

US EPA ARCHIVE DOCUMENT



## VI. Hazardous and Non-Hazardous Solid Waste Requirements for Construction Projects

**D**uring your construction project, you will likely generate solid wastes. EPA classifies solid wastes as being either non-hazardous or hazardous, as discussed later in this section. These wastes are regulated under the Resource Conservation and Recovery Act (RCRA). The regulatory text discussing this program (40 CFR Parts 260-299) can be found at <http://ecfr.gpoaccess.gov> under "Title 40 - Protection of the Environment." Construction projects typically generate much more non-hazardous waste than hazardous waste; however, you should understand the requirements for both types of wastes to assure proper handling and disposal of these wastes.

### Definitions and Acronyms

**Disposal**—The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid or hazardous waste into or on any land or water so that the solid or hazardous waste or any constituent may enter the environment.

**Generator**—Any person, by site, whose act or process produces hazardous waste identified or listed in RCRA Subtitle C or whose act first causes a hazardous waste to become subject to regulation. For example, an action such as unearthing soil contaminated with a hazardous substance causes the contaminated soil to be subject to RCRA regulations.

**Hazardous Waste**—A solid waste, or combination of solid wastes, which because of its quanti-

ty, concentration, or physical, chemical, or infectious characteristics may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

**Storage**—When used in connection with hazardous waste, means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of such hazardous waste.

## Definitions and Acronyms

**Universal Waste**—Federal Universal Wastes are batteries such as nickel-cadmium (Ni-Cd) and small sealed lead-acid batteries, agricultural pesticides that are recalled under certain conditions and unused pesticides that are collected and managed as part of a waste pesticide collection program, thermostats that can contain as much as 3 grams of liquid mercury, and lamps that are the bulb or tube portion of electric lighting devices that have a hazardous component.

**CESQG**—Conditionally Exempt Small Quantity Generators

**CFR**—Code of Federal Regulations

**DOT**—Department of Transportation

**LQG**—Large Quantity Generators

**RCRA**—Resource Conservation and Recovery Act

**SQG**—Small Quantity Generators

**TSDF**—Treatment, Storage, and Disposal Facility

EPA regulates hazardous wastes at the federal level; however, always check with your state agencies for additional hazardous waste requirements. EPA does not regulate non-hazardous wastes at the federal level; these are regulated at the state and local level. Since this guide focuses on EPA regulations, most of this section discusses EPA's hazardous waste requirements as they apply to construction projects. However, since most of the solid wastes generated at construction sites are non-hazardous, Section VI-A of Part I of this guide briefly discusses non-hazardous wastes.

### A. What are Your Non-Hazardous Waste Requirements?

Non-hazardous solid waste requirements vary from state to state. Common non-hazardous solid wastes generated at construction sites include:

- Scrap wood (used or unused);
- Dry wall;
- Bricks;
- Concrete;
- Plaster;
- Asphalt;
- Plumbing fixtures and piping;
- Insulation (non-asbestos);
- Roof coverings (e.g., shingles);
- Metal scraps; and
- Electrical wiring and components.

States have differing requirements for handling and disposing of these wastes. For example, some states allow you to grind drywall for use as on-site fill material while others do not. In addition, some states may classify certain wastes as hazardous while others do not. In many cases, if you dispose of non-hazardous construction waste, you are required to do so in a construction waste-specific landfill. Before construction begins, you

**Always check with your state environmental agency for the applicable non-hazardous waste requirements. For a list of state agency contacts, go to <http://www.epa.gov/epaoswer/hotline/rcntcts.htm>.**

should discuss who will be responsible for identifying any state requirements (e.g., recycling standards and proper disposal of solid wastes) and who will be responsible for complying with these requirements. For more information on state non-hazardous waste regulations that apply to the construction industry, go to the Construction Industry Compliance Assistance Center: <http://www.cicacenter.org/hazwaste.html>.

You may also choose to recycle or reuse your non-hazardous construction and demolition waste. For more information on local construction and demolition waste recyclers, go to the Construction Waste Management Database located at <http://www.wdbg.org/ccbref/cwm.php>. This database enables you to find waste recyclers based on your waste type and location.

