



OFFICE OF RESEARCH AND DEVELOPMENT SUPERFUND AND TECHNOLOGY LIAISON (STL) REGION 9 NEWSLETTER

Summer 2007, Edition 40

Barry Bonds breaking Hank Aaron's home run record and the Tour de France....what does that mean? No, not doping.....but summer time! (Not that you'd know it here in San Francisco by the fog and chill!) And it's also time for the next edition of the STL Newsletter! Sorry for the delay in publication....I'm a few weeks late. My excuse is that I was waiting for Barry to come through with homer #756. And now he's done it!*

As I do each quarter, I've compiled the latest new documents and upcoming conferences / workshops for you. There are also articles about some new applications (nanotechnology) and a well-respected program going by the wayside (SITE), due to competing priorities in a budget-tight world. This reality is sure to hit us in the future when we clean up sites. But in the meantime, let's be aware that the existing information from the SITE program is still available and it can assist us in doing our job in a smart and time efficient manner.

That being said, be sure to use your support staff early and often, whether regional tech support, the Forums (Groundwater, Engineering or Federal Facilities) or the ORD Tech Support Centers. Feel free to call me if you need help accessing any of these support staff! And I hope the newsletter is helpful to you.

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Serious Scientists Gather 'Round...

NATIONAL NEWS

New Tools and Technologies

Nanotechnology - One Tool in 'Green Chemistry' Research

(From NRMRL News, April 2007)

Innovative EPA National Risk Management Research Lab (NRMRL) researchers who specialize in 'greener' chemistry approaches are focusing on nanotechnology, a method that allows materials to be developed at the nanoscale, i.e., at one-billionth the size. Because of its unique ability to vastly increase the ratio of surface area to volume, nanotechnology is particularly promising in a surface-based science such as catalysis, i.e., the acceleration of chemical reactions. Nanoparticles offer large surface areas that lead to an increase in adsorption and catalytic reactions.

Green chemistry focuses on the development of benign catalysts as replacements in many conventional chemical processes that use heavy metals and strong acids. In the chemical, petrochemical, and pharmaceutical industries, for example, there is a need for processes that are solvent free and use cleaner oxidants such as air, ozone, or hydrogen peroxide, that can also be performed in one, or few, energy-saving steps. Nanostructured oxidation technology not only promises to reduce pollution through less-toxic processes, it also has the potential for significant cost savings through energy conservation and reduction of wastes.

Currently, NRMRL researchers are developing a catalytic process that could potentially save the pulp and paper industry millions of dollars annually by converting air pollutants into value-added products. In tests, this ozone-

based catalytic process, which uses energy-saving temperatures below 250 degrees C., removed odorous airborne pollutants and converted methanol in the waste stream to non-toxic methyl formate. The nanostructured catalyst process was not contaminated by the sulfur compounds and high concentrations of water in the waste stream.

Nanotechnology is one of a variety of green chemistry approaches that have the potential for environmental sustainability through pollution prevention, treatment, and remediation. For further information about green chemistry and engineering research, please visit:

<http://www.epa.gov/nrmrl/std/cppb/greenchem/greenchemaot.htm>

Contact: Patricia Schultz (schultz.patricia@epa.gov), NRMRL Public Information Office at 513-569-7966.

Field-Testing Alternative Landfill Covers

(From NRMRL News, July 2007)

Modern landfills are complicated and costly structures. Closely regulated by state and federal statutes, they are designed to protect buried trash from contact with air, light, and water. This "dry tomb" technology relies on various systems of liners and surface capping using clay, plastic membranes, or both.

The high costs associated with traditional impermeable landfill covers and a growing interest in alternative designs prompted EPA to create the Alternative Cover Assessment Program (ACAP) in 1997. This national program, supervised by NRMRL researchers, was the first field-scale, side-by-side comparison of traditional and alternative covers.

In collaboration with a dozen private and public partners, the ACAP researchers in 14 communities over a 6-year period examined when and how much water passed through the test cover systems. In so doing, the program generated the world's largest body of data on landfill cover performance.

The data provide a body of historical information on how systems succeed or fail across a wide range of climates and soil conditions. They also provide the technical foundation for a computer-based methodology that can be used by engineers, regulators, and other decision makers to design and evaluate alternative covers.

The Back Story

Covers of compacted clay or a composite of geomembrane over clay have been the standard practice since the Resource Conservation and Recovery Act of 1976. Typically, these covers require 18 inches of earthen material with an erosion overlay of at least 6 inches of soil capable of supporting native plant growth. Questions about the long-term performance of these impermeable covers had gone unanswered for lack of substantial data. Meanwhile, by the late 1990s, alternative evapo-transpiration (ET) covers were being developed.

Using site-specific variables of soil, plants, and climate, ET covers rely on a "sponge and pump" action in which soil and plants absorb precipitation, store it, and then later release much of the moisture back into the atmosphere through evaporation (from the soil) and transpiration (from the plants).

