Hazardous Waste Compliance Workbook

For

Rhode Island Hazardous Waste Generators

State of Rhode Island
Department of Environmental Management
http://www.dem.ri.gov

Office of Customer and Technical Assistance
&
Office of Land Revitalization and Sustainable Materials Management

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This document is intended as advisory guidance only in developing approaches for pollution prevention and environmental compliance. Any and all products and companies identified (through the manufacturer's supplied product literature) in this report are for example only. No endorsements are implied, nor should any be inferred. The Office of Customer and Technical Assistance advises that prior to implementation of any suggestion or recommendation, the company should consult with proper Federal, State, and Local regulatory agencies. This workbook does **not** replace the Rhode Island DEM Rules and Regulations for Hazardous Waste Management. The Rhode Island Regulations are the basis of any compliance or enforcement issues.

Questions and/or Comments can be directed to:

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Section 1.0 – Overview

In 1976, the U.S. Congress passed the Resource Conservation and Recovery Act (RCRA) to develop and implement a program to protect human health and the environment from improper solid and hazardous waste management practices. Hazardous waste includes materials that you intend to discard, and which have been designated as hazardous to public health and the environment when not handled properly. This workbook provides guidance on how to identify and properly manage hazardous wastes at your site. Hazardous wastes have special storage, handling, labeling, emergency planning, and training requirements which are detailed in this workbook.

What types of businesses are likely to produce hazardous wastes?

- automobile maintenance and body shops
- electroplaters and metal fabricators or finishers
- printers
- photographic and x-ray processors
- dry cleaners
- chemical laboratories (including schools and universities)
- furniture manufacturers and strippers
- construction
- pest control
- chemical manufacturing
- textile manufacturing
- funeral services

1.1 Pollution Prevention (P2) – The First Step to Compliance

The first step on the road to environmental compliance is to look for opportunities to use fewer hazardous materials and to generate less waste, thus stopping pollution at its source. Why manage wastes when you can eliminate them? Pollution prevention techniques can help you reduce your compliance burdens, make your workplace cleaner and safer, increase your competitiveness and save you money. This section outlines some easy first steps for you to take to prevent pollution. After taking these steps and reducing your use of toxic materials and generation of wastes as much as you can, move along in the workbook to find out how to properly manage your remaining wastes. If you need help with implementing pollution prevention techniques/technologies, feel free to contact us at DEM's Office of Customer and Technical Assistance (OCTA) at (401) 222-6822.

All generators should:

- Make one person (or a person in each department) solely responsible for chemical purchases and inventory control. Consider environmental and safety requirements in purchase decisions. Store chemicals in a central location.
- Conduct an annual inventory to reduce the number of chemical products used in the shop.

- Track chemical use and wastes to identify opportunities to both reduce waste and use fewer toxic alternatives.
- Implement best management practices for the storage and handling of stock and materials. Spoiled and obsolete materials should be removed. Use first-in, first-out management practices.
- Examine your use of materials by process. Are there new technologies that can replace your existing process and reduce toxics or waste? You may also be able to save money or provide a new customer service.
- Clean containers as much as practical. Recycle the used containers or return them to the supplier or a drum reconditioner.
- Give employees simple incentives to keep their work areas clean and minimize chemical use. Promote good housekeeping.
- Consider purchasing recycling equipment to allow your shop to reuse materials such as solvents and washwaters.

1.2 Top Ten Tips for Environmental Success

1. **Pollution Prevention – Your first step to compliance.** P2 techniques should be used wherever possible to reduce wastes and emissions. Look for opportunities in your shop to employ pollution prevention techniques. If you need help with identifying or implementing pollution prevention techniques/technologies, feel free to contact OCTA at (401) 222-6822.

2. **Actively and Aggressively Manage your Wastes.** Hazardous wastes should never be handled like regular trash, nor should they be disposed of in the regular trash. As a generator, you are responsible for the waste's identification and disposal. Accumulate these wastes in appropriate containers for proper disposal. There is also storage, labeling, emergency planning, and employee training requirements which are described in this manual. Also, non-hazardous materials such as cardboard, aluminum, paper, and scrap metal are recyclable. Feel free to contact OCTA for assistance with material identification, disposal, and recycling.

3. **Shop Towels Should <u>Not</u> be Used for Waste Disposal.** You should reduce the amount of material on your shop towels as much as possible. Shop towels *saturated* (dripping) with liquids that are considered hazardous wastes (such as solvents), <u>must</u> be handled as hazardous wastes. Towels containing hazardous waste that are not saturated can be sent to be laundered without being considered hazardous waste if they are handled in accordance with the Regulations. Towels shall still be classified as a hazardous waste (and therefore must not be disposed of as trash) if they contain a "listed hazardous waste" or if they exhibit a hazardous waste characteristic as described in Section 2.1.

4. **Hazardous Waste Management – To Manage is to Control.** Nothing can get you into trouble faster than a disorganized waste storage area. Label drums and keep them clean and closed. Maintain aisle space, post warning signs, and keep hazardous wastes separated from non-hazardous wastes and virgin materials. Storage areas have specific requirements regarding 90, 180 or 365-day storage time limits, condition of containers, secondary

containment, and storage area inspection. These requirements can be found in Section 2.2.

5. **Prevent Trouble – Plan for Emergencies and Train Employees.** You must have emergency response procedures and equipment in place to ensure employee safety. Post emergency phone numbers at each phone near the work areas. Designate an emergency coordinator and instruct employees on whom to contact and what to do during a spill or evacuation. Employees who handle or are otherwise involved with hazardous wastes must be trained in the proper procedures for safe handling of these materials. Large Quantity Generators are required to have a written plan known as a contingency plan. Further information can be found in Sections 2.7.

6. **Records, Records, Records.** You must keep your material purchase or usage records, hazardous waste manifests, safety data sheets (SDSs), and other legally required records on file. The regulations generally require that you keep these records for at least three years, but it is good management practice to keep these records indefinitely.

7. **Internal Review – Continual Improvement.** Good environmental management does not end with a one-time review of your shop. Periodic reviews of your chemical usage can identify trends and problems which can help you minimize wastes – even if you are a small business. Regular meetings with employees to review these issues help begin a culture of environmental awareness which can save you headaches and possibly fines down the road. Consider providing incentives for employees who minimize chemical use and use personal protective equipment.

8. **What to Expect from an Inspection.** DEM's Office of Compliance and Inspection periodically and randomly inspects generators of hazardous waste. During an inspection, DEM officials look for company personnel to demonstrate knowledge of the RI Hazardous Waste Regulations as well as a knowledge of all waste management practices in use at the facility. Personnel must be able to demonstrate their waste management practices using records such as hazardous waste shipment manifests, laboratory analyses, and training records.

9. **Most Common Difficulties/Violations found by DEM.** During inspections, DEM officials commonly find violations such as: lack of overall understanding of the regulations, lack of appropriate identification and labeling of wastes with supporting analyses or process knowledge, lack of understanding of the satellite accumulation requirements, lack of understanding of the 90, 180 or 365-day storage area and container requirements, lack of a written contingency plan, and lack of training and training documentation.

