

## TechDirect, April 1, 2009

Welcome to TechDirect! Since the March 1 message, TechDirect gained 186 new subscribers for a total of 33,130. 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 Announcements

**April 2009 CLU-IN Theme: Green.** Throughout 2009, CLU-IN will highlight various topics of interest in a series of special themes. During April, CLU-IN will focus on "green" resources. In celebration of Earth Day, CLU-IN will draw attention to resources that promote energy efficiency, alternative energy sources, greenhouse gas reductions, water conservation and quality, waste reduction, material recycling or reuse, reduced consumption of all natural resources, and other sustainable strategies for contaminated site cleanup. Visitors are encouraged to review "green" related resources at <http://clu-in.org/theme/green/> .

**European AdvanceETV Project Solicits Vendors.** Environmental Technology Verification (ETV) programs currently exist in the U.S. and Canada, and a European ETV scheme is now being established. A European Commission-funded cooperative project has been launched to develop approaches to facilitate recognition and acceptance of ETV data among ETV programs. The project, called AdvanceETV, is currently seeking vendors that would like to have their technologies verified concurrently in the U.S., Europe, and Canada. The objective is to test candidate technologies once and the results used to verify in accord with the three ETV programs. Technology vendors will be required to pay for verification testing for one of the programs. However, costs for extension to the other two verification programs will be covered by the AdvanceETV project. These verifications will serve as pilots to propose mutual recognition processes under the different ETV schemes and, ultimately, for global recognition. Detailed agreements between candidate technology vendors and the AdvanceETV partners will be prepared as a first step under this cooperative verification initiative. Interested vendors should contact one of the following AdvanceETV partners:(Europe) Christian Gron, DHI, at +45 4516 9570 or [chg@dhiigroup.com](mailto:chg@dhiigroup.com); (U.S.) Amy Dindal, Battelle, at +1 (561) 422-0113 [dindala@battelle.org](mailto:dindala@battelle.org); or (Canada) John Neate, OCETA, at +1 (905)822-4133 or [jhneate@etvcanada.ca](mailto:jhneate@etvcanada.ca).

### > Upcoming Live Internet Seminars

**Cumulative Risk Assessment (CRA) Seminar Series - April 7, 21, May 5, 19, June 2, 16, 30, and July 14.** EPA's Office of Research and Development and Regions are sponsoring this series of seminars as a forum for discussing the current state of the art and practice of CRA. These seminars will provide information regarding guidance, resources, and recommendations for real world CRA for regulatory and non-regulatory applications. This seminar series is, in part, preparation for the EPA ORD/Regional Workshop on CRA being hosted by Region 5 in Chicago, IL for July 28-30, 2009. The seminar series is publicly open in support of advancing CRA while the workshop will primarily be internal to EPA to enhance policy and other deliberative discussions. For more information and to register, see <http://clu-in.org/live> .

**ITRC Real-Time Measurement of Radionuclides in Soil - April 14, 2009, 2:00PM-4:15PM EDT (18:00-20:15 GMT).** This training introduces state regulators, environmental consultants, site owners, and community stakeholders to ITRC's Technology Overview document: Real- Time Measurement of Radionuclides in Soil: Technology and Case Studies (RAD-4, 2006), created by ITRC's Radionuclides Team. This training provides information on the basics of real-time measurement systems, how the technologies and data are used, acceptance issues, and case studies. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

**EPA's Electronic Report on the Environment - Finding, Understanding and Using National and Regional Environmental Indicators - April 16, 2009, 11:00AM-1:00PM EDT (15:00-17:00 GMT).** This webcast will introduce the audience to EPA's Report on the Environment (ROE) project and the Electronic Report on the Environment (eROE) web site ([www.epa.gov/roe](http://www.epa.gov/roe)) as a valuable resource in understanding what we know - and don't know - about trends in air, water, land, human health and ecologic condition in the United States. For more information and to register, see <http://clu-in.org/live> .

