



Executive Editors

Edward J. Calabrese

Paul T. Kostecki

Editor

Christine Judge

Volume 7, Number 2, Summer 1998

- **Announcing New Phytoremediation Journal - 1**
- **Recent Publications from American Petroleum Institute (API) - 2**
- **AEHS Conducting State-by-State Arsenic Survey - 3**
- **Findings from Innovative Technology Survey - 3**
- **Update: West Coast Conference on Contaminated Soil and Groundwater: Wrap-up of 1998 Conference and Looking Ahead to March 1999 - 4**

Announcing New Phytoremediation Journal

The Association for the Environmental Health of Soils and CRC Press are pleased to announce the start of a new journal of phytoremediation, entitled the ***International Journal of Phytoremediation***. This quarterly, international, peer reviewed journal will be devoted to publishing current laboratory and field research in the field of phytoremediation. The purpose of the journal is to link professionals in the many environmental disciplines involved in the development, application, management and regulation of emerging phytoremediation technologies.

The scope of the journal will include any use of phytoremediation processes for environmental restoration. This includes hybrid technologies combining phytoremediation with other chemical, physical and/or biological processes. The editors invite submission of manuscripts across the research spectrum: from basic laboratory research and bench-scale testing to pilot and full-scale field applications. Of particular interest are submissions of articles that focus on field applications or descriptions of the effects of contaminants and other forms of stress on phytoremediation systems. Also, examinations of the social framework for phytoremediation, including regulatory, economic, and public perception issues are relevant to the scope of the journal.

The editorial staff of the *International Journal of Phytoremediation* will include:

Editor-in-Chief: **Dr. Guy Lanza**, *University of Massachusetts, Environmental Science*

Associate Editors: **Dr. Kathy Banks**, Purdue University, School of Civil Engineering; **Dr. Scott Cunningham**, Dupont Central Research and Development; **Paul Flathman**, Association for the Environmental Health of Soils; **Dr. Steven Rock**, U.S. Environmental Protection Agency;

Dr. Jerald Schnoor, University of Iowa

Managing Editor: **Heather McCreary**, *Association for the Environmental Health of Soils*

Besides high quality, original articles on current phytoremediation topics, the journal will contain technical notes, short communications, editorials, invited review articles, book/software reviews, new products and patent information, and announcements of upcoming conferences and courses. All manuscripts must pass through a rigorous peer review process.

All manuscripts should be addressed to: Heather McCreary, Managing Editor, Editorial Office, P.O. Box 2308, Amherst, MA 01002. Telephone: (413) 549-5170. Fax: (413) 549-0579. Email: Heather@aehs.com. Please provide the names, complete addresses, telephone numbers, and, where possible, email addresses of three potential reviewers for the manuscript.

For more information or to obtain the complete instructions to authors, please contact Heather McCreary at the above telephone number or email address.

New Publications from American Petroleum Institute (API)

Publication 4665, *Analysis and Reduction of Toxicity in Biologically Treated Petroleum Product Terminal Tank Bottoms Water*, April 1998

The objectives of this study were to measure toxicity in biologically treated petroleum product terminal tank bottoms waters, identify the chemical constituents causing that toxicity, identify treatment options, and measure the effectiveness of the treatment techniques in removing the constituents and reducing toxicity. Nine gasoline and two diesel tank bottoms water samples were collected from petroleum product terminals at various geographical locations. The samples were normalized to a fixed chemical oxygen demand (COD), then subjected to biological treatment. Treated samples were tested for acute toxicity in 24-hour exposure tests using *Mysidopsis bahia* and for chronic toxicity in 7-day static renewal toxicity tests also using *Mysidopsis bahia*. Biological treatment was observed to effectively remove metals, but produced highly variable degrees of chemical oxygen demand, biochemical oxygen demand, and total organic carbon. <http://www.api.org/ehs/rh/4665.htm#top>

Publication 4664, *Mixing Zone Modeling and Dilution Analysis for Water-Quality-Based NPDES Permit Limits*, April 1998

This report is designed to:

provide an overview of the Environmental Protection Agency's (EPA) policies and technical guidance on the role of mixing zones in the NPDES permitting process;

present state mixing zone regulations, policies, and guidance;

introduce important concepts related to the hydrodynamics of effluent dilution in receiving waters and the design of outfall diffusers;

review available mixing zone models;

identify EPA sources for the models;

discuss strategic issues for dischargers to consider when applying models; and

describe the use of dye tracer studies as alternatives or supplements to mixing zone models.

<http://www.api.org/ehs/rh/4664.htm#new>

Publication 341, *A Survey of Diked-Area Liner Use at Aboveground Storage Tank Facilities*, February 1998

In 1997, API conducted a survey designed to evaluate the effectiveness of diked-area liner systems and to document operational problems involved with their use. The survey data indicated that the effectiveness of liners in protecting the environment is limited because liner systems frequently fail. The data further showed that there are few releases from aboveground storage tanks that would be addressed by diked-area liners. Because there were few releases, the data do not directly demonstrate the effectiveness or ineffectiveness of liner systems in containing releases; however, it was concluded that measures that prevent aboveground storage tank releases are more effective in protecting the environment and are more cost-effective in the long run.

