TechDirect, December 1, 2013

Welcome to TechDirect! Since the November 1 message, TechDirect gained 252 new subscribers for a total of 35,917. 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.

> Notice and Funding Opportunities

Please note that the December 1, 2013 TechDirect is being issued a second time due to an incomplete initial mailing. We apologize for any inconvenience this oversight may have caused. If you have any problems with viewing the entire newsletter, please contact Jean Balent at balent.jean@epa.gov.

FY14 Brownfields Assessment, Revolving Loan Fund, and Cleanup Grants. EPA's Brownfields Program provides funds to empower states, communities, tribes, and non profits to prevent, inventory, assess, clean up, and reuse Brownfields sites. EPA provides Brownfields funding for three types of grants: Brownfields Assessment Grants, Brownfields Revolving Loan Fund (RLF) Grants, and Brownfields Cleanup Grants. Proposals are due January 22, 2014. Grant guidelines are available at http://www.epa.gov/oswer/grants-funding.htm .

FY 2015 SERDP Solicitations Released. The Department of Defense's Strategic Environmental Research and Development Program (SERDP) is seeking to fund environmental research and development proposals beginning in Fiscal Year (FY) 2015 in response to the Core and SERDP Exploratory Development (SEED) solicitations. Projects will be selected through a competitive process. All Core pre-proposals from the Federal and non-Federal sectors are due Thursday, January 9, 2014. SEED proposals are due Tuesday, March 11, 2014. Details for both Federal and Non-Federal submissions are available at http://www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations .

> Upcoming Live Internet Seminars

CEC Hazard Ranking System (HRS) Webinar Series, Modules 5 and 6 - December 2 and 4. The Hazard Ranking System (HRS) webinar series is an intermediate-level course designed for personnel who are required to compile, draft and review preliminary assessments (PA), site inspections (SI), and HRS documentation records/packages submitted for proposal to the National Priorities List (NPL). **The course is intended for EPA Regional, state, tribal and contractor personnel, who support EPA in the Superfund site assessment/NPL listing process**. This course assumes a basic understanding of the HRS and its context within the site assessment

process. The training course is intended to enable staff to prepare HRS packages for the NPL and to plan PAs and SIs to address future HRS scoring issues. This training course provides details of the structure and application of the revised HRS and information related to the preparation of HRS packages, including HRS scoresheets, documentation records and site summaries. The course will incorporate an interactive case study to provide practical application of the HRS. The webinar series consists of six two-hour sessions. In order to receive credit for taking the course, participants must participate in each session. If you are unable to make one of the sessions, archived versions are being made available at www.clu-in.org that you can take to receive credit for the missed live session. In order to receive credit for a missed session, you must complete the missed session within 2 months of the originally scheduled date and submit an evaluation form from that archived module. 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 - December 3 and 10, 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 .

Overview of OSWER's Climate Change Adaptation Plan - December 4, 2013, 4:00PM-6:00PM EST (21:00-23:00 GMT). The OSWER Climate Change Workgroup will review OSWER's Climate Change Adaptation Plan, which is currently available for public comment. During the webinar we will elaborate on the contents of the plan, as well as take clarifying questions. For more information and to register, see http://clu-in.org/live .

ITRC Integrated DNAPL Site Strategy - December 5, 2013, 11:00AM-1:15PM EST (16:00-18:15 GMT). The ITRC Integrated Dense Nonaqueous Phase Liquid Site Strategy (IDSS-1, 2011) technical and regulatory guidance document will assist site managers in development of an integrated site remedial strategy. This course highlights five important features of an IDSS including: a conceptual site model (CSM) that is based on reliable characterization and an understanding of the subsurface conditions that control contaminant transport, reactivity, and distribution; remedial objectives and performance metrics that are clear, concise, and measureable; treatment technologies applied to optimize performance and take advantage of potential synergistic effects; monitoring based on interim and final cleanup objectives, the selected treatment technology and approach, and remedial performance goals; and reevaluating the strategy repeatedly and even modifying the approach when objectives are not being met or when alternative methods offer similar or better outcomes at lower cost. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

NARPM Presents...Managing Institutional Controls at Superfund Sites - December 5, 2013, 1:00PM-2:30PM EST (18:00-19:30 GMT). EPA regularly requires the use of institutional controls (ICs) at contaminated waste sites. However, at many contaminated sites, there is still continued difficulty in implementing and maintaining ICs. Some key steps to fully implementing and adequately maintaining ICs include early

and often coordination among various stakeholders and overcoming any legal hurdles that may arise. EPA's latest guidance efforts detail cross-cutting challenges in IC management and recommended processes or tools that may be used to overcome them. For more information and to register, see http://clu-in.org/live .

