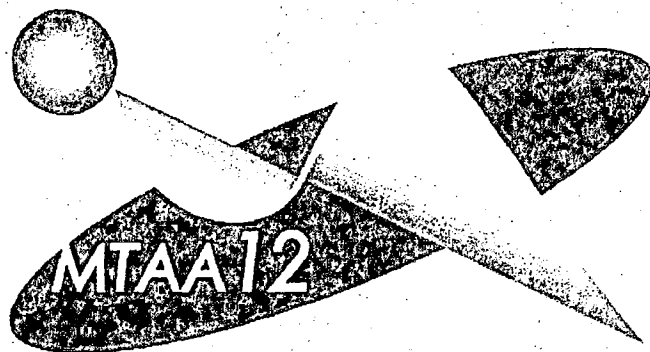


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P043

ASSESSMENT OF METAL AND TRACE ELEMENTS IN CANANÉIA ESTUARY, BRAZIL, BY NEUTRON ACTIVATION AND ATOMIC ABSORPTION TECHNIQUES

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The Brazilian estuary of Cananéia is composed of a lagoon-estuary complex area of Iquape and Cananéia, located in the southern coast of São Paulo State. This area is considered as part of Biosphere Natural Reserve due to its environmental and cultural importance and is considered not polluted. The present study reports results concerning the distribution of some major (Fe, K and Na), trace (As, Ba, Br, Co, Cr, Cs, Hf, Hg, Rb, Sb, Sc, Ta, Tb, Th, U and Zn) and rare earth (Ce, Eu, La, Lu, Nd, Sm, Tb and Yb) elements in Cananéia estuarine marine sediments. Twenty six bottom sediment samples were collected in this estuary by a steel van Veen sampler in two campaigns: summer and winter of 2005. The samples were previously dried at 50°C in a ventilated oven, passed through a 2 mm sieve and then homogenized. Multielementar analysis was carried out by instrumental neutron activation analysis. Cold vapor atomic absorption technique was employed for total mercury determination. Methodology validation for both cases was performed by certified reference material analyses. The results obtained were compared with NASC (North American Shale Composite) values and most of the elements showed lower concentrations than these values. The values for metals like As, Cr, Hg and Zn were compared to Canadian Council of Minister of the Environment oriented values (TEL and PEL). In general, most samples presented values for these elements lower than TEL values. Sample located at point 4 presented higher concentration for most elements analyzed, as well as for As, Cr and Hg showing concentrations higher than TEL values (7.24, 52.3 and 0.13 mg kg⁻¹, respectively). Cluster analyses were applied for the chemical data.

P044 ANALYSIS OF A SEWAGE SLUDGE AND COVER SOIL BY NEUTRON ACTIVATION ANALYSIS.

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The Korean government reported that in 2005, 4395 tons/day of sewage sludge was generated from sewage disposal facilities in Korea and only 11.03 % of it was reused. In addition, as a direct landfill of sewage sludge was forbidden from June 2003, research for a relevant disposal technique has been increasing. This study aimed to collect sewage sludge samples, to analyze them and to evaluate the possibility for their reuse by a comparison of the elemental contents from a sewage sludge and a cover soil. Sludge samples were collected from a sewage disposal plant in Daejeon city and the cover soil was produced by a dilution of a sewage sludge with limestone. Instrumental neutron activation analysis was employed to determine the elemental contents in the samples. Twenty seven elements were analyzed and their concentrations were compared.

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