Shoptalk

A newsletter about dangerous waste and pollution prevention

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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.

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Come Heck or High Water

Flood Season is coming. Are you ready?

Floods can happen anywhere. Even if your business is not in a floodplain, it can be flooded by natural or manmade events. Business owners are liable for any contamination and cleanup caused by their hazardous materials.

What can you do to prevent flood damage? Quite a lot, actually. *(Photo courtesy of Local Hazardous Waste Management Program in King County.)*

Before a flood hits

Manage your chemical products and wastes to reduce your risks.

- Experts from the Department of Ecology can visit your site to advise you on ways to prepare for possible flooding. Some counties also offer this. Call the Hazardous Waste and Toxics Reduction Program staff at your nearest Ecology regional office (numbers listed on front page) or your County Health or Public Works department.
- Reduce your stock of hazardous materials. You can offer unused materials and wastes to exchange services, such as IMEX, www.govlink.org/hazwaste/business/imex.
- You don't have to be a manufacturer to have hazardous waste after a flood. Retailers have had to dispose of flood-damaged hazardous products, such as garden pesticides or pool chemicals. (See After the Flood, page 3.)
- Contact your Local Emergency Planning Committee, www.ecy.wa.gov/epcra/lepclist.html.

Do some "housekeeping." Avoid stockpiling.

- Get as much of your hazardous waste off site as possible before an emergency happens. Send it to a permitted treatment, storage, and disposal (TSD) facility. Some counties take small amounts of business waste at their moderate risk waste (MRW) facility.
- Know what hazardous materials you are storing, their hazards, safe handling, disposal, and cleanup procedures.
- Limit the amounts of hazardous materials or products on site. Purchase the smallest amounts you can and use up what you have.
- Use the safest products possible.
- Work with your suppliers to evaluate what products you need to keep on site.
- Keep an inventory of what you have - that can help with post-flood cleanup.

Store hazardous materials properly.

- Label all containers with up-to-date information.
- Keep product and waste containers sealed and in good condition.
- Store materials inside, if practical.
- Secure equipment, supplies, drums, and other containers so they don't float off or break open.
- Check with your local fire marshal on securing aboveground tanks.
- If practical and safe (according to fire or other local codes), store materials above flood levels. Use waterproof containers, second story storage, or mezzanines.
- Evaluate your flood barriers, flood doors, or other flood protection devices.

Figure out your "Plan B."

- Think about this now, so you can react faster and more effectively in the face of trouble. Economists estimate that every $1 spent in flood preparedness saves $7 in disaster-related economic losses.
- Deciding to stay or go - have an evacuation plan and a "shelter-in-place" plan. If you are told to evacuate, you need to know who is in the building, which way to go, and who will do what, such as shutting down critical operations and locking the door. Use common sense and available information to determine if there is immediate danger.
- Plan to stay in business - prepare a business plan so you can recover and resume normal business activities as quickly as possible. Remember to include employee contact information. See:
  - Washington Emergency Management Division's business planning, www.emd.wa.gov/preparedness/business/prep_business_12StepstoBCPlanning.shtml
  - Ready Business, www.ready.gov/business/index.html
  - King County's Business Preparedness, www.kingcounty.gov/safety/prepare/residents_business/BusinessPreparedness.aspx
- Store a second set of vital documents at an off-site location. Include employee contact information, critical documents, such as insurance policies, and records you may need to meet future reporting requirements.
- Prepare for disaster cleanup with essentials like gloves, boots, coveralls, eye protection, duct tape, plastic bags, trashcans, buckets, and spill kits.
- Floods can also affect transport, storage, and disposal (TSD) companies. Seek out alternative TSDs you can use if your usual vendor isn't available.
- And while you're at it, check that your insurance policies are up-to-date and include flood insurance. You can get federal flood insurance through FloodSmart, www.floodsmart.gov/floodsmart/.