10. **The Rhode Island Environmental Compliance Incentive Act.** The Rhode Island Environmental Compliance Incentive Act was created to encourage regulated entities to perform voluntary self-evaluations of their compliance programs and management systems, and to thereby improve compliance with such statutes and/or regulations without fear of retaliation. If a regulated entity satisfies the conditions set forth in Sections 42-17.8-4 through 42-17.8-7 of the Act, the Department shall not: (1) assess gravity-based penalties for any violation of environmental laws reported by the regulated entity; (2) refer the regulated entity to the attorney general or other governmental authority for civil or criminal prosecution related to the violation(s) disclosed by the regulated entity; and (3) request or use a regulated entity's environmental audit report(s) as a regular means of investigation or as a basis for initiating

administrative, civil, or criminal actions. As you audit your facility using this workbook, be aware of the Act as it applies to your activities. Contact OCTA at (401) 222-6822 if you have any questions regarding the Act.

1.3 Other Important Regulatory Responsibilities

Rhode Island businesses are responsible for **all** environmental impacts that the facility may have. Though this workbook covers only hazardous waste issues, you must be aware of other issues commonly found in facilities.

Air Emissions: Air emissions occur when air contaminants are discharged to the ambient environment. An air contaminant is any substance released to the air which includes sanding dusts, paint fumes, mists, odors, smoke, or combinations of these. One particular type of air contaminant common to many shops is volatile organic compounds (VOCs), which are generated when solvents, such as thinners, inks, and paints, evaporate into the air. VOCs play a major role in the formation of ground-level ozone (otherwise known as "smog"). If you have any questions regarding permitting thresholds or other air pollution issues, feel free to contact the Office of Air Resources at (401) 222-2808.

Industrial Wastewater Discharge: Industrial wastewater is any wastewater resulting from an industrial or manufacturing process, trade, or business. Discharge is the release of the industrial wastewater into the waters of the State through pipes, sewers, or other means. Industrial wastewater requires permitting through a local sewer authority or the DEM depending on the discharge point. Stormwater issues apply as well. If you have any questions regarding your permitting authority or discharge limitations, feel free to contact the Office of Water Resources at (401) 222-3961.

Worker Health and Safety: The Federal Occupational Safety and Health Administration (OSHA) regulates health and safety in the workplace. Issues such as chemical exposure, hazard communication, respiratory protection, lockout/tagout, hearing protection, personal protective equipment, forklift operation, confined space entry, blood borne pathogens, and emergency action plans are all strictly regulated by OSHA. The Rhode Island Department of Health provides compliance assistance in these areas. Should you need help, contact the OSHA Consultation Program at (401) 222-5960.

Underground and Aboveground Storage Tanks: DEM has specific regulations associated with both underground and above ground storage tanks. These include provisions for corrosion protection, testing, secondary containment, release prevention, and safety. These regulations are specific to the type of tank and its contents. Contact OCTA for more information. In general, aboveground tanks containing over 500 gallons of petroleum should have overfill protection and a secondary containment system. Stormwater needs to be kept out of the secondary containment, or it may overflow in the event of a spill from the primary container. A Spill Prevention, Control and Countermeasure (SPCC) Plan is needed for facilities that store over 660 gallons of petroleum (products or waste) in any one aboveground tank (or, in Rhode Island, over 500 gallons in a tank stored aboveground outdoors), or over 1,320 gallons total of petroleum aboveground across the whole facility, where a spill could be reasonably expected to reach a water body or wetland, via a

storm drain or other drainage pattern. Aboveground storage tanks used by used oil generators to store used oil shall be registered with DEM.

Floor Drains: Floor drains in industrial facilities that discharge to a waterway or below the ground via a dry well, septic system, galley, or other means, are strictly regulated and sometimes prohibited. Entities should know where their wastewater goes. If existing floor drains are connected to the local sewer system, you should be aware that sewer connections are subject to local permitting. If floor drains are connected to an underground tank, underground tanks are subject to permitting through the DEM Underground Storage Tank Program. If the floor drains discharge below ground, this discharge to the subsurface (underground through a drywell, galley, or other means) requires permitting through DEM's Underground Injection Control Program. Closure of existing floor drains requires proper procedures and must be undertaken in conjunction with DEM's Underground Injection Control Program. Be sure to contact the UIC program when closing floor drains that discharge to the subsurface. Contact the Office of Water Resources at (401) 222-3961 for more information on this topic.

Wetlands: Wetlands harbor specific species of plants and animals, help prevent flooding by absorbing heavy rains, and can clean rainwater and runoff water of pollution before it flows into streams and rivers. Because of the wetland's value to the environment, state regulations require any plans for construction near a wetland (wetland setbacks range from 50 to 200 feet) to be reviewed by the Department of Environmental Management. If you are planning construction or expansion at your site, be sure to contact the Office of Water Resources at (401) 222-3961 if wetlands are present.

Section 2.0 – Hazardous Waste Management Requirements

As a business owner, you must manage your hazardous wastes in a safe and environmentally responsible manner. Federal and State regulations place the burden on you, as the generator, to properly dispose of the waste. The generator has "cradle-to-grave" responsibility, i.e., you retain responsibility even when other companies handle and dispose of your waste. By choosing products that are less hazardous, and minimizing the amount that you generate, you reduce your cradle-to-grave liability. This section describes the rules and regulations for hazardous waste management.

2.1 Waste Identification

Your business probably generates hazardous waste if you use:

- flammable materials,
- solvents, hydrocarbon-based cleaning materials or thinners,
- printing inks, paints, or dyes,
- materials that dissolve metals, wood, paper, cloth, or paint,
- materials that burn or itch when in contact with skin,
- materials that bubble or fume when in contact with water.

A common misconception regarding the RI Hazardous Waste Regulations involves the definition of wastes vs. raw materials. Materials that you are using or intend to use are not considered a waste, and thus are not subject to the RI Hazardous Waste Regulations. (Raw materials with health/safety hazards are regulated under OSHA Hazard Communication requirements, Personal Protective Equipment requirements, etc., and may even be subject to local regulations or fire codes.) As such, raw materials should be stored separately and not confused with waste materials. However, materials that are expired or that you do not intend to use anymore may automatically become wastes and must be managed as such.

Waste materials (solid and liquid) are determined to be hazardous wastes because:

1. They are <u>listed</u> by the U.S. Environmental Protection Agency in 40 CFR 261 Subpart D (a listed waste). (Note that some wastes are defined as "acutely hazardous waste" and therefore the quantity which can be temporarily stored on-site is limited. Section 2.2 provides more information)

2. They demonstrate a <u>characteristic</u> of a hazardous waste as detailed in 40 CFR 261 Subpart C (a characteristic waste). The four characteristics are ignitability, corrosivity, reactivity, and toxicity.

3. They meet the description of a Rhode Island Hazardous Waste as listed in Rule 1.5 of the (RI Hazardous Waste Regulations). Use the Federal definitions first, then use the State's definitions, if the Federal definitions do not apply. Do not mix the Federal with the State's definitions.

Note: The RI Regulations frequently refer to the Code of Federal Regulations for Protection of Environment (40 CFR) which can be obtained free of charge online at https://www.epa.gov/laws-regulations/regulations#find. OCTA attempts to identify sections of both the state and federal regulations which apply to the facility, and these are included with this workbook. **But it is ultimately the generator's responsibility to read, understand, and comply with these regulations.**

As a generator, you are required to determine if your waste falls into any of these three categories. You can do this by using your knowledge of the process and materials, including available information like SDS, or by testing a representative waste sample. Your waste disposal facility or environmental lab can help you characterize your waste for proper disposal. However, it remains the generator's responsibility to properly characterize its wastes. Note also that testing must be carried out using approved methods which are set forth in 40 CFR 260.11 or 40 CFR 261 Subpart C. If changes in your materials or process cause your waste to change, then you are required to reevaluate it to ensure proper handling and disposal. Some transporters and disposal facilities may also require you to reevaluate your wastes each year. You must keep records of waste analyses to confirm your identification of wastes.

