TechDirect, May 1, 2013

Welcome to TechDirect! Since the April 1 message, TechDirect gained 342 new subscribers for a total of 34,716. 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 groundwater.

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

New CLU-IN Internet Seminar Archives Video Podcast Feed. Many of you know that we routinely place seminars in our archives after the live broadcast. For select seminar topics offered since 2012, we are now making complete video recordings available through our archives. To subscribe to our video podcast feed, which will alert you when new seminar archives are available, see http://clu-in.org/live/archive or go directly to http://clu-in.org/live/archive/video/ .

FRTR Presents: Large-Dilute Plumes: Challenges and Opportunities - May 1, 2013, 2:00PM-4:00PM EDT (18:00-20:00 GMT). Recently, "large-dilute plumes" of chlorinated solvents have emerged as a peculiar challenge in environmental clean-up. This class of plume has several defining characteristics. These characteristics include biogeochemical conditions that result in slow contaminant degradation and that allow plume expansion, as well as matrix diffusion that results in secondary sources and that extends remediation timeframe. Research at these sites has highlighted key challenges and potential opportunities. Complicated fine-scale heterogeneity resulting from the interaction of migrating contaminants with subsurface lithology and hydrology is a particularly significant and recurring challenge resulting in concentrated plume cores and the need for innovative-focused characterization and monitoring. Understanding the subsurface distribution of contaminants and how the plume is changing in time and space are keys to successful environmental response actions. Research and data on attenuation of contaminants resulting from physical assimilation along the flow path (such as a plume interacting with inactive pore spaces) and from degradation by abiotic and microbial processes have extended our knowledge of natural attenuation rates in aerobic-oligotrophic aquifers. The research indicates that aerobic processes, particularly abiotic degradation due to magnetite/minerals and aerobic cometabolism, are occurring in many large-dilute plumes. The attenuation rates are correlated with measurable parameters such as magnetic susceptibility or various microbial population metrics, including oxygenase enzyme activity probes, DNA composition/quantity, and total microbial counts. Consistent with the observed plume scales, the data confirm that aerobic degradation processes are slower than anaerobic degradation processes. Nonetheless, incorporation of these natural rates into models and predictions provides an important tool to aid in developing a comprehensive strategy for large-dilute plumes mitigating the requirement for complete removal during source treatment and encouraging combined remedies as well as the

development of amendments to sustainably and cost-effectively enhance degradation rates. For more information and to register, see http://clu-in.org/live .

ITRC Soil Sampling and Decision Making Using Incremental Sampling Methodology Parts 1 and 2 - May 7 and 9, 2013. This 2-part training course along with ITRC's web-based Incremental Sampling Methodology Technical and Regulatory Guidance Document (ISM-1, 2012) is intended to assist regulators and practitioners with the understanding the fundamental concepts of soil/contaminant heterogeneity, representative sampling, sampling/laboratory error and how ISM addresses these concepts. Through this training course you should learn: basic principles to improve soil sampling results, systematic planning steps important to ISM, how to determine ISM Decision Units (DU), the answers to common questions about ISM sampling design and data analysis, methods to collect and analyze ISM soil samples, the impact of laboratory processing on soil samples, and how to evaluate ISM data and make decisions. In addition this ISM training and guidance provides insight on when and how to apply ISM at a contaminated site, and will aid in developing or reviewing project documents incorporating ISM (e.g., work plans, sampling plans, reports). For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

NARPM Presents...Practical Applications and Methods of Optimization across the Superfund Pipeline (Part 2) - May 8, 2013, 1:00PM-3:00PM EDT (17:00-19:00 GMT). This seminar is a continuation of the Part 1 seminar presented on April 30, 2013 which centered on EPA's "National Strategy to Expand Superfund Optimization Practices from Remedial Investigation to Site Completion." Part 2 of the seminar will present case studies of three prior optimization evaluations: (1) Black Butte Mine; (2) Grants Solvents; and (3) Gilt Edge Mine. For more information and to register, see http://clu-in.org/live .

