



TechDirect, November 1, 2016

Welcome to TechDirect! Since the October 1 message, TechDirect gained 347 new subscribers for a total of 36,817. If you feel the service is valuable, please share TechDirect with your colleagues. Anyone interested in subscribing may do so on CLU-IN at <https://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.

> Funding Opportunities

FY 2017 Brownfields Assessment and Cleanup Grants. These Brownfields grants may be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum). Assessment grants are funded over three years. Applicants may apply for up to \$200,000 in hazardous substances funding or up to \$200,000 in petroleum funding. Community-wide Applicants applying for both hazardous substances funding and petroleum funding may request a combined total up to \$300,000. Assessment Coalition Applicants may apply for up to \$600,000 in hazardous substances funding and/or petroleum funding. Cleanup Grants are funded over three years. Applicants can apply for up to \$200,000 per brownfield site and can submit up to three separate, site-specific cleanup proposals. The proposal submission deadline is December 22, 2016. For more information and application instructions, see

<https://www.epa.gov/brownfields/apply-brownfields-grant-funding>.

FY 2018 Environmental Research and Development Program (SERDP)

Solicitations. The Department of Defense's Strategic Environmental Research and Development Program (SERDP) is seeking environmental research and development proposals for funding beginning in FY 2018. The Core Solicitation provides funding opportunities for basic and applied research and advanced technology development. Core projects vary in cost and duration consistent with the scope of the work proposed. The Statements of Need (SON) referenced by this solicitation request proposals related to the SERDP program areas of Environmental Restoration (ER), Munitions Response (MR), Resource Conservation and Climate Change (RC), and Weapons Systems and Platforms (WP). The SERDP Exploratory Development (SEED) Solicitation provides funding opportunities for work that will investigate innovative environmental approaches that entail high technical risk or require supporting data to provide proof of concept. Funding is limited to not more than \$200,000 and projects are approximately one year

in duration. This year, SERDP is requesting SEED proposals for the Munitions Response program area. All Core pre-proposals were due January 5, 2017. SEED proposals are due March 7, 2017. Details for both federal and non-federal submissions are available at <https://www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations>.

> Upcoming Live Internet Seminars

ITRC Environmental Molecular Diagnostics: New Tools for Better Decisions - November 3, 2016, 1:00PM-3:15PM EDT (17:00-19:15 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 should 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>.

SERDP & ESTCP Bioavailability of Contaminants of Concern in Soils at DoD-Impacted Sites - November 3, 2016, 12:00PM EDT (16:00 GMT). Listen to three presentations on Department of Defense (DoD) research efforts on the bioavailability of contaminants in soils. First, Dr. Hans Stroo (SERDP and ESTCP) will summarize key findings and recommendations for future research from a recently prepared white paper on SERDP and ESTCP research investments on the bioavailability of contaminants in soils and sediments. Second, Ms. Yvette Lowney (Alloy LLC) will discuss the results of her work on the interactions of polycyclic aromatic hydrocarbons (PAHs) with soil and how these interactions control the oral and dermal bioavailability of PAHs in soil to humans. Finally, Dr. Nicholas Basta (The Ohio State University) will talk about the mechanisms and permanence of sequestered lead and arsenic in soils with a focus on impacts on human bioavailability. For more information and to register, see <https://serdp-estcp.org/Tools-and-Training/Webinar-Series/11-03-2016>.

SERDP Funding Opportunities - FY 2018 - November 4, 2016, 1:30-2:30PM EDT (17:30-18:30 GMT). This briefing will offer valuable information for those interested in new SERDP funding opportunities. During the online seminar, participants may ask questions about the funding process, the current SERDP solicitations, and the proposal submission process. For more information and to register, see <https://serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations/Webinar>.

The Interplay Between Environmental Exposures and Infectious Agents: Session III - Co-exposures in the Lung - November 7, 2016, 1:00PM-3:00PM EST (18:00-20:00 GMT). The NIEHS Superfund Research Program (SRP) presents the third session in the Risk e-Learning series, The Interplay Between Environmental Exposures and Infectious Agents. The seminar series examines the interactions between environmental exposures and infectious agents in the development of disease. The series will highlight researchers from around the country who are doing

innovative research to better understand this relationship between environmental exposures, infectious agents, and immune response. This session will focus on interactions between environmental exposures and infectious agents in the lung. For more information and to register, see <http://clu-in.org/live>.

