# TechDirect, April 1, 2007

Upcoming Live Internet Seminars

New Documents and Web Resources

Conferences and Symposia

Welcome to TechDirect! Since the March 1 message, TechDirect gained 247 new subscribers for a total of 27,713. 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 . 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.

## > Upcoming Live Internet Seminars

**ITRC Remediation Process Optimization Advanced Training - April 10.** Remediation Process Optimization (RPO) is the systematic evaluation and enhancement of site remediation to ensure that human health and the environment are being protected over the long term at minimum risk and cost. The purpose of this ITRC training is to present an overview of the material covered in five technical fact sheets that ITRC's RPO Team produced to enhance site remediation optimization and decision-making. The training modules provide additional information and techniques to improve project schedules, effectively manage resources, emphasize risk, and discuss tools to efficiently cleanup contaminated sites. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

**ITRC Characterization, Design, Construction and Monitoring of Bioreactor Landfills - April 19.** Bioreactors are landfills where controlled addition of non-hazardous liquid wastes, sludges, or water accelerates the decomposition of waste and landfill gas generation. This training, based on the ITRC's Characterization, Design, Construction, and Monitoring of Bioreactor Landfills (ALT-3, 2006), teaches the principles used to make critical decisions during permitting, operating, and monitoring a bioreactor landfill. This training also provides a general understanding of the biological degradation of solid wastes under aerobic and anaerobic waste conditions and the degradation products associated with each process. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

**Nanotechnology - Superfund Site Remediation - April 19.** The Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA), presents "Nanotechnology - Superfund Site Remediation." This seminar is part of a series covering the applications and implications of nanotechnology as it pertains to the National Superfund Program. The use of

nanoscale materials (particles of matter < 100 nm) shows promise for improving the efficiency of current groundwater remediation approaches. Compared to microscale zero-valent iron, nanoscale zero-valent iron (or NZVI) has a higher reactivity for treating chlorinated solvents and may allow for more cost-effective delivery options. Marti Otto, Environmental Engineer (U.S. EPAs Office of Superfund Remediation and Technology Innovation), will describe field-scale and full-scale applications of NZVI. The talk will include background on the use of NZVI to address source areas in groundwater contaminated with chlorinated hydrocarbons focusing on the results of four study sites. Mary Logan, Remedial Project Manager (EPA Region 5), will report on the considerations that led to the selection of NZVI for the Nease Chemical Superfund Site in Ohio. In September 2005, U.S. EPA selected NZVI as a remedy for volatile organic compounds (VOCs) in bedrock groundwater, particularly for the highly contaminated plume core. The remedy allows NZVI to be coupled with enhanced biological treatment if the iron alone is not sufficient to treat recalcitrant compounds. For more information and to register, see http://clu-in.org/studio .

**ITRC Planning and Promoting of Ecological Land Reuse of Remediated Sites - April 24.** This training is based on the ITRC Technical and Regulatory Guideline: Planning and Promoting Ecological Land Reuse of Remediated Sites (ECO-2, 2006). The document presents a process to promote ecological land reuse activities considering natural or green technologies instead of more traditional remedies. The guidance demonstrates that natural or ecological end-uses are valuable alternatives to conventional property development or redevelopment. Ecological benefits and a process for calculating their value are included in the guidance and reviewed in this training. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

**ITRC Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills - April 26.** This training, based on ITRC's Technical and Regulatory Guidance: Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills Based on Site-Specific Data Evaluations (ALT-4, 2006), describes a method to evaluate the performance of Post Closure Care at a landfill and determine when leachate recovery, landfill gas management, groundwater monitoring, and cap maintenance can be reduced or even ended based on threats (to human health and the environment) posed by the closed landfill. The training and document describe custodial care as those requirements the property owner must follow after post closure care has been ended. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/studio .

**Understanding and Reconstructing Soil Conditions at Remediation Sites - May 2.** Effective in situ rehabilitation of drastically disturbed and/or contaminated sites is usually dependent upon understanding and modifying on-site soil conditions to support revegetation efforts. While site-specific characterization of soil conditions is essential to the development of any revegetation strategy, limitations posed by reactive sulfides and very low pH, excess soil compaction, and excess salinity are dominant and widespread problems on disturbed sites. This seminar will focus on essential steps and procedures for (A) characterizing limiting soil conditions, (B) ameliorating soil phytotoxicity, and (C) reconstructing viable and productive soil profiles for long-term rehabilitation. The importance of matching remediated soil conditions to the intended vegetative community will be emphasized via discussion of case study sites including metal contaminated sites, acid-sulfate spoils, and forested wetlands restoration. For more information and to register, see http://clu-in.org/studio .

