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ABSTRACTS**

ENVIRONMENTAL IMPACTS CAUSED BY INDUSTRIAL WASTE IN SUBTROPICAL COASTAL WATERS: SANTOS, STATE OF SÃO PAULO, BRAZIL

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The Santos bay and estuary (State of São Paulo, Brazil), as the place of refuge for the most important harbor in the Brazilian coast, have been subjected to substantial changes in their sedimentation and circulation patterns, as a consequence of population and industrial pressures.

The first phase of development of the area could be related with the harbor expansion and railway construction at the end of the XIXth century. From the decade of 10 of this century, an incipient industrialization took place with the construction of a hydroelectrical power plant. However, a true industrialization boom started only with the construction of the Anchieta highway, in the decade of 40, accomplished between 1959 and 1963 with the installation of a petrochemical pole and an iron manufacturing complex. This sudden industrialization caused many changes in the area, with renewed harbor expansion, constant dredging of the estuary, and, even a special pier for iron manufacturing company has been constructed. The impact of this rapid

industrialization has been evidenced by some works already done (1,2,3,4). However, management programs for environmental control purposes were introduced only in the beginning of the decade of 70.

Preliminary results of Santos bay and estuary geochemical studies, now in course, through a joint project between the Chugoku National Industrial Research Institute from Hiroshima (Japan), and the University of São Paulo Institute of Oceanography, are here presented. Bay and estuary bottom surface sediments were analysed in relation to organic carbon and nitrogen, and some heavy metal (Fe, Mn and Zn) contents. Their contents are different when samples from the bay and estuary are compared, but a better understanding of these variations would be possible in the future, when they would be compared with the data obtained along some already collected cores.

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