

Hazardous Waste

UPDATE

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Hazardous Waste Update is the Thurston County Business Pollution Prevention Program newsletter for small quantity generators of hazardous waste, such as auto recyclers and auto shops, print shops, schools, painters, fire chiefs, dentists, pesticide applicators, and marinas.

To be taken off or added to this mailing list, or to request this newsletter in an alternative format, please call 360-754-4111. The TDD line is 360-754-2933.

The Business Pollution Prevention Program, run by the Thurston County Public Health & Social Services Department, Environmental Health Division, works with businesses to reduce, safely store, and properly dispose of small quantities of hazardous waste. The county provides technical assistance, workshops, fact sheets, a disposal site, and a Hazardous Waste Line at 360-786-5457.

Waste Management: Secondary Containment

Keeping Spills In One Place

The highest goal of pollution prevention is to use the least amount of hazardous products possible, but there are some materials that cannot be substituted with a less hazardous alternative. For businesses using hazardous materials in their operations, the best way to keep hazardous materials, such as solvents, petroleum products and antifreeze, from entering soil and local water bodies is to ensure any spilled materials are properly contained. Storing liquid hazardous materials in secondary containment can prevent spills or leaks from escaping chemical storage areas and reaching the environment.



Containers of hazardous materials pose a risk to water resources and public health when stored outside with no secondary containment. Spills or leaks can flow directly into the soil or local water bodies.

The basic idea of secondary containment is to place the primary container holding the hazardous liquid inside another container that can effectively hold spilled material.

For example, storing a 5-gallon container of parts-washing fluid inside of a 55-gallon drum would be acceptable as secondary containment. More extensive secondary containment might include storing 55-gallon drums of fuel oil

Beyond HazoHouse: Where Does Your Waste Actually Go?

Each year, Thurston County businesses with small quantities of hazardous wastes dispose of unwanted materials at HazoHouse, the county's hazardous waste collection facility. However, HazoHouse is only a temporary home for these wastes. Wastes collected at HazoHouse are prepared for transport and shipped to locations across the region, where they are recycled into new products, used as fuel, or safely disposed.

HazoHouse is served by hazardous waste vendors with different specialties. There is one main multi-stream hazardous waste company that transports flammable, corrosive, toxic, reactive, and other hazardous chemicals collected from businesses at HazoHouse. Flammable liquids are combined in 55-gallon drums. Corrosive, toxic, and reactive wastes are prepared for transport in "lab packs," in which absorbent material is packed around the individual waste containers to soak up any leaks inside the transport drum.

From HazoHouse, these materials are taken to a regional treatment, storage and disposal (TSD) facility for further stabilization. Flammable liquids are often burned in industrial processes to recover their energy value. Some liquid chemicals can be safely neutralized under controlled conditions and disposed in the sanitary sewer. Wastes that cannot be neutralized for disposal are solidified with a material such as cement kiln dust. These materials are then sent to the Chemical Waste



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Waste Management

inside a specially constructed, liquid-tight concrete basin. All secondary containment must be appropriately sized, depending on the quantity and type of hazardous material to be stored.

Local Requirements

The Thurston County Nonpoint Source Pollution Ordinance (Article V of the Sanitary Code) requires that hazardous wastes, including petroleum products, be stored in such a way that leaks and spills will not contaminate ground or surface water. Similarly, the Thurston County Critical Areas Ordinance, Chapter 17.15.520 C (2), requires that businesses operating in aquifer

recharge areas store all hazardous materials inside appropriate secondary containment.

How can you be sure if your existing containment method is appropriate? Here are several secondary containment options to consider.

Indoor Storage

It is appropriate to store liquid hazardous materials indoors if the building or storage unit is capable of containing 100 percent of the material in the largest container or 10 percent of the total hazardous liquids stored, whichever is greater. When a container is ruptured, hazardous material must be prevented from being released to the environment. These storage areas should have liquid-tight floors without

floor drains. The walls should be tightly sealed to the floor, and hazardous materials should be stored away from exterior doors.