## B. What are Hazardous Wastes?

Your solid wastes may also meet the federal definition of hazardous waste. If that is the case, you are responsible for proper handling, storing, transporting, and/or disposing of them according to the federal requirements of RCRA and/or state requirements, from the point of generation to ultimate disposal. While states have the sole responsibility for regulating non-hazardous construction and demolition debris, they may also have authorization to implement EPA's RCRA Subtitle C - Hazardous Waste Program. State hazardous waste programs are at least as stringent as the federal hazardous waste program. Always contact your state authority to determine which state requirements apply to your site.

To determine if you must follow hazardous waste management requirements, you must first determine if your construction project will generate (i.e., produce or have present on site) hazardous wastes. RCRA Subtitle C defines solid waste as hazardous in one of two ways. Either the waste is one of the over 500 RCRA-listed wastes or it has one of the four following characteristics:

- Ignitable (flashpoint of less than 140 degrees), such as paint thinners, paints, paint and varnish strippers, epoxy resins, adhesives, degreasers, and spent cleaning solvents.

### Examples of hazardous wastes:

- Used oil, hydraulic fluid, diesel fuel, or jet fuel;
- Soil contaminated with toxic or hazardous pollutants (e.g., soil contaminated with used oil, hydraulic fluid, diesel fuel, or jet fuel);
- Waste paints, varnish, solvents, sealers, thinners, resins, roofing cement, adhesives, machinery lubricants, and caulk;
- Cleanup materials (such as rags) contaminated with the items listed above;
- Drums and containers that once contained the items listed above;
- Waste carpeting (due to formaldehyde contents);
- Lead-based paint, lead flashing, or lead solder;
- Computer monitors and televisions with cathode ray tubes;
- Gypsum drywall (due to sulfate);
- Mercury-containing demolition wastes (e.g., fluorescent bulbs, broken mercury switches, batteries, or thermostats); and
- Other items that may have inseparable hazardous constituents.

- Corrosive (acids with a pH less than 2 or bases with a pH greater than 12.5), such as rust removers, cleaning fluids, and battery acids.
- Reactive (explosive or violently reactive), such as cyanide, plating waste, bleaches, and waste oxidizers.
- Toxic (meeting certain concentrations), such as materials containing metals (e.g., mercury, cadmium, or lead) or solvents (e.g., carbon tetrachloride or methyl ethyl ketone). Materials may include adhesives, paints, coatings, polishes, varnishes, thinners, or treated woods.

Listed wastes are divided into the four following waste codes:

- The "F" List contains nonspecific source wastes from specific industrial or manufacturing processes (e.g., spent solvents used to strip paint).
- The "K" List contains specific source waste (this list does not typically include waste from construction and demolition sites).
- The "P" and "U" Lists contain pure or commercial grade unused chemicals (e.g., left-over chemicals or container residues such as toluene or acetone). Note that unused pesticides and their containers are covered by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Additionally, some commonly recycled materials are considered to be "universal wastes." These are hazardous wastes that are subject to less stringent requirements. Universal wastes include the following hazardous wastes:

- Batteries;
- Pesticides (as defined by the Universal Waste definition);
- Thermostats; and
- Lamps.

In 2002, EPA proposed to add mercury-containing materials to the list of universal wastes. A final ruling on this proposal is expected in 2005.

For more information on hazardous wastes, refer to the resources listed in Section VI-G of Part I of this guide. You can also reference the Notification of Regulated Waste Activity, Instructions and Forms booklet. A list of commonly found hazardous wastes can be found at <http://www.epa.gov/epaoswer/hazwaste/data/form8700/8700-12.pdf>. The complete list of RCRA-listed chemicals is included in the text of the 40 CFR Part 261, Subpart D and can be found at <http://ecfr.gpoaccess.gov> under "Title 40 - Protection of the Environment."

### C. Are You Responsible for Meeting Hazardous Waste Requirements?

If you generate (or discover) hazardous waste during construction activities, you may be responsible for the proper handling, storing, transporting, and disposal of the waste. In a typical construction activity, hazardous wastes are generated in one of two ways:

**If you discover hazardous waste on your construction site, you should notify your state and local authorities or the National Response Center Hotline at 1-800-424-8802.**

- Hazardous wastes are discovered during construction activities (e.g., grading or digging) or removed during demolition (e.g., mercury-containing fluorescent bulbs); or
- Hazardous wastes are produced by construction activities (e.g., spent materials such as paints and degreasers, used oil).