<http://www.api.org/ehs/rh/341.htm#TOP>

AEHS Conducting State-by-State Arsenic Survey

The Association for the Environmental Health of Soils (AEHS) is conducting a survey of state regulations for soil arsenic contamination for each of the 50 states. The goal of the survey is to determine how arsenic in soil is regulated nationally and what the drivers are for regulatory endpoints. The findings will benefit states and the regulated community by providing information on: sources of soil arsenic contamination; how states are responding to this contamination; and what remediation methods are effective. An analysis of the results will be published in the *Journal of Soil Contamination* as well as an abbreviated version in *Soil and Groundwater Cleanup* magazine.

For more information on the arsenic survey, please contact Heather McCreary or Linda Baldwin at AEHS at (413) 549-5170.

Findings from Innovative Technology Survey

The EPA's Office of Underground Storage Tanks (OUST) sponsored a recent state-by-state survey of the use of innovative cleanup technologies to remediate leaking underground storage tank sites (LUSTs). This 1997 study was a follow-up to a first survey done in 1995, which found a significant increase in the use of "alternative" or "innovative" remediation technologies between 1993 and 1995, from usage at 3,000 sites in 1993 to use at more than 50,000 sites in 1995.

The purpose of the 1997 survey, which was conducted by the University of Massachusetts, was to determine the current alternative remediation technology usage and technology trends for the period between 1995 and 1997. The findings included a slight *decline* in the usage rates of alternative technologies for soil remediation. However, the study points out that this decline is in large part attributable to: 1) a significant drop-off in the use of monitored natural attenuation as an alternative remediation method *and*; 2) a lower response rate to the 1997 study than the 1995 study. Usage rates for groundwater remediation technologies remained the same.

For soil remediation, the study found that some significant changes have taken place in technology selection. The use of soil vapor extraction and bioventing have *increased* significantly, while the use of

monitored natural attenuation and biopiles have significantly *decreased*. Landfilling remains the predominant remediation choice for petroleum-contaminated sites. Explanations for these findings include: 1) the shift to RBCA standards has increased the number of low-risk sites being closed out, and landfilling is the most expedient way to get these sites closed out. 2) EPA and ASTM have released documents on the proper use of natural attenuation that include requirements that may be viewed as stringent by decision-makers, thereby resulting in this option being seen as less cost- and time-effective than landfilling or soil vapor extraction or bioventing. 3) Usage rates reported by California changed drastically from all sites (21,000) in 1995 to only 70 sites in 1997, due to a reinterpretation of the survey question.

For remediation of petroleum-contaminated groundwater, the use of alternative technologies remained almost the same as in 1995. The use of air sparging, biosparging, and in-situ bioremediation continued to grow, while the use of pump-and-treat and monitored natural attenuation decreased slightly. *Monitored natural attenuation still remains the most commonly used option for remediating contaminated groundwater.* However, EPA expects a continued decrease in this method over the next few years for remediating contaminated groundwater.

One reason for an expected continued increase in pump-and-treat while monitored natural attenuation technology decreases is the effectiveness of the former technology in remediating MTBE. More states are expected to be testing for and remediating MTBE (methyl-tertiary butyl ether), which is more soluble than BTEX and does not appear to biodegrade easily. Therefore, monitored natural attenuation may not be an appropriate option, while pump-and-treat may be more effective in this situation.

Overall, the 1997 survey found that the use of alternative technologies vs. traditional remediation options is 59 % vs. 41% for soil and 75% vs. 25% for groundwater. For more information on the Innovative Technology Survey, please contact Peggy Provost at the EPA at (703)603-7152.

Update: West Coast Conference on Contaminated Soils and Groundwater: Wrap-up of 1998 Conference and Looking Ahead to March 1999

In March of 1998, environmental professionals invaded the sleepy seaside town of Oxnard, CA. Yes, it was the Eighth Annual West Coast Conference on Contaminated Soils and Groundwater, held March 9-12, at the Embassy Suites Mandalay Beach Resort Hotel in Oxnard, CA. The conference spanned a wide range of topics, including MTBE/Oxygenates, Phytoremediation, Innovative Technologies, Remediation, Natural Attenuation, RBCA & Cleanup Standards, and Risk Assessment. The conference program also included a couple of special topic sessions, including one hosted by Lawrence Livermore National Laboratories on Reasonable Cost Goals which, despite the unenviable position as last session at the conference, drew a large crowd and lively discussion. Overall, the conference was highly successful, attracting attendees from throughout the United States and across a wide spectrum of environmental professions.

Due to the overwhelming demand on the part of conference attendees, we will return to the Embassy Suites Hotel in Oxnard, CA for the 1999 West Coast Conference on Contaminated Soils and Waters, March 8-11, 1999. Keep an eye on our website, www.aehs.com, for conference updates, presenter abstracts and a full listing of sessions and workshops.

New for 1999! We are proud to sponsor the first Graduate Student Poster Competition at the 1999 West Coast Conference. The competition is open to University graduate students in normal pursuit of a graduate degree. In addition, a former student who has received a degree in December 1998 is eligible. The deadline for abstract submission for the Graduate Student Poster Competition is October 15, 1998. Cash prizes will be awarded. For more information, including the Rules and Guidelines, please call (413-549-5170) or email (bkowles@aehs.com) Barbara Knowles.

Interested in presenting at the 1999 West Coast Conference? Although the abstract submission deadline has passed, we will continue to accept abstracts for consideration of poster presentations through November 31, 1998. For more information on presenting at the conference, the conference program, exhibition opportunities, or getting involved as a sponsor of the conference, please contact Barbara Knowles, the conference coordinator, by telephone (413-549-5170), fax (413-549-0579) or email (bknowles@aehs.com).