ITRC Use and Measurement of Mass Flux and Mass Discharge - May 14, 2013, 2:00PM-4:15PM EDT (18:00-20:15 GMT). The ITRC technology overview, Use and Measurement of Mass Flux and Mass Discharge (MASSFLUX-1, 2010), and associated Internet-based training provide a description of the underlying concepts, potential applications, description of methods for measuring and calculating, and case studies of the uses of mass flux and mass discharge. This Technology Overview, and associated Internet-based training are intended to foster the appropriate understanding and application of mass flux and mass discharge estimates, and provide examples of use and analysis. The document and training assumes the participant has a general understanding of hydrogeology, the movement of chemicals in porous media, remediation technologies, and the overall remedial process. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

ITRC Environmental Molecular Diagnostics: New Tools for Better Decisions - May 21, 2013, 2:00PM-4:15PM EDT (18:00-20:15 GMT). Environmental molecular diagnostics (EMDs) are a group of advanced and emerging analytical techniques used to analyze biological and chemical characteristics of environmental samples. Although EMDs have been used over the past 25 years in various scientific fields, particularly medical research and diagnostic fields, their application to environmental remediation management is relatively new and rapidly developing. The ITRC Environmental Molecular Diagnostics Fact Sheets (EMD-1, 2011), ITRC Environmental Molecular Diagnostics Technical and Regulatory Guidance (EMD-2, 2013) and this companion Internet-based training will foster the appropriate uses of EMDs and help regulators, consultants, site owners, and other stakeholders to better understand a site and to make decisions based on the results of EMD analyses. At the conclusion of the training, learners will be able to determine when and how to use the ITRC Environmental Molecular Diagnostics Technical and Regulatory Guidance (EMD-2, 2013); define when EMDs can cost-effectively augment traditional remediation data sets; and describe the utility of various types of EMDs during remediation activities. For

more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

EPA's Methodology for Understanding and Reducing a Project's Environmental Footprint - May 22, 2013, 1:00PM-3:00PM EDT (17:00-19:00 GMT). The process of cleaning up a hazardous waste site uses energy, water and other natural or materials resources and consequently creates an environmental footprint of its own. In February 2012, the U.S. EPA released a methodology for quantifying the environmental footprints. The information obtained helps prioritize efforts to reduce the footprint and improve the outcome of cleanups under any regulatory program. This two-hour seminar will: (1) briefly discuss the regulatory framework; (2) summarize the methodology for estimating or quantifying the footprint and the associated metrics; (3) walk participants through the steps of performing an environmental footprint analysis; (4) present some questions for discussion and share lessons learned from early adopters. An open forum will be held after the presentations, during which participants will be able to submit questions and feedback to the speakers. For more information and to register, see http://clu-in.org/live .

Military Munitions Support Services Series, May 30, July 25, and August 29. This new series of monthly webinars supports the Military Munitions Support Services (M2S2) community. For more information and to register, see http://clu-in.org/live .

> New Documents and Web Resources

Request for Input: Draft Final Vapor Intrusion Guidance Documents. EPA has prepared external review drafts of two guidance documents about vapor intrusion: a general guidance for all compounds and one focused on petroleum hydrocarbons released from underground storage tanks. When final, these guidance documents will help ensure vapor intrusion exposure assessment and mitigation actions to protect human health are undertaken in a technically, scientifically and nationally consistent manner. The public may provide input by May 24, 2013. For more information and instructions, see http://www.epa.gov/oswer/vaporintrusion/ .

Optimization Review: Velsicol Chemical Corporation, Hardeman County Landfill Superfund Site, Toone, Tennessee (EPA 540-R-013-015). The Velsicol Chemical Corporation Hardeman County Landfill Superfund Site (the Site) is located in a rural area near the town of Toone in western Tennessee. The optimization review of the Site includes a comprehensive review of the conceptual site model (CSM), existing soil and waste remedies, soil vapor extraction (SVE) pilot studies, and potential remedial alternatives for soil. While the focus of this review is on potential soil and waste remediation, an initial review of potential groundwater remediation is also considered (January 2013, 65 pages). View or download at http://clu-in.org/techpubs.htm .

Optimization Review: Groveland Wells Numbers 1 and 2 Superfund Site, Town of Groveland, Essex County, Massachusetts (EPA 542-R-13-001). The document describes the optimization evaluation that was performed on the water treatment plant at the Gilt Edge Mine Superfund Site in Lawrence County, South Dakota. The document includes a description of the efforts performed during the optimization review, a description of the remedy components at the sites, a description of the conceptual site model, and findings and recommendations for the site (January 2013, 78 pages). View or download at http://clu-in.org/techpubs.htm .

