

A Guide on Hazardous Waste Management for Florida's



Agricultural Pesticide Users

Florida Department of Environmental Protection Hazardous Waste Compliance Assistance Program



This document was published to help educate businesses on hazardous waste management issues affecting them. The suggested options may help businesses to operate in an environmentally appropriate manner. Some of the options may go beyond what is required to remain in compliance with regulations. Business owners are responsible for obtaining complete information about applicable regulations. Misrepresentations or omissions by the Florida Department of Environmental Protection or the Florida Center for Solid and Hazardous Waste Management do not relieve any person from any requirement of federal regulations or Florida law.

With Support From:

David Struhs, FDEP Secretary
Alan Bedwell, FDEP Deputy Secretary
John Ruddell, FDEP Waste Division Director
Bill Hinkley, FDEP Bureau Chief, Solid and Hazardous Waste Section
U.S. Environmental Protection Agency, Region IV

Prepared by:

Florida Department of Environmental Protection, Hazardous Waste Compliance Assistance Program

Satish Kastury, Administrator
Janet Ashwood, RCRA Program Contract Manager
Mike Redig, Tallahassee
Glen Perrigan, Tallahassee
Charlie Goddard, Northwest District
Bill Kellenberger, Northwest District
Ashwin Patel, Northeast District
Pamela Green, Northeast District
John White, Central District
Lu Burson, Central District
Beth Knauss, Southwest District
Kathy Winston, Southeast District
Charles Emery, South District
Karen Bayly, South District

Florida Center for Solid and Hazardous Waste Management www.floridacenter.org

John Schert, Executive Director
Marcia Marwede, Coordinator of Research Programs
Rhonda Rogers, Sr. Information Specialist
Kimberly Stenger, Technical Editor

These regulations are available at many public libraries. In addition, the Florida Department of Environmental Protection and the United States Environmental Protection Agency have posted links to copies of these regulations on the agencies' Internet sites:

<http://www.dep.state.fl.us>
<http://www.epa.gov>

These sites also provide access to agency forms, fact sheets, checklists, rule summaries, answers to frequently asked questions and reports from our public information databases. Individuals who do not have Internet access may obtain copies of department publications through the contact information listed on page 20-21 of this document.

Revised June 2003

Why should I care about hazardous wastes?

As a business owner, operator or employee, you may be producing materials that can harm people and the environment. This booklet offers helpful tips on how to:

- Comply with federal and state hazardous waste regulations.
- Avoid penalties by properly managing hazardous wastes.
- Save money on disposal costs by reducing hazardous wastes.



Health and Environment

Hazardous wastes spilled or dumped on the ground or disposed in dumpsters may seep into the groundwater and contaminate drinking water supplies.

Hazardous wastes may run off into the nearest body of water where they may poison or kill fish and other wildlife.

Hazardous wastes pose a risk to you, your employees and your community.

Cost Savings

State and county inspectors may visit your business to ensure that hazardous wastes are being managed properly. State penalties range from \$100 to \$50,000 **per violation per day**.

Reducing hazardous wastes can reduce your production and disposal costs and reduce your risk of future liability.

Public Image

Your customers will appreciate your efforts to prevent pollution.

Your community will recognize your business as a good neighbor.

What is a hazardous waste?


A waste is hazardous if:

- It is listed as a hazardous waste in the Title 40 Code of Federal Regulations (CFR) Part 261, Subpart D.
- It has any of the characteristics described below:

Characteristic Wastes


Ignitable

Ignitable wastes are flammable or spontaneously combustible. If they have a flashpoint of less than 140 degrees Fahrenheit or an alcohol content of 24% or more, they are hazardous wastes.



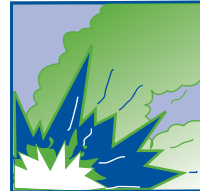
Corrosive

Corrosive wastes can burn the skin or corrode metals. Liquids with a pH of 2 or lower or 12.5 or higher are corrosive.




