



TechDirect, December 1, 2018

Welcome to TechDirect! Since the November 1 message, TechDirect gained 57 new subscribers for a total of 38,879. 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

FY 2019 Brownfields Multipurpose, Assessment, and Cleanup Grants. These brownfields grants may be used to address sites contaminated by hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum) and petroleum. Multipurpose Grants are funded up to \$800,000 over five years and EPA anticipates selecting 10 proposals. Community-wide and Site-specific proposals for Assessment Grants are each funded up to \$200,000 over three years; Assessment Coalition proposals are funded up to \$600,000 over three years. EPA anticipates selecting 114 proposals. Cleanup Grants are funded up to \$500,000 over three years and EPA anticipates selecting 40 proposals. The proposal submission deadline is January 31, 2019, and a webinar to assist in preparing proposals will be held on December 11, 2018 at 2:00pm EST. For more information and application instructions, see <https://www.epa.gov/brownfields/solicitations-brownfield-grants>.

> Upcoming Live Internet Seminars

ITRC Characterization and Remediation of Fractured Rock - December 4, 2018, 1:00PM-3:15PM EST (18:00-20:15 GMT). The basis for this training course is the ITRC guidance: Characterization and Remediation of Fractured Rock. The purpose of this guidance is to dispel the belief that fractured rock sites are too complex to characterize and remediate. The physical, chemical and contaminant transport concepts in fractured rock have similarities to unconsolidated porous media, yet there are important differences. By participating in this training class, you should learn to use ITRC's Fractured Rock Document to guide your decision making so you can: develop quality

Conceptual Site Models (CSMs) for fractured rock sites, set realistic remedial objectives, select the best remedial options, monitor remedial progress and assess results, and value an interdisciplinary site team approach to bring collective expertise to improve decision making and to have confidence when going beyond containment and monitoring -- to actually remediating fractured rock sites. For more information and to register, see <https://www.itrcweb.org> or <https://clu-in.org/live>.

Coloring Superfund Green: Select Case Studies on the Revitalization of Contaminated Sites with Green Infrastructure - December 19, 2018, 1:00-2:30PM EST (18:00-19:30 GMT). Every year thousands of contaminated sites are remediated across the United States to protect human health and the environment from exposure to contaminants in soil and groundwater. Three main drivers are increasing the importance and use of green infrastructure systems at these projects; Green remediation, climate resiliency, and sustainable redevelopment. In this webcast, you will hear EPA speakers and professionals in the field on the multiple benefits of integrating green infrastructure practices into contaminated site cleanups and reuse. For more information and to register, see <https://www.epa.gov/green-infrastructure/green-infrastructure-webcast-series>.

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.

Groundwater/Surface Water Interactions: Developing Conceptual Site Models of Organism Exposures in Hyporheic Systems, Sponsor U.S. EPA Region 10, Ground Water Forum, Office of Superfund Remediation and Technology Innovation, and Office of Research and Development, Archived Nov 16, 2018 Seminar (7 Hours). This one day training workshop presented an overview of the relationships and interactions between groundwater and surface water bodies, giving participants a greater understanding of potential exposure scenarios. Discussions focused on developing effective conceptual site models and how to collect useful data from the hyporheic zone, with case study examples. The training concluded with a panel discussion and direction to EPA resources. To replay the archived webinar, visit [View https://clu-in.org/conf/tio/GWSWInteractions_111618/](https://clu-in.org/conf/tio/GWSWInteractions_111618/).

> New Documents and Web Resources

Total Petroleum Hydrocarbons (TPH) Risk Evaluation at Petroleum-Contaminated Sites. The Interstate Technology and Regulatory Council (ITRC) Total Petroleum Hydrocarbons (TPH) Risk Evaluation team has developed this guidance to assist state regulators and practitioners with evaluating risk and establishing cleanup requirements at petroleum release sites. This guidance focuses on factors that are unique to petroleum hydrocarbon releases and builds on other available documents. This guidance will improve regulators' and project managers' understanding of the unique properties of TPH and provide the tools, techniques, and lessons learned to improve risk characterization and to make better-informed risk management decisions at petroleum-contaminated sites (November 2018). View and use at <https://tphrisk-1.itrcweb.org>.

EPA Office of Research and Development Journal Article: Enhanced Degradation of Polycyclic Aromatic Hydrocarbons by Indigenous Microbes Combined with Chemical Oxidation. In this study, the removal efficiency PAHs by chemical oxidation combined with microbe remediation was evaluated in two contaminated soils. The number of indigenous soil microbes decreased after the addition of chemical oxidants

and then increased by nutrients addition. With the addition of nutrients, the growth of indigenous microbes was enhanced significantly, and the contents of 2-4 rings PAHs in the soil were further decreased. Furthermore, the removal efficiencies of NAP and ANY were increased by more than 45.0%, while the removal efficiencies of ANE, FLE and PHE were about 30.0% at Fenton system. There was a complementary enhancing effect of chemical oxidation and microbial remediation for PAHs degradation. View at https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=342769 .

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:

- Local Contamination in Svalbard: Overview and Suggestions for Remediation Actions
- Mercury on a Landscape Scale: Balancing Regional Export with Wildlife Health
- Assessment and Management of Stormwater Impacts on Sediment Recontamination
- The Effects of Methylmercury on Wildlife: A Comprehensive Review and Approach for Interpretation
- Stormwater Best Management Practices Performance Evaluation
- Evaluation of Innovative Methane Detection Technologies
- Quality Considerations for Multiple Aspects of Munitions Response Sites
- Technical Guidance for Military Munitions Response Actions
- Sustained In Situ Chemical Oxidation (ISCO) of 1,4-Dioxane and Chlorinated VOCs Using Slow-Release Chemical Oxidant Cylinders: ESTCP Cost and Performance Report
- Electrokinetic-Enhanced (EK-Enhanced) Amendment Delivery For Remediation Of Low Permeability And Heterogeneous Materials: ESTCP Cost And Performance Report
- Terrestrial Permafrost Areas: The State of Knowledge on Transport, Fate and Degradation of Halogenated Organic Compounds
- Science Support for Evaluating Natural Recovery of Polychlorinated Biphenyl Concentrations in Fish from Crab Orchard Lake, Crab Orchard National Wildlife Refuge, Illinois
- Best Available Techniques (BAT) Reference Document for Waste Treatment

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 23 resources, events, projects and news items were added to EUGRIS in November 2018. 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, March 26-27, 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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