Shoptalk

A newsletter about dangerous waste and pollution prevention

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Links related to all articles can be found on page 12.

Inside:

Department of Ecology

Your business is liable for all dangerous wastes you generate. If you are uncertain about your responsibilities as a dangerous waste generator, call your nearest Ecology office and ask for a hazardous waste specialist. For more information on reducing or recycling dangerous waste, ask for the toxics reduction staff at:

Bellevue:	(425) 649-7000
Lacey:	(360) 407-6300
Yakima:	(509) 575-2490
Spokane:	(509) 329-3400

To ask about available formats for the visually impaired please call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Shoptalk is produced by the Washington State Department of Ecology's Hazardous Waste and Toxics Reduction Program.

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Announcements

Moving Forward with Dangerous Waste Rule Amendments

Ecology is amending the Dangerous Waste Regulations (Chapter 173-303 WAC). We plan to adopt the new rules by the end of 2014. Subscribe to the DW-RULES listserv to learn about these proposed rule changes. Stay tuned for your invitation to a public meeting to provide input on the new rules.

Hospitals and labs benefit from clearer directions on pharmaceutical disposal

Disposal facilities are having problems with hospitals and labs disposing of dangerous waste pharmaceuticals in the "red bags" intended for biohazard waste only. The new publication, *Focus on Dangerous Waste: Handle Pharmaceutical Waste Properly* (pub. #13-04-013), provides clear instruction on how to handle these waste streams and why.

15 Dead in West, Texas Explosion – Could it Happen Here?

The news from West, Texas was terrible. A fire at a fertilizer facility exploded stored ammonium nitrate. The blast killed 15 people, including volunteer firefighters. It injured hundreds, destroyed an apartment complex, and damaged homes and businesses in the small town. And people in Washington wondered, "Could it happen here?"

What's left of the West Fertilizer Company plant in West, Texas after a building storing ammonium nitrate exploded. White circle in upper center marks the crater where the building was. ***Photo courtesy of U.S. Chemical Safety Board***

Ross McDowell in the Lewis County Division of Emergency Management knows it can. Ammonium nitrate is a common fertilizer. It is also a hazardous material – an oxidizer. That means it does not burn by itself but will make an existing fire more intense. It can explode when heated in a confined space.

Texas lacks Washington's more comprehensive system of rules and inspections for hazardous materials. That's one line of defense against incidents like the one in West, Texas. But once an incident begins, firefighters and other first responders are the best defense against further harm.

Most emergency response in Washington's rural areas comes from volunteer fire departments. They need knowledge and the chance to practice their skills to do their jobs and keep themselves safe. As one of the leaders of the Local Emergency Planning Committee (LEPC), McDowell decided to put together a training exercise based on the actual events in West, Texas.

When Do You Fight Fire and When Do You Flee?

On June 7, more than 60 people came together in the exercise to consider the question, "When do you fight the fire and when do you flee?" The training began by reviewing two ammonium nitrate explosions.

- A 2009 explosion in Bryan, Texas was triggered by a slowly developing fire. The responders knew the cause and location of the fire, what chemicals were there, how vulnerable people were, and what the situation was around the fire. They chose to not fight the fire and concentrated on evacuating 70,000 people. There were no deaths and only 50 minor injuries.

- At the West, Texas incident, firefighters attacked the fire without knowing the cause of the fire. They didn't realize the danger from ammonium nitrate because it was listed as non-explosive and non-flammable. The chemicals exploded within 22 minutes after firefighters were called out. The event accelerated too rapidly to adjust tactics.

The training participants compared normal response to building fires and the unique risks associated with facilities that house chemicals. They explored topics such as risks due to quantities on hand, storing multiple chemicals in confined spaces, and the limitations of how chemical are classified. In the end, they developed a multiple-discipline *Hazardous Materials Incident Worksheet* to guide responders faced with such situations.

17 Agencies Participated

The training drew people from response organizations, businesses, and non-governmental representatives from 17 different agencies. Many of the participants were surprised at the number of different agencies involved in the response and recovery processes.

"As a result of the exercise, additional private agencies identified resources they will make available in an emergency," McDowell said.

