TechDirect, June 1, 2010

Welcome to TechDirect! Since the May 1 message, TechDirect gained 198 new subscribers for a total of 35,600. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing may do so on CLU-IN at http://clu-in.org/techdirect . All previous issues of TechDirect are archived there. The TechDirect messages of the past can be searched by keyword or can be viewed as individual issues.

TechDirect's purpose is to identify new technical, policy and guidance resources related to the assessment and remediation of contaminated soil, sediments and ground water.

Mention of non-EPA documents or presentations does not constitute a U.S. EPA endorsement of their contents, only an acknowledgment that they exist and may be relevant to the TechDirect audience.

> Special Announcement

EPA Accepting Technology Solution Submissions Related to the BP Spill in the Gulf of Mexico. EPA has created a single site for technology solution submissions related to the response and clean up of the BP Oil Spill in the Gulf of Mexico. All submissions will be forwarded to the appropriate reviewing official, who will contact submitters if needed. Please refer to the instructions listed on the submission form regarding the types of information that will be accepted. For questions about the response, call the Joint Information Center at 985-902-5231 or 985-902-5240. Submission forms and instructions are available at http://www.epa.gov/bpspill/techsolution.html .

> Upcoming Live Internet Seminars

ITRC Phytotechnologies - June 15, 2010, 2:00PM-4:15PM EDT (18:00-20:15 GMT). This training familiarizes participants with ITRC's Phytotechnology Technical and Regulatory Guidance and Decision Trees, Revised (Phyto-3, 2009). This document provides guidance for regulators who evaluate and make informed decisions on phytotechnology work plans and practitioners who have to evaluate any number of remedial alternatives at a given site. This document updates and replaces Phytoremediation Decision Tree (Phyto-1, 1999) and Phytotechnology Technical and Regulatory Guidance Document (Phyto-2, 2001). It has merged the concepts of both documents into a single document. This guidance includes new, and more importantly, practical information on the process and protocol for selecting and applying various phytotechnologies as remedial alternatives. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

Stable Isotope Analyses to Understand the Degradation of Organic Contaminants in Ground Water - June 16, 2010, 2:00PM-4:00PM EDT (18:00-20:00 GMT). When organic contaminants such as benzene, TCE or MTBE are degraded, the ratio of the stable isotopes of carbon in the organic contaminants will often change in a predictable fashion. This webinar will briefly review the theory behind isotopic effects, it will explain the units used to characterize the ratio of isotopes, and it will discuss the simple mathematics that can relate the shift in the ratio to the extent of degradation. Then the

webinar will illustrate an approach to estimate rate constants for natural biodegradation of contaminants in ground water. The isotope analysis will be used to estimate the extent of natural biodegradation of MTBE at a gasoline spill site. The extent of biodegradation will be combined with the hydrological parameters at the site to estimate rate constants for biodegradation. The webinar will conclude with a number of cautions and warnings. Heterogeneity in flow paths in the aquifer and proximity to NAPL or other source of contamination to ground water can substantially confuse the interpretation of stable isotope data. Both these conditions cause the isotope analysis to underestimate the extent of degradation. Heterogeneity in the rate of biodegradation can produce substantial errors in the forecasts of plume behavior. The webinar will provide recommendations to deal with the effects of heterogeneity in rates of biodegradation. For more information and to register, see http://clu-in.org/live .

ITRC In Situ Bioremediation of Chlorinated Ethene - DNAPL Source Zones - June 22, 2010, 2:00PM-4:15PM EDT (18:00-20:15 GMT). Treatment of dissolved-phase chlorinated ethenes in groundwater using in situ bioremediation (ISB) is an established technology; however, its use for DNAPL source zones is an emerging application. This training course supports the ITRC Technical and Regulatory Guidance document In Situ Bioremediation of Chlorinated Ethene: DNAPL Source Zones (BioDNAPL-3, 2008). This document provides the regulatory community, stakeholders, and practitioners with the general steps practitioners and regulators can use to objectively assess, design, monitor, and optimize ISB treatment of DNAPL source zones. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

