



TechDirect, January 1, 2012

Happy Holidays and may you have a prosperous new year! Welcome to TechDirect! Since the December 1 message, TechDirect gained 162 new subscribers for a total of 36,094. 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 ground water.

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 Integrated DNAPL Site Strategy - January 10, 2012, 2:00PM-4:15PM EST (19:00-21:15 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 measurable; 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>.

Mine Tailings: Enumeration and Remediation - January 11, 2012, 1:00PM-3:00PM EST (18:00-20:00 GMT). This seminar will feature Dr. Eric Betterton and Dr. Raina Maier from the University of Arizona Superfund Research Program and will focus on field trials being performed at mining sites in Arizona. Mine tailings are large piles of crushed rock leftover after the minerals of interest have been processed. They often do not support establishment of a plant cover, are prone to wind and water erosion, and may contribute to the dispersion of associated metal toxicants. Dr. Eric Betterton will discuss size-selective characterization of aerosols collected with samplers called "Multiple Orifice Uniform Deposit Impactors" at two Arizona mining sites, the Asarco plant in Hayden, AZ, and the Iron King Mine and Humboldt Smelter Superfund site in Dewey-Humboldt, AZ. Chemical speciation shows that arsenic and lead occur

preferentially in the submicron fraction at both sites; lead isotope analysis shows great promise for source apportionment at both sites; and scanning electron microscopy shows evidence for spherical particle formation by high-temperature processing at Hayden.

Data from dust flux towers installed at Iron King, and dust modeling studies will be described. Dr. Raina Maier will discuss phytostabilization, a technology being investigated for remediation of mine tailings sites in arid and semi-arid environments.

The goal is to create a vegetative cap using native plants that will 1) prevent wind and water erosion of the tailings, 2) stabilize metal contaminants in the rooting zone, and 3) avoid shoot uptake of metal contaminants. The Iron King Mine and Humboldt Smelter Superfund Site is adjacent to the town of Dewey-Humboldt, Arizona. Soil in residential yards contains elevated levels of arsenic, lead, and zinc associated with tailings particles that have been dispersed as dust, primarily by wind. Working together with the site owner and Region 9 EPA, a phytostabilization trial was initiated on site in May 2010, which was further expanded in 2011, using native plants that were shown to meet successful phytostabilization criteria in preliminary greenhouse trials. The site is being monitored to determine whether greenhouse results can be successfully translated to the field and to examine changes in chemical, physical, and biological properties of the tailings as phytostabilization occurs. For more information and to register, see <http://clu-in.org/live>.

ITRC Development of Performance Specifications for Solidification/Stabilization - January 12, 2012, 11:00AM-1:15PM EST(16:00-18:15 GMT).

The ITRC technical and regulatory guidance document Development of Performance Specifications for Solidification/Stabilization (S/S-1, 2011) and associated Internet-based training provide an approach to assist practitioners and regulators with measuring and determining acceptable S/S performance. This approach developed by the ITRC Solidification/Stabilization Team provides information for developing, testing, and evaluating appropriate site-specific performance specifications and the considerations for designing appropriate long-term stewardship programs. In addition, the approach provides useful tools for establishing an appropriate degree of treatment and regulatory confidence in the performance data to support decision-making. This training and guidance is intended to be beneficial to anyone involved with CERCLA, RCRA, Brownfields, UST or any other regulatory program where S/S has been selected or implemented as a remedial technology. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/live>.

SRP Funding Opportunities Web Seminar - January 17, 2012, 2:00PM-4:00PM EST (19:00-21:00 GMT).

The SRP will be holding a web seminar to provide information about current funding opportunities: Small Business Innovative Research Small Business Innovation Research / Small Business Technology Transfer (SBIR / STTR) Grants (R43 / R41) Hazardous Substances Detection and Remediation Program (<http://www.niehs.nih.gov/research/supported/programs/sbir/topics/hwaerp/index.cfm>); and RFA-ES-12-003 (<http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-12-003.html>) "Superfund Hazardous Substance Research and Training Program (P42)". Primary focus will be on the new multi-project center grant announcement (P42), including an emphasis on changes compared to previous solicitations. Participants will have an opportunity to ask questions. For more information and to register, see <http://clu-in.org/live>.

ITRC Permeable Reactive Barrier: Technology Update - January 24, 2012, 2:00PM-4:15PM EST (19:00-21:15 GMT).