Lewis County will repeat the exercise on Saturday, September 28, to reach more of the volunteer fire districts that were unable to attend the June training. The county has also compiled a CD of course materials, which is available to agencies wanting to perform a similar training. Call McDowell at 360-740-1151 or e-mail DEM@lewiscountywa.gov to make arrangements.

Tier Two – Emergency and Hazardous Chemical Inventory reports go the Washington State Emergency Response Commission (SERC). For more information on these and other required reports, see Emergency Planning and Community Right to Know. Or call 1-800-633-7585. (At the greeting, press 2.)

CellNetix – Reducing, Reusing, Recycling…and Saving Money

The Company:

CellNetix, a pathology laboratory in Seattle, provides a full range of laboratory services to health care providers and patients. Since 2012, CellNetix has been leading its industry in preventing pollution through reducing, reusing, and recycling waste.

Diagnostic microscopy of a patient specimen.

Their Results:

CellNetix estimates the company saves as much as $180,000 annually from their Pollution Prevention Planning, and the technical assistance from Department of Ecology. They achieved these savings by conducting on-site recycling, finding beneficial uses for waste materials, and changing some purchasing practices. Dave Simpkins, CellNetix Safety Officer, sums it up, "people need to realize that you can find solutions that are socially and ethically responsible and save money by doing so. That's a simple choice."

How They Did It:

Reducing and Recycling Solvents and Chemical Waste: Solvents are used throughout the laboratories. One solvent, **xylene** is a highly dangerous aromatic hydrocarbon used in processing tissue and staining slides. **Alcohol**s are used in tissue processing and as a solvent for various dyes. Through recycling, CellNetix recovered 407 gallons of xylene and 522 gallons of ethanol in the first seven months of 2012, saving the company more than $4,600.

Formalin is used to preserve tissue for routine analysis of cells. CellNetix preserved more than 219,000 specimens in 2011, using a large amount of formalin. Most of the formalin becomes so contaminated it is difficult to recover usable preservative. Despite this challenge, CellNetix recovered 539 gallons of waste formalin through recycling. This saved the company more than $2,500.

Diaminobenzidine (DAB) is a potent mutagen (can cause damage to genetic material). This waste stream consists of an oil portion and an aqueous (water) portion. Previously, this two-part waste was managed by an off-site disposal company. Now, CellNetix treats the aqueous portion by approved methods that render the DAB inert. That portion is disposed to the sewer under a King County discharge permit. The oil portion is still disposed of as a solid waste off-site. In 2011, they reduced the DAB waste managed off-site from 1,364 gallons to only 285 gallons, a reduction of nearly 80 percent. CellNetix also adjusted their procedures for DAB to use only the minimum amount of treatment chemical necessary. CellNetix has saved about $6,572 that would otherwise have been spent shipping the entire waste stream offsite.

Recovering Precious Metals: CellNetix's staining process creates a waste silver nitrate solution. They had sent this waste off-site for proper recovery and disposal. David Simpkins, who oversees lab safety, developed a method to recover the silver from this waste stream. The aqueous portion could then be disposed of to the sewer under their permit. Ecology and King County reviewed and accepted the silver recycling process. The silver can be used for jewelry and other art forms.

The company now recovers 250 to 300 grams of silver per year. And, they save money on waste management because they no longer have to send silver nitrate waste offsite for treatment. They are also developing a similar gold reclamation process.

Transferring a patient specimen to a tube.

Diverting Waste from Landfill: Pathology and histology services consume an enormous amount of formalin and not all of it can be recycled. Standard industry practice is to neutralize formalin waste before disposal.

The typical commercial proprietary "neutralizing" product provides the user with a 0.75-kilogram (kg) package that costs $16.00. CellNetix switched to purchasing the product locally in bulk 25 kg bags. This greatly reduced packaging and cross-country transportation costs. They now pay only $0.98 for the "same" 0.75 kg. – saving nearly 94 percent on the purchase price.

Reducing Plastic Waste: In 2011, CellNetix took a hard look at their plastic waste and began working with Mt. Baker Bio, an innovative maker of plastic labware. Their goal was to rework their use of plastics in order to reuse and recycle as much as possible. As a result, CellNetix recycled 1,768 pounds of plastic in 2011. Thanks to Mt. Baker Bio's innovations, CellNetix continues to segregate and recycle plastic.