**ITRC Perchlorate Remediation Technologies - April 28, 2009, 2:00PM-4:15PM EDT (18:00-20:15 GMT).** This training introduces state regulators, environmental consultants, site owners, and community stakeholders to Remediation Technologies for Perchlorate Contamination in Water and Soil (PERC-2, 2008), created by ITRC's Perchlorate Team to assist reviewers in assessing the adequacy of perchlorate remediation projects. This course gives the student a background in the available remediation technologies to treat perchlorate contamination, discusses emerging technologies, and presents case studies of applications. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

**Superfund Redevelopment Initiative (SRI) 10th Anniversary: Celebrating Success - April 29, May 21, June 18, July 16, September 17, and October 22.** EPA's Superfund Redevelopment Initiative (SRI) celebrates its 10-year Anniversary in 2009! To mark this event, EPA is hosting a diverse series of seminars featuring Superfund site reuse success stories. This and successive webinars will present reuse case studies on multi use, renewable energy, ecological reuse, and commercial reuse. For more information and to register, see <http://clu-in.org/sri> .

**ITRC Decontamination and Decommissioning of Radiologically-Contaminated Facilities - April 30, 2009, 11:00AM-1:15PM EDT (15:00-17:15 GMT).** This training introduces ITRC's Technical/Regulatory Guidance, Decontamination and Decommissioning of Radiologically-Contaminated Facilities (RAD-5, 2008), created by ITRC's Radionuclides Team. The curriculum is composed of four modules: Introduction and Regulatory Basis for Decontamination and Decommissioning (D&D), Factors for Implementing D&D, Preliminary Remediation Goal (PRG) Calculators, and Case Studies and Lessons Learned. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live> .

## > New Documents and Web Resources

**Framework for Green Cleanup Standards at Contaminated Sites.** EPA's cleanup programs plan to collaborate with ASTM International to develop a green cleanup standard through a consensus process. EPA worked with its state partners to develop a draft framework that outlines desired outcomes for a green cleanup standard and will serve as a starting point for the consensus-based process. The standard will establish a uniform approach, implemented voluntarily, to encourage property owners, responsible parties, developers, and communities to use green cleanup practices during project planning and implementation. EPA is now requesting input from all stakeholders to enhance the draft framework. The draft framework is available for review and input through April 30 at [http://clu-in.org/greenremediation/subtab\\_b5.cfm](http://clu-in.org/greenremediation/subtab_b5.cfm) . EPA plans to finalize the framework and post it in June 2009. ASTM International established a subcommittee and will use EPA's proposed framework to kick off the effort. To learn more, go to <http://www.astm.org/DATABASE.CART/WORKITEMS/WK23495.htm> . Please help us distribute this to other interested stakeholders working on the cleanup of contaminated property.

**Technology News and Trends (EPA 542-N-09-002).** This issue features site-specific approaches for applying, optimizing, and evaluating the potential for or efficacy of bioremediation approaches such as subsurface injection of microbial cultures or emulsified vegetable oil (March 2009, 6 pages). View or download at <http://clu-in.org/techpubs.htm> .

**Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment) Final (EPA 540-R-070-002).** This guidance is the sixth annex of the Risk Assessment Guidance for Superfund (RAGS), Volume I, which addresses human health risk at Superfund sites. Parts A, B, C, D and E of Volume I addressed other aspects of human health risk. RAGS Part F was developed by a workgroup composed of toxicologists and risk assessors in the EPA Superfund Program and other hazardous waste programs in EPA regional offices, with significant involvement from the Office of Research and Development (ORD), the Office of Air Quality Planning and Standards (OAQPS), the Office of Children's Health Protection and Environmental Education (OCHPEE), and the Office of Solid Waste and Emergency Response (OSWER). This guidance received internal EPA review in July 2007 and external peer review and state risk assessor review in April-May 2008 (January 2009, 68 pages). View or download at <http://www.epa.gov/oswer/riskassessment/ragsf/> .

**Phytotechnology Technical and Regulatory Guidance and Decision Trees, Revised.** This document is an update to "Phytoremediation Decision Tree" (PHYTO-1, 1999) and "Phytotechnology Technical and Regulatory Guidance Document" (PHYTO-2, 2001) and replaces the previous documents entirely. It merges the concepts of both previous documents and includes new and practical information on the process and protocol for selecting and applying various phytotechnologies as remedial alternatives. The technical descriptions of phytotechnologies in this document concentrate on the functioning mechanisms: phytosequestration, rhizodegradation, phytohydraulics, phytoextraction, phytodegradation, and phytovolatilization. Decision trees (Remedy Selection, Groundwater, Soil/Sediment, and Riparian Zone) help guide the user through the application of phytotechnologies to a remediation project (February 2009, 187 pages). View or download at <http://www.itrcweb.org/Documents/PHTO-3.pdf> .

