

# Kansas Dry Cleaning Program



Semi-Annual Newsletter

Spring 2005

## Preventing Contamination of Kansas Soil and Water

This newsletter focuses on the pollution prevention requirements for dry cleaning facilities in Kansas. The Kansas Department of Health & Environment (KDHE) has spent over \$9 million since 1995 on assessment and cleanup of contamination from dry cleaning facilities. Add in an estimated \$1 million spent by dry cleaner owners, themselves, the total cost estimate easily exceeds \$10 million for the past 10 years.

So how do we fix the problem? In 1995, the state legislature passed the Dry Cleaner Environmental Response Act (DERA) to help provide funds to clean up contamination from the dry cleaning industry and ensure additional contamination does not occur at active dry cleaning facilities. KDHE continues to support the DERA legislation that was introduced by the dry cleaning industry. Regulations were developed by KDHE detailing pollution prevention requirements that reduce the occurrence of leaks and spills. Each occurrence has the potential to contaminate our state's soil and groundwater.

In 2000, KDHE began inspecting 20 to 25 dry cleaning facilities annually to ensure the industry was complying with the DERA regulations. During the first year, only 24 percent of the facilities were in compliance. Unfortunately, the inspection compliance rate in subsequent years remained too low and ranged from 44 to 77 percent. In late 2004, KDHE decided to inspect the remaining 69 known facilities to ensure all dry cleaners were brought into compliance with the DERA regulations and statutes. Of the 45 facilities inspected in 2005, 20 (44 percent) were in compliance. As of May 1, 2005, 25 facilities remain to be inspected (see the Inspection Compliance graph below for yearly compliance rates).

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### Dry cleaning facilities owners must install the mandatory pollution prevention measures, such as:

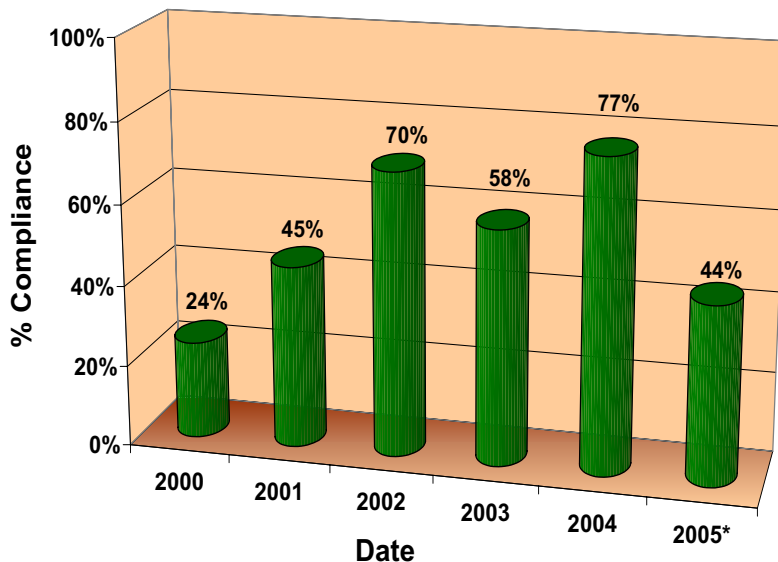
- ✓ Secondary containment around the machines, waste, and separate solvent storage
- ✓ Document, label and track waste to ensure all waste is handled and disposed properly
- ✓ Weekly inspection of machines, containment, and waste to ensure leaks or spills are detected and fixed immediately
- ✓ Disposal of wastewater (e.g. separator water) using atomized misters, heated evaporation units, and licensed off-site hazardous waste haulers only. Disposal of separator water into sewers or drains or dumping on the soil or in the water is not allowed
- ✓ Document repairs and complete in a timely manner
- ✓ Direct-coupled delivery of chlorinated solvents such as Perc, which is also known as PCE, tetrachloroethylene, or perchloroethylene

### Thoughts to Ponder

- ✓ *A bumblebee is faster than a John Deere tractor.*
- ✓ *Do not corner something that you know is meaner than you.*
- ✓ *Remember that silence is sometimes the best answer.*
- ✓ *If you find yourself in a hole, the first thing to do is stop diggin'.*
- ✓ *Always drink upstream from the herd.*
- ✓ *Good judgement comes from experience and a lot of that comes from bad judgement.*
- ✓ *If you get to thinkin' you're a person of influence, try orderin' somebody else's dog around.*

*Unknown Authors*

Dry Cleaning Facility Inspection Compliance



## Meet the Staff

### Joe Dom - Project Manager

Joe is a project manager for KDHE with responsibilities in the Kansas Dry Cleaning Program and Landfill Remediation Program. He currently manages multiple dry cleaning and landfill projects and serves as the section's geographic information system (GIS) expert. Joe has a Bachelor of Science Degree in geology from the University of Akron (Ohio) and a Master of Science in geology from the University of Missouri - Columbia. He has worked for KDHE since January 2004. Prior to working at KDHE, Joe worked for the Missouri Department of Natural Resources.