**When hazardous wastes are already present at the site, the contractor or subcontractor who first discovers the material is responsible for notifying the general contractor, developer, and/or owner. You should also notify local, state, and federal authorities.**

Because the hazardous waste was present at the site prior to construction activities, the developer or owner typically is responsible for ensuring that the hazardous wastes are handled and disposed of properly.

When hazardous wastes are produced at the site, the contractor or subcontractor who produces the hazardous waste typically is responsible for ensuring its proper handling and disposal. NOTE: Hazardous materials stored at your site that are being used for their intended purpose are not considered “wastes” and may be stored on site indefinitely. However, once the material is no longer usable, the material is considered a waste and RCRA storage requirements (e.g., time limit before a permit is needed) apply.

#### **D. What Are the Penalties for Not Meeting the Hazardous Waste Requirements?**

Federal environmental laws give a range of enforcement options to EPA, state agencies, and individual citizens. Most laws authorize EPA to: (1) issue an administrative order or impose an administrative penalty, (2) file a civil action in a federal court for injunctive relief or a civil penalty, or (3) file a criminal action in a federal court to impose criminal sanctions.

In addition to fines, you may need to pay legal fees and face project delays. If legal action is taken against your construction site, you may also be subject to increased scrutiny at all of your other construction sites by regulatory agencies and the public.

If you do not follow the hazardous waste management and permitting standards listed in RCRA Subtitle C, you may be fined in civil penalties up to \$32,500 per day per violation. You can lose any existing permits for your site and/or need to stop work until you meet EPA requirements. You also may face criminal penalties under RCRA if you knowingly endanger another person while managing hazardous waste.

In addition, you could face penalties or actions for past or present handling, storage, treatment, transportation, or disposal of any waste that may be a hazard to human health or the environment. Not only

#### **Case Studies**

In one court case, two construction companies pleaded guilty to criminal charges for failing to handle discovered hazardous waste properly. The construction contractors discovered canisters containing hazardous waste left by a previous owner; however, they failed to notify the owner and did not remove the canisters. The canisters were improperly removed from the site, ultimately resulting in the death of one person. If the contractors had notified the owner and had the canisters removed and disposed of properly, criminal charges may not have been filed against them.

are there civil and criminal penalties for violating hazardous waste laws, but a construction company can be required to pay the cost of cleaning up any contamination resulting from a violation. These “cleanup” costs can be significant.

## E. In General, What Are the Hazardous Waste Requirements?

If you generate hazardous waste, you must identify the waste and determine your generator status based on monthly data because waste storage and management requirements vary based on how much hazardous waste you generate. If you generate 220 pounds or less of hazardous waste per month, or 2.2 pounds or less of acute hazardous waste per month, you are a conditionally exempt small quantity generator (CESQG). Most construction sites are classified as conditionally exempt small quantity generators. If you generate between 220 and 2,200 pounds of hazardous waste per month, you are a small quantity generator (SQG). Some construction sites may be classified as small quantity generators. If you generate 2,200 pounds of hazardous waste per month or greater, or greater than 2.2 pounds of acute hazardous waste per month, you are a large quantity generator (LQG). Conditionally exempt small quantity generators have significantly fewer requirements than other generators, as discussed below. Acute hazardous wastes are denoted with

**Conditionally Exempt Small Quantity Generators generate  $\leq 220$  lbs/month**

**Small Quantity Generators generate  $> 220$  lbs/month and  $< 2,200$  lbs/month**

**Large Quantity Generators generate  $\geq 2,200$  lbs/month**

the hazardous waste code “H” or are P-listed RCRA wastes. Keep in mind that requirements vary between states; therefore, contact your state environmental department for hazardous waste requirements regardless of the amount of waste you generate.

**Hazardous waste must be treated and disposed of at a facility permitted or licensed for that purpose by the state or Federal Government.**

the hazardous waste code “H” or are P-listed RCRA wastes. Keep in mind that requirements vary between states; therefore, contact your state environmental department for hazardous waste requirements regardless of the amount of waste you generate.