CellNetix also now buys formalin, alcohol, and xylene in bulk 55-gallon reusable drums. This decreases the use of their own plastic reagent containers, and diminishes "single-use" containers. It also reduces the number of shipments coming to CellNetix, which means less fuel used in transportation.

All of these changes have reduced waste, and prevented pollution – while cutting costs at the same time. CellNetix continues to look for more ways to conserve resources while saving the company money.

Contacts and Resources

- CellNetix
- Cascade Columbia Distributing
- Mt. Baker Bio

Assessing the Safety of Chemical Alternatives: Reference Guide in the Works

As manufacturers strive to remove toxic chemicals from their products, they want assurance that the alternatives they choose are safer than the chemical being replaced. Ecology has been collaborating with seven other states to create an "alternatives assessment" guide to help with this effort.

An "alternatives assessment" is a tool to make clearer choices based on risk. These tools evaluate alternatives to toxic chemicals to minimize or eliminate the potential for unintended consequences. Without such an assessment, a manufacturer could replace a toxic chemical with something that is as bad or worse. Companies avoid this by selecting alternatives with the lowest possible hazard.

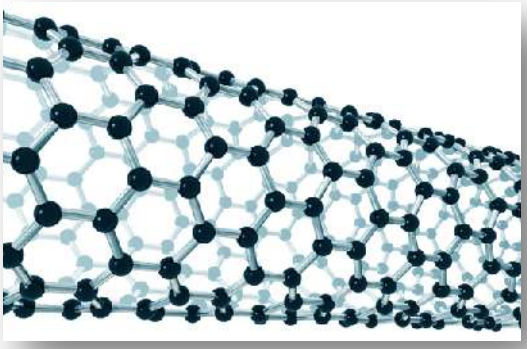
For two years, Ecology been working with member states of the Interstate Chemicals Clearinghouse, or IC2. They are developing a reference guide to help companies switch to safer chemicals and eliminate chemicals of concern currently used Stakeholders have extensively reviewed the guide throughout the process. It is now approaching its final form.

IC2 member states understand the benefits of consistency in alternatives assessment. But they recognize that one approach will not work in all situations. The comprehensive guide will include three ways to do an alternatives assessment. Washington is interested in using the guide to work with companies on a voluntary basis to replace chemicals of concern with safer alternatives.

For more information, contact Linda Glasier at 360-407-7355 or e-mail lgla461@ecy.wa.gov.

Protect Workers from Exposure to Nanoparticles

Recent research indicates that carbon nanotubes (CNT) and carbon nanofibers (CNF) may pose a respiratory hazard to workers manufacturing and using these materials. According to a national safety agency, new laboratory studies of mice inhaling carbon nanotubes showed a 90 percent increase in the probability of developing tumors. Similar studies have shown lung inflammation and other respiratory illnesses.



Carbon nanotubes are made from a folded sheet of single carbon atoms.

Based on these and other findings, the National Institute of Safety and Health (NIOSH) recommends that employers reduce worker exposure to airborne concentrations of the materials. For steps you can take, see www.cdc.gov/niosh/updates/upd-04-24-13.html.

Carbon nanotubes and carbon nanofibers are man-made, elongated particles made of sheets of pure carbon that are about a thousand times smaller than a human hair. There is no single type. One type can differ from another in shape, size, chemical composition, and other physical and chemical characteristics. This adds to the complexity of understanding their potential hazards.

Occupational Exposure to Nanomaterials

Occupational exposure to CNTs and CNFs can occur when they are manufactured, and when they are used in other products and applications. The greatest risk comes from the dry, powder form.

Many businesses don't know that the products or processes they use contain or create nanomaterials. The U.S. does not require manufacturers or processors to say whether a product contains nanomaterials, or explain its physiochemical characteristics. If you recently changed products or processes, look carefully at the information for these products, materials, and/or processes. To protect yourself and your employees, you should fully characterize the chemicals that you use. (You also need this information to characterize your waste stream.)

