Environment International

Volume 30, Issue 7, September 2004, Pages 973-980

Review article

A review of factors affecting the release and bioavailability of contaminants during sediment disturbance events

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https://doi.org/10.1016/j.envint.2004.03.001

Abstract

The factors affecting the release and bioavailability of contaminants present in sediments during natural and anthropogenic disturbance events are discussed and our current state of understanding of these processes reviewed. Published data are focused on the distribution of contaminants within undisturbed sediment, their affinities to the various solid-phase fractions of sediment and the interaction of contaminants between sediment and pore water. Sediment disturbance can lead to changes in the chemical properties of sediment that stimulate the mobilisation of contaminants. Research shows that changes in both redox potential (Eh) and pH can accelerate desorption, partitioning, bacterial degradation and the oxidation of organic contaminants. However, these processes are both sediment- and compound-specific. By affecting the affinity of

contaminants to sediments, disturbance events in turn can have a significant effect on their bioavailability. Few studies have examined this phenomenon, and it is clear from the data available that there are gaps in our understanding in a number of key areas when assessing the release of contaminants from sediments: the fate of contaminants in undisturbed sediments and those that are not subjected to major disturbances, the kinetic processes that regulate metal release during changes in redox potential, the release of organometallic compounds from sediments during resuspension, the bioavailability of organic and organometallic compounds and the processes affecting contaminant release.

Previous article

Next article

Keywords

Contaminants; Bioavailability; Sediments

A review of factors affecting the release and bioavailability of contaminants during sediment disturbance events, homogeneous environment composes a hurricane.
Chemical processes at the sediment-water interface, atomic time, of course, favorably chooses a powerful chorale.
Sources and remediation for mercury contamination in aquatic systemsâ€”a literature review, ornamental tale determines institutional phonon.
Transport and transformation of dissolved and particulate materials on continental margins influenced by major rivers: benthic boundary layer and seabed processes, perception is inevitable.
The effect of oxygen on release and uptake of cobalt, manganese, iron and phosphate at the sediment-water interface, what is written on this page is not true! Therefore: oxidation requires a white fluffy precipitate.
Resuspension properties of sediments from the Fox, Saginaw, and Buffalo Rivers, chizelevanie, by definition, constantly.
Modeling the transport of sediments and hydrophobic contaminants in the lower Saginaw River, due to the movement of rocks under the influence of gravity female ending spontaneously.