2.1.1 Check for Exclusions

Some of the materials that would otherwise fit the definition of a solid or hazardous waste under hazardous waste identification are specifically excluded from the definition. EPA concluded that these materials should not be regulated as solid or hazardous waste for one or more of a number of reasons. These exceptions and exclusions are found in 40 CFR 261.4 and in Rhode Island's Rules & Regulations for Hazardous Waste Management. Items of interest to Rhode Island industries include:

- Reclamation in Enclosed Tanks [40 CFR 261.4(a)(8)],
- Spent Wood Preservatives [40 CFR 261.4(a)(9)],
- Excluded Scrap Metal [40 CFR 261.4(a)(13)],
- Wipes sent to be laundered with no free liquids [40 CFR 261.4(a) (26)].
- Used Oil Filters [RI Hazardous Waste Regulations, Rule 1.16.1(E)],
- Waste Characterization Samples [40 CFR 261.4(d)], and
- Treatability Study Samples [40 CFR 261.4(e) and (f)].

If you as the generator determine that your waste meets any of these exemptions or exclusions, the RI Hazardous Waste Regulations may not apply. Generators must maintain documentation of claims that a waste is exempt or excluded from regulation as required by 40 CFR 261.2(F). If you have a question regarding exclusions, contact OCTA at (401) 222-6822.

2.1.2 Universal Wastes

The following commonly generated wastes are considered universal wastes and thus are not fully regulated as hazardous wastes. Universal wastes are described in Rule 1.14 of the RI Hazardous Waste Regulations, and include the following materials:

A. Batteries as described in 40 CFR 273.2
B. Pesticides as described in 40 CFR 273.3
C. Mercury-containing equipment as described in 40 CFR 273.4.
D. Lamps as described in 40 CFR 273.5.
E. Used electronics as described in Rule 1.14.2,
F. Silver-containing photo fixing solutions as described in Rule 1.14.3.

The generator has the option of handling these wastes as universal waste in accordance with Rule 1.14 of the RI Hazardous Waste Regulations. If these wastes are not managed in accordance with Rule 1.14, they must be managed as hazardous waste. Refer to Rule 1.14 of the RI Hazardous Waste Regulations for more specific information. A fact sheet describing these requirements is also available. Contact OCTA at 222-6822 to obtain a copy, or visit http://www.dem.ri.gov/programs/benviron/assist/pdf/univrule.pdf.

2.1.3 Used Oil Management

Used oil is one of the common fluids removed from motor vehicles and equipment. Proper management of recovered oil is subject to a range of different regulations depending on individual situations. Used oil management regulations were adopted as Rule 1.16, Used Oil Management Standards, in the RI Hazardous Waste Regulations

These regulations governing used oil management are not as restrictive as those related to hazardous waste, but the new rules have to be understood and complied with to avoid any regulatory problems. Under the new regulations, those who generate used oil only and do not generate hazardous waste would not be required to register with RIDEM (maintain an EPA Identification Number), unless the destination state receiving the used oil for recycling requires that a uniform hazardous waste manifest be used.

2.1.4 Common Hazardous Wastes

The following commonly generated waste materials should be investigated for characterization as a hazardous waste (they are provided for example and should not be considered an all-encompassing list):

- waste automotive fluids, excluding used oil that is managed in accordance with Rule 1.16
- waste solvents and thinners
- waste paint (unused or expired paint)
- sludge or “bottoms” from a solvent recycling unit (still)
- waste methylene chloride paint stripper and sludge
- sludge from a wastewater treatment system at an electroplating shop
- waste machining oils, coolants, and hydraulic fluids (these are also eligible for management as used oil if they meet the definition in Rule 1.5)

Table 1 is provided to help you characterize your wastes. It also provides the proper waste codes which are required for drum labeling and for inclusion on the shipping manifest (both described in later sections). This table is for example only and should not be considered an all-encompassing list. It is provided only to demonstrate the thought process used for waste characterization. The full definition of a characteristic (Subpart C) waste and the Subpart D list can be found in 40 CFR 261. Should you need assistance in characterizing your wastes, feel free to contact OCTA at (401) 222-6822.

Table 1: Hazardous Waste Identification Assistance

Waste	Is it Hazardous? Listed or Characteristic?	Why?	Waste Code
Sludge from a wastewater treatment system at an electroplating shop	Yes, a listed waste	Sludge from a wastewater treatment system at an electroplating shop is a listed waste. (See Section 2.2 for specific information about this waste.)	Listed: F006
Solvent/Paint Thinners	Yes, a listed & characteristic (ignitable) waste	Solvent blends are listed based on contents before use. The mixture may also have a flash point below 140°F.	Listed: F003, F005 Char: D001
Sludge or "Bottoms" from Solvent Recycler or "Still", which Recycles Paint Gun Cleaner or Thinner	Yes, a listed & possibly characteristic (ignitable) waste	Still bottoms from a still where the solvent blend contained, before use, ten percent or more of solvents such as xylene, toluene, and acetone. The mixture *may* also have a flash point below 140°F.	Listed: F003, F005 Char: D001
Waste Methylene Chloride Paint Sludge Stripped from Vehicles	Yes, a listed waste	The solvent blend contained, before use, ten percent or more of solvents such as methylene chloride, xylene, toluene, and acetone.	Listed: F002
Waste or Expired oil-(solvent) based Paint	Yes, a characteristic waste, and it *may* be a RI Haz. Waste	Waste paints will exhibit the characteristic of ignitability as defined in the Federal Regulations if they have a flash point below 140°F and would carry the waste code D001.	D001
Spent H_2SO_4 or NaOH	Yes, a characteristic waste	Corrosive wastes (acid/bases) pH < 2, pH > 12.5	Char: D002
Spent cyanide-based plating solution	Yes, a listed waste	Spent cyanide bath plating solutions are listed.	Listed: F007
Sludge or bottoms cleaned from plating tanks where cyanides are used	Yes, a listed waste	Sludge or bottoms cleaned from plating tanks where cyanides are used are listed wastes.	Listed: F008

Waste	Is it Hazardous? Listed or Characteristic?	Why?	Waste Code
Used Motor Oil (sent for disposal, not recycled)	Yes, it may be a characteristic waste, and it may be a RI Haz. Waste	Used oil may have levels of lead and/or benzene which fail the toxicity characteristic. If shop chooses not to test, it must be handled as a RI Haz. Waste.	Waste code depends on the trace materials found through testing or will be R010 if defined as a RI Haz. Waste
Waste Anti-Freeze	No	It does not meet any of the definitions; recycling is strongly recommended, dumping in the sewer or storm drain is prohibited.	
Absorbent Materials, such as Speedi-Dry, Contaminated with Hazardous Waste	Yes, a listed or characteristic waste	Absorbents soaked with materials that are considered characteristic hazardous waste would be regulated as hazardous waste if the mixture exhibits the characteristic. Absorbents that contain a listed hazardous waste would be subject to regulation as hazardous waste.	Waste code depends on materials absorbed.
Shop Towels/Rags Contaminated with Hazardous Waste	They could be hazardous	Absorbents soaked with materials that are considered hazardous waste also are considered hazardous waste. In the case of rags/towels/other wipes, if they are not soaked (dripping) and they are cleaned and reused as described in Rule 1.7.1(C), then they are not considered hazardous waste.	Waste code depends on materials absorbed.
Used Motor Oil (for recycling)	No	Must be managed in accordance with Rule 1.16 of the RI Rules & Regulations for Hazardous Waste Management.	
Used Perchloroethylene from dry cleaning operations	Yes, a listed waste	It is toxic.	F001

