



TechDirect, November 1, 2015

Welcome to TechDirect! Since the October 1 message, TechDirect gained 262 new subscribers for a total of 35,385. 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.

> Request for Proposals

2016 Brownfields Assessment, Revolving Loan Fund, 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). Opportunities for funding are as follows: Brownfields Assessment Grants (each funded up to \$200,000 over three years); Assessment Coalitions are funded up to \$600,000 over three years), Brownfield Revolving Loan Fund Grants (each funded up to \$1,000,000 over five years), and Brownfields Cleanup Grants (each funded up to \$200,000 over three years). The proposal submission deadline is December 18, 2015. EPA will provide one guideline outreach webinar on November 10, 2015 at 2pm (EST). The purpose of this training webinar is to assist applicants with understanding the Assessment, Revolving Loan Fund, and Cleanup Grant Guidelines and in applying for the grants. Join the webinar at <http://epawebconferencing.acms.com/fy16/> and/or via conference call (dial-in number: 1-866-299-3188/ access code: 202-566-1817). For more information and to view the grant guidelines, see <http://www2.epa.gov/brownfields/apply-brownfields-grant-funding>.

> Upcoming Live Internet Seminars

Nanotechnology for Site Remediation - November 2, 2015, 11:00AM-1:00PM EST (16:00-18:00 GMT). This webinar is a follow-up to the Inaugural Conference on the Applications of Nanotechnology for Safe and Sustainable Environmental Remediations [Nano-4-Rem-aNssERs] which was held in Hammond, Louisiana in the Summer of 2013. In this 2 hour webinar, the expert panel will give an update about the current

state of engineered nanoparticles (ENPs) workers' exposure scenarios in environmental remediation; an update of the U.S. EPA Superfund sites experience with the use of ENPs; an update on nano-zero-valent iron-based remediation experience in Europe; and an overview of ways to harness "informatics 4 impact" to meet your mission goals. For more information and to register, see <https://clu-in.org/live>.

ITRC Soil Sampling and Decision Making Using Incremental Sampling

Methodology Parts 1 and 2 - November 3 and 10, 2015. 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 understanding the fundamental concepts of soil/contaminant heterogeneity, representative sampling, sampling/laboratory error and how ISM addresses these concepts. Through this training course the participant 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 <https://clu-in.org/live>.

Integrating Data from Multidisciplinary Research, Session III - Establishing Infrastructure for Data Integration - November 4, 2015, 1:00PM-3:00PM EST (18:00-20:00 GMT).

This webinar series explores challenges and opportunities for integrating datasets to solve complex environmental health problems. In the third session, speakers include data science experts who are developing tools through NIH-funded grants to establish infrastructure to coordinate data and develop sophisticated approaches to utilize big data to advance our understanding of human health and disease. Susan Teitelbaum, Ph.D. Associate Professor in the Department of Preventive Medicine at Icahn School of Medicine at Mount Sinai, Patricia Kovatch, Associate Dean for Scientific Computing and Associate Professor at the Icahn School of Medicine at Mount Sinai, and Deborah McGuinness, Ph.D., Computer Science Professor at Rensselaer Polytechnic Institute, will discuss their previous work related to knowledge integration and developing data infrastructure. They will also discuss their recent NIEHS Children's Health Exposure Analysis Resource (CHEAR) Data Repository, Analysis, and Science Center award, which will address methodology for combining data from a wide range of environmental health studies. Gregory Cooper, M.D., Ph.D., Professor of Biomedical Informatics at the University of Pittsburgh, will discuss the Center for Causal Discovery, an inaugural member of the NIH Big Data to Knowledge (BD2K) Consortium. Cooper leads the Center, which is developing and making available the algorithms, software, and system architecture needed by biomedical scientists seeking to discover causal relationships using large and diverse data sets. For more information and to register, see <https://clu-in.org/live>.

ITRC Geophysical Classification for Munitions Response - November 5, 2015,

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>.