EPA's Strategy to Address the Retail Sector Under RCRA - November 10, 2016, 1:30PM-3:00PM EST (18:30-20:00 GMT). EPA published the Retail Strategy to address hazardous waste management challenges faced by the retail sector under the federal Resource Conservation and Recovery Act (RCRA). Hazardous waste management regulations, many of which were developed more than 35 years ago with industrial and manufacturing settings in mind, can pose compliance challenges for the retail sector. The strategy lays out a cohesive and effective plan to address these unique challenges while reducing burden and protecting human health and the environment. As part of EPA's ongoing outreach efforts associated with implementing the Agency's Retail Strategy, we have scheduled this webinar in order to provide an overview of the strategy and to offer audience members the opportunity to ask questions, make suggestions, share experiences and exchange information. We encourage you to take a look at the retail strategy and accompanying retail flowchart, share this information with others and encourage others to participate in the webinar. For more information and to register, see <http://clu-in.org/live>.

Passive Treatment of Mining-Influenced Water: From Bench Scale to O&M - November 14, 2016, 1:00PM-3:00PM EST (18:00-20:00 GMT). Passive treatment refers to processes that do not require frequent human intervention, operation, or maintenance, and typically employ natural construction materials, natural treatment media, and promote growth of natural vegetation. Biochemical reactors (BCRs) are a type of passive treatment system that use microorganisms to remove contaminants from mining-influenced water (MIW). BCRs and other passive treatment processes can be cost-effective and lower-maintenance treatment options for mine site cleanups. They also offer significant opportunities to reduce the environmental footprint associated with treatment of MIW. In recent years, development and implementation of passive systems has increased. However, there's still plenty to learn about their effectiveness. Pilot studies are good ways to study passive treatment and their application scenarios. In this webinar, two case studies will be presented that document design and implementation of BCRs to passively treat MIW - from bench-scale tests to full-scale operation and maintenance, including recovery of iron oxide byproducts for sale. For more information and to register, see <http://clu-in.org/live>.

ITRC Groundwater Statistics for Environmental Project Managers - November 15, 2016, 1:00PM-3:15PM EST (18:00-20:15 GMT). Statistical techniques may be used throughout the process of cleaning up contaminated groundwater. It is challenging for practitioners, who are not experts in statistics, to interpret, and use statistical techniques. ITRC developed the Technical and Regulatory Web-based Guidance on Groundwater Statistics and Monitoring Compliance (GSMC-1, 2013) and this associated training specifically for environmental project managers who review or use statistical calculations for reports, who make recommendations or decisions based on statistics, or who need to demonstrate compliance for groundwater projects. The training class will encourage and support project managers and others who are not statisticians to: use the ITRC Technical and Regulatory Web-based Guidance on Groundwater Statistics and Monitoring Compliance (GSMC-1, 2013) to make better decisions for projects; apply key aspects of the statistical approach to groundwater data; and answer common questions on background, compliance, trend analysis, and monitoring optimization. ITRC's Technical and Regulatory Web-based Guidance on Groundwater Statistics and Monitoring Compliance (GSMC-1, 2013) and this associated training bring clarity to the planning, implementation, and communication of groundwater statistical methods and should lead to greater confidence and transparency in the use of groundwater statistics for site management. For more

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

ITRC Use and Measurement of Mass Flux and Mass Discharge - November 17, 2016, 1:00PM-3:15PM EST (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 Geophysical Classification for Munitions Response - November 29, 2016, 1:00PM-3:15PM EST (18:00-20:15 GMT). This training class and supporting guidance document explain the process of geophysical classification, describe its benefits and limitations, and discuss the information and data needed by regulators to monitor and evaluate the use of the technology. This document and training also emphasize using a systematic planning process to develop data acquisition and decision strategies at the outset of a munitions response effort, as well as quality considerations throughout the project. Stakeholder issues that are unique to munitions response are also discussed. After this training class, participants will: understand the technology and terminology, be ready to engage in the planning process to address quality considerations throughout a project, find tools to transfer knowledge within organizations and to stakeholders, and start to transition mindset to decisions that leave non-hazardous items in the ground. An audience who understand current munitions response tools and procedures (for example, geophysical surveys, sensors, data analysis) will benefit most from this document and training. For more information and to register, see <http://www.itrcweb.org> or <https://clu-in.org/live>.