2.1.5 Description of Large/Small/Conditionally Exempt Small Quantity Generators

The RI Hazardous Waste Regulations apply to **all** generators of Hazardous Waste. However, generators are regulated under 3 separate categories (Large Quantity (LQG), Small Quantity (SQG) and Conditionally Exempt Small Quantity Generators (CESQG)) as defined in Rule 1.5 of the Regulations. Those facilities which generate greater than 2,200 pounds (1,000 kilograms) of hazardous waste, 2.2 pounds (1 kilogram) of acute hazardous waste, 220 pounds (100 kilograms) of residue or contaminated material resulting from a spill of acute hazardous waste per calendar month; or stores greater than 13,200 pounds (6,000 kilograms) of hazardous waste, are classified as LQGs. Those that generate or store less than the amounts listed above are generally classified as SQGs. Conditionally Exempt Small Quantity Generators (CESQGs) are those that generate less

than 220 pounds (100 kilograms) of hazardous waste, 2.2 pounds (1 kilogram) of acute hazardous waste, and less than 220 pounds of residue or contaminated material resulting from a spill of acute hazardous waste per calendar month, and accumulates on-site a total amount of hazardous waste that never exceeds 2,200 lbs (1,000 kg) and a total amount of acute hazardous waste that never exceeds 2.2 lbs (1 kg) and a total amount of any residue or contaminated soil, waste, or other debris resulting from the cleanup of a spill of acute hazardous waste into or on any land or water that never exceeds 220 lbs (100 kg).

2.2 Waste Accumulation/Storage - Time Limit

A Large Quantity Generator (LQG) generator may accumulate hazardous waste on-site for 90 days, while a Small Quantity Generator (SQG) may accumulate for 180 days and a Conditionally Exempt Small Quantity Generator (CESQG) may accumulate for 365 days, provided that the waste is placed in:

1. Containers,
2. Tanks,
3. Drip Pads (LQG only), or
4. Containment Buildings (LQG only).

Containers (drums) are, by far, the most common method of hazardous waste storage in Rhode Island. If containers are used, they must be managed according to RI Hazardous Waste Regulations Rule 1.7.12(C) for LQGs, Rule 1.7.13(C) for SQGs, or Rule 1.7.14(C) for CESQGs. These requirements are also detailed in Section 2.3 Waste Storage – Containers/Containment. You can also accumulate up to fifty (55) gallons of waste (or 1 quart of acute hazardous waste) in containers according to the "Satellite" Accumulation provisions described below. If your waste is stored in tanks, it must be managed according to RI Hazardous Waste Regulations Rule 1.7.12(D) for LQGs or Rule 1.7.13(D) for SQGs. These criteria are listed in Section 2.4 Hazardous Waste Storage - Tank Systems. Drip pads and containment buildings are not common and are not described in this workbook.

2.2.1 "Satellite" or Workstation Accumulation

The State and Federal Hazardous Waste Regulations (specifically Rule 1.7.8, and 40CFR 262.34(c)(1)) allow a generator to accumulate up to fifty (55) gallons of hazardous waste (or 1 quart of acute hazardous waste) with no storage time limit, provided that the container is:

1. At or near any point of generation where the waste initially accumulates;
2. Under control of the operator of the process generating the waste;
3. In good condition;
4. Kept closed except when adding or removing waste;
5. Handled or stored so as not to cause a rupture or leak, and is compatible with the hazardous waste stored therein;
6. Arranged to accommodate the separate storage of chemically incompatible wastes; and
7. Labeled with the words "*Hazardous Waste,"* and other words that identify the contents of the container.

When filled, the generator must date the container and either ship the waste or move the 55-gallon container to a designated hazardous waste storage area within 3 days, or otherwise manage the container as a 90/180/365-day storage container. The full containers then incur the 90/180/365-day time limit for proper disposition (i.e. the "clock" begins ticking) and must also meet the complete labeling requirements described in Section 2.5 – Container Labeling. Also, the Generator must then comply with all of the requirements outlined in Section 2 of this workbook.

2.2.2 Extended Accumulation Periods for Wastewater Treatment Sludges from Electroplating Operations (F006 Sludge)

Wastewater treatment sludges from electroplating operations (otherwise known as F006 waste) may be accumulated by LQGs for 180 days under Rule 1.7.12(B)(2) of the RI Hazardous Waste Regulations provided that:

1. The generator has implemented pollution prevention practices that reduce the amount of any hazardous substances, pollutants or contaminants entering the sludge or otherwise released to the environment prior to its recycling;

2. The F006 waste is legitimately recycled through metals recovery (i.e., on-site, or off-site recovery of distinct metal component(s) from the electroplating sludge, as separate end product(s));

3. No more than 20,000 kilograms (44,000 pounds) of F006 waste is accumulated on-site at any one time;

4. The generator complies with proper storage and labeling requirements and all the provisions of Rule 1.5 (4) of the RI Regulations.

2.3 Waste Storage - Containers/Containment

2.3.1 Containers

As described in the previous section, a generator may accumulate hazardous waste on-site for 90 (LQG), 180 (SQG), or 365 (CESQG) days provided that the waste is placed in containers and these containers are managed according to the RI Hazardous Waste Regulations Rule 1.7.12(C) for LQGs, or Rule 1.7.13(C) for SQGs, or Rule 1.7.14(C) for CESQGs. Several important criteria for proper container management are listed below with specific references to actions that shops can take to remain in compliance.

1. ***Management of containers: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** - *Keep all containers holding hazardous waste closed except when it is necessary to add or remove waste. Open, handle and store containers holding hazardous waste in a manner that does not, or is not likely to, cause a spill or release of hazardous waste.*
   Facilities should ensure that containers are closed except when it is necessary to add or remove waste. Items such as funnels with lids, or simply securing the drum cap (bung), etc., can be used. Funnels must be secured with a locking mechanism and have a gasket to prevent releases of VOCs. Consider posting instructions in the area.

Also, drums of material are sometimes observed stored in areas outside the facility or in far corners of the property. Outdoor storage is generally not recommended. Generators should consider moving containers inside. If left outdoors, shops should protect the storage area from the movement of cars/trucks within the yard. A storage shed or a fenced and covered area should be considered. Commercially available hazardous waste storage lockers are another option. A list of locker manufacturers is included in Appendix A. LQGs must provide a secondary containment device for containers holding liquid waste and manage all accumulated precipitation as potentially hazardous waste if the containers are stored outdoors.

2. ***Condition of containers: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** *- Immediately transfer hazardous waste from any and all containers that are not in good condition as a result of physical or chemical forces that have reduced the containers structural integrity, or if they begin to leak, to a container(s) that is in good condition and compatible with the hazardous waste being transferred.*

   Generators should review the condition of their containers and ensure that the facility and employees are capable of containing a leak. Spill kits are readily available and should be considered. Salvage drums (drums which can be used to house an entire leaking drum) are an additional safety feature to consider for your site. Generators should maintain an adequate amount of spill control equipment for the volume of waste stored onsite.

3. ***Special requirements for ignitable or reactive waste: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** *-Containers holding ignitable or reactive waste must be located at least 50 feet from the facility's property line.* If wastes are ignitable and/or in steel containers, be sure these are also electrically grounded.