SERDP Funding Opportunities - November 10, 2015, 1:30PM -2:30PM EST (18:30-19:30 GMT). SERDP Acting Executive Director Dr. Anne Andrews and Deputy Director Dr. Andrea Leeson will conduct an online seminar SERDP Funding Opportunities. 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://cc.readytalk.com/cc/s/registrations/new?cid=dtoitrab9ivv> .

SERDP ESTCP Munitions Response: Land Based Program Closeout - November 12, 2015 12:00PM - 1:30PM EST (17:00-18:30 GMT). Mr. David Wright (CH2M HILL), Mr. John Jackson (U.S. Army Corps of Engineers, Sacramento), and Mr. Doug Maddox (Environmental Protection Agency) will present on Land-Based Program Closeouts at Munitions sites. For more information and to register, see

<https://serdp-estcp.org/Tools-and-Training/Webinar-Series> .

Implementing Greener Cleanups through ASTM's Standard Guide (E2893-13) - November 17, 2015, 12:00PM-2:00PM EST (17:00-19:00 GMT). The U.S. EPA and other organizations encourage use of the ASTM International *Standard Guide for Greener Cleanups* (E2893-13), which offers a step-wise approach for reducing the environmental footprint of site cleanup activities. This two-hour webinar sponsored by the U.S. EPA will provide participants with an overview of the Standard, show how the Standard can inform project decisions, and describe experiences in using the Standard at sites across the U.S. under state or federal cleanup programs. For more information and to register, see <https://clu-in.org/live>.

RE-Powering's Screening Tools - November 18, 2015 1:30PM-3:00PM EST (18:30-20:00 GMT). EPA's RE-Powering America's Land Initiative encourages renewable energy development on current and formerly contaminated lands, landfills and mine sites. The Initiative has recently upgraded its Google Earth Mapper and released its electronic decision tree tool to allow stakeholders the ability to identify and explore sites for solar or wind potential. The Mapper uses Google Earth and displays and screens over 80,000 EPA- and state-tracked sites, comprising over 43 million acres. The Mapper provides search options by renewable energy at various scales, contaminated land type or specific site names. In addition, many sites are linked to site-specific reports maintained by the EPA region and program managing the site. The electronic decision tree is a downloadable computer application that: explores potentially contaminated sites (e.g., brownfields, RCRA permitted, Superfund sites), landfills, and underutilized sites and rooftops; walks users through a series of Yes / No / Skip questions supplemented by tips and links to relevant tools and information resources; screens for site characteristics, redevelopment considerations, criteria specific to landfills and contaminated sites, energy load, policies and financial considerations; and generates reports of the screening results and user annotations.

The webinar will provide a brief overview of the RE-Powering America's Land Initiative, provide a quick review and update on its Mapper tool and focus on describing and demonstrating the Electronic Decision Tree tool. For more information and to register, see <https://clu-in.org/live>.

Historical Radiological Assessments (HRAs): The What, Why and How for Navy Remedial Project Managers - November 18, 2015 2:00PM EDT (19:00 GMT). The Navy will host this webinar on HRAs. The Historical Radiological Assessment (HRA) is typically the first step for identification and classification of sites that have been

impacted or potentially impacted by general radiological materials called G-RAM. The Navy is conducting the HRAs at many of our bases; these HRAs are the functional equivalent of a CERCLA Preliminary Assessment or a RCRA Facility Assessment. This webinar will provide information on the HRA purpose, implementation process, roles of the project team, and follow on actions. For more information and to register, see http://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/erb/oe2.html.

SRP Funding Opportunities Web Seminar - December 1, 2015, 1:00PM-2:00PM EST (18:00-19:00 GMT). The SRP will be holding a web seminar to provide information about the new "Superfund Hazardous Substance Research and Training Program (P42)" funding opportunity, RFA-ES-15-019 (<http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-15-019.html>). Focus will be on the multi-project center grant announcement, including an emphasis on changes compared to previous solicitations. Participants will have an opportunity to ask questions. For more information and to register, see <https://clu-in.org/live>.