Hazardous Waste Generator Improvements Final Rule - November 30 and December 5, 2016. EPA recently overhauled the hazardous waste generator regulations under the Resource Conservation and Recovery Act (RCRA) to improve compliance and thereby enhance protection of human health and the environment. These changes are both a result of EPA's experience in implementing and evaluating the hazardous waste generator program over the last 30 years, as well as a response to concerns and issues identified by the states and regulated community. This webinar will delve into the recent changes and describe in detail: which components of the hazardous waste generator regulatory program were revised; which gaps in the regulations were addressed in this rule; the greater flexibility provided by this rule for hazardous waste generators to manage their hazardous waste in a cost-effective and protective manner; how the hazardous waste generator regulations were reorganized to make them more user-friendly and thus improve their usability by the regulated community; and what technical corrections and conforming changes were made to address inadvertent errors, remove obsolete references to programs that no longer exist, and improve the readability of the regulations. For more information and to register, see <http://clu-in.org/live>.

> New Documents and Web Resources

Complimentary Access to the ASTM Standard Guide for Greener Cleanups. The

ASTM Standard Guide for Greener Cleanups (E2893-16) provides a powerful approach to reducing the environmental footprint of site remediation activities. The standard guide includes a systematic protocol for identifying, prioritizing, selecting, implementing and reporting the use of best management practices (BMPs); a list of BMPs linked to the core elements of a greener cleanup and to relevant cleanup technologies; guidelines for quantifying the footprint; and a structure for voluntarily reporting associated outcomes. The standard guide is intended to accommodate each phase of a cleanup and to complement voluntary or required cleanups under various regulatory programs. Under EPA's Superfund program, alone, service and operation contracts potentially worth up to \$1.57 billion include green remediation considerations that may be facilitated through implementation of the standard guide. Interested parties may view the complete standard guide at no cost through November 30, 2016, at <http://www.astm.org/E2893-16>. To learn more on greener cleanups, see <https://www.epa.gov/greenercleanups>.

Superfund Research Program (SRP) Research Briefs. To get monthly updates on research advances from the SRP you can subscribe to their Research Brief mailing list at <https://list.nih.gov/cgi-bin/wa.exe?SUBED1=SRP-BRIEF&A=1>.

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 <https://clu-in.org/products/tins/>. The following resources were included in recent issues:

- Environmental Fate and Effects of Poly- and Perfluoroalkyl Substances (PFAS)
- Regional Screening Levels (RSLs): User's Guide
- Guidance for Remediation of Petroleum Contaminated Sites
- Regeneration of Brownfield Land Using Sustainable Technologies (ROBUST)
- We're Sensing a Change in Water Monitoring: Introducing the Arsenic Sensor Prize Competition
- University of Maryland, Shore Medical Center at Chestertown: Groundwater Remediation 2015/2016 Action Plan Summary Report [Surfactant Flushing]
- Use of Mass-Flux Measurement and Vapor-Phase Tomography to Quantify Vadoze-Zone Source Strength and Distribution
- Expert Panel Report on the Behaviour and Environmental Impacts of Crude Oil Released into Aqueous Environments

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 13 resources, events, projects and news items were added to EUGRIS in October 2016. 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:

Guidance for Remediation of Petroleum Contaminated Sites (2016). This publication (10-09-057) from the Washington State Department of Ecology, is intended to provide persons conducting studies and cleanups of petroleum contamination, and Ecology staff reviewing this work, with guidance on how to comply with these and other statutory and rule requirements. This guidance is generally applicable to all types of petroleum contaminated sites and media, including petroleum releases from regulated underground storage tank systems to soils. View or download at <https://fortress.wa.gov/ecy/publications/documents/1009057.pdf>

> Conferences and Symposia

Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management - ITRC 2-day Classroom Training, Framingham, MA, November 9-10, 2016. Preapproved for continuing education for CT LEPs, DE PGs, MA LSPs, NE Water Well Standards, NJ LSRPs, and SC PGs. This 2-day ITRC classroom training is based on the ITRC Technical and Regulatory Guidance Web-Based Document, Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management (PVI-1, 2014) and led by internationally recognized experts. Within the training class - hear about EPA's Technical Guide For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites (June 2015). The ITRC guidance document and EPA guide are complementary documents with the ITRC training course providing the "how-to" knowledge and skills for screening, investigating, and managing the petroleum vapor intrusion pathway. The class will enable you to develop the skills to screen-out petroleum sites based on the scientifically-supported ITRC strategy and checklist; focus the limited resources investigating those PVI sites that truly represent an unacceptable risk; and communicate ITRC PVI strategy and justify science-based decisions to management, clients, and the public. 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>.

Facility Decommissioning Training Course, Las Vegas, NV, November 14-17, 2016. The purpose of this 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/>.

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 <https://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 <https://clu-in.org/techdirect> at any time night or day.

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