Engineering Issue Paper: Sustainable Materials Management in Site Cleanup (EPA 542-F-13-001). Sites undergoing cleanup provide opportunities for reducing waste and diverting it from landfills. Many of the opportunities involve reusing onsite

materials, reusing or recycling materials offsite, and procuring construction materials with recycled content. Site-specific examples of applying these and other strategies and an extensive compendium of related tools and resources are now available in this issue paper compiled by the Engineering Forum of the U.S. EPA's Technical Support Project (March 2013, 12 pages). View or download at http://clu-in.org/techpubs.htm .

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 10 resources, events, projects and news items were added to EUGRIS in April. 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 resource was posted on EUGRIS:

The ADOVCATE Project (Advancing Sustainable In Situ Remediation for Contaminated Land and Groundwater). This project will develop innovative in situ remediation (ISR) concepts for the sustainable management of contaminated land groundwater, as required by WFD. View more information at http://www.theadvocateproject.eu/ .

> Conferences and Symposia

Facility Decommissioning Training Course, Deep River, Ontario, Canada, May 7-9, 2013. The purpose of the course is to provide information on the basic steps in the decommissioning process and impart lessons learned from past experiences in decommissioning. In this manner, elements learned at this training course will assist in decision-making, planning, and implementation associated with the decommissioning of various types of nuclear facilities. Moreover, a major objective of this training course is to demonstrate the need for early and complete project planning to achieve safe and cost-effective decommissioning of research reactors and other small nuclear installations. For more information and to register, see http://www.dd.anl.gov/ddtraining/ .

Training Sessions at the Brownfields 2013 Conference, Atlanta, GA, May 15, 2013. EPA's Office of Solid Waste and Emergency Response (OSWER) will be offering three training sessions on May 15 in conjunction with the Brownfields 2013 Conference in Atlanta, GA. Training Sessions will include: (1) Best Management Practices for Site Assessment, Remediation and Greener Cleanups; (2) Brownfields Road Map Training; and (3) Leveraging Contracts for Innovative Site Characterization and Cleanup. All sessions will be held at the Georgia World Congress Center (285 Andrew Young International Blvd NW, Atlanta, GA). For more information and to register, see http://www.trainex.org/TIFSD_BF2013/ .

LNAPLs: Science, Management, and Technology ITRC 2-day Classroom Training offered two more times in 2013: Springfield, IL (June 4-5, 2013) and Garden Grove, CA (October 1-2, 2013). Led by internationally recognized experts, this 2-day ITRC classroom training will enable you to develop and apply an LNAPL Conceptual Site Model (LCSM), understand and assess LNAPL subsurface behavior, develop and justify LNAPL remedial objectives including maximum extent practicable considerations, select appropriate LNAPL remedial technologies and measure progress, and use ITRC's science-based LNAPL guidance to efficiently move sites to closure. Interactive learning with classroom exercises and Q&A sessions will reinforce these course learning objectives. For local, state, and federal government; students; community stakeholders; and tribal representatives, ITRC has a limited number of scholarships (waiver of registration fee only) available. For more information and to register, see http://www.itrcweb.org/training .

Registration Now Open!! Applications of Nanotechnology for Safe and

Sustainable Environmental Remediations, Hammond, LA, June 5-7, 2013. This is the first national workshop that provides an opportunity for representatives from the environmental remediation community, industry, academia, and government to: share their perspectives, pose questions, and develop ideas for design of good guidelines, selection criteria, and work practices to support safe and sustainable nano-enabled environmental remediation; become acquainted with other U.S. nanotechnology stakeholders, including vendors, transporters, and contractors of the remediation sites and communities; and share case studies of nano-enhanced clean up technologies, including selection criteria for alternative remediation strategies and methods, job planning, job tasks, and nanomaterial handling practices. For more information and to register, see http://www.selu.edu/acad_research/programs/nano_4_rem_anssers/ .

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. 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. To unsubscribe, send a blank email to $subst('Email.UnSub'). Remember, you may subscribe, unsubscribe or change your subscription address at http://clu-in.org/techdirect at any time night or day.