U.S. ENVIRONMENTAL PROTECTION AGENCY

TechDirect, May 1, 2016

Welcome to TechDirect! Since the April 1 message, TechDirect gained 333 new subscribers for a total of 36,117. 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.

> Upcoming Live Internet Seminars

ITRC Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management - May 3, 2015, 1:00PM-3:15PM EDT (17:00-19:15 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.

ITRC Integrated DNAPL Site Characterization - May 5, 2016, 1:00PM-3:15PM EDT

(17:00-19:15 GMT). The Integrated DNAPL Site Characterization Team has synthesized the knowledge about dense nonaqueous phase liquid (DNAPL) site characterization and remediation acquired over the past several decades, and has integrated that information into a new document, Integrated DNAPL Site Characterization and Tools Selection (ISC-1, 2015). This guidance is a resource to inform regulators, responsible parties, other problem holders, consultants, community stakeholders, and other interested parties of the critical concepts related to characterization approaches and tools for collecting subsurface data at DNAPL sites. After this associated training, participants will be able to use the guidance to develop and support an integrated approach to DNAPL site characterization, including: identify what site conditions must be considered when developing an informative DNAPL conceptual site model (CSM); define an objectives-based DNAPL characterization strategy; understand what tools and resources are available to improve the identification, collection, and evaluation of appropriate site characterization data; and navigate the DNAPL characterization tools table and select appropriate technologies to fill site-specific data gaps. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

NEPA and Mining 101, Parts 1-3 - May 12, 24, and June 8. The course is designed to provide an overview of mining and NEPA and is geared towards how tribes can participate in the NEPA process. Part 1 on May 12 will educate participants on the major steps in mine development, exploration, types of hardrock mining, and mineral processing. Presenters will provide an engaging look into the world of hardrock mining. Participants will walk away with a basic understanding of the types of mining and gain a common language to communicate about mining in their geographic area of interest. Part 2 on May 24 will explore environmental concerns at mine sites and how issues can be addressed. Specific topics include types of waste products, surface and groundwater concerns, water treatment, and potential air issues. Participants will walk away with a basic understanding of the types of issues that can occur at mine sites and have the ability to pose general questions of concern during mine proposal evaluations. Part 3 on June 8 will lay out the regulatory process of mining with an in depth look into NEPA review process and major permits associated with mine operations. The session will also provide examples of key opportunities for tribal participation in the development process. Participants will walk away with an understanding and ability to engage in the NEPA process. Participants are encouraged to ask questions. For more information and to register, see http://clu-in.org/live.

CERCLA Section 108(b) Proposed Rule for Hard Rock Mining - May 17, 2016, 2:00PM-3:00PM EDT (18:00-19:00 GMT). The Office of Resource Conservation and Recovery will present a webinar on the development of the proposed regulation for financial responsibility for certain hard rock mines and mineral processing facilities under Section 108(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA previously presented the CERCLA 108(b) proposed rule framework in a webinar held in September, 2015, available at https://www.youtube.com/watch?v=xq5Di3Ti6Oc. The upcoming webinar will provide an update on the Agency's progress in developing the rule, and describe the Agency's current thinking on the key aspects of the rule described in the framework. Stakeholders and other members of the public are invited to learn about the CERCLA 108(b) rulemaking and will have the opportunity to ask questions during the webinar. For more information and to register, see http://clu-in.org/live.

ITRC Issues and Options in Human Health Risk Assessment - A Resource When Alternatives to Default Parameters and Scenarios are Proposed - May 19, 2016, 1:00PM-3:15PM EDT (17:00-19:15 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.

ITRC Remedy Selection for Contaminated Sediments - June 2, 2016, 1:00PM-3:15PM EDT (17:00-19:15 GMT). ITRC developed the technical and regulatory guidance, Remedy Selection for Contaminated Sediments (CS-2, 2014), to assist decision-makers in identifying which contaminated sediment management technology is most favorable based on an evaluation of site specific physical, sediment, contaminant, and land and waterway use characteristics. The document provides a remedial selection framework to help identify favorable technologies, and identifies additional factors (feasibility, cost, stakeholder concerns, and others) that need to be considered as part of the remedy selection process. This ITRC training course supports participants with applying the technical and regulatory guidance as a tool to overcome the remedial challenges posed by contaminated sediment sites. Participants learn how to: identify site-specific characteristics and data needed for site decision making, evaluate potential technologies based on site information, and select the most favorable contaminant management technology for their site. For more information and to register, see http://www.itrcweb.org or http://clu-in.org/live.