You can get more information from:

- The Center for Disease Control and Prevention (CDC)
- The latest updates from NIOSH regarding nanotechnology at www.cdc.gov/Other/emailupdates/.
- Maria Victoria Peeler, Department of Ecology, 360-407-6704, e-mail peel461@ecy.wa.gov.

Safer Chemistry Challenge Program Starts this Fall

Ecology will kick off a new pollution prevention initiative this fall. The Safer Chemistry Challenge Program (SCCP) aims to motivate and recognize companies that reduce or eliminate their use of hazardous and toxic chemicals, and find safer alternatives. Many states are embracing this national Program. It is already in place in the eight states of the Great Lakes Basin.

The National Pollution Prevention Roundtable sponsors the SCCP. Grants from the U.S. Environmental Protection Agency are funding the Washington and Great Lakes Basin programs.

Businesses Benefit

The businesses in the Great Lakes Basin program are finding significant value from participating in the Safer Chemistry Challenge Program and using sustainable practices. They have improved processes, reduced costs, and retained employees. They have also found new market opportunities, and established stronger competitive positions in the marketplace.

The overall goals for Washington's participating companies include:

- Selecting and using safer alternatives to hazardous chemicals.
- Moving toward cleaner processes, including adopting greener, more sustainable technologies.
- Using green chemistry tools and designs that avoid the use and generation of toxic chemicals.

For more information on the SCCP, contact Ken Zarker at 360-407-6724, or e-mail kzar461@ecy.wa.gov.

The Need for SCCP

Ken Zarker, supervisor of the pollution prevention program at Ecology, wrote about the need for a program like the SCCP in the online news site www.GreenBiz.com. His article is reprinted here.

States, firms fill chemicals leadership void left by feds

By Ken Zarker

Published June 11, 2013, Reprinted from GreenBiz.com®

Amid widespread agreement that the Toxic Substances Control Act of 1976 is outdated, new efforts are emerging in Congress to revise it. The new Chemical Safety Improvement Act, introduced by the late Democratic Sen. Frank Lautenberg and Republican Sen. David Vitter, is an unusual bi-partisan effort. If an effective federal system is established, states will not feel compelled to regulate. However, weak federal power, as the outdated TSCA bill shows, encourages states to step in.

Across the country, states implemented policies and programs to advance sound chemical management. Beginning in the early 1990s, many states began to supplement existing end-of-pipe regulation towards a prevention-based approach to reduce pollution at its source.

The results have been impressive. According to the National Pollution Prevention Roundtable's (NPPR) most recent pollution prevention report, almost $6.6 billion in economic benefits and more than 7 billion pounds of pollution were reduced or eliminated from 2007 to 2009.

Chemicals policy has emerged as a priority at the state level the past two decades. An April report by the NPPR, funded by the Seattle-based Bullitt Foundation, reveals accelerated state legislative actions to reduce toxic chemical threats. From individual states' actions on restricting single chemicals in consumer products to more comprehensive approaches, businesses are recognizing emerging market pressure.

According to the NPPR report, states have passed more than 77 individual chemical restriction bills in recent years, including 31 bills related specifically to mercury. The new report, "State Chemicals Policy: Trends and Profiles," reveals that almost all 50 states either have proposed or enacted such legislation. According to Safer States, a network of environmental health coalitions and organizations, toxics bills have passed with broad bipartisan support and have continued legislative interest. More than 20 states have bills under consideration in 2013.

As chemicals policies are changing and varied from state to state, companies need to evaluate the downstream use of chemicals throughout their supply chain. The market landscape continues to shift beyond restricted substances lists and towards a demand for a life-cycle approach to identify safer alternatives, and design new chemistries – a shift also reflected in state-level legislation.

States have a demonstrated history of stepping up to fill federal gaps, introducing and passing laws to help mitigate the threats and costs to public health and supporting consumer demand that manufacturers produce safer products with transparent disclosure. At the same time, businesses remain concerned that conflicting state regulatory actions will become increasingly challenging. If a federal policy passes with an effective framework, much of this regulation will be standardized. Continued gaps and holes leave consumers and constituents to rely upon the states to step up.

Several leading organizations are moving forward with actions as Congress considers TSCA reform.