MTBE and TBA Cleanup-New Research Perspectives - June 24, 2010, 2:00PM-3:30PM EDT (18:00-19:30 GMT). The UC Davis Superfund Research Program team has isolated a robust, naturally occurring microorganism, *Methylibium petroleiphilum* PM1, determined its genome sequence and developed a rapid, real-time PCR-based bioassay that can be used to supplement classical monitoring technologies at sites contaminated with methyl tertiary butyl ether (MTBE) and tertiary butyl alcohol (TBA). Quantitative spatial and temporal enumeration of strain PM1 correlates with MTBE and TBA contamination and provides evidence for bioremediation potential. They tested the capacity of uninoculated, field-scale bioreactors for MTBE degradation at two locations: in a North Hollywood, CA aquifer and in a contaminated drinking water aquifer at Glennville, CA. The GAC bioreactor in North Hollywood was rapidly colonized by native bacteria, while inoculation with mixed MTBE degrading culture was necessary in the Glennville bioreactor. Both systems efficiently biodegraded MTBE and TBA. Quantitative PCR was used to enumerate total bacterial counts and sequences of the PM1 MTBE-degrading bacteria. To determine which technologies were necessary for safe drinking water production, they assessed the presence and behavior of ten potential waterborne pathogens, total coliforms and heterotrophic plate count (HPC) numbers across the Glennville bioreactor. In most cases potentially pathogenic microorganisms were either not detected or their numbers decreased across the bioreactor. Total bacteria enumerated by HPC also decreased across the bioreactor. This work demonstrated that bioreactors are capable of sustaining high densities of MTBE-degrading bacteria and rapid degradation of MTBE and TBA. The GAC and fluidized bed bioreactors are being tested at additional field sites, and transferred to a new partnership of end users, including community members, regulatory agencies and the drinking water industry. This research was conducted under the NIEHS Superfund Research Program (SRP) and will be presented by Dr. Krassimira R. Hristova. For more information and to register, see http://clu-in.org/live .

ITRC Enhanced Attenuation of Chlorinated Organics: A Site Management Tool - June 29, 2010, 2:00PM-4:00PM EDT (18:00-20:00 GMT). This training on the ITRC Technical and Regulatory Guidance for Enhanced Attenuation: Chlorinated Organics (EACO-1, 2008) describes the transition (the bridge) between aggressive remedial actions and MNA and vise versa. Enhanced attenuation (EA) is the application of

technologies that minimize energy input and are sustainable in order to reduce contaminant loading and/or increase the attenuation capacity of a contaminated plume to progress sites towards established remedial objectives. Contaminant loading and attenuation capacity are fundamental to sound decisions for remediation of groundwater contamination. This training explains how a decision framework which, when followed, allows for a smooth transition between more aggressive remedial technologies to sustainable remedial alternatives and eventually to Monitored Natural Attenuation. This training will demonstrate how this decision framework allows regulators and practitioners to integrate Enhanced Attenuation into the remedial decision process. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

Using Ecological-Based Tools and Approaches to Assess Bioavailability - June 30, 2010, 1:30PM-3:30PM EDT (17:30-19:30 GMT). The Superfund Research Program (SRP) presents "Using Ecological-Based Tools and Approaches to Assess Bioavailability" featuring Dr. Kim Anderson (Oregon State University) and Dr. Celia Chen (Dartmouth College). Dr. Anderson's presentation will demonstrate the sensitivity of the BRIDGES bio-analytical tool for detecting spatially distinct toxicity in aquatic systems; bridging environmental exposure to biological response. Dr. Chen's presentation will cover work conducted in both freshwater and estuarine ecosystems through a combination of field and experimental studies that investigated the factors that influence the trophic transfer of methylmercury from the bottom of the food web up to fish that humans consume. This is the second session of the RiskeLearning Spring/Summer 2010 series "Ecological Risk: New Tools and Approaches." For more information and to register, see http://clu-in.org/live .

> New Documents and Web Resources

May 2010 State Coalition for Remediation of Drycleaners Newsletter. The State Coalition for Remediation of Drycleaners (SCRD) produces a newsletter to announce recent events and undertakings. The May 2010 issue discusses state and national updates, state progress on remediation of drycleaning sites, remedial technologies employed at SCRD drycleaning sites, and upcoming events (May 2010, 8 pages). View or download at http://drycleancoalition.org/download/news0510.pdf .

EUGRIS Corner. EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 46 resources, events, projects and news items were added to EUGRIS in May 1-24, 2010.These can be viewed at http://www.eugris.info/whatsnew.asp . Then select the appropriate month and year for the updates in which you are interested. The following reports were featured on EUGRIS:

Cluster SOIL Technology Research . The cluster Soil Technology Research is a coalition of research projects, funded by the European Commission. The aim of this action is: to strengthen collaboration in the field of soil technology research, to support research and technological development in the field of soil technology research, increase visibility of Soil Technology Research and enable joint dissemination. View model descriptions online at http://www.ufz.de/index.php?en=19441 .