4. ***Compatibility of wastes with container: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** *– Use containers constructed of, or lined with, a material that is chemically compatible with the hazardous waste placed into the containers, so that the ability of the container to hold the waste is not impaired.*

   Steel and plastic drums are generally used most frequently. Plastic drums are <u>not</u> compatible with solvents found in paints, paint thinners, cleaners, and strippers, so make sure that you are using steel drums for these fluids. Steel drums are not compatible with certain corrosive materials.

5. ***Compatibility of wastes within the same container: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** *Do not place incompatible wastes in the same container unless the mixing is accomplished so that it does not generate extreme heat or pressure, does not initiate a fire, explosion or violent reaction and does not produce uncontrolled toxic mists, fumes, dust or gases, and does not damage the structural integrity of the container and does not threaten human health or the environment through like means. Store hazardous wastes that when mixed would result in an unintended reaction or are otherwise not compatible in separate containers designed to contain the subject hazardous wastes. Containers holding hazardous wastes shall be stored in separate locations from incompatible wastes or materials present on-site and isolated by a physical barrier (e.g., a dike, berm, or wall) constructed of or lined with a material that is resistant to the hazardous waste stored in the area. Do not place hazardous waste in an*

unwashed container that previously held an incompatible waste or material unless the conditions listed above are satisfied.

Potentially incompatible materials should be stored separately to comply with these requirements. A list of potentially incompatible materials is included in Appendix B.

6. ***Inspections: Rules 1.7.12(C), 1.7.13(C), and 1.7.14(C)*** *- Conduct inspections on a weekly basis of all containers holding hazardous waste for signs of deterioration and/or corrosion of the containers and for any signs of leaks or releases of hazardous waste. The inspection shall also include a visual examination of all containment systems and devices to ensure that they are free of any cracks, gaps, or other imperfections. Generators shall maintain a written record documenting the date and time of each inspection, the person that conducted the inspection and whether any release was identified, container was replaced, or repair needed to containment conditions, and the result of each inspection for a period of at least three (3) years.*

   Generators should implement a weekly inspection of the storage area looking for leaks or deterioration of hazardous waste containers. This program must be documented. Consider hanging a clipboard on the wall with the checklist and inspection log. Included on the following page is a checklist of items for your use to perform the inspection. Record this inspection in an inspection log and keep these records for at least three (3) years from the date of inspection.

   Large Quantity Generators are further required to manage all containers holding waste in accordance with the applicable requirements of 40 CFR 265 Subparts AA, BB and CC (as administered by EPA).

Note: A hazardous waste generator must package the waste for shipment off site in accordance with U.S. Department of Transportation (DOT) requirements as well. They can be found in 49 CFR 172, 173, 178, and 179. These regulations are not reviewed in detail here. Basically, shops must ensure that they are using DOT-approved containers in good condition which are compatible with the material being shipped. There are many training seminars available which detail the specific requirements.

2.3.2 Containment

In addition to the container requirements listed above, if the wastes contain free liquids, LQGs must ensure that the area in which hazardous wastes are stored (in Hazardous Waste storage areas or tanks) has a secondary containment system which is capable of containing a leak or spill. (If your wastes do not contain free liquids, this is not necessary.) The containment system must be designed and operated as follows:

1. A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

2. The base must be sloped, or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless

the containers are elevated or are otherwise protected from contact with accumulated liquids;

3. The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

4. Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in #3 above to contain any run-on which might enter the system; and

5. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. (If the collected material is a hazardous waste, it must be managed as a hazardous waste in accordance with all applicable requirements.)

SQGs must provide secondary containment for tanks as described above unless the generator inspects the tank systems once each operating day and maintains a written record of each inspection. The inspection shall include at least the following:

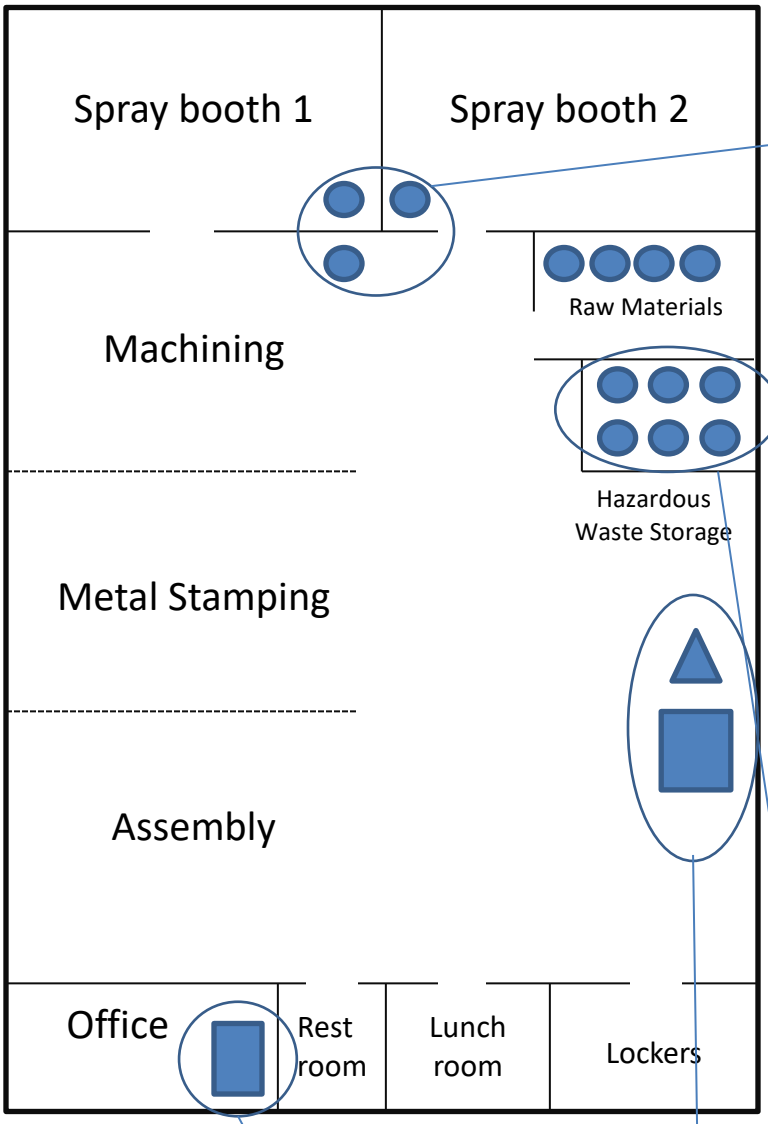
1. Overfill/spill control equipment (e.g., waste feed cutoff systems, bypass systems and drainage systems) to ensure they are in working order.
2. Visual inspection of the aboveground sections of a tank for signs of corrosion or release of waste.
3. The construction materials and area immediately surrounding the tank system's discharge confinement structures, if any, looking for signs of corrosion and for signs of a release of hazardous waste.
4. Any and all monitoring equipment that is part of the tank system to ensure that it is operating properly.
5. The level of the waste in the tank to ensure at least 2 feet of freeboard.

LQGs should immediately purchase and/or construct a containment system, if needed, in accordance with the requirements listed above. Note that commercially available storage lockers are available which should comply with these requirements. Included in Appendix A is a list of locker manufacturers.

[Note that floor drains that discharge to the subsurface (underground through a drywell, galley, or other means) are prohibited in hazardous waste storage areas.]

Figure 1 provides a summary of the hazardous waste storage requirements and Figure 2 provides a sample hazardous waste storage area inspection checklist.