The ITRC Technical/Regulatory Guidance Permeable Reactive Barrier: Technology Update (PRB-5, 2011) and associated Internet-based training is intended to help guide state and federal regulators, consultants, project managers and other stakeholders and technology implementers through the decision process when a Permeable Reactive Barrier (PRB) is being considered as a remedy, or part of a remedy, to address contaminated groundwater; and to provide updated information regarding several technical aspects of the PRB using information attained from the more than 15 years that the PRB has been a viable

and accepted in situ remediation technology for contaminated groundwater. The guidance and training provides an update on PRBs to include discussions of additional types of reactive media and contaminants that can be treated, design considerations, construction/installation approaches and technologies, performance assessment and longevity. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

ITRC Incorporating Bioavailability Considerations into the Evaluation of Contaminated Sediment Sites - January 26, 2012, 11:00AM-1:15PM EST (16:00-18:15 GMT).

ITRC's web-based Technical and Regulatory Guidance, Incorporating Bioavailability Considerations into the Evaluation of Contaminated Sediment Sites (Sed-1, 2011) and associated Internet-based training are intended to assist state regulators and practitioners with understanding and incorporating fundamental concepts of bioavailability in contaminated sediment management practices. This guidance and training describe how bioavailability considerations can be used to evaluate exposure at contaminated sediment sites, the mechanisms affecting contaminant bioavailability, available tools used to assess bioavailability, the proper application of those tools and how bioavailability information can be incorporated into risk-management decisions. This guidance and training also contain summaries of case studies where bioavailability has been assessed and considered in the contaminated sediment remedial decision making process. This guidance and training provide insight on how bioavailability assessments can be used to understand, mitigate and manage risk at a contaminated sediment site, often at a reduced overall project cost. For more information and to register, see <http://www.itrcweb.org> or <http://clu-in.org/live>.

US and EU Perspectives on Green and Sustainable Remediation, Part 4 - March 6, 2012, 10:00AM-12:00PM EDT (15:00-17:00 GMT).

This seminar is a continuation in the series on international green and sustainable remediation efforts (additional information on prior internet seminars can be found at <http://clu-in.org/consoli/>). This two-hour seminar will: (1) present the final case studies of the internet seminar series on how green and sustainable remediation efforts are being implemented in the US and Europe; (2) discuss Austria's new tool for performing a cost-effective analysis; (3) provide an update on EPA's draft environmental footprint methodology for estimating or quantifying a remediation site's footprint (www.clu-in.org/greenremediation/methodology/index.cfm) and on the ASTM International effort to develop a voluntary consensus-based standard for greener cleanups (www.clu-in.org/greenremediation/subtab_b5.cfm); (4) present updates on international green and sustainable remediation efforts; and (5) provide information on 2012 green and sustainable remediation internet seminars and conferences. An open forum will be held throughout the seminar to respond to participant questions. For more information and to register, see <http://clu-in.org/live>.

> New Documents and Web Resources

Optimization Evaluation: General Motors Former AC Rochester Facility, Sioux City, Iowa (EPA 542-R-11-009). The General Motors (GM) Former AC Rochester Facility (site) is located within the valley of the Missouri River in Sioux City, Iowa and is bounded by a steep loess bluff to the north, commercial properties to the east and undeveloped properties to the south and west. A Sioux City municipal drinking water wellfield is located along the Missouri River southeast of the site. GM formerly used the site to assemble and test throttle-body injection fuel systems. Chemicals of potential concern (COPC) in soil and groundwater are chlorinated volatile organic compounds (CVOCs). The current remedy includes a hydraulic capture system (HCS) and a former city supply well that is currently operating as a recovery well to protect other supply wells in the area. No active remedy is occurring in the source area. Improved operation

of the HCS and confirmation of capture is crucial to reducing concentrations downgradient of the property boundary and allow operation of City Well #3 to resume supplying water to the city. Evaluation of the potential for soil VI and source area remediation are also high priorities for the site (December 2011, 76 pages). View or download at <http://clu-in.org/techpubs.htm> .

Remediation System Evaluation (RSE): Tutu Wellfield Superfund Site, St Thomas, US Virgin Islands (EPA 542-R-11-008).

The Tutu Wellfield Superfund Site is a 1.5 square mile site located on the eastern end of St. Thomas, U.S. Virgin Islands (USVI) within the upper Turpentine Run surface drainage basin in the Anna's Retreat area. It is bounded by steep slopes and surrounding hills and lies slightly east of the city of Charlotte Amalie. There are two comingled groundwater contamination plumes at the site. The higher concentration, northern and upgradient plume has a source near the Curriculum Center. The southern and downgradient plume has a source near the O'Henry Dry Cleaners. Chemicals of concern (COC) in groundwater are specific chlorinated volatile organic compounds (CVOCs). The groundwater remedy consists of two groundwater treatment facilities (GWTF). GWTF #1 includes groundwater extraction and treatment by air stripping near the Curriculum Center source and previously also included soil vapor extraction (SVE). GWTF #2 includes groundwater extraction and air stripping at the downgradient end of the Curriculum Center plume just upgradient of the O'Henry plume. This RSE focuses on these systems and associated monitoring program (November 2011, 50 pages). View or download at <http://clu-in.org/techpubs.htm> .