When Flooding is Possible or Probable

- Monitor news reports and alert systems so you can take appropriate action. Consider buying a weather radio. National Oceanic and Atmospheric Administration (NOAA) Weather Radio Receivers are available at many retail outlets and via the Internet. Prices range from $20 to over $200. See also National Weather Service Watches, Warnings, and Advisory Alerts, (www.wrh.noaa.gov/sew/) or EMD Respond, (www.emd.wa.gov/preparedness/business/prep_business_respond.shtml).
- Use sandbags and other protective measures as appropriate.
- Prepare to notify your employees as appropriate.
- Prepare to evacuate employees, visitors, and customers if advised.
- When evacuating, take critical documents and contact information.

After the Flood

- What to do with hazardous wastes after floods, go to www.ecy.wa.gov/programs/hwtr/floods/.
- Wait for the local authorities' "ALL CLEAR" before returning to your business.
- Check for structural damage and other hazards before re-entering.
- Keep electricity turned off until a qualified electrician has inspected the system.
- When safe to do so, take pictures of damage from the flood.
- Notify your insurance agent of any losses and follow designated procedures to document losses.

- Notify your customers, investors, and employees of your status.
- Remove sandbags. If contaminated, dispose of properly. If not, store them for future use.

For more information and guidance:

Ecology, Floods, www.ecy.wa.gov/programs/sea/floods/index.html

Flood Information for Underground Storage Tank Owners, www.ecy.wa.gov/biblio/0909190.html

Washington Military Department, Emergency Management Division, Floods, www.emd.wa.gov/hazards/haz_flood.shtml

Federal Emergency Management Agency, Prepare for Disaster, www.fema.gov/plan/index.shtm

Do It Yourself to Compliance

Auto body shops self-evaluate in Local Source Control Auto Body Pilot project

The Auto Body Pilot program supports shop's efforts to comply with air, water, and waste requirements.

The Department of Ecology is piloting a new business-assistance program for Washington auto body professionals — the Local Source Control Auto Body Pilot project. Approximately 500 collision repair, painting, and restoration shops are participating. The pilot area includes 14 local jurisdictions in Jefferson, Mason, Kitsap, Skagit, San Juan, Pierce, King, Island, Whatcom, and Spokane counties.

The Auto Body Pilot helps shops better understand and comply with air, water, and hazardous waste requirements. Local Source Control Specialists from cities and counties are conducting site visits and providing technical assistance. Shops will be able to self-certify their environmental performance and receive incentives for this work. Participating shops will send in a completed *Self Certification Checklist* by March 2010.

The program also created the new Auto Body Technical Assistance Manual. This manual explains requirements specific to auto body shops.

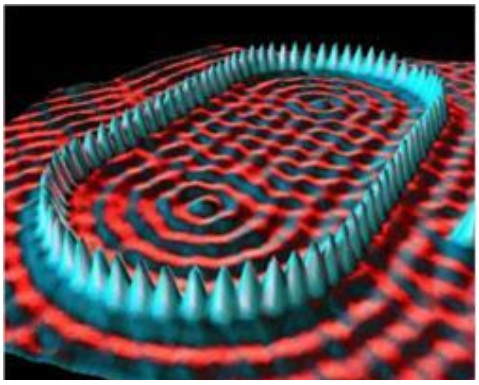
Shops can also self-certify that they have satisfied the new federal Area Source Rule notice requirements for air quality. Shops in counties with an EnviroStars Program can self-certify eligibility for a 3-Star membership in EnviroStars, without an inspection.

Ecology worked with these partners to develop the program and materials — Automotive Service Association of Washington, Autobody Craftsman Association Northwest, Washington Department of Labor & Industries, Environmental Protection Agency (EPA), EnviroStars Program, and local governments.

Ecology modeled the Auto Body Pilot on EPA's Environmental Results Program (ERP), an innovative regulatory approach for small business. Many states are evaluating and incorporating ERP into existing regulatory programs. ERP addresses environmental compliance and performance issues for multiple waste streams within a specific industry. Regulators use industry outreach and collaboration, compliance assistance, and self-certification, followed by statistical analysis to determine the best use of limited inspection and enforcement resources.