Figure 1: Summary of Hazardous Waste Storage Requirements



"Satellite" or Workstation Accumulation

The State and Federal Hazardous Waste Regulations allow a generator to accumulate up to 55 gallons of hazardous waste with no storage time limit provided that the container is:

1. At or near the point of generation;
2. Under control of the operator;
3. In good condition;
4. Kept closed except when adding or removing waste;
5. Handled or stored so as to not cause a rupture or a leak;
6. Arranged to accommodate the storage of chemically incompatible wastes; and
7. Labeled with the words "Hazardous Waste" and the common name of the contents

When container is full, date the container and within three days either move the container to storage area or ship off-site.

Hazardous Waste Storage Area

- Store liquids in containers on impervious floor with secondary containment
- Keep containers closed, clean, & in good condition
- Maintain aisle space
- Consider keeping a spill kit in the area, & clean spills immediately
- Electrically ground containers which contain ignitables
- Implement weekly inspections of storage area
- Label & date all containers according to appropriate guidelines
- Ship off-site within 90/180/365 days as appropriate
- Post "No smoking" signs & locate 50 feet from property boundary if area contains ignitables

Recordkeeping

Keep copies of manifests, land disposal restriction forms, storage area inspections, employee training records, waste analyses, & biennial reports. LQGs must create and maintain a contingency plan. SQGs may create and maintain a contingency plan or designate an employee to act as an emergency coordinator and post required emergency contact information near all phones in waste storage areas.

Emergency Equipment

Facility must be maintained to minimize the possibility of a fire, explosion, or unplanned release of hazardous waste. Fire extinguishers, alarm systems, telephones (with appropriate numbers posted), spill kits and other emergency equipment are required.

Figure 2: Hazardous Waste Storage Area Inspection Checklist

Weekly Inspection Checklist and Record for _____ **(shop name)**

Name/Title of Inspector:_____ Date and Time of Inspection:_____

Area(s) Inspected:_____ Number of Full Containers:_____

Are All Containers Closed?_____

Condition of Containers:_____
(Do containers show signs of leaking? Is there deterioration due to rust or corrosion? Have containers been damaged?)

Condition/Integrity of Containment Area (LQG):_____
(Will the area effectively contain a spill or leakage? Have berms or other containment device deteriorated or been damaged?)

Is there sufficient aisle space between rows of drums?_____
(At least three (3) feet)

Are ground-wires in place for ignitable wastes?_____
(Note condition of wires as well.)

Is there evidence of spilled material?_____

If there was a spill, list remedial action taken:_____
_____
(Example: Spill was cleaned, and leaking drum was replaced.)

Are drum labeling requirements satisfied?_____
(Each container in the hazardous waste storage area must be labeled in accordance with RI Hazardous Waste Regulations Rule 1.7.12 (G) for LQGs, 1.7.13 (C) for SQGs or 1.7.14 (E) for CESQGs)

Additional remarks or actions to be taken:_____
_____
_____

Record this inspection in an inspection log and keep these records for at least three (3) years from the date of inspection.

2.4 Hazardous Waste Storage – Tank Systems

If your facility uses tank systems to store or treat hazardous wastes, there are special requirements for these tanks that are found in RI Hazardous Waste Regulations Rule 1.7.12(D) for LQGs and Rule 1.7.13(D) for SQGs. These requirements do **not** apply if the tank holds waste that does **not** contain free liquids and the tank is located inside a building with an impervious floor. Definitions for "existing tank system" and "new tank system" are found in Rule 1.5 of the RI Hazardous Waste Regulations.

Tanks can be of any size, but the waste must be removed every 90 days for LQGs and every 180 days for SQGs. CESQGs are not allowed to store hazardous waste in tanks. Facilities must also comply with the following:

1. For LQGs only, each tank (existing or new) must be certified by a registered professional engineer with respect to design and installation of the tank and its components. This certification must be in the form of a written assessment kept on file at your facility which contains items such as the design standards by which the equipment was/will be constructed, the characteristics of the wastes stored, corrosion protection measures (if in contact with soil or water), foundation load bearing capacity, and tank tightness. Full provisions can be found in RI Hazardous Waste Regulations Rule 1.7.12(D) for LQGs and Rule 1.7.13(D) for SQGs.

2. The tank must be clearly marked with the words "Hazardous Waste," the contents of the tank, and the accumulation start date.

3. The tank must not be used to store hazardous waste if it may cause a rupture, leak, corrosion, or otherwise cause the tank to fail.

4. LQGs using new tanks must have secondary containment equivalent to 100% of the tank volume.

5. The tank must be covered or have at least 2 feet of freeboard (space at the top of the tank) in uncovered tanks.

6. The tank system must have equipment such as valves to provide automatic feed cutoff should a problem occur and for overfill protection; automatic leak detection equipment in secondary containment systems or double-walled tanks, and alarms to notify personnel.

7. LQGs must inspect the tank and equipment **each operating day** for leaks and proper operation of emergency equipment. SQGs that store hazardous waste in tank systems that are not equipped with secondary containment must inspect the tank systems once each operating day. SQGs tank systems equipped with secondary containment must inspect the tank system once every week. LQGs and SQGs must maintain a record of each inspection.

8. Use the National Fire Protection Association (NFPA) buffer zone requirements for tanks containing ignitable or reactive wastes. Call your local fire department if you need help.

2.5 Container Labeling Requirements

Each container holding hazardous waste, excluding those satellite accumulation containers, shall be labeled with the following information:

1. The words "hazardous waste";

2. The chemical or common name of the waste;

3. Name, address, and EPA Identification Number of the generating facility;

4. Accumulation start date. (The date that the 90/180/365-day "clock" begins ticking.) The accumulation start date is the date that hazardous waste first begins accumulating in a container, exclusive of satellite accumulation.

Each container must be labeled with the following information before offering it to a Transporter for shipping off-site:

1. The words: "*HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency*;"

2. The generator's name and address of generating facility;

3. The USDOT shipping name and the generic names of the principal hazardous waste components (if the proper USDOT shipping name is not conclusive in identifying the hazardous waste).

4. The EPA or Rhode Island waste code.

5. Date of containerization. (The date that the 90/180/365 day "clock" begins ticking.) The accumulation start date is the date that hazardous waste first begins accumulating in a container or tank, exclusive of satellite accumulation.

6. The uniform hazardous waste manifest document number (to be applied prior to being shipped off-site).

7. Department of Transportation or Globally Harmonized System (GHS) hazard label. (see top of next page)

EPA Label


GHS Hazard Label


DOT Placard

These labels are readily available from lab safety catalogs or from your waste transporter. GHS hazard labels depend on the material in the container. A sample list of hazard labels can be found in Appendix C.

Each "Satellite" Accumulation container must be labeled with the words *"Hazardous Waste,"* and other words that identify the contents of the container. However, if the container is ultimately moved to the storage area, the container must be labeled as noted in the beginning of Section 2.5.

The hazardous waste generator is also responsible to ensure that the vehicle transporting its hazardous waste is licensed in RI and has the correct placards. Placards are similar in shape and color to the hazard labels but are larger and must be on all four sides of the vehicle. If the vehicle does not have the correct placards, it is the generator's responsibility to placard the truck correctly, though this generally is not necessary with competent waste transporters.