Using GIS Tools to Analyze, Compute, and Predict Pollution, Session II - GIS Tools for Hazardous Site Tracking - December 6, 2013, 1:00PM-3:00PM EST (18:00-20:00 GMT). During the first presentation, presenters from the Columbia University Superfund Research Program will discuss the Program's "NPL Superfund Footprint: Site, Population, and Environmental Characteristics" Mapper, funded by NIEHS. The Mapper permits academic researchers, government regulators, and community stakeholders to visualize critical data about the area and inhabitants near Superfund sites to better assess the vulnerability of affected populations and prioritize cleanups. In the second presentation DOE subcontractor, Peter Salpas of Salpas Consulting will give an overview of the Oak Ridge Environmental Information System (OREIS), the Oak Ridge Reservation database for storing and retrieving historical and environmental characterization data used for risk assessments to support source remediation decisions under watershed Interim Records of Decision (RODs), and discuss recent enhancements. For more information and to register, see http://clu-in.org/live .

ITRC Green & Sustainable Remediation - December 12, 2013, 11:00AM-1:15PM EST (16:00-18:15 GMT). Many state and federal agencies are just beginning to assess and apply green and sustainable remediation (GSR) into their regulatory programs. This training provides background on GSR concepts, a scalable and flexible framework and metrics, tools and resources to conduct GSR evaluations on remedial projects. The training is based on the ITRC's Technical & Regulatory Guidance Document: Green and Sustainable Remediation: A Practical Framework (GSR-2, 2011) as well as ITRC's Overview Document, Green and Sustainable Remediation: State of the Science and Practice (GSR-1, 2011). Beyond basic GSR principles and definitions, participants will learn the potential benefits of incorporating GSR into their projects; when and how to incorporate GSR within a project's life cycle; and how to perform a GSR evaluation using appropriate tools. In addition, a variety of case studies will demonstrate the application of GSR and the results. The training course provides an important primer for both organizations initiating GSR programs as well as those organizations seeking to incorporate GSR considerations into existing regulatory guidance. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

ITRC Mining Waste Treatment Technology Selection - December 12, 2013, 2:00PM-4:15PM EST (19:00-21:15 GMT). ITRC's Mining Waste Team developed the ITRC Web-based Mining Waste Technology Selection site to assist project managers in selecting an applicable technology, or suite of technologies, which can be used to remediate mine waste contaminated sites. Decision trees, through a series of questions, guide users to a set of treatment technologies that may be applicable to that particular site situation. Each technology is described, along with a summary of the applicability, advantages, limitations, performance, stakeholder and regulatory considerations, and lessons learned. Each technology overview links to case studies where the technology has been implemented. In this associated Internet-based training, instructors provide background information then take participants through the decision tree using example sites. Project managers, regulators, site owners, and community stakeholders should attend this training class to learn how to use the ITRC Web-based Mining Waste Technology Selection site to identify appropriate technologies, address all impacted media, access case studies, and understand potential regulatory constraints. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

Using GIS Tools to Analyze, Compute, and Predict Pollution, Session III - Community Engagement - December 13, 2013, 1:00PM-3:00PM EST (18:00-20:00

GMT). In the first presentation, Andy Larkin will discuss how he is integrating fine particulate matter, coarse particulate matter, and ozone air pollutant data into models for the state of Oregon that use Androids and iPhones to make personal and easy to understand air quality predictions. The predicted pollutant concentrations at smartphone locations are displayed on phones as interactive Google maps and graphs, and users are warned if predicted concentrations within 10km exceed custom set warning levels. The predicted pollutant levels at all participant locations are anonymously collected and used to create 3D exposure projection maps for the entire sampling population. In the second presentation, Lex van Geen, Ph.D., will illustrate how field kits could play a much greater role in reducing community exposure to contaminated water or soil. The health risk of human exposure to certain contaminants is often spatially highly variable. This is the case for groundwater that is naturally contaminated with arsenic in many shallow aquifers across South and Southeast Asia, and for soil contaminated with lead from mine tailings. Highly localized knowledge of contaminants from field kits can drastically reduce exposure at a relatively low cost, where laboratory analyses of contaminated water or soil and sensitive field instrumentation are not available. For more information and to register, see http://clu-in.org/live .

