

Lead isotopes used to investigate the occurrence of copper in aquatic macrophytes and water from a public supply water reservoir

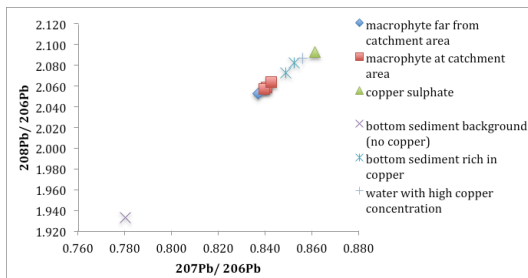
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Guarapiranga Dam is a public surface water reservoir, which provides water to 3,7 million people that live in the southeastern part of São Paulo City and its surroundings. In a previous work [1], the presence of copper in bottom sediments and water samples were detected in this same dam. The hypothesis was that this copper should be associated with copper sulphate used as algicide. Isotopes have been used to distinguished natural from anthropogenic sources of contaminants. This work applied isotopic techniques to investigate the occurrence of copper in this enviroment. Besides bottom sediments and water samples, we also analysed aquatic macrophytes and the copper sulphate used as algicide by water supply company.

Our results showed that bottom sediments with no copper (natural background) has a more radiogenic signature,



whereas the copper sulphate has the less radiogenic signature. Bottom Sediments with high copper concentration has an isotopic signature closer to the copper sulphate signature. Water sample with high copper concentration (located at the cathement area) also have a similar signature to the copper sulphate.

This results show that the copper occurrence is related to the use of copper sulphate and this can be incorporated by plants as the macrophyte and become bioavailable.

[1] Martins, Murakami & Grhomann (2013) Goldschmidt abstract.

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