The Business-NGO Working Group, a collaboration among business and NGO leaders, has outlined principles for safer chemicals, including support for public polices and industry standards. In addition, they recently updated the business case for reform of TSCA.

The American Chemistry Council (ACC) recently announced it is implementing enhancements to the Responsible Care program. The Product Safety Code includes a set of 11 management practices, including a reference to product design and improvement. The ACC plans to fully implement the code by 2017.

Businesses should be aware of these themes emerging at the state level. These are some key policy initiatives:

- States are transitioning from piecemeal restrictions on specific chemicals towards a more integrated approach.
- States are embracing environmentally preferable purchasing policies to promote ingredient disclosure related to state purchasing and to stimulate new markets.
- States are looking for solutions that manage products throughout their lifecycle. This represents a comprehensive approach to the design, use and end-of-life phases of chemicals.
- States support economic development through green chemistry initiatives to promote product innovation and jobs.

If efforts to update the 37-year-old TSCA don't fully address these concerns, many states are likely to continue to pass chemicals management legislation and regulations. Many states consider these efforts necessary to manage chemicals of concern and protect their citizens and the environment. States will continue to provide constructive and practical input towards creating a new national chemicals management system.

Lessons learned from states' experiences will lend a strong voice to the debate on strengthening our federal chemical regulations, and heeding these lessons will lead to an effective path forward.

Local Source Control Specialists Find Problems and the Fixes

An UST that Wasn't – Franklin Pierce School District

When Local Source Control Specialist, Tina Friedrich, conducted a site visit at the Franklin Pierce School District's maintenance facility, she discovered a mysterious underground storage tank (UST). This discovery led to the removal of the UST and efforts to eliminate the environmental threat it posed.

A Local Source Control (LSC) representative first visited the site in 2012. The Specialist found the tank's fill port sticking out of a little grassy area by the building. It was being used to store used oil. But the district's staff did not know whether the tank had been tested to detect leaks.

Good riddance to a bad tank.

Pulled tank showing fill port.

It's Got Legs!

The Department of Ecology and the Tacoma Pierce County Health Department's UST Program got involved during the following site visits and activities. The School District pulled the tank in January 2013 and found another surprise. The tank had remnants of legs and a valve on the bottom! The tank was actually an aboveground storage tank not designed for underground use.

Once the tank was pulled the basin showed oily groundwater. The lab results from soil and water testing are in and the Health Department's UST Program is now determining what further action is needed.

Oily groundwater in the tank's hole.

Significant Find

This was a significant LSC find for several reasons:

- Improper use of the UST would have likely continued indefinitely if not for the LSC Specialist's discovery.
- Contamination could have gotten much worse if the tank had ruptured or failed catastrophically.
- Waste oil releases are among the most problematic. They customarily involve multiple toxic components (solvents, petroleum, metals), require expensive analysis, and result in considerable disposal costs.

The Franklin Pierce School District's straightforward response to this issue is getting it resolved. Kudos to them for taking the necessary steps to correct this situation.

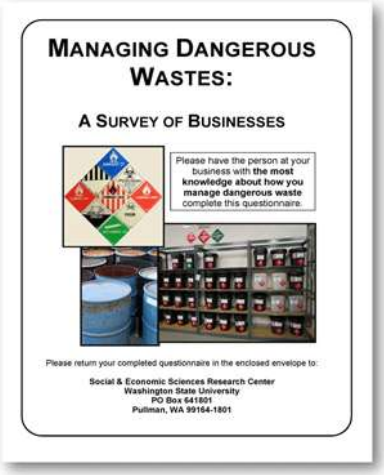
For more information on the Local Source Control Partnership, contact Julia McHugh at 360-407-6850 or email her at Julia.mchugh@ecy.wa.gov.

What You Said: Results from Generator Survey

The results from the recent survey of dangerous waste generators are in, and we want to share them with you. But first, a big THANK YOU to everyone who shared his or her thoughts and ideas with us. We had a better than 30 percent response. In the world of surveys, 10 percent is considered good.