Archive of SERDP/ESTCP Webinar on Long Term Monitoring Issues at Chlorinated Solvent Now Available. Two presentations were offered in this April 2016 webinar. Dr. Ron Falta presented on A Practical Approach for Modeling Matrix Diffusion Effects in Low Permeability Zones at Chlorinated Solvent Sites. A second presentation on Methods for Minimization and Management of Variability in Long Term Groundwater Monitoring Results was given by Poonam Kulkarni and Thomas McHugh. View or download at https://serdp-estcp.org/Tools-and-Training/Webinar-Series/04-21-2016 .

> New Documents and Web Resources

Setting the Stage for Leveraging Resources for Brownfields Revitalization (EPA 560-K-16-001). Many communities struggle to find and attract sufficient funding for brownfields redevelopment projects. It can be difficult for communities to identify how best to invest limited local resources. Sound initial investments of local funds can open opportunities for additional public funds and attract the interest and support of outside investors and lead to additional funding. This guide was developed by EPA to assist communities in overcoming the challenges of making sound investment decisions to attract additional resources for community revitalization (April 2016, 40 pages). View or download at https://www.epa.gov/brownfields/setting-stage-leveraging-resources-brownfields-revitalization.

Ecotools Case Study: Anaconda Smelter Superfund Site, Anaconda, MT (EPA 542-F-16-001). Contamination from nearly 100 years of copper smelter operations affected the health and quality of the environment at the Ancaconda Smelter Site. Estimates indicate that more than a billion gallons of groundwater were contaminated and thousands of acres of soil were affected by fluvially transported mine wastes and smelter emissions. The massive 300-square-mile site area and variable, rugged terrain provided major remedial design challenges. The innovative site evaluation and assessment techniques, paired with effective remedial processes such as tilling and adding soil amendments, have helped restore these vital grasslands and ranch areas. The uplands remediation and ecological revitalization efforts have served to provide key lessons and replicable assessment techniques for other sites with area-wide contamination (March 2016, 13 pages). View or download at https://clu-in.org/ecotools/case.cfm.

Sensor Technology for the 21st Century. This new resource is designed to help sensor developers locate Small Business Innovation Research (SBIR) and/or Small Business Technology Transfer (STTR) funding opportunities across federal agencies. The U.S. Government is a significant driver of sensor innovation: investing in low cost, portable, easy-to-use technologies to facilitate the collection of real time, reliable measurement information. View and use at https://www.sbir.gov/Sensor-technology-for-the-21st-century.

International Workshop on the Regulatory Supervision of Legacy Sites: from Recognition to Resolution (NRPA 2016:5). In November 2015, the Norwegian Radiation Protection Authority hosted a workshop on the regulatory supervision of legacy sites. Participation included a wide range of regulatory authorities, as well as technical and academic organizations, coming from Australia, Europe, Japan, Russia and the USA, including the U.S. EPA, U.S. Nuclear Regulatory Commission (NRC) and U.S. Department of Energy (DOE). The objective of the workshop was to promote the sharing of experience on practical regulation of a wide range of nuclear and radiation legacies, including: sites and facilities affected by major accidents and incidents, storage and disposal sites and facilities for radioactive waste, which were built and operated prior to there being an appropriate regulatory basis, nuclear technology and development centers and laboratories that were built and operated prior to there being an appropriate regulatory basis, uranium mining and milling facilities and dumpsites for Naturally Occurring Radioactive Material (NORM), and former peaceful nuclear explosion and weapons testing sites. Based on the presentations and discussion, it was concluded that the development of a common international framework for legacy management and regulation would be useful. This should be based firmly on the current international framework, with additional guidance provided on moving from the general framework to address site-specific issues. Continued activities to share international experience in this context were recommended (April 2016, 124 pages). View or download the workshop report at http://www.nrpa.no/filer/7be4a09906.pdf.