Also known as water balance or vegetative caps, ET covers can be based on either a continuous layer of soil or on layers that create capillary breaks, a feature that improves the water-holding capacity of the soil. Plantings include grasses, bushes, or fast-growing trees appropriate to the site. The ACAP research was designed as an on-site, data-driven program to answer performance questions about both ET and traditional covers.

The test sites in California, Georgia, Iowa, Montana, Nebraska, Ohio, and Oregon were chosen for a variety of climates, soils, and climax (stable) vegetation. Each test site contained sensors and devices for measuring runoff, soil moisture, meteorological data, and percolation through the cover.

Key Findings

ACAP research yielded the following key findings:

- 1. As a measurement program for drainage performance and for process and design variables, ACAP was a complete success. The program has led to a better understanding of testing cover designs.*
- 2. In all locations, alternative covers performed as well or better than compacted clay covers.*
- 3. To date, installation cost savings total \$205 million at the 30 sites using alternative covers.*
- 4. ACAP data and design methodologies have been used in support of regulatory decisions to approve permits for and installation of alternative cover systems at many conventional cover sites, including four Superfund sites.*

While decisions about landfill cover design still require site-specific evaluation, the information gleaned from the ACAP data makes this technology a very useful tool.

For more information about the ACAP research, see Alternative Landfill Cover Project Profiles (<http://www.clu-in.org/products/altcovers>).

Contact: Patricia Schultz, NRMRL Office of Public Affairs, (513) 569-7966

ETV VERIFICATIONS

ETV has completed verification testing and reports for 385 innovative environmental technologies! For a full list of ETV verifications, visit: <http://www.epa.gov/etv/verifications/verification-index.html>.

MERCURY EMISSION MONITORS VERIFIED
<http://www.epa.gov/etv/verifications/vcenter1-11.html>.

MOBILE SOURCES DEVICE VERIFIED
<http://www.epa.gov/etv/verifications/vcenter5-5.html>.

BAGHOUSE FILTRATION PRODUCT VERIFIED
<http://www.epa.gov/etv/verifications/vcenter5-2.html>.



The SITE Program Sunsets

SITE Program will soon publish its last quarterly report (in October 2007), so says the April-June 2007 quarterly. It's been a good run, with the program having been around for about 20 years. For the latest quarterly, see the following: <http://www.epa.gov/ORD/SITE/quarterly.htm> . Here is the latest from the program's webpage:

The EPA's Superfund Innovative Technology Evaluation (SITE) Program was established by EPA's Office of Solid Waste and Emergency Response and the Office of Research and Development in response to the 1986 Superfund Amendments and Reauthorization Act, which recognized a need for an "Alternative or Innovative Treatment Technology Research and Demonstration Program." The SITE Program is administered by National Risk Management Research Laboratory in the Land Remediation and Pollution Control Division, headquartered in Cincinnati, Ohio.

The SITE Demonstration Program has encouraged the development and implementation of:

1. innovative treatment technologies for hazardous waste site remediation and
2. monitoring and measurement.

The SITE Program will discontinue the publication of quarterly reports on October 1, 2007. The final SITE Quarterly Report will cover activities for the July 1 - September 30, 2007 time period. For most of its history, the SITE Program has published quarterly reports of completed and ongoing remediation technology demonstration activities. SITE will continue to maintain the SITE Program website which contains previous quarterly reports and final reports of the technology demonstrations and evaluations performed under the Demonstration Program, Monitoring and Measurement Technologies Program and the Emerging Technology Program. All reports from the 20 year history of the program are available for downloading from the program website, located at: <http://www.epa.gov/ORD/SITE/>. Publications are also available from the National Technical Information Service (1-800-553-6847) and EPA's National Center for Environmental Publications (NSCEP), 1-800-490-9198.



2007 NARPM Conference Summary

The 17th annual National Association of Remedial Project Managers (NARPM) conference was held from May 21-25, 2007 in Baltimore, MD. It was extremely well attended and successful! Geared towards EPA project managers, topics covered a broad range of technical and policy issues that RPMs face everyday. They are too numerous to mention here, but for an agenda of the meeting with downloadable presentations, please go to <http://www.epanarpm.org/2007/> .

Here is a broad view of some of the areas covered at this year's conference.

- Investigation
- Design, Remediation and Construction
- Technology and Contaminant-Specific Topics
- Resources and Tools

LOCAL NEWS

[A Model For Monitored Natural Attenuation.....BIOSCREEN...Avoiding Some Problems](#)

(Thanks to Herb Levine, Matt Small [Region 9] and John Wilson [ORD Lab in Ada, OK.]

A few months ago, two of our Region 9 staffers, Herb Levine and Matt Small, noted that the Bioscreen model, which is used for quantifying monitored natural attenuation and carrying out risk analyses, had come under some scrutiny after an article published in the March-April issue of "Groundwater" questioned its accuracy. Here is a summary of the issue and a solution.

