



TechDirect, February 1, 2024

Welcome to TechDirect! Since the January 1 message, TechDirect gained 59 new subscribers for a total of 43,838. 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 Funding Opportunities

FY 2024 Technical Assistance to Existing and Potential Brownfields Revolving Loan Fund (RLF) Grant Recipients.

EPA's Office of Brownfields and Land Revitalization (OBLR) is soliciting applications from eligible entities to provide RLF-specific technical assistance that focuses on the unique complexities of EPA Brownfield RLF Grants with the goal of increasing the capacity of EPA-funded Brownfield RLF Programs nationwide. OBLR anticipates awarding this grant at \$3 million over a 5-year period of performance. The application submission deadline is March 1, 2024. For more information, please visit

<https://www.epa.gov/brownfields/solicitation-fy-2024-technical-assistance-existing-and-potential-brownfields-rlf-grant>.

ESTCP FY 2025 Solicitation. The Department of Defense's Environmental Security Technology Certification Program (ESTCP) released a solicitation on January 4, 2024, requesting proposals for demonstrations of environmental and installation energy technologies. Funding is available through a Broad Agency Announcement (BAA), DoD Call for Proposals, and Call for Proposals for Federal Organizations Outside DoD for areas such as Innovative Technology Transfer Approaches, Management of Impacted Soils and Waters, Munitions Response in Underwater Environments and Nature-Based Solutions for Climate Resilience in DoD Arid Landscapes. The due date for all pre-proposals is due March 14, 2024 by 2:00 p.m. ET. For more information, please visit <https://serdp-estcp.mil/workingwithus/solicitation?id=2b6ea9e0-5282-4b43-96c6-7d50f820beb8>.

> Upcoming Live Internet Seminars

ITRC: Managed Aquifer Recharge (MAR) Training - February 6, 2024, 1:00PM-3:00PM EST (18:00-20:00 GMT). The ITRC Managed Aquifer Recharge (MAR-1) Training is intended for state regulators and stakeholders who may not be familiar with the opportunities and challenges associated with MAR. It provides a basic understanding of MAR concepts, along with case studies, that showcase examples of successful MAR applications. For those who are familiar with MAR, the training gives an overview of the components of the MAR process along with the important considerations associated with each component necessary for the design and implementation of a MAR project. It is important to understand that MAR is an area of active research and expanding practical applications, and that this management process is continuing to evolve with time. For more information and to register, see <https://www.itrcweb.org> or <https://www.clu-in.org/live>.

Recognizing the Positive Economic Impacts of Superfund Redevelopment - February 7, 2024, 12:30PM-2:00PM EST (17:30-19:00 GMT). Future use remains a key consideration for EPA's cleanup programs. EPA's Superfund program works with property owners, developers, stakeholders and communities to negotiate agreements, address barriers and make sure property uses will fit well with site remedies. In turn, the cleanup and reuse of Superfund sites revitalizes local economies, supporting jobs, new businesses, tax revenue and spending, and provides new amenities for communities affected by site contamination. EPA also works to ensure that existing businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment, enabling these businesses to remain open and serve as a source of jobs and income for local communities. For more information and to register, see <https://clu-in.org/live>.

In Vitro Bioaccessibility Assay (IVBA) Sampling Guidance Update Part 1 - February 12, 2024, 1:00PM-2:30PM EST (18:00-19:30 GMT). The Technical Review Workgroup (TRW) Bioavailability Committee recently published the "Guidance for Sample Collection for In Vitro Bioaccessibility Assay for Arsenic and Lead in Soil and Applications of Relative Bioavailability Data in Human Health Risk Assessment." This is an update to the 2015 Guidance for Sample Collection for In Vitro Bioaccessibility Assay for Lead (Pb) in Soil. The update is intended to help EPA risk assessors, remedial project managers, and on-scene coordinators develop and use bioavailability data at their sites. It incorporates sample planning and data analysis recommendations from EPA's Guidance on Systematic Planning Using the Data Quality Objectives Process that are pertinent to sampling for In Vitro Bioaccessibility (IVBA) and Relative Bioavailability (RBA). It also clarifies the application of IVBA and RBA data to human health risk assessment, the development of risk-based goals at CERCLA remedial and removal sites and includes arsenic (As) which was recently added to the In Vitro Bioaccessibility Assay. For more information and to register, see <https://clu-in.org/live>.

Federal Facilities Academy: Land Use and Onsite/Offsite Determinations - February 20, 2024, 1:00PM-3:00PM EST (18:00-20:00 GMT). Determining Land Use and Onsite/Offsite Determinations is a two-hour webinar course that provides an overview of land use determinations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Reasonably anticipated future land use at CERCLA sites is important in determining the appropriate extent of remediation. Onsite and offsite determinations impact the need for permits and offsite transfer of CERCLA wastes. The target audience for this course is federal, state, and tribal representatives who work on Federal Facility cleanups. Ideally, students should have a basic understanding of land use and the CERCLA process. For more information and to register, see <https://clu-in.org/live>.