What the respondents shared will help us as we decide what and how to communicate with dangerous waste generators around the state. Here are a few highlights:

- You value your reputation and your employees. You want information that will help you keep your business, school district, or agency in the "good news" column. And you want to know how to protect your greatest investment – your workers.
- You want to get information about the "meat and potatoes" of safe handling of dangerous waste. Changes to laws and rules. Required reports and fees. And guidance on specific wastes and techniques.
- You like to get information on the telephone, from the Internet, and newsletters, but not from Twitter and other social media outlets. And you consider state government a reliable source of information.



You can read the full report here 2013 Hazardous Waste & Toxics Reduction Program Survey. For more information on the survey, contact Mariann Cook Andrews at 360-407-6740, or e-mail maco461@ecy.wa.com.

Links to Resources Mentioned in this Issue

Announcements

- DW-RULES listserv: http://listserv.wa.gov/cgi-bin/wa?SUBED1=DW-RULES&A=1
- ***Focus on Dangerous waste: Handle Pharmaceutical Waste Properly*:** https://fortress.wa.gov/ecy/publications/SummaryPages/1304013.html

15 Dead in West, Texas Explosion – Could it Happen Here?

- **Tier Two Reporting:** www.ecy.wa.gov/epcra/saw.html
- **For more information contact:** DEM@lewiscountywa.gov
- **Washington State Emergency Response Commission:** www.ecy.wa.gov/epcra/serc.html
- **Emergency Planning and Community Right-to-Know:** www.ecy.wa.gov/epcra/index.html

CellNetix – Reducing, Reusing, Recycling…and Saving Money

- **CellNetix:** www.cellnetix.com/
- **Cascade Columbia Distributing:** www.cascadecolumbia.com/
- **Mt. Baker Bio:** http://mtbakerbio.com/

Assessing the Safety of Chemical Alternatives: Reference Guide in the Works

- **Linda Glasier:** Linda.Glasier@ecy.wa.gov
- **Chemical Alternatives website:** www.ecy.wa.gov/programs/hwtr/ChemAlternatives/index.html

Protect Workers from Exposure to Nanoparticles

- **Steps to take to reduce worker exposure:** www.cdc.gov/niosh/updates/upd-04-24-13.html
- **National Institute of Safety and Health (NIOSH):** www.cdc.gov/niosh/
- **CDC Email Updates:** www.cdc.gov/other/emailupdates/
- **Maria Victoria Peeler:** Maria.Peeler@ecy.wa.gov

Safer Chemistry Challenge Program Starts this Fall

- ***National Pollution Prevention Roundtable*:** www.p2.org/
- ***Ken Zarker*:** ken.zarker@ecy.wa.gov
- ***GreenBiz online news site*:** www.greenbiz.com
- ***Toxic Substances Control Act*:** www.epa.gov/agriculture/lsca.html
- ***Chemical Safety Improvement Act*:** www.lautenberg.senate.gov/newsroom/record.cfm?id=342861&
- **NPPR's Pollution Prevention Report:** www.p2.org/wp-content/uploads/p2-results-2007-9-final.pdf
- **Bullitt Foundation:** http://bullett.org/
- **State Chemicals Policy: Trends and Profiles Report:** www.p2.org/wp-content/uploads/2013-state-toxics-policy-profiles-report-2.pdf
- **Safer States:** www.saferstates.com/2013/03/2013-toxic-chemicals-legislation.html
- **Chemicals Policies, NEWMOA:** www.newmoa.org/
- **Business-NGO Working Group:** http://bizngo.org/
- **Safer Chemical Principles:** http://bizngo.org/guidingprinciples.php
- **Business case for TSCA reform:** http://bizngo.org/pdf/BizNGO_ASBC_BusinessCaseforTSCAReform_2013.pdf
- **American Chemistry Council:** www.amercialchemistry.com
- **Product Safety Code:** http://responsiblecare.americanchemistry.com/Responsible-Care-Program-Elements/Product-Safety-Code

What You Said: Results of Generator Survey

- **2013 Hazardous Waste & Toxics Reduction Program Survey:** www.ecy.wa.gov/programs/hwtr/HWTR13DataReport_6_27_2013.pdf
- **Mariann Cook Andrews:** Mariann.Cook-Andrews@ecy.wa.gov