### **Preventing Contamination** ... *continued from Page 1*

Facilities that are first-time inspection noncompliance offenders are typically given 45 days to correct the compliance problem(s). Issues that cause an immediate risk for contamination, such as improper disposal of separator water require immediate compliance. The KDHE may assess administrative penalties up to \$500 per violation per occurrence if the compliance issues are not fixed within the allotted time frame. Compliance issues involving willful and wanton violations receive an immediate administrative penalty.

#### **Who does the inspections?**

The Kansas Dry Cleaning Program has its own inspectors, based out of Topeka. The inspector will identify him or herself as an employee with the KDHE Dry Cleaning Program when they call to set up an appointment or arrive to inspect your facility for compliance with DERA.

It is possible that a facility may be inspected by other local and state agencies not affiliated with the Kansas Dry Cleaning Program. These other agencies may enforce similar laws such as those governing the handling of waste. For example, KDHE Bureau of Waste Management, Hazardous Waste Program inspectors may inspect facilities according to hazardous waste handling laws. KDHE Bureau of Air and Radiation compliance inspectors look at maximum achievable control technology standards (MACT) for air emissions. Local agencies may also inspect for boilers or for other environmental requirements.

Keep in mind DERA has slightly stricter waste regulations for handling solvents and wastes. The KDHE programs are considering joint inspections, when a facility is due for inspection by each program.

#### **Dry Cleaner Compliance Calendars**

All registered dry cleaners should have received their 2005 compliance calendars in early December 2004. Please call 800-578-8898 if you did not receive a calendar for your facility or need additional copies. These calendars are an excellent way to remember when to inspect and document any problems.

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### **Small Business Environmental Assistance Program (SBEAP) Offers Free Environmental Compliance Advice**

Is your head spinning because there are so many environmental regulations and you aren't sure which regulations and statutes apply to your facility? Well, put down the aspirin because help is available from a free, confidential program offered through the Small Business Environmental Assistance Program (SBEAP).

The SBEAP provides small businesses with technical assistance to achieve environmental regulatory compliance. The program helps companies prevent pollution and improve the bottom line by improving the company's environmental performance.

SBEAP services are **confidential** and **free-of-charge**. The services are provided by:

- ◆ consultation by phone (800-578-8898)
- ◆ on-site technical and regulatory assistance
- ◆ publications and newsletters
- ◆ presentations, workshops, and training

Please call Barb or Nancy at 800-578-8898 for more information. A Kansas Dry Cleaner Compliance manual and various fact sheets can be found on the SBEAP Web site at <http://www.sbeap.org/ppi/industry/drycleaners.htm>.

### School Days

*"School days are the best days of your life ... provided your kids are old enough to go."*

## Bioremediation - Technology Spotlight

**B**ioremediation is a remediation technology that has emerged as a cost effective method of cleaning up contaminated soil and groundwater. Microbial bacteria are essentially microscopic "bugs" that exist in virtually all soil. The goal of this technology is to create an anaerobic environment in the saturated soil to allow the bugs to thrive and help degrade or "break down" solvent such as tetrachloroethylene (PCE). Anaerobic means the environment has extremely low oxygen levels. This degradation process is called reductive dechlorination. The problem is that some strains of bacteria cannot completely degrade PCE to the desired non-harmful end product called ethene. Commonly the degradation will stop at cis 1,2-dichloroethylene (DCE) or vinyl chloride, which can still be harmful in drinking water. At the time of this publication, the only "bugs" known to significantly expedite the break down of PCE to ethene is *Dehalococcoides ethenogenes*. Sites with strong evidence of natural attenuation are good candidates for bioremediation. Natural attenuation is a process where solvents naturally degrade into other chemicals without any human assistance. Commonly this degradation is very slow (many decades), which is why KDHE looks to speed up the degradation process with bioremediation. Bioremediation can be used to clean up soil, but the technology is more commonly used for groundwater remediation.

