



December 2008

New on the SCRDR Website

The State Coalition for Remediation of Drycleaners (SCRDR) recently posted the *State Coalition for Remediation of Drycleaners (SCRDR) 10-Year Accomplishments Report (EPA 542-R-08-004)* on its website at <http://www.drycleancoalition.org/pubs.cfm>. This report documents SCRDR's work since 1998 fostering collaboration among the states to improve and ensure the effectiveness of the cleanup of environmental contamination from drycleaner sites with support from the EPA's Technology Innovation and Field Services Division (TIFSD) and the National Ground Water Association. The TIFSD will be printing copies of the accomplishments report for distribution at national technology conferences/meetings as well as providing a limited number of hard copies to SCRDR members for their distribution at special events in early 2009.

The document *State Drycleaner Remediation Programs* has recently been updated. This document contains information on the current drycleaner remediation programs across the United States and can be found on the website at <http://www.drycleancoalition.org/pubs.cfm>.

In July, the SCRDR posted the paper *Approach to Vapor Intrusion at Contaminated Dry Cleaner Sites* by Theresa Evanson (WI) and Sheila Gleason, (CT). This paper summarizes responses to a short survey conducted in 2007 regarding how SCRDR-represented states approach vapor migration investigation, mitigation, and site closure at contaminated drycleaner properties. This paper can also be found at <http://www.drycleancoalition.org/pubs.cfm>.

SCRDR Holds 2008 Meeting

The Coalition held its annual meeting October 21-23 in New Orleans, Louisiana. State representatives from member states Alabama, Florida, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin attended the meeting. Representatives from New Jersey, New York, and Virginia also participated in the meeting.

The agenda for the three day meeting consisted of state update briefings, environmental issues training, technical case study presentations, and a business meeting. The state update briefings included information on the revenues collected, expenditures from the

state funds, the number and status of sites in the state programs and other issues relevant to the management of the state programs.

During the training portion of the meeting, the state representatives received training on the following topics:

- **Enhanced Attenuation of Chlorinated Organics – A New Decision Strategy** by Dr. Guy Sewell, Dr. Richard Lewis, and John Doyon (NJ)
- **Biological Mechanisms & Activation to Remediation of Chlorinated Solvents** by Dr. Guy Sewell
- **Modified Active Soil Gas Surveys – A Method to Identify Contaminated Source Areas** by Dr. Richard Lewis

This year's case study presentations focused on site assessment, vapor intrusion mitigation, and remediation activities. The case studies given were:

- Expanded Initial Assessments – 2008 Update (SC)
- EOL Site Characterization Study at (former) Springfield Laundry Site (MO)
- Jones Road Groundwater Plume Federal Superfund Site (TX)
- BOS-100 Pilot Study at Former Mitchell's Formal Wear, Charlotte, NC (NC)
- New York State's Experience with Phytoremediation at a Dry Cleaner Site (NY)
- Vapor Intrusion Mitigation – Kansas Dry Cleaning Program (KS)
- MPCA Site Assessment: Vapor Intrusion Investigation (MN)
- Wisconsin's Approach to Vapor Intrusion (WI)
- Vapor Intrusion Mitigation or Sub-Slab Depressurization – The Use of Radon Mitigation Technology for Drycleaners (VA)

During the business portion of the meeting, Bob Jurgens of the Kansas Drycleaning Program was elected as the new Chair of the SCRDR and Dan Switek from Texas is the new Chair of the Project Management/Technical Issues Subgroup. The SCRDR would like to thank Steve Goins, the outgoing Coalition Chair, and Nancy Boisvert, outgoing Project Management/Technical Issues Subgroup Chair, for all of their hard work during the past two years.

The agenda for the 2008 meeting, state updates, and case study presentations are available for viewing on the SCRDR website. Summaries of past meetings and conference calls can be found on the website at <http://www.drycleancoalition.org/members.cfm>.

State and National Updates

Florida

- Effective March 1, 2009, all registered drycleaning facilities in Florida will be required to display in the vicinity of their drycleaning machines a Certificate of Registration. This Certificate of Registration will be necessary to purchase drycleaning solvent.

Kansas

- The Kansas Department of Health & Environment's Dry Cleaning Program will be soliciting bids for assessment and remediation environmental services associated with the Kansas Dry Cleaning Facility Release Trust Fund Program. This program addresses contamination at dry cleaning sites in the state of Kansas. The current contracts were awarded in 2004 and will end August 31, 2009. A new Request For Proposal (RFP) with individual modules for assessment, remediation, and operation & maintenance will be posted on the State of Kansas Division of Purchase web site at <http://www.da.ks.gov/purch/> in early 2009

Missouri

- On July 2, 2008, the Drycleaning Environmental Response Trust Fund issued a "Certificate of Completion" letter for Colonial Cleaners, a drycleaner that operated for over 30 years at the corner of South Brentwood Boulevard and White Avenue in Brentwood, Missouri. The owner ceased drycleaning operations at this location in 2004.