Reactive

Reactive wastes are unstable and may explode or react violently with water or other materials.



Toxic

Wastes are toxic if they contain certain heavy metals above specific concentrations, such as chromium, lead or cadmium, or toxic organic chemicals.



Listed Wastes

Some industrial processes and chemical wastes are listed specifically as hazardous in the federal regulations under 40 CFR 261, Subpart D. Copies of the rule can be found at many public libraries, on the internet (<http://www.access.gpo.gov/nara/cfr/>) or may be purchased from the Government Printing Office.

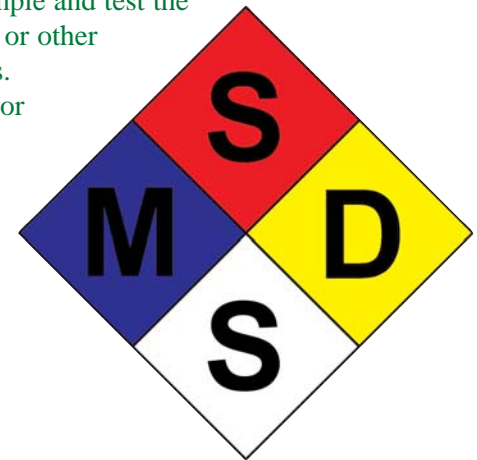
Acutely Hazardous Wastes

Small amounts of very dangerous wastes, such as arsenic and cyanide compounds, are regulated in the same way as large amounts of other wastes. A business that generates 2.2 pounds (1 kilogram) or more of these acutely hazardous wastes per month is subject to full regulation under the hazardous waste rules.

Identifying Your Hazardous Wastes

It is very important to determine whether a waste is hazardous or non-hazardous. There are several ways to identify hazardous wastes.

- Always ask for a Material Safety Data Sheet (MSDS) before ordering any new product. The MSDS will give you valuable information about the product. Note: the MSDS does not identify chemicals present in concentrations less than 1%, or 10,000 parts per million.
- Talk to product suppliers and manufacturers.
- Read product labels.
- Compare product and process information to hazardous waste characteristics and to wastes listed in federal regulations.
- If product or process information is not available or is inconclusive, have a commercial lab sample and test the waste using the TCLP test or other appropriate analytical tests.
- A non-hazardous material or product may become a hazardous waste due to contaminants added during use. Lab testing may be necessary.



Typical Hazardous Wastes

Pesticides regulated as hazardous wastes must be disposed properly, usually by a licensed hazardous waste contractor.

The following charts list **some** of the common pesticides that are regulated as hazardous wastes. The charts are reprinted from Proper Disposal of Pesticide Waste, a publication of the University of Florida, Florida Cooperative Extension Service, August 2000.

“Toxic” and “actuely toxic” hazardous wastes are subject to different disposal regulations.

Common Pesticides Regulated as Toxic Hazardous Wastes

Common Chemical Name	Trade Name
amitrole	Weedazol, others
cacodylic acid	Phytar, others
chlorobenzilate	Acaraben
chlordane	Chlordane, others
diallate	Avadex
DBCP	Nemagon, others
1,2-D	DD, others
1,3-D	Telone, Vorlex
2,4-D	Weedone, others
DDT	DDT
ethylene dibromide	EDB, Soilbrom, others
lindane	Isotox, others
maleic hydrazide	MH-30, others
methyl bromide	Brom-o-gas, others
methoxychlor	Marlate, others
pronamide	Kerb
thiram	Terson, others
warfarin (0.3% or less)	Coumadene, others
zinc phosphide (10% or less)	ZP, others

For information on applicable regulations, and for a **complete** listing of pesticides regulated as hazardous wastes, contact:
 Florida Department of Agriculture and Consumer Services
 Bureau of Pesticides
 Phone: (850) 487-0532