Screening, Testing, and Application of Residuals and Byproducts for Remediation - December 2, 2015, 1:00PM-3:00PM EST (18:00-20:00 GMT). This webinar will discuss the use of coal combustion products for soil remediation at mining sites, as well as discuss recent research on screening and testing residuals, such as waste lime, gypsum, and paper mill sludge, for application on contaminated lands. Presentations will include case study data and findings that are supported by publications available from the presenter and collaborators' website www.landrehab.org. A previous, related CLU-IN mining webinar on Using Biosolids and Coal Combustion Products for Soil Remediation at Mining Sites was presented on July 24, 2014 and is archived at <https://clu-in.org/live/archive>. For more information and to register, see <https://clu-in.org/live>.

Issues and Options in Human Health Risk Assessment - A Resource When Alternatives to Default Parameters and Scenarios are Proposed - December 3, 2015, 1:00PM-3:15PM EST (18:00-20:15 GMT). After participating in this ITRC training course, the learner will be able to apply ITRC's Decision Making at Contaminated Sites: Issues and Options in Human Health Risk (RISK-3, 2015) document when developing or reviewing site-specific risk assessments by: identifying common issues encountered when alternatives to default parameters and scenarios are proposed during the planning, data evaluation, toxicity, exposure assessment, and risk characterization and providing possible options for addressing these issues; recognizing the value of proper planning and the role of stakeholders in the development and review of risk assessments; and providing information (that includes links to additional resources and tools) to support decision making when alternatives to default approaches, scenarios and parameters are proposed. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management - December 4, 2015, 1:00PM-3:15PM EST (18:00-20:15 GMT). Chemical contaminants in soil and groundwater can volatilize into soil gas and migrate through unsaturated soils of the vadose zone. Vapor intrusion (VI) occurs when these vapors migrate upward into overlying buildings through cracks and gaps in the building floors, foundations, and utility conduits, and contaminate indoor air. If present at sufficiently high concentrations, these vapors may present a threat to the health and safety of building occupants. Petroleum vapor intrusion (PVI) is a subset of VI and is the process by which volatile petroleum hydrocarbons (PHCs) released as vapors from light nonaqueous phase liquids (LNAPL), petroleum-contaminated soils, or petroleum-contaminated groundwater migrate through the vadose zone and into overlying buildings. The ITRC Technical and Regulatory Guidance Web-Based Document, Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management (PVI-1, 2014) and this associated Internet-based training provides

regulators and practitioners with consensus information based on empirical data and recent research to support PVI decision making under different regulatory frameworks. The PVI assessment strategy described in this guidance document enables confident decision making that protects human health for various types of petroleum sites and multiple PHC compounds. This guidance provides a comprehensive methodology for screening, investigating, and managing potential PVI sites and is intended to promote the efficient use of resources and increase confidence in decision making when evaluating the potential for vapor intrusion at petroleum-contaminated sites. By using the ITRC guidance document, the vapor intrusion pathway can be eliminated from further investigation at many sites where soil or groundwater is contaminated with petroleum hydrocarbons or where LNAPL is present. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

> New Documents and Web Resources

RE-Powering's Electronic Decision Tree. Developed by EPA's RE-Powering America's Land Initiative, the RE-Powering Electronic Decision Tree tool guides interested parties through a process to screen sites for their suitability for solar photovoltaics or wind installations. EPA encourages renewable energy on already developed or degraded land instead of green space. This informational resource will help ascertain whether potential barriers to a solar or wind project exist at a site of interest. It provides: a step-by-step walk through of key considerations for renewable energy development at the site; suggested resources to help you answer screening questions to gauge the site's potential; and reports summarizing your answers to the screening questions, initial findings regarding suitability and other comments about the site. Download at <http://www2.epa.gov/re-powering/re-powerings-electronic-decision-tree>. For more information on the corresponding internet seminar that will be offered on November 18, see <https://clu-in.org/live>.

