

TechDirect, September 1, 2012

Welcome to TechDirect! Since the August 1 message, TechDirect gained 241 new subscribers for a total of 32,387. 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.

> Upcoming Live Internet Seminars

Save the Date! Practical Models to Support Remediation Strategy Decision-Making - October 11, 17, 24, 31, and November 7. The overall objective of this series of webinars is to explore and provide experience using publicly-available simulation and data analysis tools that can be used individually or in combination, to support remediation decisions and strategy development for sites contaminated by chlorinated solvents, petroleum hydrocarbons, or other constituents. The webinars will focus on questions such as: Will source remediation meet site goals? What will happen if no action is taken? Should I combine source and plume remediation? What is the remediation timeframe? What are achievable and reasonable remediation objectives? The discussion will focus on the unique features of selected models and how those features can support strategy development and effective remediation decisions. Emphasis will be on REMChlor and REMFuel, recent simulation tools developed for the U.S. EPA and DoD. These tools simulate both source and plume behavior and remediation options. By providing the ability to simulate sites where conditions change in space and time, REMChlor and REMFuel can provide information "equivalent" to the types of output from more sophisticated numerical models and can assist environmental professionals in rapidly and efficiently developing and optimizing strategies for cleaning up sites. Check <http://clu-in.org/live> for more information and to register later in September.

ITRC LNAPL Training Parts 1, 2, and 3 - September 11, 18, 25. Light non-aqueous phase liquids (LNAPLs) are organic liquids such as gasoline, diesel, and other petroleum hydrocarbon products that are immiscible with water and less dense than water. LNAPLs are important because they are present in the subsurface at thousands of remediation sites across the country, and are frequently the focus of assessment and remediation efforts. Part 1 of this training course explains how LNAPLs behave in the subsurface and examines what controls their behavior. Part 1 also explains what LNAPL data can tell you about the LNAPL and site conditions. Relevant and practical examples are used to illustrate key concepts. Part 2 addresses LNAPL characterization and site conceptual model development as well as LNAPL recovery evaluation and remedial considerations. Specifically, Part 2 discusses key LNAPL and site data, when and why those data may be important, and how to get those data. Part 2 also discusses how to evaluate LNAPL recoverability. Part 3 uses the LNAPL conceptual site model (LCSM) approach to identify the LNAPL concerns or risks and set proper LNAPL remedial objectives and technology-specific remediation goals and performance metrics. Part 3 also provides an overview of the LNAPL remedial technology selection framework. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

ITRC Development of Performance Specifications for Solidification/Stabilization - September 13, 2012, 11:00AM-1:15PM EDT (15:00-17:15 GMT). The ITRC technical and regulatory guidance document Development of Performance Specifications for Solidification/Stabilization (S/S-1, 2011) and associated Internet-based training provide an approach to assist practitioners and regulators with measuring and determining acceptable S/S performance. This approach developed by the ITRC Solidification/Stabilization Team provides information for developing, testing, and evaluating appropriate site-specific performance

specifications and the considerations for designing appropriate long-term stewardship programs. In addition, the approach provides useful tools for establishing an appropriate degree of treatment and regulatory confidence in the performance data to support decision-making. This training and guidance is intended to be beneficial to anyone involved with CERCLA, RCRA, Brownfields, UST or any other regulatory program where S/S has been selected or implemented as a remedial technology. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

Mining-Influenced Water: Environmental Issues, Remediation Research, and Tools for Estimating Remediation Cost - September 19, 2012, 1:00PM-3:00PM EDT (17:00-19:00 GMT). This webinar within the series will focus on mining-influenced water (MIW) - any water whose chemical composition has been affected by mining, mineral or metallurgical processing. Topics to be presented include MIW treatment technologies being employed at both active and abandoned mining sites, AMDTreat - a tool for estimating abatement costs for acid rock drainage, innovative acid rock drainage remediation techniques (research at the Berkeley Pitlake site in Butte, Montana will be presented as a case study), and environmental hazards posed by PCBs deposited by equipment at mining sites. For more information and to register, see <http://clu-in.org/live>.