The "bugs" involved in bioremediation need a source of carbon (food), an electron donor, an electron acceptor, appropriate nutrients, a suitable temperature range and pH, and other environmental conditions. Naturally occurring conditions often do not have an adequate supply of food required for good biological activity. Injecting the nutrients or food into the groundwater to speed up reductive dechlorination of chlorinated solvents is termed **biostimulation**. Biostimulation relies on existing microbial populations to degrade the PCE. Food and nutrient materials that have been injected at dry cleaner facilities include dextrose, molasses, ethyl lactate, potassium lactate, sodium lactate, hydrogen releasing compound (HRC™), soybean oil, vegetable oil, or combinations of these products. Many of these products are food-grade sugar, starch, or edible oil products. New biostimulation products, such as cheese whey (waste product from cheese production) and milk are being researched as the list of biostimulants continues to grow. The biostimulation process commonly takes several years to achieve cleanup or at least reduce the contaminant levels in the groundwater.



At some sites, the existing microbial populations in the subsurface may not have the correct bugs necessary to complete the break down of the solvents, namely the *Dehalococcoides* bacteria. Under such circumstances, a mixture with the correct bugs and necessary nutrients can be injected into the subsurface to speed up the break down of the solvents. This technology is typically termed **bioaugmentation**. Case studies indicate that bioaugmentation products can quickly clean up site source areas to below cleanup levels in a short period of time, sometimes within one year. Several bioaugmentation products currently offer a consortium of bacteria and nutrients to "kick-start" bioremediation at dry cleaning sites. Most companies warn that proper design of the injections and handling of their product is key toward success with bioaugmentation.

Sites will often use bioremediation as a "treatment train" approach, which may involve removal of contaminated soil via excavation and then mixing a stimulant or augmentation product into the pit basin (when near the groundwater) to help complete the groundwater remediation. Recirculation systems can be used to try and get the injected materials quickly mixed throughout the aquifer. The stimulation or augmentation product is added to water pumped from the site and reinjected into the groundwater, or the water can be injected directly into the groundwater in the source area without adding more product. In either case, recirculation helps to provide better mixing of the food and nutrients throughout the plume which helps speed up the cleanup. Reinjection is commonly performed through vertical wells, horizontal wells, or infiltration galleries (trench system).

Bioremediation is a relatively new technology, which shows tremendous potential for cleanup of dry cleaning sites. The KDHE is currently working on a joint project with Kansas State University to determine the effectiveness of bioremediation at a dry cleaning site in Manhattan. The results of the lab testing to date are very positive and upcoming field tests will help KDHE with designs and implementation at sites throughout the state. For more information on remediation technologies, please visit the State Coalition for Remediation of Drycleaners (SCRD) at [www.drycleancoalition.org](http://www.drycleancoalition.org). The Web site has many remediation site profiles and will soon have a report in the Publication section titled "Technology Assessment for Remediation at Solvent Contaminated Drycleaner Sites."

## Frequently Asked Questions

***The Kansas Dry Cleaning Program's annual registration is due by January 31 of each calendar year. What happens if I don't register on time?*** Per regulation K.A.R. 28-68-2, the annual registration form and fee are due by January 31 of the calendar year or within 30 days after opening a new facility or change of ownership. Facilities that do not meet the deadline are subject to an administrative penalty of up to \$500. In addition, solvent distributors are not allowed to sell solvent to unregistered facilities or they may too be assessed an administrative penalty. KDHE mailed registration forms and a fee invoice to each dry cleaning facility registered the previous year. The forms and invoice are typically mailed in December of the preceding year. KDHE also has an on-line registration Web site at [www.kdhe.state.ks.us/dryclean](http://www.kdhe.state.ks.us/dryclean) for immediate registration with a printable certificate. The 2006 registration will also allow payment of the fee with on-line registration using electronic checks in addition to most major credit cards. The on-line transaction fee in 2006 will continue to be absorbed by KDHE so the registration fee will remain \$100 for on-line and mail in registration.

### Golf Caddies- What not to say!

Golfer: *"Do you think my game is improving?"*

Caddy: *"Yes, you are missing the ball much closer now."*

*Author unknown*

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## Who to contact if you have questions

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## Drycleaning Technical Advisory Committee

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Scotch Fabric Care, Lawrence
- ◆ Robert Bayless: (620) 793-3576  
Bayless Cleaners, Great Bend
- ◆ Brian Gieber: (785) 539-4211  
Stickel Cleaners, Manhattan
- ◆ John Neal: (620) 663-5688 - Hutchinson
- ◆ Ross Markle: (913) 682-3535  
Harris Brothers Cleaners, Leavenworth
- ◆ Dan Miller: (316) 942-5180  
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