Common Pesticides Regulated as Acutely Toxic Hazardous Wastes

Common Chemical Name	Trade Name
aldicarb	Temik
aldrin	Aldrex, others
aluminum phosphide	Phostoxin
aminopyridine	Avitrol
dimethoate	Cygon, others
dinoseb	Dinitro, others
disulfoton	Di-syston
endosulfan	Thiodan
endothall	Aquathol, others
famphur	Warbex
heptachlor	Gold Crest H60, others
methomyl	Lannate, Nudrin
methyl parathion	Metaphos, others
parathion	Ethyl Parathion, others
phorate	Thimet
toxaphene	Toxakil, others
warfarin (more than 0.3%)	Coumafene
zinc phosphate (more than 10%)	ZP, others

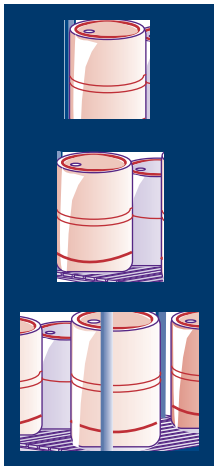


Courtesy Clemson University

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) regulates the distribution, use and sale of pesticides. FIFRA Section 12(a)(2)(G) makes it illegal to use pesticides in a manner inconsistent with their labeling. Your facility must comply with the requirements outlined by US EPA on each pesticide container label.

How should I manage hazardous wastes?

First, determine how much hazardous waste you generate **each month**. The rules you must follow depend on how much you generate, how much you store and how long you store it.



Less than 220 pounds (100 kilograms or about half a drum): you are a “Conditionally Exempt Small Quantity Generator” (CESQG).

220 - 2,200 pounds (100-1,000 kilograms or about half a drum to 5 drums): you are a “Small Quantity Generator” (SQG).

More than 2,200 pounds (1,000 kilograms or more than about 5 drums): you are a “Large Quantity Generator” (LQG).

The following practices may be required for your business. Even if they are not required, they are good waste management practices. Additional information is available from FDEP.

Containers

- Maintain containers in good condition. Prevent leaks, ruptures and accumulation of rainwater on tops of drums.
- If a container leaks, transfer waste to a new container.
- Keep containers closed. Use self-closing funnels when adding waste. Do not allow wastes to evaporate; this is a serious offense.
- Wastes must be compatible with the container. For example, use HDPE plastic containers for corrosive wastes.
- Never place incompatible wastes, such as wastes that react with each other (e.g., acids and bases) in the same container.

Storage

- Maintain adequate aisle space between container rows to allow inspection for leaks and damages.
- Store ignitable and reactive wastes at least 50 feet from property boundaries.
- Store containers with incompatible wastes in separate areas.
- Time limit for SQGs is 180 days. It is 90 days for LQGs.

Labels



- The above label represents proper wording for a hazardous waste label. You must also comply with FDOT.
- Label every container with the type of waste and whether it is hazardous or non-hazardous.
- Include the accumulation start date (the date when waste was first placed in the container).
- Include your business' name and address.
- Include federal waste code numbers.

Transport and Disposal

- Make sure your transport and disposal facility have US EPA identification numbers.
- Use manifests for all hazardous wastes shipped off-site. Keep the manifests on-site.

Inspections and Recordkeeping

- Inspect containers at least once a week and keep a written log of container inspections.
- Keep a record of larger spills and use this information to identify the spill prevention options that might help your business.
- Keep training and inspection records for three years.
- Keep manifests and shipping receipts for three years.
- Keep records of lab tests for three years.
- Keep land disposal restriction forms for three years from the date the waste was last shipped.

Training

- Train all personnel to identify, reduce and properly handle wastes.
- Train new employees before they handle hazardous wastes.
- Inform employees of the importance of pollution prevention.

How can I reduce hazardous wastes?

Reducing hazardous wastes makes good business sense. Benefits include:

- Saving money on waste management costs.
- Reducing concerns about penalties and liability.
- Creating a safer, healthier workplace.
- Promoting positive public relations with clients, customers and the local community.

