

Reducing and Managing Wastes from Pesticide Containment Areas

Dirt and other debris often end up in containment pads and sumps where equipment is cleaned and chemicals are handled, mixed, and loaded. This guidance identifies typical pesticide contaminated wastes that may be regulated by Washington's Dangerous Waste Regulations. It also describes how to determine if these wastes are regulated, requirements for their disposal, and ways to reduce the generation of contaminated debris.

Typical containment facility waste may include:

- Debris from a containment facility floor.
- Operational area debris contaminated from concentrated product spillage or from pesticide spilled during tank filling operations.
- Debris contaminated from cleaning equipment.
- Used filters from sump pumps and pesticide application equipment.
- Rinse and wash water.

Determine if Debris is Dangerous Waste

If sediments or rinse waters become contaminated from pesticides, read the label instructions to see if you can re-apply them to the crop or field. If wastes can't be reused and must be disposed, you will need to determine if they are a dangerous waste. This determination is known as waste designation. Waste designation can be difficult. Designation guidance is available at www.ecy.wa.gov/programs/hwtr/reg_comp_guide/index.html. You can also contact your local Ecology regional office for help with designation.

Several pesticides, such as 2,4-D and Methoxychlor, are dangerous waste because they are on a federal Environmental Protection Agency (EPA) list of discarded chemical products. Listed chemical products that are spilled result in listed dangerous waste residues. A few "P listed" discarded pesticides, such as dinoseb, endosulfan, and warfarin, are very toxic, and are known as Acutely Hazardous Wastes, or AHW. The container label will indicate if a pesticide is "P listed" with the statement: *Pesticide wastes are acutely hazardous.*

WHY IT MATTERS

Pesticides typically adhere to soil particles in the containment facility sump or onto sump pump filters.

Over time, pesticides can concentrate in the sediment and filters, which may become dangerous waste when chemical concentrations are high.

To avoid creating dangerous waste, it is important to keep pesticides out of sump sediments. See the section on avoiding dangerous waste generation on page 3.

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Special accommodations:

To ask about the availability of this document in a version for the visually impaired call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

Because pesticides are toxic, pesticide-contaminated debris is typically considered dangerous waste. You may use lab analysis or other knowledge to prove it is not a dangerous waste. Depending on its toxicity level, the debris may also designate as a state toxic extremely hazardous waste, or EHW (carrying the waste code WT01). EHW and AHW are regulated much more stringently than regular dangerous waste. If you are using pesticides with the words “warning” or “danger” on the label, the waste debris may carry the WT01 code, depending on dilution and other factors.

Generator Status

Waste management and disposal options are affected by how much dangerous waste is generated per month. A “small quantity generator” (SQG):

- Generates less than 220 pounds of “dangerous waste” per month.
- Generates less than 2.2 pounds of toxic EHW or AHW per month.
- Does not accumulate more than 2,200 pounds of “dangerous waste”.
- Does not accumulate more than 2.2 pounds of toxic EHW or AHW.

If you exceed these thresholds, you move into fully regulated generator status, with more difficult regulations to follow. For example, storing a quart of toxic EHW more than a month causes you to become a Large Quantity Generator (LQG). LQG’s must notify Ecology, hire a hazardous waste disposal company to transport their dangerous waste on a hazardous waste manifest, and file an annual waste generation report. An SQG, has fewer rules to follow and wastes generated in small quantities are easier and less expensive to dispose. See section on disposal.

Laboratory Testing

It is not always necessary to have your waste tested at a lab. You can assume you have a dangerous waste, if you know what waste codes apply. Lab testing may also be avoided if you are certain that the waste is non-hazardous, based on a thorough knowledge of the chemicals used in the operational area. Careful monitoring and housekeeping can help provide good “process knowledge” to avoid laboratory testing. Tips on good housekeeping and waste controls are listed on page 3, “Avoid Generation of Dangerous Waste.”

SQGs also must determine if their wastes designate as toxic EHW (WT01) or AHW, since this may affect their generator status and waste management options.

If you don’t know what pesticides are in your waste, or otherwise suspect you have a toxic EHW, you may need to have it tested to identify the pesticides and their concentration. Once you have this information, there are two methods to determine if you have a state toxic waste.