For more information, call Peggy Morgan, Environmental Results Coordinator, at 360-407-6739 or e-mail her at pmor461@ecy.wa.gov.

Big Changes in Small Packages



An example of a nanomaterial – electrons surrounded by 48 iron atoms. *(Image by IBM Almaden research Laboratory, CA.)*

Advice about nanotechnology and worker safety

They're as far away as the International Space Station and as near as the sunscreen on your nose. They've been found in surface water. They can affect the cell membranes used to treat wastewater. At last count, they could be found in 1000+ products (www.nanotechproject.org/inventories/consumer/). You may already be using them in your shop and not know it.

"They" are nanomaterials, manufactured structures one-billionth the size of meter, or 100 times smaller than a red blood cell. (They have unique properties and do not behave like similar, larger-scale materials.) Some products using nanoparticles include textiles, cosmetics, semiconductors, and catalysts. Their unique properties make them useful, but at the same time raise questions about their risks.

Researchers first created nanoparticles by mixing chemicals, then adding heat and pressure to create unique bonds. They also used "self-assembly" of molecular bonds that "lock" together under the right conditions. Nanoparticles have always occurred naturally, but manufacturing them is new. Our ability to control or manipulate these nanoparticles is primarily due to the new, incredibly powerful microscopes and computers that allow us to see and predict at the atomic scale.

You can find more information on nanoparticles and their use, known as nanotechnology, at the National Nanotechnology Initiative (www.nano.gov/) or Understanding Nano (www.understandingnano.com/introduction.html).

(Another class of material, "micromaterials," maintain their familiar properties and behavior. They are used primarily in fabrication processes for dry adhesives, electrical coils, and scanning mirrors for high resolution.)

Scientists are assessing the potential risk from manufactured nanoparticles to human health and the environment. Preliminary studies indicate that particles sized at 20 nanometers or less may have the potential to enter and affect the bloodstream and lungs.

The limited knowledge could be dangerous for workers and the environment, especially at the disposal end of use. Some workers were recently found crushing nanoparticle-containing material for disposal...by stomping on it. Since they weren't wearing masks, they could easily have been inhaling the nanoparticles.

Some physical and chemical characteristics of nanoparticles may affect their toxicity and health risk, according to the available research. These are:

- Size
- Shape
- Agglomeration state
- Biopersistence
- Surface area
- Porosity
- Surface chemistry
- Trace impurities
- Chemical composition
- Physical properties, such as density
- Crystal structure

From: *Standard Guide for Handling Unbound Engineered Nanoscale Particles in Occupational Settings*, Designation: E 2535-07, ASTM International, Conshohocken, PA, 19428-2959, US. (This standard guide is for sale through ASTM International, www.astm.org/.)

The U.S. Environmental Protection Agency (EPA), www.epa.gov/ and National Institute for Occupational Safety and Health (NIOSH), www.cdc.gov/niosh/ determined more research is needed on carbon nanomaterials. Currently, there is limited environmental regulatory framework to oversee nanomaterials.

Here are some steps you can take until we all know more about the potential risks:

- Ask specifically for the nanomaterials information in Material Safety Data Sheets (MSDS) and other specifics for any new materials added to products you use, and for "reformulated" products. Read this information carefully.
- Research whether the new material can affect workers or the environment. Find out more about these products on NIOSH Nanotechnology, www.cdc.gov/niosh/topics/nanotech/.
- Reduce dust and emissions. Restrict access to these materials. Provide protective gear to those who are directly exposed.
- Notify Ecology if you have a new or reformulated product that may contain nanomaterials. We can assist you or refer you to other agencies that can.
- Recyclers should get the same information as manufacturers. Some of these nanomaterials may behave completely different in recycled waste.
- Visit the Washington State Department of Labor & Industries' Nanotechnology: An Emerging Industry for information on nanotechnology (http://lni.wa.gov/Safety/Topics/AtoZ/nanotechnology/), how it is being used, and ways to avoid risk to workers.