How do I begin?

- Make a commitment to reducing wastes in all areas of your business.
- Follow instructions on pesticide labels to avoid having pesticides become hazardous wastes.
- Encourage the participation of all employees through education, training and incentives.

Integrated Pest Management (IPM)

With IPM, pesticides are only one of several methods used to control pests. IPM has many benefits, including:

- Fewer pests and more beneficial populations.
- Reduced pesticide costs.
- Reduced liability for hazardous wastes.
- Reduced potential for soil or water contamination.

Information on IPM is available from your county's Extension office.

Pesticide Storage

- Store pesticides in clearly labeled and segregated containers.
- Place bulk tanks in adequate secondary containment.
- Store pesticide containers off the ground in an area where there is no possibility of flooding.
- Store dry (granular) and liquid products separately, with dry products above liquids to prevent wetting from spills.
- Storage facilities should be dry and well-ventilated with proper fire protection equipment.
- Avoid storing pesticides that will not be used. When possible, return them to the manufacturer for relabeling or reprocessing.

Contact your county's Extension office for factors to consider in the design and modification of your storage facility.

Pesticide Selection and Handling

- Identify the specific pest to be controlled and choose the least toxic pesticide available.
- Purchase only the amount of pesticide needed for the immediate future.
- Read labels carefully to ensure proper and safe mixing, use and storage.
- Mix pesticides carefully, using only recommended amounts. Avoid mixing excess quantities.
- When pesticides must be mixed, conduct a compatibility test before adding pesticides to tanks. Follow label instructions.
- Inspect and calibrate spraying equipment frequently. Replace leaking hoses, fittings and nozzles.
- Clean up all spills and leaks immediately. Keep clean-up tools and supplies such as containment drums, kitty litter, shovel, broom and dustpan in storage areas.
- Spilled pesticides can be handled as a product, rather than a waste, if label instructions are followed.

Training

- Train new employees to use pesticides efficiently, using minimal amounts to get the job done.
- Ensure that employees follow label directions and precautions listed on Material Safety Data Sheets (MSDS).

Vehicle and Equipment Maintenance

- Reduce or eliminate solvent use by determining whether cleaning is necessary.
- Use a multi-purpose solvent to reduce the types of hazardous waste that need to be managed.
- Find less-hazardous substitutes for solvents, such as citrus-based, water-based or detergent-based cleaners.
- Keep used oil and other vehicle fluids segregated from solvent wastes and carburetor cleaner.
- Label waste containers clearly to prevent contamination of non-hazardous wastes.
- Contract with approved recycling services for used antifreeze, oil, lead-acid batteries and oil filters.

PREVENTING POLLUTION THROUGH PROPER MANAGEMENT

Rinsewaters

- Minimize rinsewaters by washing equipment only when necessary.
- Equipment rinsewater and empty container rinsewater may contain pesticides that would be regulated as hazardous waste if the rinsewater is not used as makeup water or applied as a pesticide.
- Rinsewaters can be collected for use at a later time to make a batch of the same or a compatible pesticide. Water containing pesticides is not a waste if it is used as a pesticide.
- Rinsewaters containing pesticides regulated as hazardous wastes should be used within 90 days. If stored longer than 90 days, FDEP must be notified and a permit is required.
- Use a hazardous waste disposal contractor for the treatment or disposal of unused rinsewaters containing hazardous pesticides.
- Rinsewaters should never be discharged to:
 - the ground
 - septic systems
 - ditches or streams
- Obtain written permission before discharging rinsewaters to a municipal wastewater treatment plant.
- Never store pesticide rinsewater in a sump. Sumps are similar to underground storage tanks, and leaks may occur.



Excess Product and Mixtures

- The best way to dispose of excess product is to find someone who can use it in accordance with the label.
- Contact the supplier or manufacturer to determine if excess product can be returned, or arrange for disposal with a hazardous waste contractor.
- Excess mixture that is left over in the spray tank should be used on a labeled site. It usually cannot be stored.
- Measure and calibrate carefully to avoid generating excess mixture.