ITRC Biofuels: Release Prevention, Environmental Behavior, and Remediation - October 2, 2012, 2:00PM-4:15PM EDT (18:00-20:15 GMT). This training, which is based on the ITRC's Biofuels: Release Prevention, Environmental Behavior, and Remediation (Biofuels-1, 2011), focuses on the differences between biofuels and conventional fuels specific to release scenarios, environmental impacts, characterization, and remediation. The trainers will define the scope of the potential environmental challenges by introducing biofuel fundamentals, regulatory status, and future usage projections. Participants will learn how and when to use the ITRC biofuels guidance document for their projects. They will understand the differences in biofuel and petroleum behavior; become familiar with the biofuel supply chain, potential release scenarios and release prevention; be able to develop an appropriate conceptual model for the investigation and remediation of biofuels; and select appropriate investigation and remediation strategies. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

Brownfields Road Map to Understanding Options for Site Investigation and Cleanup - October 3, 2012, 2:00PM-4:00PM EDT (18:00-20:00 GMT). EPA recently released the new Brownfields Road Map publication and companion website which provide an outline of the general steps involved in the investigation and cleanup of brownfields sites and introduce stakeholders to technology options and available resources. During this Road Map webinar, EPA speakers will review its history, describe how the structure of the Road Map was redesigned to better meet the needs of a diverse audience, and review the online interactive guide to contaminants and technologies. Technical resources and tools available online will also be highlighted. A second segment of the webinar serves to summarize the core chapters focused on assessment, investigation, selection of cleanup options, and design and implementation of cleanup. Participants will also be introduced to technical and management topics covered in Road Map "spotlights." Participants are invited to submit questions during a Question-and-Answer session. For more information and to register, see <http://clu-in.org/live>.

US and EU Perspectives on Green and Sustainable Remediation, Part 5 - October 9, 2012, 10:00AM-12:00PM EDT (14:00-16:00 GMT). This seminar is the fifth in the series on international green and sustainable remediation (GSR) efforts (additional information on prior internet seminars can be found at <http://clu-in.org/global/>). This 2-hour seminar will address the upcoming Sustainable Remediation Conference 2012 in Vienna, Austria, and provide an overview of the presentations available within each of the conference tracks: 1) Conceptual Framework - considering sustainability within remedial approaches; 2) Sustainability Assessment - methodologies, models, and tools for sustainable remediation; and 3) Sustainability Management - case studies of sustainable remediation projects. An open forum will be held throughout the seminar to respond to participant questions. For more information and to register, see <http://clu-in.org/live>.

Site Characterization for Munitions Constituents - October 10, 2012 1:00PM-3:00PM EDT (17:00-19:00 GMT). The Federal Facilities Forum is a group of USEPA Scientist and Engineers who represent EPA Regional Program Offices and are responsible for the identification and resolution of technical/policy issues regarding the characterization and remediation of federal facility Superfund, Resource and Conservation and Recovery Act, and Base Realignment and Closure sites. In January 2012 the Federal Facility Forum with the support of the U.S. Army Corps of Engineers using an Interagency Agreement completed and published a technical issue titled, "Site Characterization for Munitions Constituents." This project was done in order to provide federal, state

and private consultants site cleanup managers with detailed information on the nature of energetic residues on DOD training ranges, sampling strategies that provide representative samples, and the most current analytical methods that are used to characterize these samples. The issue paper is 149 pages and includes detailed discussions on residues at various types of DOD ranges (grenade, antitank, artillery, tank, bombing, and small arms), soil sampling studies/recommended protocols, and a review of other contaminants of concern. This document also includes, a glossary of common terms, figures, tables, photographs, site specific case studies, and references. The Webinar will review and highlight specific information found in the issue paper and focus on the following items: explain background information on the types of military ranges and the munitions and contaminants associated with them, describe sample preparation issues specific to energetic compounds and associated metals, illustrate the above sampling and sample management information with four case studies. For more information and to register, see <http://clu-in.org/live> .

> New Documents and Web Resources

New CLU-IN Focus Area on Environmental Fracturing. Environmental fracturing technologies are techniques that enhance or create openings in bedrock or soil with low effective porosity, such as clay, to help soil and groundwater cleanup methods work better. The enhancements are referred to as secondary porosity fractures and joints. Environmental fracturing can be used to make primary treatment technologies such as pump and treat (P&T), in situ chemical oxidation/reduction (ISCO/ISCR), in situ bioremediation, or soil vapor extraction (SVE) more efficient. View and use at <http://clu-in.org/fracturing> .

Technology News and Trends (EPA 542-N-12-004). This issue highlights the use of permeable reactive barriers (PRBs) to treat groundwater plumes containing organic or inorganic contaminants. Each featured article describes work by the U.S. EPA National Risk Management Research Laboratory to evaluate long-term performance of PRBs constructed of carbon-rich organic materials, zero-valent iron, or other substrates. Monitoring results indicate that PRB performance can change significantly over time due to factors such as reactive media depletion, fluctuations in rainfall, or a site's hydrologic conditions (August 2012). View at <http://clu-in.org/tnandt/0812> .