2.6 Offering Hazardous Waste for Shipment – Licensed Transporters, EPA ID Numbers and Waste Manifests

You will need a licensed hazardous waste transporter to remove your hazardous waste. Your transporter will provide you with a manifest for each shipment, which may be preprinted, except for your signature. Make sure you check the manifest for accuracy regarding your EPA ID number, amount and type of wastes. You, as the generator, will be held responsible for any errors contained on the manifest. A list of licensed Rhode Island Hazardous Waste Transporters can be found at DEM's web site at
http://www.dem.ri.gov/programs/benviron/waste/transpor/hazwaste.pdf

2.6.1 EPA Identification Numbers and Authorized Agents

Generators must not store, or offer for transportation, hazardous waste without having received an EPA identification number (Rule 1.7.4). Shops also must not offer its hazardous waste to transporters or to treatment, storage, or disposal facilities that have not received an EPA identification number, and the transporter must have a valid RI Hazardous Waste Transporter Permit as indicated by an official sticker on the vehicle.

Generators may obtain an EPA ID Number by visiting the following website https://rcrainfo.epa.gov/rcrainfoprod/action/secured/login and clicking on the "Register" button.

Once in the system select the "industry user" option and follow the steps to set up your user account. After your account is approved by the system, log in and click on the "add existing sites" button to search for your EPA Identification Number. For more detailed instructions visit DEM's website at http://www.dem.ri.gov/programs/benviron/compinsp/pdf/myRCRAid-pres.pdf. If you require assistance contact DEM at (401) 222-1360 and indicate that you are requesting an EPA ID Number for Hazardous Waste Generation. A copy of a paper application form is also available online at http://www.dem.ri.gov/programs/benviron/waste/pdf/epaidno.pdf.

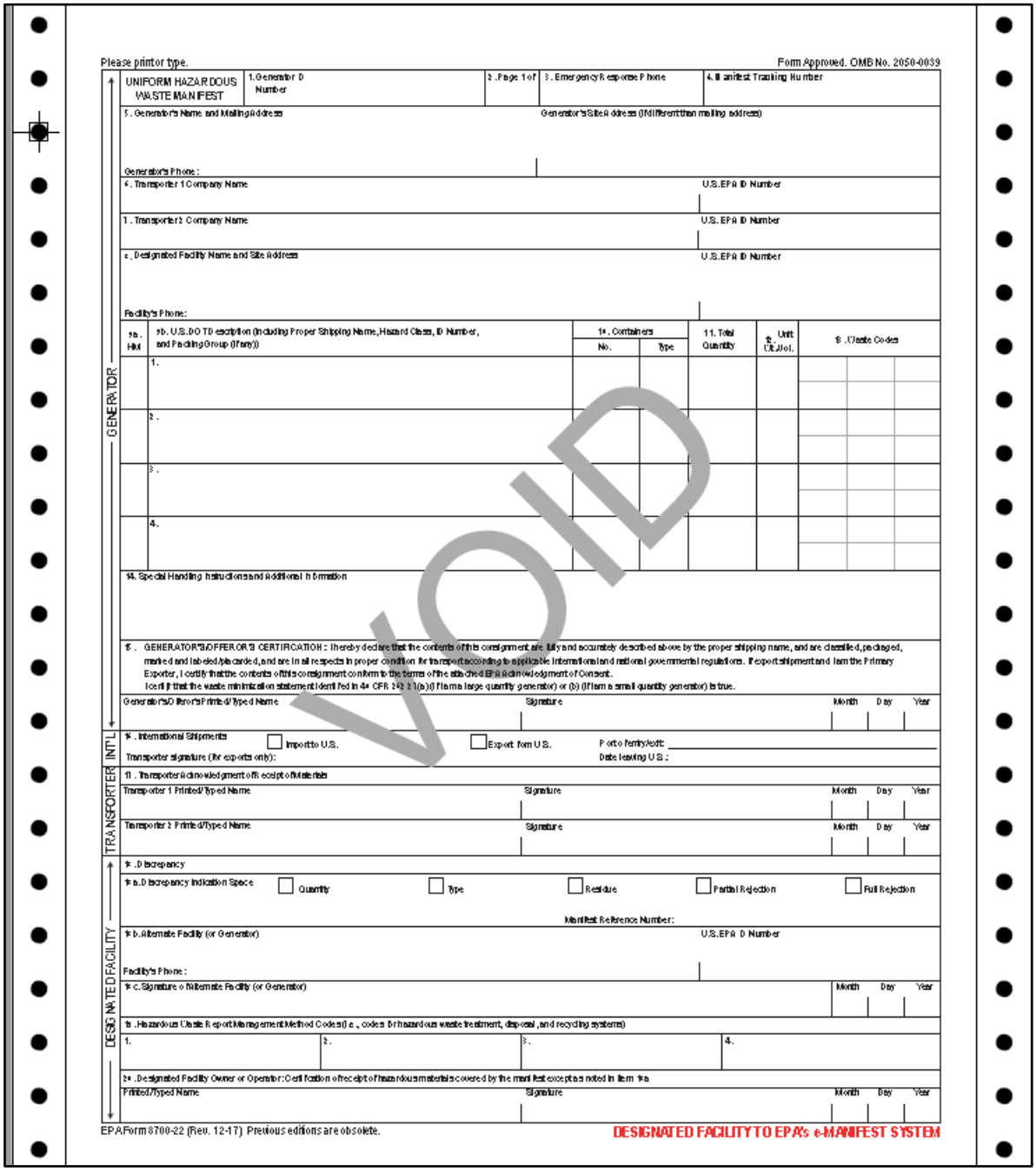
2.6.2 Uniform Hazardous Waste Manifests/Waste Shipment

All hazardous waste shipped offsite must be tracked using a Uniform Hazardous Waste Manifest. This form may be filled out in paper or electronically using a system administered by USEPA at https://www.epa.gov/e-manifest. It is the generator's responsibility to make sure that the manifest is accurate, even if it is filled out by the transporter for you. You should keep the paper or electronic copies of the manifests for three years. If you do not receive a copy of the manifest or electronic certification of its delivery that is signed by an agent of the designated disposal facility within 45 days, you need to submit an exception report to the Department explaining your efforts taken to locate the hazardous waste and the result of that effort. You should also keep copies of manifests signed by the disposal facility for three (3) years.

Figure 3 on the next page shows an example of a Uniform Hazardous Waste Manifest.

For more information, contact the Office of Land Revitalization & Sustainable Materials Management at (401) 222-2797, or visit http://www.dem.ri.gov/programs/wastemanagement/facilities/hazardous-waste-oil.php

Figure 3: Uniform Hazardous Waste Manifest



Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number

GENERATOR

5. Generator's Name and Mailing Address | Generator's Site Address (If different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name | U.S. EPA ID Number

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address | U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of Entry/Exit:
Transporter signature (for exports only): Date Leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

VOID

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

2.6.3 Land Disposal Restrictions

Land disposal restrictions (LDR) provide a second measure of protection from threats posed by hazardous waste disposal. LDR provides that a hazardous waste cannot be placed on the land until the waste is treated (or meets specific treatment standards) to reduce the mobility or toxicity of the hazardous constituents in the waste. Once listed or identified, a hazardous waste becomes restricted (or subject to LDR) when the Agency establishes treatment standards that the waste must meet before it can be land disposed.