Remediation System Evaluation (RSE): Vineland Chemical Company Superfund Site, Vineland, New Jersey (EPA 542-R-11-007).

The Vineland Chemical Superfund Site is located in the northwestern portion of Vineland, in Cumberland County, south central New Jersey, in an area of mixed industrial, low-density residential and agricultural properties. The site is bordered immediately to the north by other industrial properties and the Blackwater Branch, a perennial stream that flows westward to the Maurice River. The site consists of several operable units. This RSE specifically addresses Operable Unit 2 (OU2), which manages migration of the groundwater contaminant plume. The OU2 remedy is in the seventh year of a Long-Term Remedial Action (LTRA). In 2014, the responsibility for the OU2 remedy will be transferred to the State of New Jersey Department of Environmental Protection (NJDEP) (November 2011, 288 pages). View or download at <http://clu-in.org/techpubs.htm> .

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 <http://clu-in.org/products/tins/> . The following are some resources included in the latest issue:

- SERDP and ESTCP Workshop on Investment Strategies to Optimize Research and Demonstration Impacts in Support of DOD Restoration Goals
- Field Demonstration of Biologically Active Zone Enhancement (BAZE) for In Situ RDX Degradation in Groundwater: ESTCP Cost and Performance Report
- Field Demonstration of a Novel Biotreatment Process for Perchlorate Reduction in Groundwater: ESTCP Cost and Performance Report
- Field Portable GC-MS Unit For Semi-Volatile Compound Analysis In Groundwater: ESTCP Cost & Performance Report
- Practical Cost-Optimization of Characterization and Remediation Decisions at DNAPL Sites with Consideration of Prediction Uncertainty
- Contaminant Mass Transfer During Boiling in Fractured Geologic Media
- Innovative In-Situ Remediation of Contaminated Sediments for Simultaneous Control of Contamination and Erosion: Part I & Part II

- Decision Guide: A Guide for Selecting Remedies for Subsurface Releases of Chlorinated Solvents
- Decision & Management Tools for DNAPL Sites: Optimization of Chlorinated Solvent Source and Plume Remediation Considering Uncertainty: ESTCP Cost and Performance Report
- Vapor Intrusion Mitigation Advisory, Revision 1

EUGRIS Corner. New Documents on EUGRIS, the platform for European contaminated soil and water information. More than 14 resources, events, projects and news items were added to EUGRIS in December 2011. 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:

Proceedings from Conference on Remediation of Contaminated Sites: Key for an Efficient Land Management in the EU. On November 10, 2011, the Liaison Office of Saxony in Brussels, in cooperation with the Environment Directorate-General of the European Commission, hosted a conference to address the remediation of contaminated sites and its links to a more efficient land use in the EU. View or download the complete conference proceedings at http://ec.europa.eu/environment/soil/remediation_conference.htm

> Conferences and Symposia

Facility Decommissioning Training Course, San Diego, CA, January 24-26, 2012.

The purpose of this Argonne National Laboratory course is to provide information on the basic steps in the decommissioning process and impart lessons learned from past experiences in decommissioning. In this manner, elements learned at this training course will assist in decision-making, planning and implementation associated with the decommissioning of various types of nuclear facilities. Moreover, a major objective of this training course is to demonstrate the need for early and complete project planning to achieve safe and cost-effective decommissioning of research reactors and other small nuclear installations. For more information and to register, see <http://www.dd.anl.gov/ddtraining/> .

TRI Winter Webinar: The 25th Anniversary of the Emergency Planning and Community Right to Know Act (EPCRA) of 1986, January 26, 2012, 2:00PM-4:00PM EST (19:00-21:00 GMT).

The Environmental Council of the States (ECOS) and the United States Environmental Protection Agency (EPA) invite you to attend the 2012 TRI Webinar. This Webinar will celebrate the 25th anniversary of EPCRA, and more specifically, the Toxics Release Inventory (TRI), which was created in large part to increase the public's knowledge and access to information on toxic chemicals at individual facilities and releases of the chemicals into the environment. The focus of the Webinar will be background on EPCRA, an overview of the TRI program, a history of enforcement and compliance efforts, and a look at future directions of the TRI program and how TRI has impacted regulatory programs in many countries around the world. Featured speakers include Mike Walker, Director of the National Enforcement Training Institute and Steve Devito, a Senior Scientist with EPA's TRI Program Division. All are welcome to participate! For more information, see <http://www.chemicalright2know.org/2011/12/21/save-the-date-new-tri-webinar-january-26th-2012/> .

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.

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