Covered Outdoor Containment

Covered outdoor secondary containment will meet current requirements if 120 percent of the largest container stored, or 10 percent of the total volume stored, can be contained so that a spill will not enter the environment. Covered outdoor containment units with sides are more highly recommended.

Uncovered Outdoor Containment

Although uncovered outdoor secondary containment can be designed to meet local ordinance requirements, these storage areas are problematic because they tend to collect rainwater. With this comes the challenge of managing stormwater collected in the containment unit. If this stormwater became contaminated with petroleum products or another hazard-

ous material, it would need to be drained and handled as a hazardous waste. In all cases, these units need to be designed according to site-specific requirements. For further information, including resources for design specifications, call the Business Pollution Prevention Program.

UL-certified double-walled storage tanks are regarded as both primary and secondary containment, and therefore do not require additional containment.

Designing and Maintaining Your Containment

Secondary containment devices can be as simple as a bucket or molded plastic container, or as innovative as a fabricated spill pan under existing equipment or storage containers. Regardless of how basic or complex the devices are, secondary containment must prevent liquid hazardous waste from reaching local soils and water bodies.

All secondary containment structures or containers must be chemically compatible with the materials held within them, including joints and seals for constructed containment areas. Secondary containment needs to be visually inspected on a regular basis to ensure that the container is physically capable of holding spilled materials.

Secondary containment must also be kept clean. Drip pans and absorbent pads are useful for keeping small spills and leaks from contaminating the containment device.

Protecting Local Water Supplies

If a spill should occur, secondary containment is the first line of defense to prevent hazardous materials from entering local surface water or seeping into the ground, potentially contaminating drinking water. Preventative measures are well worth the expense when you consider that the cost for cleaning up contamination is often in the thousands of dollars, if not more.

Business owners with questions about secondary containment should call the Business Pollution Prevention Program Hazardous Waste Line at (360) 786-5457 for free technical assistance. Hazardous waste specialists are available to visit local businesses to ensure that all hazardous materials are securely stored. ♦



Madrona Autoworks designed and fabricated this spill pan to contain minor spills or leaks of oils, coolant and solvents stored inside their automotive repair business.

Update from the Field: Photo Processors

Waste fluids from photo processing equipment present a challenging waste management task. Users range from home-based photography businesses to businesses specializing in large-quantity photo development. Photographic fixer solutions contain silver, which is a toxic and persistent heavy metal. Since silver is also regulated as a hazardous waste, this waste fluid requires proper treatment or disposal and cannot be disposed into sewer or septic systems. To assist photo processors with these challenges and learn more about waste disposal options, the Thurston County Business Pollution Prevention Program conducted a technical assistance campaign for photo processors during the summer of 2003.

The county last formally visited this industry in 1993, and both processing technology and waste treatment options have changed significantly since that time. This campaign continues an effort to limit heavy metals from entering the local wastewater utilities and marine waters.

Pollution prevention specialists visited 24 photography businesses. During the visit, specialists observed storage of developer and fixer chemicals, treatment of the wastewater from the processing unit, and spill preparedness measures. Specialists were interested in the treatment process used to recover the silver from the fixer waste. Photo processing wastes can only be disposed into sanitary sewers if they are pre-treated to remove the silver. Photographic wastes should never be discharged into a septic system.

Any business discharging untreated photographic fluids into the sanitary sewer or septic systems would be out of compliance with the Thurston County Nonpoint Source Pollution Ordinance.

At the conclusion of the initial visits, 19 of the 24 processing businesses were properly treating their photographic wastes and in compliance with the county ordinance. After follow-up visits were completed, all businesses were in compliance or pending compliance. Compared with the findings of the 1993 campaign, a greater percentage of businesses were handling their hazardous wastes properly in 2003.

Many businesses had previously implemented general pollution prevention best management practices. All businesses were found to have proper safety and personal protective equipment and adequate ventilation in processing areas. All businesses had properly labeled chemicals, and no unknown chemical

containers were found. To further improve safety and enhance pollution prevention, specialists made a total of 19 recommendations to improve pollution prevention, such as chemical handling training and maintaining MSDS for processing chemicals. Of those 19 recommended practices, follow-up contact found that eight practices had been implemented.

