

TechDirect, October 1, 2007

[Upcoming Live Internet Seminars](#)

[New Documents and Web Resources](#)

[Conferences and Symposia](#)

Welcome to TechDirect! We apologize for the delayed delivery of this month's message. We experienced technical difficulties with the ListServ software used to send TechDirect this month that have been resolved, and you can expect to receive next month's message on November 1.

Since the September 1 message, TechDirect gained 332 new subscribers for a total of 29,132. 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>. 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

What's New with CLU-IN? - October 26. Technology Innovation and Field Services Division (TIFSD) staff will cover new changes to the CLU-IN website and discuss proposed improvements. Participants will also learn about expanded features and new platforms that are being considered for CLU-IN and our internet seminar offerings. For more information and to register, see <http://clu-in.org/studio>.

ITRC Characterization, Design, Construction and Monitoring of Bioreactor Landfills - October 11. Bioreactors are landfills where controlled addition of non-hazardous liquid wastes, sludges, or water accelerates the decomposition of waste and landfill gas generation. This training, based on the ITRC's Characterization, Design, Construction, and Monitoring of Bioreactor Landfills (ALT-3, 2006), teaches the principles used to make critical decisions during permitting, operating, and monitoring a bioreactor landfill. This training also provides a general understanding of the biological degradation of solid wastes under aerobic and anaerobic waste conditions and the degradation products associated with each process. For more information and to register, see <http://www.itrcweb.org> Or <http://clu-in.org/studio>.

Annual Status Report 12th Edition - October 11. EPA is offering a briefing to review the information and analyses in the Twelfth Edition of Treatment Technologies for Site Cleanup, Annual Status Report (known as the "ASR"). The ASR, released October 1st 2007, offers a unique overview and analysis of remedies used to cleanup contaminated sites in the United States. Every year hundreds of remedies are selected to protect human health and the environment at sites with contaminated soil or groundwater. The report documents the status and trends of treatment technologies at

NPL sites to help decision-makers better evaluate different cleanup options. Findings include a continuing upward trend in the selection of innovative "in situ" remedies that treat soil and groundwater without having to extract them from the ground. Following a presentation on the findings of the report three senior Program Analysts from EPA's Office of Superfund Remediation and Technology Innovation will be available for discussion and to answer your questions. For more information and to register, see <http://clu-in.org/studio> .

ITRC Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills - October 16. This training, based on ITRC's Technical and Regulatory Guidance: Evaluating, Optimizing, or Ending Post-Closure Care at Municipal Solid Waste Landfills Based on Site-Specific Data Evaluations (ALT-4, 2006), describes a method to evaluate the performance of Post Closure Care at a landfill and determine when leachate recovery, landfill gas management, groundwater monitoring, and cap maintenance can be reduced or even ended based on threats (to human health and the environment) posed by the closed landfill. The training and document describe custodial care as those requirements the property owner must follow after post closure care has been ended. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/studio> .

ITRC Risk Assessment and Risk Management: Determination and Application of Risk-Based Values - October 18. This training course describes the development and application of risk-based screening values. The first module provides a review of key risk assessment concepts related to risk management. The second module focuses on the process by which risk-based levels are derived in different states. The third module examines the application of risk assessment to remediation operations in two case studies providing examples of how risk assessment has actually been implemented, based upon research and case studies conducted by the ITRC Risk Assessment Resources team. This training course describes a number of the reasons behind variations in risk-based screening values and their use in risk management. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/studio> .

Nanoparticles and Ecotoxicology - October 18. The NIEHS Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA), presents "Nanoparticles and Ecotoxicology." Dr. Stephen Klaine, Clemson University, will briefly overview some of the major considerations involved in assessing ecotoxicology and the challenges associated with predicting the effects of nanoparticles in aquatic ecosystems. His talk will focus on recent work involving multi-walled carbon nanotubes (MWNTs) interactions with natural organic matter (NOM) in studies using water fleas (*Daphnia magna*). Dr. Patrick Larkin, Santa Fe Community College, will discuss the use of a standard EPA-approved ecotoxicology test using daphnia with assays using a newly developed, 2000-gene DNA array for the fathead minnow to measure the potential toxicity of a reactive nano-iron particle. Please note the final session in this series will be "Nanotechnology: Looking Ahead," on November 8, 2007. For more information and to register, see <http://clu-in.org/studio> .