During initial site investigations conducted in 2004 and 2005, residual chlorinated solvent contaminants, including Perchloroethylene (PERC) and several of its daughter (i.e., degradation) chemicals, were discovered in the soil and groundwater on the property. Groundwater monitoring wells were initially installed at the site in 2006. However, due to statewide drought conditions at that time, sufficient quantities of groundwater for sampling and analysis were difficult to obtain. After four quarters of successful groundwater sampling and analysis, the results were evaluated in accordance with the Departmental Missouri Risk-Based Corrective Action (MRBCA) Technical Guidance.

Based on reviews of the laboratory reports, as well as a comparison with the MRBCA standards, the levels of chlorinated solvent contamination on-site were found to be below the MRBCA risk-based target levels for continued non-residential use of the property. In June 2008, the department and the owner signed an Environmental Covenant agreement, which ensures the future uses of the property will remain non-residential and prohibits domestic use of groundwater from the site.

- The deadline for notifying the Drycleaning Environmental Response Trust Fund (DERT) Unit of abandoned dry cleaning sites is **July 1, 2009**. DERT Fund monies cannot be used to pay for corrective action costs at abandoned dry cleaning facilities that were taken out of service prior to July 1, 2009 and not documented by or reported to the DERT Fund by July 1, 2009.

Owners or former operators that have not reported the locations of these abandoned facilities to the department can submit the *Notification for the Existence or Former Existence of a Dry Cleaning Facility* (MO 780-1831) form and any available evidence that the property once contained a dry cleaning facility by the deadline. A copy of this form is available on the department's Web site at

www.dnr.mo.gov/forms/780-1831.pdf or by contacting the DERT Fund at 573-526-8913 or 800-361-4827.

New Jersey

- The proposed amendments to N.J.A.C. 7:27-17 to reduce the amount of perchloroethylene (PCE) entering the environment by eliminating the use of PCE in the dry cleaning industry in New Jersey will be allowed to expire. The state is currently re-working a revised version of the amendments.
- In February 2008, an employee at a New Jersey dry cleaner was diagnosed with clinical manifestations of neurotoxicity after an occupational exposure to 1-Bromopropane (1-BP) (n-propyl bromide) due to inadequate ventilation and failure to use personal protective equipment (PPE). In some states, n-propyl bromide is used as a solvent in dry cleaning because of restrictions on the use of perchloroethylene. More information on this and another case concerning occupational exposure to n-propyl bromide can be found in the Centers for Disease Control and Prevention's December 5, 2008 (Vol. 57 / No. 48) *Morbidity and Mortality Weekly Report* (www.cdc.gov/mmwr).

Virginia

- The Voluntary Remediation Program (VRP) continues to average one new dry cleaner enrolling in the program every month. Vapor intrusion is now required at all dry cleaner sites enrolled in the VRP with sub slab vapor sampling being the preferred method of evaluation. If vapor intrusion is determined to be a risk at a site a radon style vapor mitigation system is commonly used.

Wisconsin

- The Wisconsin Dry Cleaner Environmental Response Program (DERP) closed to new applicants on August 30, 2008. Eighty-six new applicants applied to the program in 2008, which is equal to 60% of the total applications received in the previous 10 years of the program's existence. Demand for reimbursement continues to outstrip program revenues, even though licensing fees were increased by 1% (to a total of 2.8% of gross drycleaning revenues) in 2008. Dry cleaners applying for reimbursement must now wait 12 months or more to receive reimbursement of their site investigation and cleanup expenses.

Presentations by SCRD Members at National Conferences

On May 5, 2008, Meade Anderson of Virginia's Voluntary Remediation Program spoke during the *Turning up the Heat: Electrical Resistance Heating and Remediation* session of the Brownfields 2008 National Conference in Detroit, Michigan. Electrical Resistance Heating (ERH) is performed on dozens of brownfield properties annually in the U.S. for rapid removal of chlorinated solvent and petroleum hydrocarbon contamination in soil and groundwater.

The discussion during this session centered on the advantages and disadvantages, and pitfalls of two projects which utilized this remediation solution. His presentation covered the electrical resistance remediation which occurred at a former drycleaner site in Richmond Virginia and case history of this clean up effort. Former drycleaners are often found during the investigation, remediation and redevelopment of brownfields and failure to address them in a timely manner can lead to significant redevelopment issues.

In July 2008, SCRDR members, Bob Jurgens (KS), Bill Linn (FL), and Meade Anderson (VA) participated on a panel at the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Superfund meeting in Scottsdale, Arizona. The panel title was "Hung Out to Dry – The Dirt on Dry Cleaners". The panel members discussed the difficulties with addressing volatile organic compound (VOC) contamination at dry cleaners in the USA.