1. *Book designation* uses research data from fish or rat toxicity studies to determine the toxicity of the waste. You must know the chemical components and their concentration in order to book designate. Test your waste samples in the lab to determine chemical concentration. The book designation procedure will show if your waste designates and if so, if it is a toxic EHW.
2. The *fish bioassay test* measures fish mortality from exposure to a sample of the waste. If the waste designates, the test will also show if the waste is a toxic EHW. The fish bioassay test overrules the results from book designation. The result of this test determines your waste generator status.

The laboratory methods for testing pesticide wastes are described below. A more complete description of the methods appears in the Environmental Protection Agency publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods." These methods are available electronically at www.epa.gov/epawaste/hazard/testmethods/index.htm.

Consider using the following tests when the pesticide concentration is unknown:

Method 8151A - Concentrations of chlorinated herbicides such as 2,4-D, Dicamba, Marlate, Triclopyr, etc.

Method 8081A - Concentrations of chlorinated pesticides such as Endosulfan, Methoxychlor, etc.

Method 8141A - Concentrations of organophosphate pesticides such as Diazinon, Azinphos-methyl, Chlorpyrifos, Malathion, etc.

Wet sump sediments may also need to be tested for "free liquids," using SW-846 Method 9095B. Wastes with free liquids are not accepted for disposal at local landfills. A county government may require this test to approve waste disposal at a municipal landfill.

Avoid Generation of Dangerous Waste

Several techniques can be used to avoid generating operational area dangerous wastes.

- Avoid pesticide spillage when filling the spray tank by using a closed mixing system. Consider using an injection pump system to mix pesticide into the spray during application. Injection systems keep the water and pesticide separated until just before spraying. They also help reduce the amount of water used to rinse equipment during cleaning – consequently less waste reaches the sump. Injection systems are often more accurate and safer for workers because the pesticides are handled less during mixing/loading.
- Avoid releasing rinse water to the wash pad and sump. When rinsing out the application equipment, transfer rinse water directly to a storage tank. With this method, the rinse water does not become contaminated from other chemicals on the wash pad or in the sump, and can be reused as make-up water for another pesticide application.
- Whenever possible, clean the equipment at the application site. Apply the rinse water to the vegetation, following label directions. This technique minimizes dirt, debris, and wash water at the pesticide wash pad and sump. However, avoid repeated washing of the equipment's exterior at the same field site to prevent chemical buildup in the soil. Also, keep these activities clear of wells, surface water, and field drainage tiles.
- You may also use the liquids as makeup water for future applications. Design your sump system to separate sediment, dirt, and oil from the liquids. If liquids are reused to make more pesticide solution, you should keep records of the application date, amount of liquid used and brand name of the pesticide. To document that the rinse waters were legally applied, also record rate of application and which fields received treatment.

- Keep the secondary containment pad and sump clean:
 - Cover your sump when not in use to reduce blown in dust and debris.
 - Clean up all chemical spills as soon as possible. Keeping the secondary containment pad clean will avoid contaminating rainwater or snowmelt, and the need to test accumulated liquids for dangerous waste characteristics. Remove liquids accumulated in sumps within 24 hours when the facility is in operation. Send dangerous waste liquids accumulated in amounts exceeding the small quantity generator threshold to a hazardous waste disposal facility.
 - Thoroughly clean sumps on a regular basis to reduce buildup of sediment and avoid concentrating high levels of pesticide.
 - If possible, clean the sump each time a different pesticide is used, especially if rinse water is not piped directly from the spray equipment to a storage tank. Keeping the liquids (or sump sediments) from cross-contamination allows them to be applied to another location, according to pesticide label directions. Sometimes you may legally apply contaminated sump sediments to land as a legitimate pesticide use, but only if they meet the conditions listed on the pesticide label.

Disposal of Dangerous Waste Debris and Filters

If possible, re-apply the sediments according to pesticide label instructions. Unless testing or other documented knowledge shows they do not designate, contaminated debris should be disposed of as dangerous waste. Disposal is normally much simpler if the wastes are routinely managed in smaller quantities, specifically at “small quantity generator” (SQG) levels. (See page 2 for an explanation of SQG.)

Consider disposal of SQG dangerous waste debris through a county operated moderate risk waste program, sometimes referred to as a household hazardous waste facility. Contact your county solid waste office or health department to find out which small quantity disposal opportunities are available. If a county does not provide this service, you can still dispose of your waste using professional services. You can find hazardous waste disposal contractors in the Hazardous Waste Services Directory at <http://apps.ecy.wa.gov/hwsd/default.htm>. Waste quantities greater than the SQG levels must be disposed of at a permitted hazardous waste facility.