

# US EPA Mid-Continent Ecology Division

## Research Project Summary

### **Development of Methods for Assessing Contaminated Sediments: TIE**

#### *Overview*

Contaminated sediments generally contain complex mixtures of chemicals. While sediment toxicity tests can indicate if the sediment is toxic overall, effective management of contaminated sediments requires an understanding of the specific chemical(s) responsible for sediment toxicity. The purpose of this research project is to develop Toxicity Identification Evaluation (TIE) methods for contaminated sediments. Previous work has adapted water column TIE techniques for application to interstitial water. However, technical and logistical differences between interstitial water toxicity tests and whole sediment exposures make it desirable to have TIE methods applicable directly to bulk sediment. Methods are being developed to characterize, isolate, and identify three types of common sediment toxicants: metals, ammonia, and non-ionic organic chemicals. Results of this research will aid all programs involved with the assessment and management of contaminated sediments.

#### *Key Products*

Leonard EN, Mount DR, and Ankley GT. 1999. Modification of metal partitioning by addition of synthetic AVS to freshwater sediments. *Environ Toxicol Chem* 18:858-864.

Heinis, LJ, Highland TL, and Mount DR. 2004. A method for testing the aquatic toxicity of sediment extracts for use in identifying organic toxicants in sediments. *Environ. Sci. Technol.* 38:6256-6262.

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