Successful State Programs for Renewable Energy on Contaminated Sites - February 21, 2024, 1:00PM-2:00PM EST (18:00-19:00 GMT). Why do some states have more of their solar generation on contaminated sites, while other states are at

much lower levels? This webinar will explain one of the biggest factors -- the successes of state renewable programs specifically designed for prioritizing landfills, mine sites, and other potentially contaminated lands. States such as New Jersey, Massachusetts, and Illinois have large-scale programs in place that are leading to the successful development of many megawatts of new renewable projects on RE-Powering sites per year. The state programs include financial incentives, procurement preferences, streamlined permitting, liability relief, and hands-on project development assistance designed and implemented by states over a decade or more. For more information and to register, see <https://clu-in.org/live>.

SERDP ESTCP Novel Research on In-Situ PFAS Adsorptive Technologies - February 22, 2024 1:00PM EST (18:00 GMT). This webinar will feature DoD-funded research efforts to develop adsorptive technologies for PFAS removal. First, Dr. Kurt Pennell (Brown University) will discuss the development a polymer-stabilized powdered activated carbon and a polymer-stabilized ion exchange resin for use as injectable particulate amendments for PFAS adsorption in situ. Second, Mr. Matt Vanderkooy (Geosyntec Consultants) and Dr. Anh Pham (University of Waterloo) will present research on in situ PFAS immobilization via activated carbon barriers. For more information and to register, see <https://serdp-estcp.org/webinars>.

Affordable and Workforce Housing Development on Former Brownfield Sites - February 26, 2024, 1:00PM-2:30PM EST (18:00-19:30 GMT). This webinar will provide an overview of the environmental considerations in redeveloping Brownfield sites for housing, explore the role public-private-partnerships can play in facilitating housing and Brownfield development, and review some of the major funding resources available to support the development of workforce and affordable housing. For more information and to register, see <https://clu-in.org/live>.

ITRC Microplastics Training - February 27, 2024, 1:00PM-3:15PM EST (18:00-20:15 GMT). In response to one of the biggest emerging environmental concerns, ITRC formed the Microplastics Team in 2021 to develop the Microplastics Guidance Document. Plastics have become pervasive in modern life and are now used in a wide range of commercial and industrial applications. Microplastics may result from the degradation and fragmentation of larger plastics, or they may be intentionally produced for specific applications and products. Regardless of their origin, microplastics are now ubiquitous in our environment. Because of their small size and pervasiveness in the environment, microplastics, along with any other contaminants which are adhered to the microplastics, may be inadvertently consumed by humans and other organisms. For more information and to register, see <https://www.itrcweb.org> or <https://www.clu-in.org/live>.

FRTR Presents...Recent Advances in PFAS Characterization Technologies - February 28, 2024, 1:00PM-3:00PM EST (18:00-20:00 GMT). This webinar will include live deliveries of two presentations from the recent FRTR Fall meeting, with updated information: "Best Practices for PFAS Sampling and Evaluation" and "Clean Water Act Methods: Overview of EPA's CWA PFAS Method Activities". The science and technology of site characterization for per- and polyfluoroalkyl substances (PFAS) has advanced in the five years since FRTR last addressed the topic in 2018. Federal agency budgets for PFAS remediation have grown substantially during this time. As a result, site characterization efforts such as Remedial Investigations, as well as early response actions, are underway at many Federal facilities. Funding for field-scale projects to further advance PFAS characterization technology and methodologies also has increased substantially. For more information and to register, see <https://clu-in.org/live>.

ITRC PFAS Introductory Training - February 29, 2024, 1:00PM-3:00PM EST (18:00-20:00 GMT). Per- and polyfluoroalkyl substances (PFAS) are a large and complex class of anthropogenic compounds whose prevalence in the environment are

an emerging, worldwide priority in environmental and human health. The ITRC PFAS Team, formed in 2017, has prepared readily accessible materials to present PFAS information to stakeholders, regulators, and policy makers. The PFAS team represents a diverse cross-section of expertise and experience working on PFAS. This training will include emerging science on PFAS, including topics such as Properties of PFAS, Fate and Transport, Sampling and Analysis, and Treatment Technologies. The technical presentations will be focused on those who are relatively new to PFAS. The training will last approximately 90 minutes and include time for questions. For more information and to register, see <https://www.itrcweb.org> or <https://www.clu-in.org/live>.