If you or your consultant are using the Bioscreen model for quantifying monitored natural attenuation and carrying out risk analyses, you need to be aware of an article published in the March-April 2007 issue of Ground Water. The article titled "On the Use and Error of Approximation in the Domenico (1987) Solution"

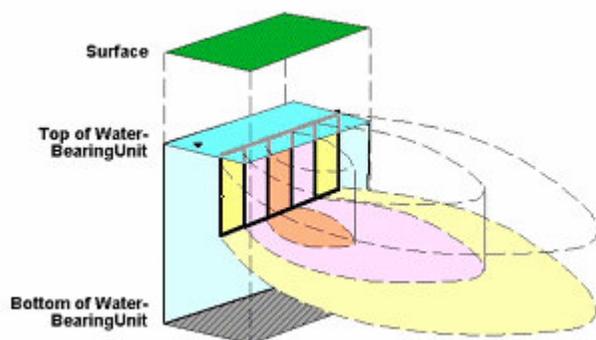
points out the inherent error of approximation using Domenico (1987) as compared to an exact analytical solution.

The Domenico (1987) solution is an approximate solution to the governing equation for three-dimensional solute transport in saturated porous media under uniform steady state flow subject to advection, dispersion, sorption, and first-order decay. The article states that "...the accuracy of the approximate solutions is highly variable and dependent on the selection of input parameters. For solute transport in a medium-grained sand aquifer, the Domenico (1987) solution under-predicts solute concentrations along a centerline of the plume by as much as 80%".

The paper recommends that because more accurate exact analytical solutions exist, Domenico (1987) should not be employed as the basis for a screening model. A variation of the Domenico (1987) solution is incorporated into Bioscreen so this inherent error exists in the Bioscreen model. Chuck Newell, who developed Bioscreen, has reviewed the article and believes that the findings are accurate. He recommends against the use of the Bioscreen model at this time (dated April, 2007). A suitable substitute may be the BioScreen-AT spreadsheet model, available at the following address: <http://www.sspa.com/Software/bioscreen.shtml> .

BIOSCREEN-AT

Version 1.4 with exact analytical solution



BIOSCREEN-AT is a screening-level model developed for and distributed by the U.S. Environmental Protection Agency (EPA)[1] that simulates remediation through natural attenuation of dissolved hydrocarbons at petroleum fuel release sites. BIOSCREEN is also routinely used for simulating the movement of a wide variety of dissolved solutes in groundwater. The software, programmed in the Microsoft Excel™ spreadsheet environment, uses the Domenico analytical solute transport model for solute transport in three-dimensional porous media. The Domenico model has the ability to simulate advection, dispersion, adsorption, and aerobic decay as well as anaerobic reactions that have been shown to be the dominant biodegradation processes at many petroleum release sites. BIOSCREEN Version 1.4. BIOSCREEN as distributed by the EPA, only provides this Domenico analytical solution to the solute transport equation. This analytical solution is an approximate solution to the solute transport equation that, under some circumstances, produces solutions that differ significantly from the exact solution to the solute transport equation.[2]

BIOSCREEN-AT is an enhancement of the standard BIOSCREEN program. In BIOSCREEN-AT, a second solution method has been implemented that can be chosen by the user as an alternative to the Domenico solution. The alternative method is an exact three-dimensional analytical solution for solute transport from a patch boundary condition within a semi-infinite aquifer[3]. This solution, unlike the Domenico solution, is exact and with the use of this method the user does not introduce numerical error of unknown magnitude into the solution. The Excel user interface for BIOSCREEN-AT is nearly identical to that for BIOSCREEN and a user familiar with BIOSCREEN will have no difficulty using BIOSCREEN-AT. With BIOSCREEN-AT, it is possible to easily quantify the error introduced by the Domenico solution, and to present results calculated using either – or both – solution methods.

Here are some recent comments from EPA's John Wilson (from the Ada Lab), which provide detailed practical tips:

People should not be using high values of longitudinal dispersivity compared to plume length to Calibrate BIOSCREEN. I recently read *Estimation of Methyl tert-Butyl Ether Plume Length Using the Domenico Analytical Model* by Weixing Tong and Yue Rong in *Environmental Forensics* (2002) 3, 81-87. In a population of 90 plumes, the maximum, minimum, average and median plume length was 1110, 63, 315, and 242 feet respectively. Their calibration values of longitudinal dispersivity were 4, 0.35, 1.45 and 1 foot respectively.

If people are using sensible values for longitudinal dispersivity to calibrate BIOSCREEN, there will not be an approximation error. If they are not using sensible values, the "error" from using an unrealistic value for longitudinal dispersivity will probably outweigh the approximation error.

[1] Newell, C., R. McLeod and J. Gonzales, 1996. BIOSCREEN, Natural Attenuation Decision Support System, User's Manual Version 1.3. EPA/600/R-96-087. This document is available on the U.S. EPA web site at <http://www.epa.gov/ada/csmos/models/bioscrn.html>.