You are not allowed to transport hazardous wastes off your construction site unless you follow EPA’s standards for transporting hazardous waste to a designated treatment, storage, and disposal facility (TSDF). This guide does not address transportation requirements; contact your local Department of Transportation for information on these requirements.

### Conditionally Exempt Small Quantity Generators

Most construction sites are conditionally exempt small quantity generators (generate less than 220 pounds of hazardous waste per month). Under RCRA, these generators must meet RCRA storage limit requirements (2,200 pounds of hazardous waste/month) and ensure proper transportation, waste treatment, and disposal (i.e., meet all DOT requirements and use permitted or licensed facilities for hazardous waste treatment and/or disposal). Although you are not required to meet the further stipulations listed below for small and large quantity generators, some states may have additional requirements (e.g., obtaining an EPA ID number) that do apply. If your site exceeds the storage limit (2,200 pounds of hazardous waste/month), you become a small quantity generator and must meet additional requirements.

### Small and Large Quantity Generators

If you generate hazardous waste as a small or large quantity generator, you must get an EPA ID number and notify EPA (or your state) within 90 days after initial waste generation. In addition, you need to provide subsequent notifications if one of the following occurs:

- Your business moves to another location;
- Your site contact changes;
- The ownership of your site changes;
- An additional owner is added or replaced; or
- The type of regulated waste activity changes.

To get an EPA ID number and notify EPA of hazardous waste generation, you need to file a Form 8700-12, Notification of Regulated Waste Activities. The form and instructions are available on line at <http://www.epa.gov/epaoswer/hazwaste/data/form8700/8700-12.pdf>. The instructions include a list of state contacts for submitting forms and asking for assistance.

If you store hazardous waste for longer than 180 days (for small quantity generators) or 90 days (for large quantity generators), you must get a RCRA permit. You should plan ahead to avoid storing hazardous wastes longer than allowed without a permit. If you exceed the storage limits and need a RCRA permit, additional regulations apply. If you need a RCRA permit, you may be eligible to meet only those requirements for Remedial Action Plans (RAPs). As with permits, you must submit an application for a RAP to the permitting authority (e.g., EPA or designated states). For more information on RAP requirements go to <http://www.epa.gov/epaoswer/hazwaste/id/hwirmdia/hwrmedfr.pdf>.

In addition, small and large quantity generators must meet the following requirements for handling hazardous waste:

- Document the amount of hazardous waste stored on site.
- Keep waste in proper containers.
- Properly mark containers.
- Put emergency procedures in place.
- Train on-site personnel to handle hazardous waste.
- Get a licensed hazardous waste hauler to transport the waste.
- Properly package and label hazardous waste for transport.
- Complete a Uniform Hazardous Waste Manifest for transporting hazardous waste. The manifest allows all parties involved in hazardous waste management (e.g., generators, transporters, TSDFs, EPA, state agencies) to track the movement of hazardous waste from the point of generation to the point of ultimate treatment, storage, or disposal.

If your construction project is located in Iowa or Alaska, contact your EPA Region for hazardous waste information. If your construction project is located in one of the other 48 states, contact your state environ-



mental agency for hazardous waste information. Note that states may control some RCRA provisions, but not others.

For more detailed information on the hazardous waste requirements, use the resources listed in Section VI-G of Part I of this guide.

### Universal Wastes

You can store universal wastes at your site for up to one year. Small quantity handlers of universal waste store less than 11,000 pounds and large quantity handlers of universal waste store 11,000 pounds or more.

Universal waste handlers must meet the following requirements:

- Prevent environmental releases of the wastes;
- Respond immediately to any releases; and
- Educate employees on basic waste handling and emergency procedures (including information distribution).

Large quantity handlers of universal waste must meet additional requirements, including maintaining shipment documentation, getting an EPA ID number, and meeting stricter employee training requirements.

When transporting universal wastes, you do not need to meet the RCRA hazardous waste manifest requirements; however, DOT or state requirements may apply.

**A good guide for safe lead work practices can be found at <http://www.epa.gov/lead/leadsafetybk.pdf>**

### Lead-Based Paint Debris

During construction projects, you may discover lead-based paint debris. In most cases, lead-based paint debris is considered to be a hazardous waste under RCRA; however, certain activities involving this type of debris are exempt. If you generate lead-based paint debris from construction in homes and other residences (e.g., during abatement, renovation, and remodeling), you can treat the debris as "household waste." You can dispose of the debris as household garbage in municipal waste landfills, construction and demolition debris landfills, or in municipal solid waste combustion units, unless other state requirements apply. You cannot dump (dispose on or off site) or open-burn lead-based paint debris.