County staff reached several conclusions based on their findings from site visits. Sixteen businesses were found to use silver-recovery units to remove silver from their waste. Of these, 13 businesses used an outside vendor to regularly service their recovery unit, eliminating the need to train employees about maintenance. Regular, professional maintenance also ensures the

recovery system is functioning at the highest efficiency possible. Specialists also found that 16 of the 24 businesses were planning to expand their operations into digital photography, which produces no processing wastes.

This campaign also created new waste management options for smaller photo processing operations. Prior to the campaign, one local photo processor offered free silver waste treatment for small photo operations and amateur photographers. As a result of the campaign, an additional photo processor agreed to offer these services. Small processors who could not afford a treatment system for their limited waste stream, or who were connected to a septic system, benefited from these



Photographic waste fluid treatment systems, like this one with dual cartridges to filter out silver, need to be regularly serviced and properly maintained to effectively remove silver before fluids can be safely sent to the sanitary sewer.

agreements. This work also sparked talks with the LOTT Wastewater Alliance about installing a public silver recovery system at the local wastewater treatment facility.

In general, this campaign found

that the majority of photo processing businesses were quite knowledgeable about health and safety requirements, as well as how to properly manage the resulting waste stream. Customer surveys indicated that business owners felt comfortable with their knowledge of photo processing waste management, and knew where to obtain additional information if necessary.

For more information about this pilot project, please contact Brad Zulewski, Thurston County Business Pollution Prevention Program, at 754-4111 ext. 6451. ♦

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Beyond HazoHouse

Management Facility in Arlington, Oregon, a permitted hazardous waste landfill, for final disposal.

Though one multi-stream hazardous waste company manages a wide variety of the waste streams collected at HazoHouse, several other vendors handle the majority of the waste volume.

Latex paint

Latex paint is shipped to the Metro paint recycling facility in Portland, Oregon. There, it is separated by color, blended, filtered with similar colors, and recycled into a new product. Metro recycled paint is sold at the Metro paint recycling facility, as well as at several Portland-area retail locations.

Used motor oil, antifreeze, and used oil filters

Used oil and antifreeze can be refined and recycled into new fluids. Oil filters are thoroughly drained and then crushed. The metal components are recycled. Currently, Arcom Oil services the main used oil tank at HazoHouse, collects used antifreeze for recycling, and picks up oil filters deposited in the adjacent container.

Fluorescent light bulbs

More than 1000 four-foot fluorescent tubes are brought to HazoHouse each month. Rainier Lighting, of Tacoma, picks up the burnt out fluorescent bulbs from their storage

shed at HazoHouse. These bulbs are brought to EcoLights Northwest in Seattle for disassembly and recycling. EcoLights is the only fluorescent bulb recycling facility in the region. Once at the recycling facility, the bulbs are crushed in a unit that separates the crushed glass and metal contact caps from the mercury-containing phosphor powder. The glass and metal can be recycled; the phosphor powder is refined to extract the pure mercury, which can then be used to manufacture new fluorescent bulbs.

Batteries

Lead-acid automotive, motorcycle, and marine/RV batteries are picked up by Interstate Battery Corporation and sent to a permitted smelter for reprocessing and recycling. Lead plates are refined and sent to battery manufacturers. Plastic casings are recycled into new plastic and paper products. Acids are either treated and disposed, or reused.

Dry cell batteries are also recycled through HazoHouse. Thurston County is one of the few municipalities in the state recycling alkaline batteries. Nickel-cadmium (Ni-Cd), nickel metal hydride (Ni-MH), and lithium-ion (Li-Ion) batteries are also recycled through HazoHouse. Interstate Battery and the Rechargeable Battery Recycling Corporation handle these materials.

By properly disposing of hazardous materials at HazoHouse, local businesses support many additional parts of the recycling and treatment process and safeguard local environmental health. ♦



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