Empty Containers and Liners

- Containers or liners that held pesticides listed as hazardous wastes must be empty before disposal.
- Triple-rinse containers with water only or power wash to remove the pesticide.
- After triple-rinsing or power washing, punch holes in the pesticide containers to prevent reuse. Store containers out of the weather, if possible.
- Follow directions on the label for container disposal.
- When available, recycle containers at a pesticide-container recycling facility.
- Purchase products from vendors that take back empty containers.

PREVENTING POLLUTION IN MIXING AND LOADING AREAS

Small but frequently repeated spills in mixing and loading areas can pollute ground waters, surface waters and soils.

Clean-up costs for pesticide contamination are astronomical and can bankrupt a business.

Typical causes of contamination in mixing-loading areas include:

- Leaking nozzles and hoses.
- Valves left open.
- Overflowing tanks.
- Frequent spilling of pesticides.
- Cleaning of spray equipment.

You can prevent soil and water contamination by:

- Preventing pesticide spills.
- Preventing repeated small spills in one location.
- Cleaning up any spill immediately.



Some ways to prevent spills include:

- Installing anti-siphon devices on wells or hydrants to prevent reverse flow of liquids into the water supply.
- Never putting a hose in a sprayer tank.
- Supervising sprayer filling.
- Using closed handling systems that transfer the pesticide directly from the storage container to applicator equipment.

Planning for a Mixing and Loading Site

Proper planning for a mixing and loading site is very important. A mixing and loading site that is not designed or constructed properly may require expensive reconstruction.

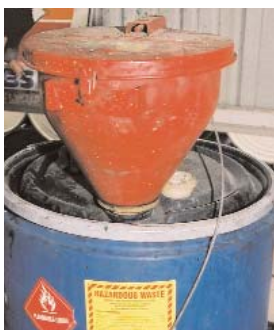
Before building, be familiar with available guidelines. To obtain a guidance document called “Natural Resources Conservation Service Interim Conservation Practice Standard Agrichemical Handling Facility,” call the Department of Agriculture and Consumer Services, Bureau of Pesticides, at (850) 487-0532. The document is also available on FDEP’s website: <http://www.dep.state.fl.us>.

Listed below are just a few of the important planning considerations:

- Locate the site as far as possible from unprotected groundwater wells and areas where runoff may carry spilled pesticides into surface water bodies.
- Use an impermeable surface for mixing and loading, such as concrete. Pesticide-resistant synthetics or steel also may be used.
- If an impermeable surface is not available, use random locations for mixing and loading to prevent the buildup of spilled materials in one place.
- A roof with an adequate overhang over a permanent mixing-loading slab prevents runoff of hazardous pesticides.
- Plant vegetation to provide a buffer zone between a mixing-loading area and sensitive areas, such as wells, groundwater recharge areas, sinkholes and surface waters.

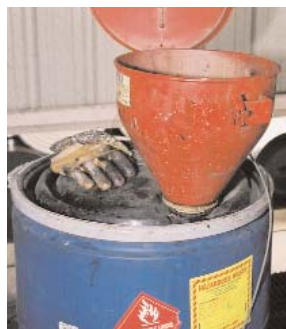


Dos and Don'ts



DO

Keep containers closed



DON'T

Leave containers open

DO

Keep accurate inspection logs



DO

Label all containers



DON'T

Leave containers unlabeled

Who needs to know if my business generates hazardous waste?

Post Emergency Information

Post the following information near every telephone:

- * Fire department phone number.
- * Emergency coordinator's name and phone number.
- * Locations of fire alarms and extinguishers.
- * Locations of spill control materials.

Notify FDEP

If your business is a small or large quantity generator, notify FDEP to obtain a US EPA identification number. Local environmental agencies also should be notified.

Notify local authorities

Police and fire departments and local hospitals that would respond to an emergency need to know that there are hazardous wastes on your property.