[2] For a detailed discussion of the approximate nature of the Domenico solution and the error introduced by the use of the equation refer to Guyonnet, D. and C. Neville, 2004, Dimensionless analysis of two analytical solution for 3-D solute transport in groundwater, *Journal of Contaminant Hydrology*, 75:141-153.

[3] This solution was developed by C. Neville and is called ATRANS. Documentation of the solution with validation is contained in the compressed archive file downloaded from this page.

DATEBOOK - UPCOMING EVENTS

This section of the newsletter is an attempt to present both EPA and non-EPA sponsored environmental technology related courses and conferences. But being a quarterly publication, it is impossible for this newsletter to always be up-to-date. For the most pertinent information on upcoming EPA courses, see <http://www.trainex.org>. These events are listed chronologically.

Many of the entries in these newsletters are from TIO's "TechDirect" emails (thank you Jeff Heimerman!). TechDirect prefers to concentrate mainly on new documents and the internet live events. However, they do support an area on the CLU-IN webpage where announcement of conferences and courses can be regularly posted. Sponsors can input information on their events at <http://clu-in.org/courses>. Likewise, the page has an area for upcoming events that might be of interest. It allows users to search events by location, topic, time period, etc.

Many of you know that www.clu-in.org routinely place seminars in the CLU-IN Studio archive after they have aired. This provides access to the slides and the audio file for each presentation. Some of you requested that we make these audio files more portable. Now they have done that. For more recent seminars, you now have the option to download them in MP3 format which will allow you to listen via portable music players. You may also subscribe to their podcast feed, which will alert you when new seminar archives are available. For more information, see <http://clu-in.org/live/archive.cfm>.

CLU-IN Training Area. A training section has been posted to CLU-IN. The Training page offers visitors a quick glimpse of upcoming training opportunities in a monthly view as well as a running list of events. Links to upcoming Conference Webcasts, Trainex and Archived Internet Seminars and Podcasts are available on the Training Page. See: <http://www.cluin.org/training>.

ITRC Internet Based Training

These are typically 1-2 hour online courses where the participant follows a webpage presentation, while listening on the phone. Check - <http://www.itrcweb.org> or <http://www.clu-in.org/studio/seminar.cfm> for times and registration.

NOTE: All dates/times are subject to change – check <http://www.itrcweb.org> for the most up-to-date information.

NOTE: All dates/times are subject to change – check www.itrcweb.org for the most up-to-date information.

August 9th - *Perchlorate: Overview of Issues, Status and Remedial Options*
11:00 a.m. - 1:15 p.m. EASTERN Time

August 16th - *Remediation Process Optimization Advanced Training*
11:00 a.m. - 1:15 p.m. EASTERN Time

August 16th - *Fate and Transport of Nanoparticles*
<http://www-apps.niehs.nih.gov/sbrp/products/products4.cfm>
2:30-4:30pm EASTERN Time

August 23rd - *Risk Assessment and Risk Management: Determination and Application of Risk-Based Values*
11:00 a.m. - 1:15 p.m. EASTERN Time

ASTSWMO Solid Waste Managers Conference
August 13-15, 2007
Portland, OR
Contact: Truett DeGeare (703) 308-8292

Chemistry for Environmental Professionals - Fundamentals
August 14-15, 2007
Indianapolis, IN
<http://www.trainex.org/offeringlist.cfm?courseid=16&all=yes>

Chemistry for Environmental Professionals - Applied
August 16-17, 2007
Indianapolis, IN
<http://www.trainex.org/offeringlist.cfm?courseid=66&all=yes>

EPA Meeting on the Fate and Effects of Hormones in Waste from Concentrated Animal Feeding Operations (CAFOs).
August 20-22, 2007
U.S. EPA Region 5 Conference Facility, Chicago, IL.
<http://es.epa.gov/ncer/events/index.html#aug2007a>

National SBIR Phase II Conference 2007
August 20-23, 2007
Crystal City, VA
<http://www.dodsbir.com/conference/beyondphase2.htm>

23rd National Environmental Monitoring Conference
August 20-24, 2007
Cambridge, MA
<http://www.nemc.us/>

Introduction to Ground Water Investigations
August 21-23, 2007
Cincinnati, OH
<http://trainex.org/classdetails.cfm?courseid=6&classid=2867>

Environmental Information Management Systems (EIMS II)
August 22, 2007
Irvine, CA
<http://www.grac.org/eims.asp>

3rd Int'l Symposium on Nanotechnology, Occupational and Environmental
Health
August 29 - September 1, 2007
Taipei, Taiwan
<http://nano-taiwan.sinica.edu.tw/EHS2007/index.htm>

AFCEE Workshop on Performance-Based Contracting (PBC)
September 4-6, 2007
San Antonio, TX
Contact ERICA BECVAR at erica.becvar@brooks.af.mil

The 2007 Clean Water Partnership Summit
September 5-6, 2007
Cincinnati, OH
<http://www.htfwo.org/etprogram/summit07/>

Interagency Workshop on the Environmental Implications of Nanotechnology
September 5-7, 2007
Washington, DC
<http://es.epa.gov/ncer/events/index.html#sep0507>

SEDIMENT REMEDIATION : HOW DO YOU SELECT AND DESIGN OPTIONS?

