



# Diagenetic remobilization of manganese, iron, copper and lead in anoxic sediment of a freshwater pond

Masahiro Sakata

Show more

Outline | Share Cite

[https://doi.org/10.1016/0043-1354\(85\)90373-2](https://doi.org/10.1016/0043-1354(85)90373-2)

[Get rights and content](#)

## Abstract

The diagenetic remobilization of manganese, iron, copper and lead in anoxic sediment of a freshwater pond, T Reservoir, Japan has been examined in an *in situ* submerged chamber system, through the interstitial water and sediment analyses. Manganese was released continuously from the sediment into the overlying water during the experiment, whereas iron was released from the sediment abruptly after the 2nd day of the experiment. The steep vertical concentration gradients of manganese and iron were observed in the interstitial water. The release of manganese and iron from the sediment is due to the dissolution of ferro-manganese oxides and hydroxides in the surface sediment under anoxic condition. In contrast to manganese and iron, copper and lead were not released from the sediment during the experiment, and their concentrations in the interstitial water were not significantly different from the values of the overlying water. The results show that the diagenetic remobilization of copper and lead in the sediment is negligibly small. It is likely that copper and lead are fixed into the sediment by some process other than the formation of sulfides.

Previous

Next

## Keywords

diagenetic remobilization; sulfide-forming metal; iron; copper; lead; manganese; anoxic sediment; freshwater pond; interstitial water; submerged chamber experiment

[Recommended articles](#)

Cited by (31)

### [Iron and manganese fluxes across the sediment-water interface in a drinking water reservoir](#)

2020, Water Research

[Show abstract](#) ✓

### [Uncertainties in historical pollution data from sedimentary records from an Australian urban floodplain lake](#)

2018, Journal of Hydrology

[Show abstract](#) ✓

### [Behaviour of trace metals in the anoxic environment of Veraval harbour, India](#)

2018, Marine Pollution Bulletin

[Show abstract](#) ✓

### [Modeling diagenesis of lead in sediments of a Canadian Shield lake](#)

2004, Geochimica et Cosmochimica Acta

[Show abstract](#) ✓

### [Chapter 5: Sediments](#)

1997, Studies in Environmental Science

[Show abstract](#) ✓

### [Sediment pore water collection methods for trace metal analysis: A review](#)

1995, Water Research

[Show abstract](#) ✓



[View all citing articles on Scopus](#)

[View full text](#)

Copyright © 1985 Published by Elsevier Ltd.



Copyright © 2022 Elsevier B.V. or its licensors or contributors.  
ScienceDirect® is a registered trademark of Elsevier B.V.

RELX™