Designate an emergency coordinator

This person must know what to do in case of fire, spill or other emergency and must be on the premises or on call 24 hours a day.

Develop a contingency plan

Guidance on contingency plans is available from FDEP. Large quantity generators must have a written plan that includes:

- * Emergency response arrangements with police and fire departments, hospitals and emergency response contractors.
- * Emergency coordinator's address and phone number.
- * On-site emergency equipment descriptions and locations.
- * Evacuation plan and routes, including a site diagram.
- * Spill reporting procedures.

Smaller generators (SQGs and CESQGs) also should have a contingency plan.

Tips from Inspectors

Drums



- You cannot have any mystery drums. All drums must be labeled and have a “birthdate” on them.
- Evaporation of hazardous waste is a serious violation. Do not allow the hazardous wastes to evaporate. When you are not in the process

of putting waste into the drum, you must keep it closed. You also are required to keep the top of the drum clean.

- Do not store old drums outside. If they get stormwater inside them, you will have to sample the stormwater and determine whether the water in the drum is hazardous. Insist that the person who sold you the drum and its contents takes the drum back when you are done with it.
- Inspectors go into dumpsters and walk the entire property line of a business. They go back into trees looking for orphan drums and distressed/dead vegetation.



Oil

- Used motor oil cannot be used for weed control. Used oil containers must not leak and must be in good condition.

Spills

- You must clean up your spills at the time of the spill.
- Be sure to store old automotive batteries on a floor that is under a roof. Do not stack batteries. If they fall over, they will leak acid and create a spill problem.

Transport

- The only generators who are allowed to transport their own waste are conditionally exempt small quantity generators. All other generators must use a hazardous waste hauler that has a permit from the FDEP and the US EPA.

Waste

- The most common violation is the non-determination of whether something is a waste.
- Abandoned products are wastes.
- If you throw away containers, make sure the container is completely empty and rinsed before you place it in a waste receptacle. If you throw away aerosol cans, make sure the can has a hole in it, and that you have drained the liquids out of the can. If you are throwing away paint containers, be sure to drain all the paint out of the container.

Water

- If you discharge any waste that could be construed as a hazardous waste into a city sewer, you must have the written permission of the city sewer system. The city sewer system must be a Publicly Owned Treatment Works (POTW). It cannot be a privately owned package plant.
- If you use rags, you should send the rags to a linen service that is served by a publicly-owned sewage treatment plant. If you use paper towels, you must make a determination as to whether the used paper towels are a hazardous waste.
- Know where your drains go. All drains that lead from a hazardous materials area to a stormwater area should be sealed shut.



Courtesy USDA NRCS

Where can I get more information?

Additional information on hazardous waste reduction and regulations is available from many sources.

Florida Department of Environmental Protection

District offices and the Tallahassee office offer technical assistance, fact sheets and other publications on hazardous waste regulations.

Hazardous Waste Compliance
Assistance Program

Phone: (800) 741-4DEP

(850) 245-8707

Fax: (850) 245-8810



Information about the
Universal Waste Rule can be found at:
<http://www.dep.state.fl.us/waste/categories/mercury/pages/laws.htm>
or by calling (800) 741-4DEP

Available publications include:

- Summary of Hazardous Waste Regulations
- Requirements for Conditionally Exempt Small Quantity Generators
- Requirements for Small Quantity Generators
- Handbook for Small Quantity Generators of Hazardous Waste

Bureau of Pesticides

For information and publications, call the Florida Department of Agriculture and Consumer Services, Bureau of Pesticides.

Phone: (850) 487-0532

Institute of Food and Agricultural Sciences (IFAS)

For information and publications, call the IFAS Pesticide Information Office at the University of Florida.

Phone: (352) 392-4721

Extension Offices

For the phone number of your county's Extension office, call the District Extension Directors Office:

Phone: (352) 392-1781

U.S. Environmental Protection Agency

The US EPA has published a series of industry-specific guidelines and handbooks on preventing pollution and complying with hazardous waste regulations.