NAVFAC Technical Memorandum on Vapor Intrusion Passive Sampling. This technical memorandum describes the basics of passive sampler theory and design, available types of passive samplers, advantages and limitations of passive samplers, and important considerations when implementing a passive sampling program. Results from two vapor intrusion case studies at DoD sites are highlighted (July 2015, 20 pages). Download at <https://clu-in.org/download/issues/vi/vl-passive-sampling-EXWC-EV-1503.pdf>.

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:

- Quantifying Seepage Flux Using Sediment Temperatures
- Biotransformation of Dimethylarsinic Acid: Engineering Issue
- The Biogeochemistry and Bioremediation of Uranium and Other Priority Radionuclides
- Methods for Characterizing the Fate and Effects of NanoZerovalent Iron During Groundwater Remediation
- Detection and Characterization of Engineered Nanomaterials in the Environment: Current State-of-the-Art and Future Directions -- Report, Annotated Bibliography, and Image Library
- Ground Water Technical Considerations During the Five-Year Review Process

- Cost-Effective, Ultra-Sensitive Groundwater Monitoring for Site Remediation and Management: Standard Operating Procedures with QA/QC
- Soil and Groundwater Remediation Technologies for Former Gasworks and Gasholder Sites
- Risk-Based Management of Mercury-Impacted Sites
- U.S. EPA Proceedings of National Conference on Mining-Influenced Waters: Approaches for Characterization, Source Control and Treatment
- Draft Toxicological Profile for Perfluoroalkyls

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 17 resources, events, projects and news items were added to EUGRIS in October 2015. 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:

In situ thermal treatment (ISTT) for source zone remediation of soil and groundwater. Published in 2013 by the Centre of Competence for Soil, Groundwater and Site Revitalisation in Germany, this text covers In situ thermal treatment (ISTT) Guidelines. The specific planning and implementation steps in the different project phases are illustrated for users, principals and authorities in an easy-to-understand, practice-based manner. The guidelines are also intended to assist in estimating and evaluating the site-specific remediation success of ISTT right from an early stage of planning. Furthermore, possibilities to compensate for investigatory and forecast insecurities by adjusting the overall design are demonstrated, and advice is given for the monitoring of the remediation operations and the evaluation of the remediation success. View or download at http://www.reconsite.com/fileadmin/dateien/Publikationen/ISTT_Guidelines_FINAL_PRINT.pdf .

> Conferences and Symposia

13th HCH & Pesticides Forum, Zaragoza, Spain, November 3-6, 2015. This three day forum will focus on the lessons learned from the legacy of lindane production in Spain. For more information and to register, <http://www.hchforum.com/>.

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training, Austin, TX, November 18-19, 2015. 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>.

Groundwater High-Resolution Site Characterization (HRSC), Atlanta, GA, December 10-11, 2015. This training course focuses on groundwater characterization and discusses (1) the impacts of subsurface heterogeneity on the investigation and cleanup of groundwater and related media, (2) the need for scale-appropriate measurements and adequate data density, and (3) the tools and strategies that are available to overcome the impacts of subsurface heterogeneity. After taking this

course, participants will be armed with information that will allow them to improve their subsurface investigation approaches and develop more realistic and comprehensive conceptual site models (CSM). CSMs developed based on HRSC strategies and tools will decrease site uncertainty, improve the remedy selection process for groundwater remedies, and better enable the evaluation, design, and implementation of targeted in situ and ex situ groundwater remedies. The Groundwater HRSC course is an advanced 2-day course. The recommended audience includes EPA, federal, state, tribal and private industry technical project managers, practitioners and other stakeholders involved in groundwater investigation and remediation. For more information and to register, see <https://trainex.org/hrsc>.

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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