**Field Application of a Permeable Reactive Barrier for Treatment of Arsenic in Ground Water (EPA 600-R-08-093).** In June 2005, a pilot-scale PRB containing granular iron was installed at a former metal smelting facility near Helena, MT, to treat

ground water contaminated with concentrations (>25 mg/L) of arsenite and arsenate.

The barrier is 9.1 m long, 14 m deep, and 1.8 to 2.4 m wide (in the direction of ground-water flow). Within the PRB, As concentrations are 2 to After 2 years of operation, significant decreases in As concentrations are evident. This report covers site characterization, remedial design and implementation, and monitoring results for this pilot-scale PRB (September 2008, 81 pages). View or download at

<http://www.epa.gov/nrmrl/pubs/600r08093/600r08093.pdf> .

**Natural Attenuation of the Lead Scavengers 1,2-Dibromoethane (EDB) and 1,2-Dichloroethane (1,2-DCA) at Motor Fuel Release Sites and Implications for Risk Management (EPA 600-R-08-107).** The lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) were included along with lead in conventional leaded gasoline used for automobiles in the US prior to 1988. Old spills of leaded gasoline from underground storage tank systems (USTs) at gasoline service stations may contaminate ground water aquifers used to supply drinking water. This report is intended for regulators in the U.S. EPA Regions and in the state environmental agencies who manage the risk of EDB and 1,2-DCA contamination in ground water. The report reviews the previous use of EDB and 1,2-DCA in leaded motor fuel, provides information on the transport and fate of EDB and 1,2-DCA at motor fuel release sites, and presents results of a study of the current distribution of EDB and 1,2-DCA at motor fuel release sites and the associated chance of contaminating ground water (September 2008, 74 pages). View or download at

<http://www.epa.gov/ada/download/reports/600R08107/600r08107.pdf> .

**Remediating and Monitoring White Phosphorus Contamination at Eagle River Flats (Operable Unit C), Fort Richardson, Alaska: FY07 Data Report.** This is the eighteenth annual contract report prepared by researchers from CRREL and other Federal agencies for the U.S. Army Garrison Alaska, Public Works, describing results of research, remediation, and monitoring efforts addressing white phosphorus (WP) contamination in Eagle River Flats, an 865-ha estuarine salt marsh on Fort Richardson, Alaska. Over the five-year period from 1999-2003, full-scale remediation was performed at Eagle River Flats using six remote-controlled pumps to temporarily drain contaminated ponds, allowing the sediments to dry and the WP to oxidize. This effort successfully remediated about 90% of the ponds. More recently, limited remediation using one or two pumps has been conducted to address the remaining few white-phosphorus-contaminated areas (May 2008, 132 pages). View or download at

<http://www.crrel.usace.army.mil/erf/remediationdata/ERF-RemediationReport-FY2007.pdf> .

**In Situ Chemical Oxidation for Remediation of Contaminated Groundwater: Summary Proceedings of an ISCO Technology Practices Workshop.** The Colorado School of Mines (CSM), in collaboration with East Tennessee State University (ETSU), CH2M HILL, and the U.S. Navy, convened a 2-day In Situ Chemical Oxidation (ISCO) Technology Practices Workshop at the CSM in Golden, Colorado on March 7-8, 2007. The purpose of the Workshop was to provide a forum to share insights and perspectives gained regarding the application of ISCO for remediation of contaminated sites. There were 43 invited participants at the Workshop including SERDP/ESTCP program staff, ISCO project team leaders, and key ISCO stakeholders (chemical companies, technology vendors, environmental consultants, researchers, and remedial project managers). The Workshop program was designed to encourage participation and consisted of a series of technical presentations, four panel discussions, a contaminated site scenario exercise, three breakout group meetings, along with several periods of plenary discussions. This proceedings document summarizes the activities and outcomes of the workshop (June 2008, 74 pages). View or download at

<http://www.estcp.org/viewfile.cfm?Doc=ER-0623%20Summary%20Proceedings.pdf>.