> New Documents and Web Resources

Integrating Green Remediation and Climate Resilience Under the Superfund Remedial Acquisition Framework: A Primer for Service Contractors (EPA 542-R-24-001). Over the years, organizations such as engineering firms, construction companies and academic or non-profit groups have made valuable contributions to EPA's mission to protect human health and the environment. EPA's latest remediation market study estimates that completing remediation at approximately 1,000 sites on the National Priorities List may cost \$15.4 billion to \$21.1 billion. EPA compiled this primer to help Superfund service contractors and subcontractors plan and implement their work in manners that consider green remediation and climate resilience strategies. The primer summarizes pertinent language in contract clauses and task orders relating to design and engineering services, remediation environmental services, environmental services and operations, and other types of work performed under the Superfund Remedial Acquisition Framework. It also describes associated aspects such as potential deliverables, metrics and costs. To view or download, please visit [https://clu-in.org/greenremediation/docs/Integrating GR and CR under the SF RAF.pdf](https://clu-in.org/greenremediation/docs/Integrating_GR_and_CR_under_the_SF_RAF.pdf).

Consideration of Climate Change at Contaminated Groundwater Sites (EPA 542-F-24-001). Use of ex situ or in situ technologies to remediate a site with contaminated groundwater relies on a thorough understanding of the site's unique hydrogeological conditions. It also relies on an understanding of groundwater characteristics that may change under future climate scenarios. The changes should be considered throughout the site cleanup pipeline, from site assessment through long-term remedy maintenance. This fact sheet describes potential climate change impacts on groundwater, such as altered directions of groundwater flow or decreased infiltration, as well as potential impacts on cleanup remedies and associated remediation technologies. The fact sheet also describes how climate vulnerabilities are addressed at National Priorities Lists sites such as the Hunters Point Naval Shipyard Superfund site in California, Torch Lake Superfund site in Michigan, and Wyckoff Co./Eagle Harbor site in Washington. To view or download, please visit [https://clu-in.org/greenremediation/docs/Consideration of Climate Change at Contaminated Groundwater Sites.pdf](https://clu-in.org/greenremediation/docs/Consideration_of_Climate_Change_at_Contaminated_Groundwater_Sites.pdf)

Updated Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. On January 17, 2024, EPA announced updates to guidance for lead in residential soil at CERCLA (also known as Superfund) sites and Resource Conservation and Recovery Act corrective action facilities. EPA is lowering recommended screening levels and strengthening guidance for investigating and cleaning up lead-contaminated soil in residential areas where children live and play. Screening levels are not cleanup standards. While this update will help EPA site teams make site-specific cleanup decisions to protect nearby communities, EPA makes cleanup decisions specific to each site, using site-specific factors, including risk factors

and community input that can vary from site to site. For more information, please visit <https://www.epa.gov/superfund/updated-soil-lead-guidance-cercla-sites-and-rcra-corrective-action-facilities>

Research Brief 349: Mapping Microbe Interactions That Support PCB-Degrading Bacteria. Researchers partially funded by the NIEHS Superfund Research Program (SRP) mapped interactions between microbes that may support the growth of certain bacteria that degrade polychlorinated biphenyls (PCBs), a harmful contaminant. By harnessing those microbial relationships, researchers could improve the bioremediation, or bacterial breakdown, of PCBs from the environment, according to a team led by Timothy Mattes, Ph.D., University of Iowa SRP Center. View or download the brief at https://tools.niehs.nih.gov/srp/researchbriefs/view.cfm?Brief_ID=349

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://www.clu-in.org/products/tins/>. The following resources were included in recent issues:

- Demonstration of Scaled-Production of Rare Earth Oxides and Critical Materials from U. S. Coal-Based Sources
- Clean Energy Technology Applications on US Mine Land: Technical Analysis
- Advances in PFAS Leaching Models and Long-Term Monitoring

Biopile and ISCR Case Studies Needed for IMPEL. The Network for the Implementation and Enforcement of Environmental Law (IMPEL) is promoting a project entitled Water and Land Remediation, that focuses on best practices in several remediation technologies. For 2024, two questionnaires have been drawn up for collecting case studies on Biopiles and In Situ Chemical Reduction. The case studies should be submitted by than February 28 2024. For more information and to submit a case study, see <https://www.impel.eu/en/projects/water-and-land-remediation>.

> Conferences and Symposia

Design and Construction Issues at Hazardous Waste Sites (East), April 10-12, 2024, Philadelphia, PA. The Society of American Military Engineers organizes this annual conference to share information about applications of engineering and science associated with cleaning up hazardous waste sites. The conference panels focus on case studies, advances in processes such as remedy optimization, and emerging issues such as PFAS contamination. For more information, please visit <https://sites.google.com/samephiladelphiaapost.org/dchws/home>

ITRC Annual Meeting, April 8-11, 2024, Long Beach, CA. Environmental professionals from the state, tribal and federal government, private sector, and stakeholder groups come to ITRC's Annual Meeting to collaborate on critical environmental topics and guidance. For more information, please visit <https://itrcweb.org/itrcwebsite/events/2024-annual-meeting>

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 (202) 566-0832 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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