ITRC Biochemical Reactors for Mining-Influenced Water - December 17, 2013, 2:00PM-4:15PM EST (19:00-21:15 GMT). Mining influenced water (MIW) includes aqueous wastes generated by ore extraction and processing, as well as mine drainage and tailings runoff. MIW handling, storage, and disposal is a major environmental problem in mining districts throughout the U.S and around the world. Biochemical reactors (BCRs) are engineered treatment systems that use an organic substrate to drive microbial and chemical reactions to reduce concentrations of metals, acidity, and sulfate in MIWs. The ITRC Biochemical Reactors for Mining-Influenced Water technology guidance (BCR-1, 2013) and this associated Internet-based training provide an in-depth examination of BCRs; a decision framework to assess the applicability of BCRs; details on testing, designing, constructing and monitoring BCRs; and real world BCR case studies with diverse site conditions and chemical mixtures. At the end of this training, you should be able to complete the following activities: describe a BCR and how it works; identify when a BCR is applicable to a site; use the ITRC guidance for decision making by applying the decision framework; improve site decision making through understanding of BCR advantages, limitations, reasonable expectations, regulatory and other challenges; and navigate the ITRC Biochemical Reactors for Mining-Influenced Water technology guidance (BCR-1, 2013). For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live .

CEC Training for OSCs...Community Engagement and Communication Tools for the OSC - December 18, 2013, 1:30PM-3:30PM EST (18:30-20:30 GMT). OSCs are challenged to be well versed in many technical and regulatory aspects of the environmental field. One of the regulatory aspects is the requirement for community involvement as specified in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP outlines specific activities, deliverables and timelines that must be followed during a given removal action. In addition to the required community involvement activities, there are many useful and timely activities that an OSC can engage in to support their removal action and avoid miscommunication and confusion between the agency and the public. This two-hour webinar provides practical information and tools including: take-home handouts outlining the specific requirements for community involvement as set forth in the NCP, a discussion on the development of an Administrative Record and public notifications, lessons learned: a community engagement case study, and useful tips for developing presentations and communicating information. For more information and to register, see http://clu-in.org/live .

Military Munitions Support Services - Quality - December 19, 2013,

1:00PM-4:45PM EST (18:00-21:45 GMT). This is one of the regular webinar sessions for the Military Munitions Support Services (M2S2) community. During this session, speakers will make presentations on a variety of tools, perspectives, and case studies regarding the planning and implementation of quality processes during the investigation or remediation of Munitions Response Sites. For more information and to register, see http://clu-in.org/live .

ITRC Environmental Molecular Diagnostics: New Tools for Better Decisions - January 7, 2013, 2:00PM-4:15PM EST (19:00-21:15 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 .

ITRC Use and Measurement of Mass Flux and Mass Discharge - January 9, 2014, 11:00AM-1:15PM EST (16:00-18:15 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 .

> New Documents and Web Resources

Superfund Remedy Report, Fourteenth Edition (EPA 542-R-13-016). The Superfund Remedy Report (SRR), Fourteenth Edition, was published by the EPA Office of Superfund Remediation and Technology Innovation (OSRTI) in November 2013. The SRR 14th Edition summarizes remedy decisions back to 1982 with a focus on the analysis of Superfund remedial actions selected from fiscal years (FY) 2009 to 2011. The report includes remedies selected in 459 decision documents (Records of Decision [RODs], ROD amendments, and Explanations of Significant Differences with changes to remedy components) signed in this three-year period. The SRR compiles data on overall remedy selection and remedies for source materials (such as soil and sediments), groundwater, surface water and air related to vapor intrusion. This edition of the report, for the first time, presents a detailed look at sediment remedies and an analysis of vapor intrusion remedies. The report also analyzes media and contaminants for sites under investigation with planned RODs. The online version includes downloadable appendices that summarize all the remedy components selected for

sources and groundwater in each individual decision document (November 2013, 139 pages). View or download at http://clu-in.org/techpubs.htm .

Optimization Review: Naval Base Kitsap OU-1, Keyport, Washington (EPA 542-R-13-009). The document discusses the optimization review performed at the Naval Base Kitsap OU-1 in Keyport, Washington. The Navy and EPA agreed to work collaboratively to conduct an optimization review of OU-1 to evaluate potential options for improving remedy performance. The review focuses on OU-1, with emphasis on addressing the VOC contamination (August 2013, 71 pages). View or download at http://clu-in.org/techpubs.htm .

Soil Vapor Extraction System Optimization, Transition, and Closure Guidance. Soil vapor extraction (SVE), a prevalent remediation approach for volatile contaminants in the vadose zone, may exhibit a diminishing rate of contaminant extraction over time due to diminishing contaminant mass, and/or slow rates of removal for contamination in low-permeability zones. Upon indications of a diminished contaminant removal rate, SVE performance needs to be evaluated to determine whether the system should be optimized, terminated, or transitioned to another technology to replace or augment SVE. The guidance presented in a new report specifically addresses the elements of this type of performance assessment. A stepwise approach is presented for gathering information and performing evaluations to support SVE remedy decisions. Steps include revisiting the conceptual site model, considering relevant information, quantifying the impact of remaining vadose zone contaminant sources on groundwater, and integrating the assessment outcomes into a decision logic approach to addressing optimization, transition, and closure decisions. This material highlights relatively recent advances in use of mass flux/discharge approaches and includes a calculation tool to facilitate the evaluation process. The Soil Vapor Extraction Endstate Tool (SVEET) is a spreadsheet tool that allows the user to easily enter data and calculate the estimated groundwater concentration for one or more scenarios conforming to the generalized conceptual model described in the report. This software provides a convenient method for the user to apply the calculation procedures described in Appendix C of the guidance report (which also walks through an example calculation). Appendix D of the report provides details about the SVEET software, including system requirements, installation, the user interface, and application of the software (February 2013, 130 pages). View or download at http://bioprocess.pnnl.gov/SVEET_Request.htm .