September 5-7, 2007

Portland, OR

<http://www.smwg.org/Sept%202007%20Short%20Course%20info.pdf>

Interagency Workshop on the Environmental Implications of Nanotechnology

September 5-7, 2007

Washington, DC

<http://www.scgcorp.com/nanoimp2007/index.htm>

Introductory Risk Assessment Guidance for Superfund

September 11-13, 2007

EPA Region 9 - Exact location to be determined

<http://trainex.org/classdetails.cfm?courseid=24&classid=2865>

Preliminary Assessment and Site Inspection Training

September 11-14, 2007

Los Angeles, CA

<http://www.trainex.org/offeringslist.cfm?courseid=457&all=yes>

Hazard Ranking System

September 18-21, 2007

Los Angeles, CA

<http://www.trainex.org/offeringslist.cfm?courseid=38&all=yes>

2007 NGWA/U.S. EPA Fractured Rock Conference:

State of the Science and Measuring Success in Remediation

September 24-26, 2007

Portland, ME

<http://www.ngwa.org/DEVELOPMENT/conferences/details/0709245017.aspx>

4th International Phytoremediation Conference

September 24-26, 2007

Denver, CO

<http://www.phytosociety.org>

The 2nd International Conference on DNAPL Characterization & Remediation
September 24-27, 2007
Niagra Falls, NY
<http://www.redoxtech.com/>

Pollution Prevention through Nanotechnology Conference
September 25-26, 2007
Arlington, VA
<http://www.epa.gov/oppt/nano/nano-confinfo.htm>

Vapor Intrusion: Learning from the Challenges
September 26-28, 2007
Providence, RI
http://www.awma.org/events/view_event.html?typeid=1&id=11

Desert Remedial Action Technologies Workshop
October 2-4, 2007
Phoenix, AZ
http://www.clu-in.org/download/misc/DesertRat_Call_for_Abstracts.pdf

22nd Annual North American Hazardous Materials Management Conference
October 8-12, 2007
San Diego, California
Contact: Dee Johnson at paloma@well.com or (510) 530-6048

23rd Annual International Conference on Soils, Sediments and Water Analysis, Site Assessment, Fate,
Environmental and Human Risk Assessment, Remediation and Regulation

October 15-18, 2007

Amherst, MA
<http://www.umasssoils.com/>

2007 Northwest Environmental Summit
October 17-18, 2007
Tacoma, WA
<http://www.envsummit.com/>

The 15th Annual Region 9 EPA Tribal Conference

October 17-19, 2007

Elko, Nevada

(RTOC on October 15-16, 2007)

<http://www.temoaktribe.org/EPA/> and click on the "EPA Conference Registration Form."

Remedial Process

October 22-26, 2007

Dallas, TX

<http://www.trainex.org/offeringslist.cfm?courseid=52&all=yes>

Western Regional Pollution Prevention Network (WRPPN) Annual Conference

October 23-25, 2007

San Diego, California

<http://www.wrppn.org/>

Fall 2007 NATIONAL SBIR/STTR SBIR Conference

October 29 - November 1, 2007

Richardson, TX

http://www.texasone.us/site/PageServer?pagename=nat_conference

Remedial Design/Remedial Action (RD/RA)

November 7-9, 2007

Seattle, WA

<http://www.trainex.org/offeringslist.cfm?courseid=47&all=yes>

SETAC North America 28th Annual Meeting

November 11-15, 2007

Milwaukee, WI

<http://milwaukee.setac.org/home.asp>

Vapour Intrusion - A Rapidly Developing Environmental Challenge

November 13-15, 2007

Calgary, Canada

http://www.awma.org/events/view_event.html?typeid=1&id=53

DNAPL-2 Source Zone Characterization and Remediation

November 14-15, 2007

Long Beach, CA

<http://www.grac.org/dnapl.asp>

EPA's Environmental Information Symposium 2007

November 14-16, 2007

St. Louis, MO

<http://www.epa.gov/oei/proceedings/2007/proceedings07.htm>

OSC 201

December 3-5, 2007

Kansas City, KS

<http://www.trainex.org/offeringslist.cfm?courseid=285&all=yes>

SERDP/ESTCP SYMPOSIUM: Partners in Environmental Technology Technical Symposium & Workshop

December 4-6, 2007

Washington, D.C.