State Progress on Remediation of Dry Cleaning Sites

Remediation is currently being conducted at drycleaning sites in all of the member states. As of November 2008, cumulative statistics for the State Coalition for Remediation of Drycleaners member states are as follows:

3,648 Sites in drycleaning programs
2,018 Sites where contamination assessment work has been initiated
1,060 Sites where contamination assessment work has been completed
525 Sites where remediation has been initiated
265 Sites where remediation has been completed
525 Sites closed

Remedial Technologies Employed at SCRDR Drycleaning Sites

Soil/Sediment/Sludge Remediation:

- Excavation/Removal, including conventional excavations, trench box excavations, large diameter auger, vacuum trucks, septic tank/lift station cleanouts
- Soil Vapor Extraction (in-situ and ex-situ)
- Heated Soil Vapor Extraction
- Passive Venting
- Mobile Injection Treatment Unit
- Sub-slab Depressurization System

Groundwater Remediation:

- Pump & Treat
- Multi-phase Extraction
- Air Sparging
- Recirculating Wells
- Chemical Oxidation using: Fenton's Reagent, potassium permanganate, sodium permanganate, hydrogen peroxide, ozone, Cool-Ox™, persulfate

- Bioremediation using: HRC[®], HRC-X[™], Cl-Out, ethyl lactate, sodium lactate, potassium lactate, molasses, emulsified oil substrate, ORC[®], ABC[®], ERC, Phoster's Process[™], Vitamin B₁₂ / B₁, chitin, corn syrup, vegetable oil, and Bio Rem H-10[™]
- Bioaugmentation using: KB-1[™], Bio-Dechlor INOCULUM[™], Pseudomonas, Co-solvent flushing
- Granular activated carbon
- Surfactant/Co-solvent flushing
- Co-oxidation
- Nanno-scale zero-valent iron
- Diffusive Emitter
- Permeable Reactive Barrier (iron filings)
- Zero-Valent Iron Soil Mixing
- Zero valent iron
- Electrical Resistance
- Vapor control/venting
- Monitored Natural Attenuation (MNA)

Upcoming Events

- January 12-13, 2009, Philadelphia, Pennsylvania – National Forum on Vapor Intrusion: Science, Technology, and Policy (www.epa.gov/osp/stlworkshops.htm).
- January 28-30, 2009, San Diego, California – Air & Waste Management Association's Vapor Intrusion Conference (www.awma.org/events/view_event.html?typeid=1&id=98).
- February 23-24, 2009, Safety Harbor, Florida – 5th Conference on Hydrology, Ecology, Monitoring, and Management of GW in Karst Terrains (www.ngwa.org).
- February 25-25, 2009, Orange, California – Groundwater Monitoring Conference (www.grac.org/monitoring.asp).
- March 2-5, 2009, Atlanta, Georgia – REMTEC09 (Remediation Technology Summit) (www.remtec09.com).
- April 19-23, 2009, Tucson, Arizona – National Ground Water Association's (www.ngwa.org) 2009 Ground Water Summit.
- May 5-9, 2009, Baltimore, Maryland – Tenth International In Situ and On-site Bioremediation Symposium (www.battelle.org/conferences/bioremediation).
- June 9-11, 2009, University of Massachusetts-Amherst – International Conference on the Environmental Implications and Applications of Nanotechnology (www.teiconferences.com/nanoconference). The EPA may have some funding for one or two SCRD members to attend that have a strong interest in nanotechnology.

- November 16-18, 2009, New Orleans, Louisiana – Brownfields 2009 National Conference (www.brownfields2009.org).
- May 24-27, 2010, Monterey, California – Remediation of Chlorinated and Recalcitrant Compounds, The Seventh International Conference (www.battelle.org/conferences/chlorinated/).

SCRD Facts

- The SCRCD website received an estimated 6,159 visits during November 2008.
- As of December 2008, there are 655 subscribers to the SCRCD newsletter.

Newsletter Subscription

If you would like to be placed on the subscription list for the SCRCD newsletter please go to the following address <http://www.drycleancoalition.org/newsletter.cfm>. Copies of previous newsletters can be viewed at <http://www.drycleancoalition.org/pubs.cfm> on the SCRCD website.

SCRCD members are state governments that have established programs to fund remediation of drycleaner sites. Current member states include Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. California, Maryland, New Jersey, New York, and Virginia, which do not have formal programs but are active in drycleaner remediation under other authorities, also participate in Coalition activities. SCRCD provides a forum for states to share programmatic, technical, and environmental information to improve the remediation of drycleaner sites. SCRCD was established in 1998 and receives technical, management, and training support from the U.S. EPA Office Superfund Remediation and Technology Innovation (OSRTI) and the National Ground Water Association (NGWA).