State-of-the-Science Workshop on Mercury Remediation in Aquatic Environments Archive. The U.S. EPA Region 9 State-of-the-Science Workshop on Mercury Remediation in Aquatic Environments was held on September 26, 2013, in San Francisco, California, and via webinar. The workshop brought together participants and speakers from nongovernmental organizations, academia, private industry, regulatory agencies, the consulting sector and all levels of government (federal, state, local and tribal). They shared the latest information regarding mercury remediation techniques and their effects on levels of mercury in fish tissue and presented a balanced and honest assessment of what is and is not working with respect to remediation. This was driven by concerns resulting from legacy mining activities, aerial deposition and other potential sources of methyl mercury. Archives for the workshop are available, including proceedings, audio and slide recordings of the live event, all presentation materials, instructor contact information, and some additional handouts. View and use at http://www.clu-in.org/conf/tio/hg/ .

Evaluating Matrix Diffusion Effects on Groundwater. A new spreadsheet-based tool helps site managers and consultants determine if matrix diffusion processes will cause "rebounding" of downgradient plume concentrations above remediation goals after plume remediation or isolation is complete. Having this information readily available before a remedy is implemented will assist stakeholders in selecting more appropriate remedies and improving effective risk communication. The tool was developed by GSI

Environmental Inc. and Colorado State University with support from ESTCP. Download at http://www.serdp.org/Tools-and-Training/Environmental-Restoration/Groundwater-Plume-Treatment/Matrix-Diffusion-Tool-Kit .

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 18 resources, events, projects and news items were added to EUGRIS in November. 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:

Feedback Needed for Consultation on Contaminated Land Fact sheets (New Zealand (2011). WasteMINZ published a series of 5 fact sheets to assist members of the public who were planning to build, subdivide or undertake earthworks on land which was potentially contaminated. View or download at http://www.wasteminz.org.nz/2013/11/consultation-on-contaminated-land-fact-sheets/ .

> Conferences and Symposia

Call for Abstracts!! 2014 National Training Conference on the Toxics Release Inventory (TRI) and Environmental Conditions in Communities, Arlington, VA, May 7-9, 2014. The co-sponsors of the 2014 Conference - Dillard University's Deep South Center for Environmental Justice and U.S. EPA-invite you to submit abstracts for oral presentations, posters and exhibit booths. This is a great opportunity to present your research, share knowledge, and interact with attendees. Abstracts should promote outreach, learning and networking among federal, state, and local government agencies, academics, industry, community groups, and other professionals interested in TRI, either alone or in conjunction with other sources of environmental information. Abstracts will be accepted through December 13, 2013. For more information and to submit an abstract, see http://www2.epa.gov/toxics-release-inventory-tri-program/2014-national-training-conference-call-abstracts .

Groundwater High-Resolution Site Characterization (HRSC), San Francisco, CA, December 12-13, 2013. This is a two-day training course that 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 recommended audience for this course 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 http://www.trainex.org/hrsc .

IRIS Public Meeting, Washington, DC, December 12-13, 2013. EPA will hold the first in a series of IRIS bimonthly meetings to obtain input from stakeholders and the public on data that may be used to characterize hazard and exposure-response relationships and develop toxicity values on chemicals being assessed through IRIS. For more information, see http://www.epa.gov/iris/publicmeeting/.

LNAPLs: Science, Management, and Technology - ITRC 2-day Classroom Training offered three times in 2014: Kansas City, MO (April 1-2); Lexington, KY (June 3-4); and Richmond, VA (October 29-30). 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 .

Call for Abstracts!! 3rd International Conference on Sustainable Remediation 2014, Ferrara, Italy, September 17-19, 2014. This conference will focus on five topics concerning sustainable remediation: conceptual framing; tools, metrics and indicators; greening remediation, eco-efficient technologies and opportunities from synergy; case studies; and stakeholder involvement and participative approaches. Abstracts for presentations and posters may be submitted electronically at http://www.sustrem2014.com/mail.php through April 25, 2014. For more information, visit http://www.sustrem2014.com/index.html .

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.