<http://www.estcp.org>

<http://www.serdp.org/>

Removal Process for RPMs

December 4-5, 2007

Kansas City, KS

<http://www.trainex.org/offeringslist.cfm?courseid=53&all=yes>

Waste Treatment, Transportation, and Disposal

December 6-7, 2007

Kansas City, KS

<http://www.trainex.org/offeringslist.cfm?courseid=46&all=yes>

International Symposium on Nanotechnology in Environmental Protection and
Pollution

December 11-13, 2007

Ft. Lauderdale, FL

<http://www.isnepp.org/ISNEPP07/front1.htm>

OPTIMIZING DECISION-MAKING AND REMEDIATION AT COMPLEX
SEDIMENT SITES

January 8-10, 2008

New Orleans, LA

<http://www.smwg.org>

2008 North American Environmental Field Conference and Exhibition

January 14-16, 2008

Tampa, FL

<http://www.envirofieldconference.com/>

8th National Conference on Science, Policy and the Environment

Climate Change: Science and Solutions

January 16-18, 2008

Washington, DC

<http://www.NCSEonline.org/2008conference>

Brownfields 2008

May 5-7, 2008

Detroit, MI

<http://www.brownfields2008.org>

Sixth International Conference on Remediation of Chlorinated and Recalcitrant
Compounds

May 19-22, 2008

Monterey, CA

<http://www.battelle.org/environment/er/conferences/chlorcon/default.stm>

25th Annual Meeting of the American Society of Mining and Reclamation

June 14-19, 2008

Richmond, VA

http://www.cses.vt.edu/revegetation/ASMR_2008.html

2008 Annual Meeting of American Society of Surface Mining & Reclamation

June 14-19, 2008

Richmond, VA

http://www.cses.vt.edu/revegetation/ASMR_2008.html

AEHS' 18th ANNUAL WEST COAST CONFERENCE ON SOILS, SEDIMENTS, AND WATER

MARCH 10-13, 2008

SAN DIEGO, CA

<http://www.aehs.com/conferences/westcoast/index.htm>

Triad Investigations: New Approaches and Innovative Strategies

June 10-13, 2008

Amherst, MA

<http://www.umass.edu/tei/conferences/triad.html>

WEB PAGES

Earth Portal

The National Council for Science and the Environment (NCSE) is pleased to announce the formal launch of the **Earth Portal** (<http://www.EarthPortal.org>).

Earth Portal is a comprehensive, free and dynamic resource for timely, objective, science-based information about the environment built by a global community of environmental experts: educators, physical, life, and social scientists, scholars, and professionals who have joined together to communicate to the world.

In contrast to information from anonymous sources with no quality control, the Earth Portal is created and governed by individuals and organizations who put their names behind their words and where attribution and expert-review for accuracy are fundamental.

The Earth Portal includes:

- [Encyclopedia of Earth](http://www.eoearth.org) (www.eoearth.org) has an initial 2,300 articles from over 700 experts from 46 countries, as well as such content partners as the World Wildlife Fund and the United Nations Environment Programme. The Encyclopedia is a means for the global scientific community to come together to produce the first free, comprehensive expert-driven information resource on the environment. The Encyclopedia includes articles, e-books and reports, interactive maps, and biographies, and will eventually be published in other major languages. Environmental scholars and experts are invited to become contributors to the Encyclopedia. [Click here.](#)
- [Earth News](http://www.earthportal.org/news) (www.earthportal.org/news) includes breaking news updates from many sources, with links from key words to Encyclopedia articles, enabling readers to learn about the science behind the headlines.
- [Earth Forum](http://www.earthportal.org/forum) (www.earthportal.org/forum) allows the public to engage in discussions with experts, ask questions and get answers, and to participate in community debates about issues that matter to them.
- [Environment in Focus](http://www.earthportal.org/?page_id=70) (www.earthportal.org/?page_id=70) provides an exploration of a major issue each week – energy, climate change, environmental economics and other topics – led by a prominent expert in the subject and involving articles, news, places, discussions, Q&A, interesting facts, and more.

The National Council for Science and the Environment (www.NCSEonline.org) is a not-for-profit organization dedicated to improving the scientific basis for environmental decision-making. The NCSE specializes in

programs that foster collaboration among diverse institutions, communities and individuals. The NCSE serves as secretariat for a growing Environmental Information Coalition of environmental experts and organizations, which is building the Earth Portal. ManyOne Networks, an innovative IT firm based near San Jose, California, has provided engineering and vision for the Earth Portal.

Technical Performance Measures (TPMs)

Soil Remediation, Revitalization, and Reuse: Technical Performance Measures is now available. This CLU-IN section is a tool to assist site project managers in selecting appropriate Technical Performance Measures (TPMs) for evaluating the success (risk reduction) of soil amendments or other in situ technologies used for remediation, revitalization, and reuse of contaminated sites. The database of TPMs and the search engine at the heart of this new tool contain a range of potentially applicable TPMs. This provides site managers the flexibility they need to design the most appropriate testing for their sites while providing consistency and comparability between sites.

The database includes a set of "core" TPMs chosen for their ready availability, reasonable cost, and level of standardization, plus supplemental TPMs that could be useful and/or important depending on specific conditions at your site. Users can search the database by using criteria (including the project goal, exposure pathway, and desired performance endpoint) that are appropriate for their sites. The search results provide information about each method that matches the selection criteria, including whether the method is a "core" TPM, comments on issues to consider when using the method, and references for additional information.