ITRC Remediation Process Optimization Advanced Training - October 30. Remediation Process Optimization (RPO) is the systematic evaluation and enhancement of site remediation to ensure that human health and the environment are being protected over the long term at minimum risk and cost. The purpose of this ITRC training is to present an overview of the material covered in five technical fact sheets that ITRC's RPO Team produced to enhance site remediation optimization and decision-making. The training modules provide additional information and techniques to improve project schedules, effectively manage resources, emphasize risk, and discuss tools to efficiently cleanup contaminated sites. For more information and to register, see <http://www.itrcweb.org> OR <http://clu-in.org/studio> .

> New Documents and Web Resources

Treatment Technologies for Site Cleanup: Annual Status Report (ASR), Twelfth Edition (EPA 542-R-07-012). This report, published by the EPA Office of Superfund Remediation and Technology Innovation (OSRTI), documents, as of October 2006, treatment technology applications at more than 1,900 soil and groundwater cleanup projects at National Priorities List (NPL) sites. The status of more than 1,200 projects included in the ASR Eleventh Edition is updated, and information about 192 new projects derived from Records of Decision (ROD) signed from 2002 through 2005 is added. The report also includes a special section about on-site containment remedies. The ASR is based on the analysis of over nearly 3,000 RODs signed since 1982 at 1,536 NPL sites. The online version includes new downloadable spreadsheets with the data for several of the key tables and figures in the report. In coming months, specific information about each technology application included in the ASR Twelfth Edition will be incorporated into the ASR Remediation Database available at <http://cfpub.epa.gov/asr/>. View or download the ASR at <http://clu-in.org/asr>. For hard copies, contact (800) 490-9198 or fax to (301)604-3408.

Green Remediation and the Use of Renewable Energy Sources for Remediation Projects. Green remediation is the practice of considering environmental impacts of remediation activities at every stage of the remedial process in order to maximize the net environmental benefit of a cleanup. In that spirit, this study seeks to identify cleanup projects employing renewable, sustainable energy sources and/or alternative fuels for site remediation. The report describes 19 pilot-scale and full scale projects applying renewable energy to power various remedial system components, and provides a preliminary analysis of potential areas of expansion. Amanda Dellens' research and production of this paper was supported by a National Network of Environmental Management Studies fellowship from the U.S. Environmental Protection Agency (August 2007, 55 pages). View or download at <http://clu-in.org/techpubs.htm> .

Long-Term Groundwater Monitoring Optimization, Newark, Muscoy, and Source Operable Units, Newmark Superfund Sites, San Bernardino, California (EPA 542-R-07-015). This report contains a review of the groundwater monitoring network for Newmark Superfund Site in San Bernardino, California (Newmark Site). The Site consists of the Source, Newmark and Muscoy operable units (OUs). The current groundwater monitoring network has been evaluated using a formal qualitative approach as well as statistical tools found in the Monitoring and Remediation Optimization System software (MAROS). Recommendations are made for groundwater sampling frequency and location based on current hydrogeologic conditions and long-term monitoring goals for the system. The report evaluates the monitoring system using analytical and hydrogeologic data from sampling events conducted between May 1987 and January 2007 (September 2007, 326 pages). View or download at <http://clu-in.org/techpubs.htm> .

