sodium-bicarbonated until sodium-chlorated with depth.

No significant variations were observed in the chemical composition with the seasons, reflecting the more-or-less homogeneous humid subtropical climate.

The results show that the climate influences the chemical composition of water in the upper part of the unsaturated zone, while the lithology controls in the lower.

Groundwater at the sampling point, PF, is sodium-bicarbonated, reflecting water from the unsaturated zone. At the other sampling points (piezometers), groundwater is classified as calcium-bicarbonated, being already mixed by the flows from all the other directions. This is typical for the upper part of groundwater, confirming results of studies on chemical zonality in groundwater, known from literature.

HYDROGEOCHEMISTRY OF ARTIFICIAL RESERVOIRS

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The forcing functions, regulating and controlling the hydrogeochemistry of artificial reservoirs are related mainly to the special characteristics of these complex ecosystems intermediates between rivers and lakes. Precipitation (intensity and periodicity) and runoff are

fundamental processes in the input of macronutrients and trace elements. Water column circulation and thermal instability or stability (which depend on average depth, wind force and direction, morphometry and operational procedures) are basic factors in the vertical