The TPMs in the database currently focus on metals, and the list is not exhaustive. Users are encouraged to suggest other appropriate tests that should be included. Over time, the matrix also may be expanded to include other types of contaminants. For more information, see <http://www.clu-in.org/ecorevitalization> .

Monitoring and Measurement for the 21st Century

The EPA 21M2 website publishes a quarterly literature search for EPA identified monitoring need areas. These need areas include DNAPL characterization techniques; monitoring mining waste sites; sensor technology development; vapor intrusion monitoring methods; test methods for dioxin, cyanide, mercury, pesticide, perchlorate, MTBE, and emerging contaminants; and remote sensing for a variety of applications. The most recent quarterly search was posted to the website in June (64 pages). The June search contains the most recent citations to the literature search database which contains thousands of citations and abstracts on these and other topics. To access the June quarterly literature search and the database, see <http://clu-in.org/programs/21m2/> .

RECENT DOCUMENTS, DATABASES, ETC.

These entries are arranged alphabetically. Thanks to TechDirect, Tech Trends, NRMRL News, the ETV Program, DOE, DoD and others for posting their latest documents. And remember, many of these are available in paper format in the Region 9 library. Use your local library.....or it may disappear. It's happening at EPA.....

"Analysis of a Gas-Phase Partitioning Tracer Test Conducted in an Unsaturated Fractured Clay Formation." Simon, M.A. and M.L. Brusseau. (2007)., Journal of Contaminant Hydrology, Elsevier Science, Ltd., 90, 3?4:146?158. Abstract:http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V94-4MHPBH3-1&_user=10&_coverDate=03/20/2007&_alid=568499916&_rdoc=3&_fmt=summary&_orig=search&_cdi=5888&_sort=d&_docanchor=&view=c&_ct=37&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=13b264394e48a655f1fab7cd49e79abb

"Arsenic Removal From Drinking Water by Adsorptive Media, U.S. EPA Demonstration Project at Chateau Estates Mobile Home Park in Springfield, OH, Six-Month Evaluation Report
McCall, S.E., A. Chan, and L. Wang.
(70 pp, 1.65 MB)
EPA/600/R-07/016, March, 2007
<http://www.epa.gov/nrmrl/pubs/600r07016/600r07016.pdf>

Biological Test Methods for Assessing Contaminated Land: A Demonstration of the Use of a Framework for the Ecological Risk Assessment of Land Contamination
(Science Report P5-069/TR1)
(August 2004, 116 pages)
<http://publications.environment-agency.gov.uk/epages/eapublications.storefront> and enter SCHO0804BICW-E-E as the product code on the publications search page.

Characterization and Fate of Gun and Rocket Propellant Residues on Testing and Training Ranges: Interim Report 1
(ERDC TR-07-1)
(January 2007, 226 pages)
<http://www.crrel.usace.army.mil/library/technicalreports/ERDC-TR-07-1.pdf>

Field Demonstration and Validation of a New Device for Measuring Water and Solute Fluxes at CFB Borden (ESCTP 0114)

(November 2006, 152 pages)

<http://www.estcp.org/viewfile.cfm?Doc=ER%2D0114%2DFR%2DBorden%2Epdf>

From Bench to Backyard: EPA Patents at Work Protecting Human Health and the Environment

(December 2006, 20 pages)

<http://www.epa.gov/osp/ftta.htm>

Grand Plaza Site Investigation Using the Triad Approach and Evaluation of Vapor Intrusion

(EPA 540/R-07-002)

(September 2006, 86 pages)

<http://www.epa.gov/nrmrl/pubs/540r07002/540r07002.pdf>

Hurricane Katrina, Hurricane Rita: A Coordinated Response.

23 minutes video

<http://www.clu-in.org/studio/video.cfm>

In Situ Bioremediation of Chlorinated Ethene DNAPL Source Zones: Case Studies (BioDNAPL-2).

(April 2007, 173 pages)

http://www.itrcweb.org/Documents/bioDNPL_Docs/BioDNAPL-2.pdf

In-Situ Substrate Addition to Create Reactive Zones for Treatment of Chlorinated Aliphatic Hydrocarbons (ESTCP 9920)

(March 2007, 93 pages)

<http://www.estcp.org/viewfile.cfm?Doc=ER%2D9920%2DC%26P%2Epdf>

Interim Guiding Principles for Good Samaritan Projects at Orphan Mine Sites and Transmittal of CERCLA Administrative Tools for Good Samaritans

(June 2007, 24 pages)

<http://www.epa.gov/compliance/resources/policies/cleanup/superfund/cercla-goodsam-principles-mem.pdf>

Inventory of Radiological Methodologies for Sites Contaminated with Radioactive Materials (EPA 402-R-06-007).