Long-Term Groundwater Monitoring Optimization, Taylor Road Landfill Superfund Site, Seffner, Hillsborough County, Florida (EPA 542-R-07-016). This report reviews and provides recommendations for improving the groundwater monitoring network for Taylor Road Landfill Superfund Site in Seffner, Hillsborough County, Florida (Taylor Road Site). The current groundwater monitoring network has been evaluated using a formal qualitative approach as well as using statistical tools found in the Monitoring and Remediation Optimization System software (MAROS). Recommendations are made for groundwater sampling frequency and location based

on current hydrogeologic conditions and long-term monitoring (LTM) goals for the system. The recommendations presented below are based on a technical review; balancing both the statistical results with goals of the monitoring system and site management decisions. The recommendations may not reflect the current regulatory requirements. The following report evaluates the monitoring system using analytical and hydrogeologic data from sampling events conducted between January 1995 and April 2007 (September 2007, 114 pages). View or download at <http://clu-in.org/techpubs.htm> .

Technology News and Trends (EPA 542-N-06-011). This issue highlights site remediation involving in-situ application of heat or electrical current to treat soil or ground water containing volatile organic compounds (VOCs), including non-aqueous phase liquid. These projects demonstrate significant cost and time savings gained over conventional remedies such as soil excavation or ground-water pumping with limited aboveground treatment, and suggest methods to address common difficulties such as treatment of heterogeneous contaminant sources or verification of system performance (September 2007, 6 pages). View or download at <http://clu-in.org/techpubs.htm> .

Grant Guidelines to States for Implementing the Operator Training Provision of the Energy Policy Act of 2005 (EPA-510-R-07-005). This guideline was published by the U.S. EPA Office of Underground Storage Tanks. Section 9010 of the Energy Policy Act requires EPA to publish guidelines that specify training requirements for three classes of operators: persons having primary responsibility for on-site operation and maintenance of underground storage tank systems; persons having daily on-site responsibility for the operation and maintenance of underground storage tank systems; and, daily, on-site employees having primary responsibility for addressing emergencies presented by a spill or release from an underground storage tank system. These guidelines describe the minimum requirements a states underground storage tank (UST) program must contain in order for a state to comply with the Section 9010 requirements for Subtitle I funding (August 2007, 14 pages). View or download at http://www.epa.gov/oust/fedlaws/otgg_final080807.pdf .

Report to Congress on Implementing and Enforcing the Underground Storage Tank Program in Indian Country (EPA 510-R-07-006). Title XV, Section B of the Energy Policy Act of 2005 amends Subtitle I of the Solid Waste Disposal Act, the original legislation that created the underground storage tank (UST) program. The UST provisions of the Energy Policy Act focus on preventing releases and direct EPA to help states comply with new UST requirements. EPA developed and submitted the report to Congress as required by the Energy Policy Act. The report discusses the considerable progress EPA and tribes have made, working together, to prevent and cleanup releases from USTs in Indian Country as well as the challenges remaining and work to be accomplished (August 2007, 38 pages). View or download at http://www.epa.gov/oust/fedlaws/rtc_finalblnkpgs.pdf .

EUGRIS Corner. EUGRIS now has a new easier to use format. More than 45 resources, events projects and news items were added to EUGRIS in September 2007. These can be viewed at <http://www.eugris.info/whatsnew.asp> and include the following reports:

Report of the NICOLE Workshop: Redevelopment of Sites - the Industrial Perspective. The restructuring of European economies, including the migration of manufacturing to Asia, has resulted in many underused, derelict and contaminated industrial sites. At the same time land demand, principally lead by housing, has made many of these urban sites into attractive assets. The owners of these sites would like to realize the value of these assets and at the same time avoid any future risk of liability. This NICOLE report summarizes the papers delivered at this meeting along with a discussion based on the points raised during the meeting. The workshop reviewed: Drivers for redevelopment of sites for government municipality industry redevelopers;

Management of liability; Case studies; and Tools and communication (August 2007, 34 pages). View or download at <http://www.nicole.org/publications/library.asp?listing=1>.

European Brownfield Revitalisation Agenda. There are many examples of good practice that have produced positive results from brownfield site project redevelopment across Europe. Much of this information is a result of individual EU funded projects but these have not necessarily been brought together to build up a body of collective experience. There is an opportunity to bring together best practices and the various tools that have been developed to create the best opportunities for an integrated approach for the future redevelopment of Brownfield sites. Policy makers and developers should be supported through a conduit of best practice, the collation of information, and a network of specialists with practical experience in the field. The main objective of the EUBRA Agenda is to support policy makers and program managers in setting priorities in future national and international funding programs (Summer 2007, 24 pages). View or download at http://www.sv-ertel.de/eubra/EUBRA_agenda.pdf.