## > New Documents and Web Resources

**Technology News and Trends (EPA 542-N-06-008).** This issue of Technology News and Trends highlights strategies and tools for characterizing or monitoring remediation of sites with contaminated sediment and surface water bodies. Addressing these sites often relies upon dynamic workplans that involve more efficient, cost-effective, and practical methods for field work (March 2007, 6 pages). View or download at http://clu-in.org/techpubs.htm .

**Updating Remedy Decisions at Select Superfund Sites - Summary Report FY 2004 and FY 2005 (EPA-540-R-06-074).** This is the fifth in a series of two-year reports which summarize the progress made through implementation of the Superfund Administrative Reform. Since this reform was announced on October 5, 1995, the Superfund program has continuously tracked national progress from updating remedies. This summary report shows that in FY04 and FY05, EPA updated more than 130 remedies, reducing estimated future cleanup costs by more than $260 million (February 2007, 83 pages). View or download this report, as well as the four previous summary reports, from http://www.epa.gov/superfund/programs/reforms/docs.htm .

**New CLU-IN Software and Tools Area.** A new software and tools section has been posted to CLU-IN. This new area offers information on individual software packages and online tools to assist visitors as well as links to other sources of free software and tools. We are also interested in additional software packages you would like us add to this area. See http://www.clu-in.org/software for a list of resources and our suggestion form.

Comparison of Geoprobe• PRT and AMS GVP Soil-Gas Sampling Systems with Dedicated Vapor Probes in Sandy Soils at the Raymark Superfund Site (EPA 600-R-06-111). This U.S. EPA study compared results of soil-gas sampling using dedicated vapor probes, a truck-mounted direct-push technique - the Geoprobe Post-Run-Tubing (PRT) system, and a hand-held rotary hammer technique - the AMS Gas Vapor Probe (GVP) kit. A comparison of VOC concentrations using dedicated vapor probes and the GVP sampling kit indicated that the two methods provided similar results. For practical purposes, all three sample systems can be considered approximately equivalent (November 2006, 79 pages). View or download at http://www.epa.gov/ada/download/reports/600R06111/600R06111.pdf . For hard copies, contact Susan Sexton at (580) 436-8502 or fax (580) 436-8503 or send an email to gwerd_pub@epa.gov.

**Protocol for Use of Five Passive Samplers to Sample for a Variety of Contaminants in Groundwater (DSP-5).** This report was produced by the Interstate Technology and Regulatory Council (ITRC). This guidance contains protocols for five passive sampling technologies. Passive sampling is synonymous with no-purge sampling. The technologies included in this document include Snap Sampler" and Hydrasleeve" (grab-type well water samplers); regenerated-cellulose dialysis membrane sampler and rigid, porous polyethylene sampler (diffusion/equilibrium-type samplers), and GORE" Module (a diffusion and sorptiontype sampler). These three categories or types of passive samplers are described in detail in the precursor to this document, Technology Overview of Passive Sampler Technologies (DSP-4, ITRC 2006). The intent of the current document is to provide a sound guidance on how to properly deploy and collect samples using passive devices (February 2007, 121 pages). View or download at http://www.itrcweb.org/Documents/DSP-5.pdf . To request a hard copy, see http://www.itrcweb.org/product_request.asp?DOCID=DSP-1&ACT=add .

**Evaluation of the Role of Dehalococcoides Organisms in the Natural Attenuation of Chlorinated Ethylenes in Ground Water (EPA 600-R-06-029).** This report was produced by the U.S. EPA Office of Research and

Development. It is designed for technical staff in the EPA Regions and in state agencies that require information on the contribution of Dehalococcoides bacteria to MNA of chlorinated solvents, and information on the proper application and interpretation of the assays in an evaluation of MNA. This report includes sections on the role of biotransformation in evaluation of MNA of chlorinated solvents, the ecology of microorganisms that transform chlorinated solvents, tools to assay microorganisms that transform chlorinated solvents, the relationship between Dehalococcoides DNA in ground water and rates of natural attenuation at field scale, the relationship between geochemical parameters and the occurrence of Dehalococcoides DNA in ground water, and the relationship Dehalococcoides DNA in ground water and behavior of chlorinated solvents in laboratory treatability studies or microcosm studies done with water from the plume (June 2006, 121 pages). View or download at http://www.epa.gov/ada/download/reports/600R06029/600R06029.pdf .

