

Presented by ANTONIO C. ROCHA-CAMPOS

Heavy metals distribution in the aquatic ecosystems endowed with human activities is nowadays a serious environmental problem. The number of studies related to heavy metals and bottom sediments have been growing lately, because the bottom sediment is the main reservoir for heavy metals contents.

Ten samples from the Embu-Mirim river were collected and studied in this basin to measure downstream towards the Guarapiranga Reservoir. The purpose is to study the Cr, Cu, Ni and Zn contents in the bottom sediments sampled by means of two subsamples, one at the top and the other in the base of the core sediments. The influence of the physicochemical properties (pH and Eh), the organic matter data and granulometric data were correlated to the heavy metals found in this environment. The research shows the probable contamination by those metals in the sediment of the Guarapiranga Reservoir.

The results obtained so far suggest a possible tendency of the values of Cr, Ni and Zn to depend on the properties of the organic matter, and that the Cu amounts are being governed by the pH values, as a function of the sources emission of those metals. The granularity is directly related to the concentration of the metals, because the sampling stations with larger amounts of metals are clayey, while the smallest amounts were found in the stations of sandy size.

With the collected data, an environmental approach becomes relevant in the area, seeking to improve the quality of the bottom sediment, mainly for Cr and Ni that present considerable decline in the quality of the water of the Guarapiranga Reservoir. — (*December 14, 2001*) .

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FACIES, 3rd ORDER SEQUENCE STRATIGRAPHY AND HYDROLOGIC POTENTIAL OF SANDSTONES, MAFRA FORMATION (LATE PALEOZOIC), PARANÁ BASIN, BRAZIL*

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The middle part of the Mafra Formation shows, in Mafra and Rio Negro, a great thickness of diamictites, sandstones, shales, siltites and varvites.

According to Canuto's (1999) nomenclature, the following facies were recognized, in a general way: com-

pacted massive diamictite, lenticular diamictite, cross-bedded and showing fining-upward sandstone, lenticular sandstone, massive siltite, massive siltite with dispersed clasts, laminated or massive shale with dispersed clasts, interlaminated (very fine sandstone intercalated with silty shale), and regular rhythmite, some of them corresponding to diagnostic (#) facies of facies associations.

Four facies associations were also recognized: A₁, compacted massive diamictite#; A₂, laminated or massive shale with dispersed clasts#; lenticular diamictite; cross-bedded and showing fining-upward sandstone, lenticular sandstone, massive siltite with dispersed clasts# and regular rhythmite#; A₃, massive siltite, lenticular diamictite and cross-bedded and showing fining-upward sandstone; and A₄, interlaminated#, lenticular sandstone and cross-bedded and showing fining-upward sandstone; they represent, respectively, lowstand, transgressive, highstand and regressive glacio-isostatic system tracts, forming a complete 3rd order sequence.

The alternation of psammitic and pelitic sediments identified sandstone porosities between 20 to 25% and the observed permeability of 10⁻³ cm/s indicate a good potential as aquifers.

According to their great lateral extension, it can be expected that they can supply the local community even without a systematic exploration. Besides existing wells in the vicinity, water seeps in outcrops, directly used by the population have also been verified. — (*December 14, 2001*) .

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PROBABLE FIRST OCCURRENCE OF LYCOPODIALES IN THE GONDWANA NEOPALEOZOIC*

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The Transitional ‘‘A-B’’ Taphoflora is a Lower Permian plant megafossil association of the Paraná Basin (Southern Brazil), whose type locality is located on the Sítio Itapema Cerquillo (SP). In this taphoflora there