European Environment Agency: Progress in management of contaminated sites (CSI 015). The EEA monitors a number of environmental indicators across the EU. One of these is: Progress in management of contaminated sites. Soil contamination requiring clean up is present at approximately 250,000 sites in the EEA member countries, according to recent estimates. And this number is expected to grow. Potentially polluting activities are estimated to have occurred at nearly 3 million sites (including the 250000 sites already mentioned) and investigation is needed to establish whether remediation is required. If current investigation trends continue, the number of sites needing remediation will increase by 50% by 2025 (August 2007). Read online at http://themes.eea.europa.eu/IMS/ISpecs/ISpecification20041007131746/Assessment1152619898983/view_content.

> Conferences and Symposia

Long-Term Monitoring Optimization (LTMO) Training, Seattle, October 17-18. EPA is partnering with the U.S. Army Corps of Engineers to provide state and federal regulators with information about new methods of optimizing groundwater monitoring programs. The training will be held at the EPA Region 10 Office in Seattle, WA on October 17 and 18, 2007. Responsible parties, Federal Facilities, and EPA have used LTMO methods at more than 100 sites nationwide and are likely to use them at more sites in the future. The methods are used to support decision making regarding optimal location and frequency of groundwater monitoring and to support changes to existing monitoring networks. As a result, it is important for regulators to be familiar with LTMO methods and technical support mechanisms such that appropriate decisions can be made. The training includes a 1-day lecture on a variety of qualitative and quantitative methods including: the Monitoring and Remediation Optimization System (MAROS); the Geostatistical Temporal-Spatial (GTS) algorithm; and the Three-Tiered Monitoring Network Optimization (MNO) approach. A 4-hour hands-on training sessions with the MAROS software program will be offered on the second day for a limited number of attendees. While the training is designed primarily for state and federal regulators, federal facilities cleanup managers, potentially responsible parties (PRPs), and contractors are welcome to participate at no cost. State and federal regulators will receive registration priority. For details about this training and to register, visit <http://www.trainex.org>.

Sediment Remediation Course, Atlanta, October 29-31. This three-day course is sponsored by the EPA Hazardous Substance Research Center/ South and Southwest. The course provides environmental professionals in industry,

consulting and government with practical information on how to evaluate the technical suitability of monitored natural recovery, dredging and excavation, or in situ capping remedies for contaminated sediments. It focuses on issues and limitations associated with each alternative, including information on selecting, designing and constructing remedies that maximize long-term effectiveness and minimize short-term impacts. It will also discuss case studies involving the three remedial approaches. For more information and to register, see <http://www.smwg.org/> .

EPA's Environmental Information Symposium 2007, St. Louis, November 14-16. The 2007 Environmental Information Symposium is a unique opportunity to learn more about EPA's Information Management (IM) and Information Technology (IT) strategic direction and policies, understand and get involved in current information initiatives, reach out to new groups, and network with colleagues. Again this year, the meeting will include a variety of two-hour specialized courses, an exhibit area and a series of tracks designed to provide valuable information and learning opportunities for environmental and IT program managers. For more information and to register, see <http://www.epa.gov/oei/proceedings/2007/proceedings07.htm> .

Reminder - Call for Abstracts! 2008 Conference on Design and Construction Issues at Hazardous Waste Sites, Philadelphia, April 24-25.

This conference is hosted by the USEPA and the US Army Corps of Engineers. It will provide a forum for discussion among professionals from the private and public sectors regarding design and construction issues at hazardous waste sites including current approaches, management techniques, lessons learned, and application of technologies. Abstracts are due by November 16, 2007. For abstract guidelines or to register please see the conference website at <https://superfund.usace.army.mil/2008DCHWS> .

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. Currently there are 120 conferences and courses featured. 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/techdrct> at any time night or day.

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