Superfund Research Program Research Brief 256: A New Dilution Tool to Facilitate High-Throughput Assay Techniques. A new tool provides a quick and easy way to dilute samples for biochemical and biological analyses. The microfluidic dilution generator, developed by researchers at the University of California, Davis Superfund Research Program Center, can serve as a simple dilution device in research laboratories, point-of-care clinical settings, and low-resource environments. For more information, see http://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=256. 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:

- OW-5/55R Area In-Situ Geochemical Stabilization Remediation Performance Evaluation, Former Koppers Wood Treating Plant, Nashua, New Hampshire
- Robust Means for Estimating Black Carbon-Water Sorption Coefficients of Organic Contaminants in Sediments
- Remediated Sites and Brownfields: Success Stories in Europe
- Analysis of Superfund Site Assessment Program Cooperative Agreements with States: Benefits of Flexibility during Pre CERCLA Screening
- PubChem Substance and Compound Databases
- Abstract Book: Phytotechnologies for Sustainable Development: 12th International Conference, 27-30 September 2015, Manhattan, KS

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 12 resources, events, projects and news items were added to EUGRIS in April 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:

Identifying Emerging Risks for Environmental Policies (2016). The European Commission brief discusses some of the tools and approaches that can be used to identify emerging risk. These include strategic foresight tools, scanning of the internet for information, citizen science and state of-the-art monitoring technologies. It addresses the policy implications of these new approaches, with reference to some of the strategies that are currently employed to search for emerging risks. View or download at http://ec.europa.eu/environment/integration/research/newsalert/pdf/emerging_environmental_risks_early_warnings_FB12_en.pdf.

> Conferences and Symposia

Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management - ITRC 2-day Classroom Training, Denver, CO, May 9-10, 2016. 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.

Incremental-Composite Soil Sampling, Chicago, IL, July 28, 2016. This full-day course focuses on the theory and application of ITRC's Incremental Sampling Methodology (ISM), composite sampling designs, and hybrids of the two (Incremental-Composite Sampling, ICS). ICS hybrid designs are useful to address multiple project goals simultaneously. Since "representativeness" is a key aspect of data quality and ISM/ICS data are demonstrably more representative than most discrete data, it will be argued that ICS data are indeed "better" than non-ICS data. The course will answer questions such as: What is the difference between ITRC's ISM and EPA's Incremental-Composite Sampling (ICS) strategies? Is there written EPA guidance? What features should an ISM or ICS design have? Can ICS give project risk assessors the data they want, while simultaneously meeting the RPM's own data needs for characterization or remedial design? How are background concentrations determined and comparisons to background handled using ICS? How do we know whether ICS "worked" for the project? For more information and to register, see https://trainex.org/icss.

Call for Abstracts! 2016 National Training Conference on the Toxics Release Inventory (TRI) and Environmental Conditions in Communities, Washington, DC, October 19-20, 2016. This year marks the 30th anniversary of the Emergency Planning

and Community Right-to-Know Act (EPCRA) (https://www.epa.gov/epcra), which supports and promotes emergency planning and provides the public with information about releases of toxic chemicals in their community through the Toxics Release Inventory (TRI). Join us for presentations, panels, discussions, exhibits, and networking opportunities as we celebrate TRI's 30th birthday and look ahead to the next 30 years of community right-to-know. The TRI Program provides information on industrial releases and other waste management of toxic chemicals and what industrial facilities are doing to prevent pollution in communities. This conference is the TRI Program's main public outreach and training event, bringing together EPA, localities, states, tribes, federal agencies, companies, community groups, researchers, and non-governmental organizations. The theme of this year's conference is TRI at 30: Working Together To Reduce Toxic Releases. The conference co-sponsors--the U.S. Environmental Protection Agency and Dillard University's Deep South Center for Environmental Justice--invite you to submit abstracts for oral presentations, posters and exhibits. This is a great opportunity to present your research, share knowledge, and network with others. Abstracts will be accepted through May 20, 2016. For more information on how to submit your abstract and to register, see https://www.epa.gov/toxics-release-inventory-tri-program/2016-tri-national-training-conference.

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.

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