**Microfracture Surface Characterizations: Implications for In Situ Remedial Methods in Fractured Rock (EPA 600-R-05-121).** This report was produced by the the Bedrock Bioremediation Center (BBC) at the University of New Hampshire under a cooperative agreement with the U.S. EPA Office of Research and Development. The focus of the publication is a field research-based program conducted at Site 32 at the Pease International Tradeport (formerly Pease Air Force Base) in Portsmouth, NH. The U.S. EPA supports the overall mission of the BBC to (i) examine whether microbial communities in organically-contaminated bedrock aquifers are capable of biodegrading the contaminants, (ii) more efficiently and economically characterize the direction of groundwater flow and fracture patterns (size, direction, secondary mineralization) in contaminated bedrock aquifers, (iii) improve and develop new field technologies to control hydraulic and flow conditions in the contaminant zone, (iv) develop laboratory and field methods to estimate and accelerate in situ rates of bioremediation of organic contaminants in bedrock aquifers, and (v) to develop and apply innovative microbial, molecular biology and other advanced techniques to enhance in situ bioremediation and assess the efficacy of remediation strategies (June 2006, 99 pages). View or download at http://www.epa.gov/ada/download/reports/600R05121/600R05121.pdf .

**EUGRIS Corner.** New Documents on EUGRIS, the platform for European contaminated soil and water information. See http://www.eugris.info/DisplayNewsItem.asp?NewsID=400 to access important new information from Europe, including the following documents and web links. Look at the New RESOURCES section under NEWS. More than 25 new resources, projects and news items were added to EUGRIS in March 2007. These include:

**European Union Strategic Framework 7 Environmental Technologies Info Day Session.** This link provides access to all the presentations from an EU event held in January 2007. The major intention of the event held in Brussels was to provide detailed information about the various topics identified in the first call for proposals under FP7. The program provided an overview of the research themes and administrative procedures. It also had four parallel sessions on 1) Water and Soil technologies; 2) Waste and Clean Processes; 3) Built Environment and Cultural Heritage; and 4) Risk assessment of chemicals and alternative strategies for testing. For access to the presentations and concluding remarks, see http://www.cluin.org/envirotechinfoday/.

**The Urban Environment.** This report was published by the Royal Commission on Environmental Pollution United Kingdom. It identifies 4 priority themes: sustainable urban transport; sustainable urban management (Local Agenda 21, EMAS, indicators); sustainable urban construction (resource and energy efficiency, demolition waste, design issues); and sustainable urban design, including land use-regeneration, brown field sites, urban sprawl, land use densities (March 2007, 232 pages). View or

download at http://www.rcep.org.uk/urban/report/urban-environment.pdf .

**After Minerals Website.** This website was developed by the UK Royal Society for the Protection of Birds. They offer it as a resource for everyone with an interest in quarry restoration. Minerals sites offer an opportunity to create important habitats on a huge scale, benefiting wildlife and providing people with wonderful places to enjoy. The website includes: case studies; habitat advice and a mapping tool. See http://www.afterminerals.com .

## > Conferences and Symposia

**2007 Community Involvement Conference and Training, Jacksonville, June 19-22.** This EPA conference brings together public participation and community involvement professionals from EPA and its federal, state, tribal, and local partners. The theme of this conference is Community Involvement: Celebrating the Past, Looking to the Future. It will celebrate the successes of the past ten years and also explore forward-looking, innovative approaches for government to interact with communities to promote the protection and sustainability of the environment. The conference will include several plenary sessions and dozens of engaging and interactive concurrent sessions. It also will feature field trips, exhibits, a poster session, evening activities, and many networking opportunities. Several four- and eight-hour post-conference training workshops will be offered. For more information and to register, see http://www.epa.gov/superfund/action/community/ciconference/ .

**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 146 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/techdrct at any time night or day.

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