



TechDirect, February 1, 2019

Welcome to TechDirect! We apologize for any inconvenience, but our January 1 TechDirect message was not sent due to the partial government shutdown that ended on January 25.



Since the December 1 message, TechDirect gained 75 new subscribers for a total of 38,928. 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 Issues and Options in Human Health Risk Assessment - A Resource When Alternatives to Default Parameters and Scenarios are Proposed - February 7, 2019, 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 <https://www.itrcweb.org> or <https://clu-in.org/live>.

ITRC Bioavailability of Contaminants in Soil: Considerations for Human Health Risk Assessment - February 12, 2019, 1:00PM-3:15PM EST (18:00-20:15 GMT). The basis for this training course is the ITRC guidance: Bioavailability of Contaminants in Soil: Considerations for Human Health Risk Assessment (BCS-1). This guidance describes the general concepts of the bioavailability of contaminants in soil, reviews the state of the science, and discusses how to incorporate bioavailability into the human health risk assessment process. The target audience for this guidance and training course are: project managers interested in decreasing uncertainty in the risk

assessment which may lead to reduced remedial action costs, and risk assessors new to bioavailability or those who want additional confidence and training in the current methods and common practices for using bioavailability assessment to more accurately determine human health risk at a contaminated site. As a participant in this training you should learn to: apply the decision process to determine when a site-specific bioavailability assessment may be appropriate, use the ITRC Review Checklist to develop or review a risk assessment that includes soil bioavailability, consider factors that affect arsenic, lead and PAH bioavailability, select appropriate methods to evaluate soil bioavailability, and use tools to develop site-specific soil bioavailability estimates and incorporate them into human health risk assessment. For more information and to register, see <https://www.itrcweb.org> OR <https://clu-in.org/live>.

ITRC Remediation Management of Complex Sites - February 19, 2019, 1:00PM-3:15PM EST (18:00-20:15 GMT). This training course and associated ITRC guidance: Remediation Management of Complex Sites (RMCS-1, 2017), provide a recommended holistic process for management of challenging sites, termed "adaptive site management." By participating in this training course we expect you will learn to apply the ITRC guidance document to: identify and integrate technical and nontechnical challenges into a holistic approach to remediation; use the Remediation Potential Assessment to identify whether adaptive site management is warranted due to site complexity; understand and apply adaptive site management principles; develop a long-term performance-based action plan; apply well-demonstrated techniques for effective stakeholder engagement; access additional resources, tools, and case studies most relevant for complex sites; and communicate the value of the guidance to regulators, practitioners, community members, and others. For more information and to register, see <https://www.itrcweb.org> OR <https://clu-in.org/live>.

Military Munitions Support Services - MR-QAPP Module 1 RI/FS: How to Document Your Investigation and an Overview of Data Usability Assessment - February 20, 2019, 1:00PM-3:00PM EST (18:00-20:00 GMT). The Intergovernmental Data Quality Task Force (IDQTF) has developed the Munitions Response Quality Assurance Project Plan (MR-QAPP) Toolkit to assist project teams in planning for the characterization and remediation of buried munitions and explosives of concern (MEC) at Department of Defense (DoD) installations and formerly used defense sites (FUDS). MR-QAPP Module 1 illustrates approaches for planning and implementing the Remedial Investigation (RI)/Feasibility Study (FS) phase of investigation. This webinar will provide an review of the document and provides overview of the data usability assessment for an example site. For more information and to register, see <https://clu-in.org/live>.

ITRC TPH Risk Evaluation at Petroleum-Contaminated Sites - February 21, 2019, 1:00PM-3:15PM EST (18:00-20:15 GMT). The basis for this training course is the ITRC guidance: TPH Risk Evaluation at Petroleum-Contaminated Sites (TPHRisk-1, 2018). The guidance builds on long-standing and current research and experience, and presents the current science for evaluating TPH risk at petroleum-contaminated sites. As a participant in this training you should learn to: recognize the ITRC document as a go-to resource for evaluating TPH risk at petroleum-contaminated sites, recognize how TPH -impacted media interacts with the environment and changes over time, select appropriate analytic method(s) to match site objectives, and apply the decision framework to determine when a site-specific target level may be more appropriate than a generic screening level for TPH. For more information and to register, see <https://www.itrcweb.org> OR <https://clu-in.org/live>.