<http://www.clu-in.org/download/char/402-r-06-007.pdf>

Life Cycle Assessment: Principles and Practice

(14 pp, 632 KB)

(EPA/600/R-06/060) May 2006.

http://www.epa.gov/nrmrl/lcaccess/pdfs/chapter1_frontmatter_lca101.pdf

"Life Cycle Impact Assessment for the Building Design and Construction Industry

Bare, J.C. and T. Gloria.

(64 pp, 2.69 MB)

Life Cycle Assessment and Sustainability, A Supplement to Building Design and Construction, 3: 22-24, November, 2005.

<http://www.bdcnetwork.com/contents/pdfs/BD&CLCAWhitePaper.pdf>

May 2007 State Coalition for Remediation of Drycleaners Newsletter

<http://www.drycleancoalition.org/download/news0507.pdf>

Mineralogical Preservation of Solid Samples Collected from Anoxic Subsurface Environments (EPA 600-R-065-112)

(October 2006, 8 pages)

<http://www.epa.gov/ada/download/issue/600R06112.pdf>

MTBE and TBA Biodegradation

API, November 2004

http://www.api.org/ehs/groundwater/oxygenates/upload/Barcelona_Presentation.pdf

Nanotechnology and Life Cycle Assessment

(March 2007, 37 pages)

http://www.nanotechproject.org/file_download/168

Performance of Statistical Tests For Site versus Background Soil Comparisons When Distributional Assumptions Are Not Met

Evan Englund (US EPA)

<http://www.epa.gov/nerlesd1/cmb/pdf/141pos07.pdf>

RemTech Proceedings (2002-2006)

<http://www.esaa-events.com/remtech/proceedings.htm>

SITE Technology Capsule: Compost-Free Bioreactor Treatment of Acid Rock Drainage.
(2005, 11 pages)

<http://www.epa.gov/ORD/SITE/reports/540r06009/540r06009a.pdf> .

(More detailed Innovative Technology Evaluation Report (March 2006, 93 pages) available at

<http://www.epa.gov/ORD/SITE/reports/540r06009/540r06009.pdf>)

Technical Protocol for Evaluating the Natural Attenuation of MtBE

(API Publication 4761)

(May 2007, 186 pages)

http://www.api.org/ehs/groundwater/oxygenates/upload/4761_Final.pdf

Technology News and Trends

(EPA 542-N-06-009)

(May 2007, 6 pages)

<http://www.clu-in.org/download/newsltrs/tnandt0507.pdf>

Triad Implementation Guide (SCM-3)

(May 2007, 63 pages)

<http://www.itrcweb.org/Documents/SCM-3.pdf>

Vapor Intrusion and Ambient Air Study Final Results Report: Armen Cleaners, Ann Arbor, Michigan
(EPA 542-R-06-010)

<http://www.clu-in.org/download/char/armen.pdf>

Serious Scientists Gather 'Round...

These journal article titles are making me hungry:

TI: Dining at the Periodic Table: Metals Concentrations as They Relate to Recycling

AU: Johnson, J; Harper, EM; Lifset, R; Graedel, TE

JN: Environmental Science and Technology

PD: 2007

VO: 41

NO: 5

PG: 1759-1765

PB: ACS AMERICAN CHEMICAL SOCIETY

IS: 0013-936X

PE: MAR 01

URL: <http://www.ingentaconnect.com/search/expand?unc=1071391467>

Click on the URL to access the article or to link to other issues of the publication.

TI: Diffusion of PAH in Potato and Carrot Slices and Application for a Potato Model

AU: Trapp, S; Cammarano, A; Capri, E; Reichenberg, F; Mayer, P

JN: Environmental Science and Technology

PD: 2007

VO: 41

NO: 9

PG: 3103-3108

PB: ACS AMERICAN CHEMICAL SOCIETY

IS: 0013-936X

PE: MAY 01

URL: <http://www.ingentaconnect.com/content/docdel/art1072192697>

TI: Spoonful of Caution with Nano Hype: Andrew Maynard speaks about addressing the environmental effects of emerging nanotechnologies

AU:

JN: Environmental Science and Technology

PD: 2007

VO: 41

NO: 8

PG: 2661-2666

URL: http://pubs.acs.org/subscribe/journals/esthag/41/i08/html/041507interview_maynard.html



Disclaimer

This quarterly newsletter publication is meant to be used for information only. It does not represent the opinion of the management of the regional or national offices of EPA, only that of the author. The accuracy of the information contained herein is not guaranteed, only desired. If corrections are necessary, please contact the author. Thanks again to all of my information resources, which include EPA's OSRTI (formerly TIO), ORD (including ETV and NRMRL News) and Region 1's CEIT.

Thanks for reading it! Comments and suggestions are appreciated. If you wish to be added to or deleted from this list, please send me an email. (gill.michael@epa.gov)

Newsletter archives can be found on the EPA intranet site.....<http://www.epa.gov/osp/hstl/hstnewsletter.htm>

A number of environmental technology web resources can be found here.....<http://www.epa.gov/region09/waste/techlinks/>

And don't forget the "STL" website.....<http://www.epa.gov/osp/hstl.htm>

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