What's In There?

Rule revision allows use of two more toxicity databases when designating waste

You'll need all the help you can get to figure out what's in this drum.

Dangerous waste generators in Washington can now use two more tools to help designate their waste — the free Hazardous Substances Data Bank from TOXNET (http://toxnet.nlm.nih.gov/) in the National Library of Medicine, and the U.S. Environmental Protection Agency's (EPA) free ECOTOX (http://cfpub.epa.gov/ecotox/) ecotoxicology database.

Waste designation can be difficult. Generators may need to determine if they have a state toxic criteria waste (http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303-090), especially when a waste does not otherwise designate as a federal RCRA waste. Also, small quantity generators (SQG) need to find out if their waste is an extremely hazardous waste (EHW with waste code WT01). Only one quart or 2.2 pounds of EHW waste will move an SQG to large quantity generator (LQG) status.

There are two ways to designate your waste for state toxicity:

1. Have a lab run a fish or rat bioassay toxicity test (see *Biological Testing Methods for the Designation of Dangerous Waste*, Ecology publication 80-12 (www.ecy.wa.gov/biblio/8012.html).
2. Use data from published toxicity studies to calculate toxicity for all known waste constituents, known as book designation (see *Chemical Test Methods for Designating Dangerous Waste*, Ecology publication 97-407 (www.ecy.wa.gov/biblio/97407.html).

Washington State has many miles of shoreline, so it is especially important to know how wastes affect fish and other aquatic species. Previously, the dangerous waste rules only described one source for book designation, the Registry for Toxic Effects of Chemical Substances (RTECS) (www.cdc.gov/niosh/rtecs/). RTECS does not include fish toxicity studies.

Ecology has revised the dangerous waste regulations, adding the Ecotoxicology database (EPA ECOTOX) and Hazardous Substances Data Bank (HSDB) (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB). These databases do supply fish toxicity information, along with information on other target species.

The dangerous waste rules require using data that give the highest, or most conservative, toxicity when doing book designation. So a search isn't finished once you've found the first bioassay study for the chemical you're investigating. Ecology has always expected that waste designators would consider all available data when doing book designation, including toxicity to fish. Whenever possible, generators should evaluate toxicological studies to make sure they are reputable and appropriate for their waste stream. If a thorough evaluation is not possible, use the most conservative toxicity value.

For help with your designation questions, contact the Hazardous Waste and Toxics Reduction staff at your nearest Ecology regional office.

On Not Taking Care of Business

Keep up with inspections, even when moving out

The remains of the collapsed tank, with second tank still standing. Note the level of brown sludge left from the flood.

On March 25, 2008, a 50,000 gallon, wood-stave tank failed at a metal-finishing firm. The resulting flood of caustic solution and metal sludge gushed through the company's plant in south Seattle and overflowed onto nearby parking lots and 6th Avenue South. From there some of the liquid and sludge went into the storm drain and on to the Duwamish River.

The company was in the process of closing the business and was not regularly inspecting its two aboveground tanks. Besides that, the two-foot containment wall wasn't enough to hold back the wastewater and sludge from the one tank that ruptured, much less what might have happened if both tanks had failed. On top of those problems, the company didn't report the spill to Ecology. The report had to work its way from the Seattle Fire Department through Seattle Public Works to Ecology!

All of which added to the $101,000 fine the State fined the company for violations of their permit-by-rule requirements and the dangerous waste regulations. The U.S. Environmental Protection Agency (EPA) also assessed a penalty of $162,500 for failure to report hazardous chemicals on site under the Emergency Planning and Community Right-to-Know Act, and King County Industrial Waste imposed a $22,000 penalty for violating the company's wastewater discharge permit. Besides the total $285,500 in penalties, the company had to pay to clean up the site.

Even when you're closing down and moving away, it's cheaper to keep up with inspections and maintenance and provide the right volume of secondary containment than risk this kind of damage to the environment...and your bottom line.