Highlight from the CLU-IN Seminar Archives. Each edition of TechDirect highlights a previously recorded internet seminar from our archives that may be of interest to our readers.

Analytical Tools and Methods: Session II - Techniques for Trace Analysis of Metals and Chemical Mixtures, Sponsor NIEHS Superfund Research Program, Archived: Monday, May 22, 2017 (2 hours). This webinar series highlighted innovative analytical tools and methods developed and used by Superfund Research Program (SRP) grantees. The presenters featured the benefits of these new tools and methods compared to conventional methods. They also included information about how the technology has helped to facilitate ongoing SRP research. During the second session of the series, speakers highlighted techniques that help measure trace levels of metals and chemical mixtures to better understand environmentally relevant chemical exposures. To replay the archived webinar, visit https://clu-in.org/conf/tio/SRPAAnalyticalT&M2_052217/.

> New Documents and Web Resources

EPA Issues Technical Guides to Streamline Site Cleanup. EPA has issued three technical guides to assist environmental professionals in scoping, data management and strategic sampling activities at hazardous waste sites. EPA intends for the guides to strengthen Superfund site characterization activities to facilitate stronger site remedy decisions and improved remedy performance, among other objectives. These documents address three recommendations from the 2017 Superfund Task Force Recommendations Report. View or download all three guides and learn more about the Superfund Task Force at <https://www.epa.gov/superfund/superfund-task-force-accomplishments#streamline>.

EPA Office of Research and Development Journal Article: Geochemical Monitoring of In-Situ Remediation. Long-term data on the performance of in-situ remediation technologies for groundwater cleanup are needed to improve system designs and to guide selection of remedial measures that best match site-specific hydrogeochemical conditions. The study examined a twenty-two-year history of trichloroethylene (TCE) treatment by zero-valent iron in a Permeable Reactive Barrier (PRB). Degradation products included cis-dichloroethene (cis-DCE), vinyl chloride (VC), ethene, ethane, >C4 compounds, and possibly CO₂(aq) and methane. Abiotic patterns of TCE degradation were indicated by the distribution of degradation products and by compound-specific stable isotope data. $\delta^{13}\text{C}$ values of methane within and down-gradient of the PRB varied widely and covered most of the isotopic range encountered in natural methanogenic systems. Methanogenesis is a sink for inorganic carbon in zero-valent iron PRBs that competes with carbonate mineralization and this process is important for understanding pore-space clogging and longevity of iron-based PRBs. This study provides the longest available record of treatment performance of chlorinated compounds by iron metal. View at https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=343800.

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:

- Development and Characterization of Small-Scale Washing Systems for Removal of Depleted Uranium Oxides
- Comprehensive Approach for Monitoring and Remediating Petroleum-Derived Contaminants in the Arctic: Case Study of the Former NARL Site Near Utqiagvik, Alaska (Formerly Barrow)
- State of Michigan: Sampling Guidance for Per- and Polyfluoroalkyl Substances

(PFASs)

- Preliminary Closeout Report: Solvents Recovery Service of New England, Inc.
- Development of Environmental Health Criteria for Insensitive Munitions (IMX-101-104)
- Aqueous Film-Forming Foam [Fact Sheet]
- TPH Risk Evaluation at Petroleum-Contaminated Sites

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. Three resources, events, projects and news items were added to EUGRIS in January 2019. 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.

> Conferences and Symposia

Groundwater High-Resolution Site Characterization (HRSC), Chicago, IL, August 14-15, 2019. 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 Jean Balent at (703) 603-9924 or balent.jean@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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