Calculation tool to provide insight into CO2 emissions in soil remediation techniques (2010) . There are many different soil remediation techniques. These techniques all appear to differ considerably relating to sustainability. This difference lies mainly in the CO2 emissions. Tauw has developed a calculation tool to quantify CO2 emissions for different soil remediation techniques. This tool can be deployed when different remediation variants are considered. View or access the calculator online at

http://www.tauw.com/content.jsp?objectid=26188 .

> Conferences and Symposia

Green Remediation: Environment - Energy - Economics, Amherst, MA, June 15-17, 2010. The conference will address the full range of environmental, energy and economic aspects of green and sustainable remediation, taking into account the energy requirements of treatment systems, air emissions, water use requirements and impacts on water resources, land and ecosystem use and impacts, energy use and renewables, material consumption, reuse, and waste generation. The conference will provide a forum for scientists, regulators, managers, and other stakeholders from around the globe to interact and share new knowledge in both basic and applied research in green and sustainable remediation. For more information and to register, see http://www.umass.edu/tei/conferences/GreenRemediation/ .

Vapor Intrusion Pathway: A Practical Guideline ITRC 2-day Classroom Training, Cambridge, MA, July 12-13, 2010. The ITRC 2-day Vapor Intrusion Pathway class is planned for Cambridge, Massachusetts (July 12-13) and Atlanta, Georgia (October 4-5). Led by internationally recognized experts, this 2-day ITRC classroom training will enable you to learn the latest strategies to conduct site screening and investigations; determine what tools are appropriate to collect quality data and evaluate the results; apply multiple lines of evidence to ensure quality decision-making; build solutions for VI issues through understanding of mitigation options; and network with environmental professionals dealing with this interdisciplinary and complex pathway. Interactive learning with hands-on exhibits, classroom exercises, and frequent Q&A sessions will reinforce these course objectives and contribute to a practical understanding of this difficult pathway. This course meets continuing education requirements of Massachusetts Licensed Site Professionals (LSPs) and Connecticut Licensed Environmental Professionals (LEPs). For more information and to register, see http://www.itrcweb.org/crt.asp .

Call for Abstracts!! National Training Conference on the Toxics Release Inventory (TRI) and Environmental Conditions in Communities, Washington, DC, November 1-4, 2010. This year's conference expands on previous TRI National Training Conferences to include sessions on other environmental information and data associated with the conditions and trends in ecological and human health that collectively help to support environmentally-related decision making in communities. Co-sponsors of this year's conference - The Environmental Council of the States (ECOS), World Resources Institute (WRI) and United States Environmental Protection Agency (U.S. EPA) - invite you to submit an abstract for oral presentations, posters and electronic demonstrations on the theme of "Connecting Communities and Decision-makers with Environmental Information." Abstracts will be accepted through June 25, 2010. This is your opportunity to present knowledge, share experiences, and voice expectations and aspirations related to TRI topics and our newly expanded scope addressing information about environmental conditions. For more information and to submit an abstract, see http://chemicalright2know.org/content/call-for-abstracts .

Call for Ideas!! Brownfields 2011 Conference, Philadelphia, PA, April 3-5, 2011. This year the Brownfields 2011 Planning Committee wants to encourage more interactive educational sessions in hopes to have at least 60 percent using the always popular marketplace/roundtable format and the newly established public dialogue/debate format. Topics should fall under the categories of: Community Engagement and Environmental Justice; Green Jobs; Green Technology and Emerging Solutions; Planning for Community Revitalization; Sustainability, the Path Forward; and

The Business of Brownfields. The Call for Ideas will be open and accepting submissions for full sessions, short presentations, and poster gallery ideas until July 2, 2010. For more information and to submit an idea, see http://www.brownfields2011.org/en/Article/4/Call_for_Ideas_is_Now_Open .

NOTE: For TechDirect, we prefer to concentrate mainly on new documents and the Internet live events. However, we do support an area on CLU-IN where announcement of conferences and courses can be regularly posted. Currently there are 50 conferences and courses featured. We invite sponsors to input information on their events at http://clu-in.org/courses . Likewise, readers may visit this area for news of upcoming events that might be of interest. It allows users to search events by location, topic, time period, etc.

If you have any questions regarding TechDirect, contact Jeff Heimerman at (703) 603-7191 or heimerman.jeff@epa.gov. Remember, you may subscribe, unsubscribe or change your subscription address at http://clu-in.org/techdirect at any time night or day.

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