**EUGRIS Corner.** New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 116 resources, events projects and

news items were added to EUGRIS 1 - 24 March, 2009. 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 report was featured on EUGRIS:

**Using Organic Wastes and Composts to Remediate and Restore Land.** This manual of best practice provides a comprehensive framework and detailed description of the ways in which composts created from bulk organic materials may be used alone or mixed with mineral wastes for the restoration of a wide range of derelict land sites to create green landscapes which encompass newly created habitats of conservation value. The manual carefully explains every step in the process, starting with the legal and regulatory framework, via the various methods of producing compost, establishing a compost site and using the product for creation of habitats for conservation and biodiversity and the remediation of contaminated sites. Not only are restoration practices at the Treating Waste for Restoring Land Sustainability (TWIRLS) project sites described and assessed but the manual also showcases several case studies of best practice in the use of compost for the creation of habitats and biodiversity on brownfield sites (2007, 92 pages). View or download at <http://ies.bangor.ac.uk/TWIRLS/Web%20version%20Manual.pdf> .

## > Conferences and Symposia

**Vapor Intrusion Pathway: A Practical Guideline: ITRC 2-day Classroom Training, Oklahoma City, OK on April 6-7; Sacramento, CA on June 22-23; and Los Angeles area, CA on June 25-26.** 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. For more information and to register, see <http://www.itrcweb.org/crt.asp> .

**2009 Conference on Design and Construction Issues at Hazardous Waste Sites, Philadelphia, PA, April 13-15, 2009.** The conference, hosted by the EPA and the US Army Corps of Engineers, will provide a forum for discussion among professionals from the private and public sectors regarding design and construction issues at hazardous waste sites, including effective methods, lessons learned, and application of technologies. For more information, see <https://superfund.usace.army.mil/2009DCHWS> .

**Advanced Design Application and Data Analysis for Field XRF Instrumentation in Soil Matrices, Atlanta, GA, April 22, 2009.** This course covers material that generally is not presented in XRF presentations or training courses. This is an applications course: how can a FP-XRF be used so that its data are highly dependable and defensible. Sampling design and sample handling options for FP-XRF will be covered, along with the benefits and limitations of each. Analytical and QC concerns common to using XRF are also discussed. This course will be of interest to staff developing XRF sampling and analysis plans, reviewing the plans for quality assurance, field operators, and users of XRF data for making project decisions. Concepts and practice will be illustrated using experiences from actual field projects. For more information and to register, see <http://www.trainex.org/classdetails.cfm?classid=3992&courseid=521> .

**Cal/EPA Vapor Intrusion Workshop, Sacramento, CA on June 3-4; Los Angeles,**



**CA on June 9-10.** The California Environmental Protection Agency (Cal/EPA), in cooperation with the Groundwater Resources Association of California, is hosting a Vapor Intrusion Workshop at two locations in June 2009. The workshop is intended as a forum for Cal/EPA staff and external stakeholders to discuss three Cal/EPA guidance documents/advisories pertaining to vapor intrusion: (1) Advisory - Active Soil Gas Investigations; (2) Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air; and (3) Vapor Intrusion Mitigation Advisory (expected late April 2009). Discussion topics will include: upcoming changes to the soil gas advisory (e.g., sample depths, leak detection methods, reporting limits, acceptable tubing types, data quality objectives); update on laboratory methods and certification for soil gas; sampling considerations for vapor intrusion assessment; vapor intrusion risk assessment California Human Health Screening Levels; public participation considerations for vapor intrusion sites; and design and implementation considerations for vapor intrusion mitigation technologies. For information and to register, see

[http://www.dtsc.ca.gov/SiteCleanup/Vapor\\_Intrusion.cfm](http://www.dtsc.ca.gov/SiteCleanup/Vapor_Intrusion.cfm) .

**Call for Abstracts!! GreenRemediation, Copenhagen, Denmark, November 9-10, 2009.** Sustainable approaches for decision-making and soil remediation are more relevant than ever. The objective of the GreenRemediation Conference is to improve the awareness of green remediation solutions among environmentalists and decision makers. Main topics are Policy Drivers, Decision Support Tools and Sustainable Remediation Technologies. Attendees from countries around the world are expected. The conference will benefit from the limelight of UN Climate Change Conference - COP15 that will take place in Copenhagen only a few weeks later. The conference is being organized in collaboration with Danish EPA, Information Centre on Contaminated Sites - DANISH REGIONS, The Capital Region of Denmark and a number of private organizations. The Scientific Committee is formed by international capacities from Scandinavia, Austria, the UK and the US. Abstract guidelines are available at

<http://www.polytec.dk/greenremediation> .

**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 156 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](mailto: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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