

Geochemical characteristics of S and Mn concentrations of sediments on river bed in Akita Prefecture, Japan

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Abstract

Distributions of concentrations of S and Mn in sediments on river bed and river water of river in Akita Prefecture were examined on the basis of data determined by PIXE method for the sediments samples and ion chromatography and ICP-MS methods for river waters. The distribution of S content in sediments is similar to the distribution of SO₄ content in river water. The similarity suggests that S in sediments occurs as sulfate-bearing minerals such as sulfate minerals. Mn content in sediments of river bed is high in areas having low Mn content with high oxidation potential of river water. On the other hand, Mn content in sediments on river bed is low in areas having high Mn content with low oxidation potential of river water. The inverse correlation suggests that dissolution and transportation of Mn in sediments and river waters are controlled by redox environments.