While not a regulatory requirement, using safe work practices when disturbing lead paint can greatly reduce the risk of household occupants, workers, and even workers' families from being exposed to hazardous quantities of lead. Also, check with your state for any additional requirements.

If your project involves construction in homes or other residences, several rules and policies may apply, all developed under the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X). The authority for these regulations falls under the Toxic Substances Control Act (TSCA), Title IV (Lead Exposure Reduction).

National Lead Laboratory Accreditation Program (TSCA Section 405(b)): Establishes protocols, criteria, and minimum performance standards for laboratory analysis of lead in paint, dust, and soil;

- Hazard Standards for Lead in Paint, Dust, and Soil (TSCA Section 403): Establishes standards for lead-based paint hazards and lead dust cleanup levels in most pre-1978 housing and child-occupied facilities;
- Training & Certification Program for Lead-Based Paint Activities (TSCA Section 402/404): Ensures that individuals conducting lead-based paint abatement, risk assessment, or inspection are properly trained and certified, that training programs are accredited, and that these activities are conducted according to reliable, effective and safe work practice standards;
- Pre-Renovation Education Rule (TSCA Section 406(b)): Ensures that owners and occupants of most pre-1978 housing are provided information concerning potential hazards of lead-based paint exposure before beginning certain renovations on that housing;
- Disclosure Rule (Section 1018 of Title X): Requires disclosure of known lead-based paint and/or lead-based paint hazards by persons selling or leasing housing constructed before the phase-out of residential lead-based paint use in 1978; and
- Lead-Based Paint Debris Disposal: Regulatory status of waste generated by contractors and residents from lead-based paint activities conducted in households.

For more information on these programs, go to <http://www.epa.gov/lead/regulation.htm>.

## **F. What Questions Do You Need to Answer Before Starting Your Construction Project?**

You can use the questions in Section II of Part I of this guide to start a discussion among all parties involved in the construction project and to assign tasks to ensure all environmental requirements are met. Each question has a space next to it to designate who will take the lead on each task. Note that designating a responsible party does not absolve you of meeting environmental requirements or liability for failing to meet these requirements.

## **G. Where Can You Get Additional Information?**

For more information on hazardous and non-hazardous solid waste requirements, you can check the following resources:

- The Hazardous Solid Waste Self-Audit Checklist in Part II of this guide;
- The Construction Industry Compliance Assistance Center provides information on hazardous and toxic waste regulations that apply to the construction industry:  
<http://www.cicacenter.org/hazwaste.html>;
- The National Environmental Compliance Assistance Clearinghouse contains a search engine to help you find compliance assistance tools, contacts, and EPA- sponsored programs:  
<http://www.epa.gov/clearinghouse/>;

- EPA's Office of Solid Waste and Emergency Response provides information on RCRA regulations, including permitting, state authorization, and other requirements: <http://www.epa.gov/epaoswer/osw/laws-reg.htm>;
- EPA's Office of Solid Waste provides information on remediation waste, recycling construction wastes, and other resources: <http://www.epa.gov/osw/>;
- List of commonly reported hazardous wastes in EPA's Notification of Regulated Waste Activities: Instructions and Forms (available on-line at <http://www.epa.gov/epaoswer/hazwaste/data/form8700/8700-12.pdf>);
- Your state or EPA Region (for a list of state agency contacts, go to [www.epa.gov/epaoswer/hotline/rcntcts.htm](http://www.epa.gov/epaoswer/hotline/rcntcts.htm));
- Federal Facility Hazardous Waste Identification Flow Chart helps you to decide if your waste is hazardous as defined by RCRA (some states have different definitions): <http://www.epa.gov/fedsite/hazwaste/flowchart.html>;
- EPA's "Where you live" page contains links to state environmental agencies: <http://www.epa.gov/epahome/wherelive.htm>; and
- EPA's Office of Site Remediation Enforcement provides information on RCRA cleanup regulations and enforcement at: <http://www.epa.gov/compliance/cleanup/>.