



## JOURNAL OF ENVIRONMENTAL ENGINEERING

Search All Issues

[ [Back To Hit List](#) | [Next Document](#) | [Issue Table of Contents](#) | [Bottom of Page](#) ]

### Abstract

#### **Microcosm Approach to Study Transport of Polychlorinated Biphenyls in Sediment**

J. Envir. Engrg., Volume 132, Issue 6, pp. 689-693 (June 2006)

[Kathleen M. McDonough](#),<sup>1</sup> S.M.ASCE and [David A. Dzombak](#),<sup>2</sup> F.ASCE

<sup>1</sup> *Post-Doctoral Researcher, Dept. of Civil and Environmental Engineering, Carnegie Mellon Univ., Pittsburgh, PA 15213. E-mail: kmm2@andrew.cmu.edu*

<sup>2</sup> *Professor, Dept. of Civil and Environmental Engineering, Carnegie Mellon Univ., Pittsburgh, PA 15213 (corresponding author). E-mail: dzombak@cmu.edu*

---

(Accepted 6 September 2005)

The transport of polychlorinated biphenyls (PCBs) in sediment is difficult to study in the laboratory due to their low solubility and strong tendency to sorb to sediment and experimental equipment. A small-scale laboratory microcosm was designed to study PCB transport in anaerobic surface sediment at microscale and to quantify transport rates. Results of verification testing showed that the experimental system enabled quantitative characterization of the diffusive transport of PCBs in sediment in a reasonable time frame (months). The fine-spatial-resolution results obtained were as expected with the less chlorinated, more mobile congeners transporting the fastest and the more heavily chlorinated compounds transporting more slowly. This laboratory microcosm system could be used to study the transport of many types of pollutants in sediment, but is particularly useful for hydrophobic organic compounds.

©2006 ASCE

doi:10.1061/(ASCE)0733-9372(2006)132:6(689)

[Permissions for Reuse](#) 

[Show References](#)

---

[ [Back To Hit List](#) | [Next Document](#) | [Issue Table of Contents](#) | [Top of Page](#) ]

© 2006 American Society of Civil Engineers