Optimization Review, Black Butte Mine Superfund Site, Lane County, Oregon (EPA 542-R-12-003). The purpose of this optimization review was to evaluate site conditions and identify optimal approaches for conducting a remedial investigation (RI) of the Black Butte Mine (BBM) Superfund Site. The review was conducted using U.S. Environmental Protection Agency (EPA) optimization review methods. This document focuses on the fate and transport of mercury and other trace metals at and downstream of the BBM Superfund Site as a means to focus and streamline the sequence of RI activities. It is expected that this report may form the basis for additional systematic project planning among the optimization review team, project technical team, and stakeholders to develop, review, and finalize RI-specific work planning and implementation documents (July 2012, 104 pages). View or download at <http://clu-in.org/techpubs.htm> .

New Testing Methods for Arsenic and Lead in Soil. Cleaning up arsenic and lead at Superfund sites can be an expensive proposition. Currently, if the levels of contaminants are high, the top layer of soil is removed and transported to a hazardous materials landfill for careful treatment to isolate and remove the toxic metals. The price tag for such remediation activities can reach into the millions of dollars per acre. Developing rapid, reliable, and inexpensive tools for guiding remediation activities that effectively protect human health could have a big impact on the way Superfund and other contaminated sites are managed. When every acre spared from soil removal and treatment means a million less dollars spent, the savings add up fast. EPA scientist Karen Bradham, Ph.D., and her research partners are working on just those kinds of tools. She and her collaborators are evaluating new and inexpensive methods for assessing arsenic levels as a means to improve human exposure estimates for soil arsenic and lead. View at <http://www.epa.gov/research/sciencematters/april2012/arsenic.htm> .

Technology Innovation News Survey Corner. The Technology Innovation News Survey contains market/commercialization information; reports on demonstrations, feasibility studies and research; and other news relevant to the hazardous waste community interested in technology development. Recent issues, complete archives, and subscription information is available at <http://clu-in.org/products/tins/> . The following resources

were included in recent issues:

- Remediation of Buried Chemical Warfare Materiel
- Superfund Site Assessment Program: Benefits Beyond NPL Listing, Phase II
- State Management and Potential Reuse of Marginally Contaminated Soils
- Community Involvement Guidance for Munitions Response Sites
- Application of a Bimetallic Treatment System (BTS) for PCB Removal from Older Structures on DoD Facilities
- Field Investigation of the Chemistry and Toxicity of TPH in Petroleum Vapors: Implications for Potential Vapor Intrusion Hazards (DRAFT)
- DIOXIN20XX: The International Dioxin Symposium Website
- Phytoremediation Database
- Guidelines for the Assessment, Design, Construction and Maintenance of Phytocaps as Final Covers for Landfills
- Ecological Impacts of Toxic Chemicals
- The Global Acid Rock Drainage Guide

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. 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.

> Conferences and Symposia

9th International Phytotechnology Society (IPS) Conference, Hasselt University, Belgium, September 11-14, 2012. Phytotechnologies - plant-based strategies to clean water, soil, air and provide ecosystem services - have an effective power beyond their science when integrated into our managed landscapes. This conference will bring together scientists, consultants, designers, engineers, builders, regulators, site owners, and site users to explore phytotechnologies to address current and emerging environmental challenges. For more information and to register, see <http://www.uhasselt.be/Phytotechnologies> .

Labs21 2012 Annual Conference, San Jose, California, October 2-4, 2012. The International Institute for Sustainable Laboratories (I²SL) hosts this annual conference in partnership with the U.S. EPA and U.S. Department of Energy to highlight recent advancements in laboratory efficiency and performance and to provide the sustainable laboratory community with a forum for information exchange and education. For more information and to register, see <http://www.i2sl.org/labs21/conference/conference2012.html> .

LNAPLs: Science, Management, and Technology ITRC 2-day Classroom Training, Novi, MI, October 16-17, 2012. 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. **Register by September 14 to receive the early bird discount.** 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/crt.asp> .

SERDP and ESTCP Announce Cancellation of 2012 Symposium & Workshop. Due to the recent changes across the Federal government on sponsoring meetings, SERDP and ESTCP unfortunately are unable to support this year's Partners in Environmental Technology Technical Symposium & Workshop originally scheduled to be held November 27-29 in Washington, D.C. For more information, see <http://www.serdp-estcp.org/News-and-Events/News-Announcements/Program-News/SERDP-and-ESTCP-announce-cancellation-of-2012-Symposium-Workshop> .

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. 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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