RCRA Hotline: (800) 424-9346

Your Trade Associations

Many trade associations have published guides to help you find solutions to your hazardous waste management problems.

Florida Small Business Assistance Program

The Small Business Assistance Program helps businesses with environmental concerns and problems related to compliance with air regulations. Assistance is confidential and staff experts have business experience.

Phone: (800) 722-7457



Checklist

This checklist will help you prevent the most common hazardous waste violations. For more detailed information on hazardous waste management requirements, contact FDEP.

- Each month, identify and record types and quantities of hazardous waste.
- Notify FDEP and obtain a US EPA identification number.
- Use proper containers to collect and store wastes.
- Label all containers, whether product or waste, as to their contents.
- Include accumulation start dates on labels.
- Keep all containers of hazardous waste or products containing regulated solvents closed at all times unless actively removing from or adding to them.
- Maintain aisle space between containers for inspection.
- Inspect containers weekly for rust, leaks or damage and keep a log.
- Train employees to properly handle hazardous wastes.
- Designate an emergency coordinator.
- Post emergency information near each phone.
- Develop a contingency plan for emergencies.
- Use manifests for all waste transported for disposal.
- Keep all records for at least three years.

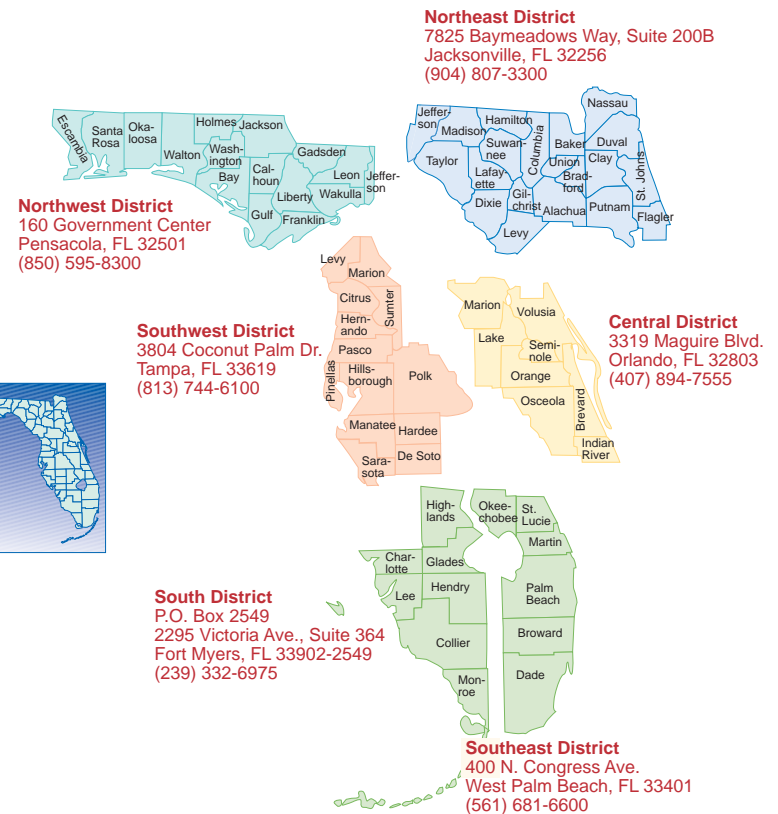


Offices of the Florida Department of Environmental Protection



Hazardous Waste Regulation Section

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(800) 741-4DEP



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University of Florida
**Florida Center for Solid and
Hazardous Waste Management**
2207-D N.W. 13th Street
Gainesville, FL 32609
(352) 392-6264
Fax: (352) 846-0183

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For additional information contact:

Janet Ashwood

**Florida Department of Environmental Protection
Hazardous Waste Compliance Assistance Program**

Tallahassee, FL

Phone: (800) 741-4337

(850) 245-8707