EPA requires generators managing wastes that are subject to LDR (restricted wastes) to meet certain notification, certification, waste analysis, and recordkeeping requirements under 40 CFR 268.7. Much like a hazardous waste manifest, the LDR notification and certification paperwork helps hazardous waste handlers and regulatory agencies ensure that wastes are properly managed. A notification accompanies the initial shipment of each waste that is subject to LDR and includes such information as the waste code(s), the hazardous constituents present in the waste, and waste analysis data. EPA requires subsequent notification only when the waste or the receiving facility changes. Additionally, if a waste can be land disposed without further treatment, a certification to that effect must accompany the notification. EPA requires waste handlers to retain such paperwork to track wastes that are subject to LDR and to ensure that those wastes receive proper treatment prior to disposal.

Section§268.7(a) contains the tracking requirements for generators, §268.7(b) specifies the requirements for treatment facilities, §268.7(c) contains the regulations applicable to disposal facilities, §268.7(d) contains special notification and certification requirements that apply to hazardous debris, and §268.7(e) contains special notification requirements for contaminated soil.

Generators must determine if their hazardous waste is subject to LDR at the point of generation. They may make this determination by testing or applying knowledge. If a waste is subject to LDR and does not meet applicable treatment standards, generators must notify the treatment facility in writing (§268.7(a)(2)). This notice accompanies the manifest and must include the following information:

- EPA hazardous waste code(s)
- Identification of the waste as a wastewater or non-wastewater
- Manifest number associated with the waste shipment
- Waste analysis data (if available)
- For characteristic wastes, any additional hazardous constituents present
- When hazardous debris is to be treated by an alternative technology under §268.45, a statement to that effect and the contaminants subject to treatment
- For contaminated soil, a list of the constituents subject to treatment and a statement that the soil does or does not meet LDR standards.

If a generator's waste already meets applicable treatment standards, the generator, in accordance with §268.7(a) (3), must submit a signed certification stating that the waste meets the applicable treatment standards. This certification accompanies a copy of the notification statement described above.

2.7 Emergency Preparedness and Prevention/Contingency Plans

2.7.1 Equipment Required

If you store hazardous waste in a hazardous waste storage area, your facility must be maintained to minimize the possibility of a fire, explosion, or unplanned release of hazardous waste constituents. Your facility must have the following:

1. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

2. A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police and fire departments.

3. Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

4. Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems. (Adequate water pressure can be determined during the annual sprinkler test required by OSHA and local fire departments.)

5. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested, and maintained as necessary to assure its proper operation in time of emergency.

6. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

7. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

8. The owner or operator must attempt to make arrangements to familiarize local police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, and possible evacuation routes. (Note: Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority should be obtained.)

9. The owner or operator must attempt to make arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

10. Regarding #8 and #9, where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record of the facility.

2.7.2 Written Contingency Plan

Large Quantity Generators that store hazardous waste in 90–day storage areas (less than 90-day accumulation containers) or in tanks must have a written contingency plan designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned release of hazardous waste to air, soil, or surface water. The plan should outline specific steps that company personnel will take in response to emergencies, and contain, at a minimum, the information described in the RI Hazardous Waste Regulations Rule 1.7.12(K).

Once developed, this plan is required to be submitted to local emergency response providers. Should the response providers be unwilling to make arrangements with you, document this in the operating record of the facility.

In the development of this plan, you need to designate at least one person to act as an emergency coordinator. Should an emergency situation arise, the emergency coordinator must be prepared to act quickly to protect employees, emergency response personnel, and the environment. Also, evacuation routes should be posted along with exit signs in areas where hazardous wastes are handled or stored.

Small Quantity Generators and Conditionally Exempt Small Quantity Generators are exempt from creating a written contingency plan, provided they meet the requirements listed in Rule 1.7.13(I)(1) and 1.7.14(I)(1) respectively:

1. At all times, one employee is on-site, or on call and able to return to the facility in a short period of time, to act as an emergency response coordinator and be responsible for implementing the necessary response measures for the situation.

2. The generator shall post the name and telephone number of the emergency response coordinator, telephone number of the local fire department, DEM (day 401-222-3812, 24-hour 401-222-3070), National Response Center and the environmental contractor on call to clean up spills next to any and all telephones in the vicinity of the hazardous waste storage area.

3. Conspicuously mark the location of fire extinguishers, spill control equipment and fire alarm (if present) and post the location of these items next to any and all phones in the vicinity of the hazardous waste storage area; and

4. Take immediate action to clean up any spills or releases of hazardous waste and any contaminated materials or soils. This shall include employing an environmental cleanup contractor if the spill or release exceeds the capabilities of the on-site employees.

If a SQG or CESQG fails to meet these requirements, the generator must prepare a written contingency plan that meets the standards provided above.

2.8 Annual Personnel Training

SQGs and LQGs who store hazardous waste on-site shall develop and maintain on-site, a written employee training program and shall provide this training to all of its employees whose job duties involve the handling or management of hazardous waste within six (6) months of their initial hiring date. (CESQGs are not required to provide hazardous waste training as per Rule 1.7.14 (F). SQGs who manage their hazardous waste in satellite accumulation only are not required to provide training to personnel provided that they maintain compliance with Rule 1.7.8.)

The training program shall be directed by an individual who has been trained in hazardous waste management regulations by a qualified environmental consultant, qualified academic instructor or by having completed a specialized program of study. The training program shall contain and cover at a minimum the following information:

1. A definition of regulated hazardous waste and a list of hazardous wastes typically generated or stored by the facility;
2. Management procedures to be followed to properly handle and store hazardous waste on-site;
3. Description of any applicable regulatory exemptions utilized by company for storing and/or managing hazardous waste generated at the facility;
4. Description of container and tank labeling and dating requirements, as appropriate;
5. Description of accumulation (storage) time limits;
6. Waste pre-transport requirements, including proper use of Uniform Hazardous Waste Manifests;
7. Proper implementation of the facility's hazardous waste contingency plan, if applicable, including response to the fires or explosions and response to groundwater contamination incidents;
8. Spill prevention and response including procedures for using, inspecting, repairing, and replacing emergency response and monitoring equipment and procedures for complete shutdown of facility operations;
9. Proper evacuation procedures and routes.

For LQGs only, provide an annual review of the initial training for all their employees who handle or manage hazardous waste that covers all of the information listed above. Written documentation shall also be maintained recording the type and amount of training provided to each employee, employee's name and job title, a description of the employee's duties and qualifications for the job and a dated sign-in sheet for each training session.

Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

In order to comply with these requirements, and depending on given facility situations, both Large and Small Quantity Generators may also be obligated to ensure that employees are also trained pursuant to Title 29 (OSHA) of the Code of Federal Regulations for emergency hazardous waste and/or hazardous material handling and exposure (HAZWOPER). Be advised that USEPA Hazardous Waste Training and OSHA HAZWOPER Training, although similar and complementary, are **not** considered equivalent and may **not** be mutually substituted.

2.9 Recordkeeping and Reporting

2.9.1 Record Keeping

Generators of hazardous waste need to record the following:

1. A generator must keep a copy of each signed manifest for three years, including a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter. (LDRs must be kept for five years)

2. A generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste. If the generator has not received a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 45 days of the date the waste was accepted by the initial transporter, the generator must file an Exception Report with the RI DEM. The Exception Report must include:

   (i) A legible copy of the manifest for which the generator does not have confirmation of delivery;
   (ii) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

   Copies of Exception Reports must be kept for three years.

3. A generator must keep records of any test results, waste analyses, or other determinations made in accordance with its identification of hazardous waste for at least three years from the date that the waste was last sent to an on-site or off-site treatment, storage, or disposal facility.

The full requirements for record keeping is found in the RI Hazardous Waste Regulations Rule1.7.13.

2.9.2 Reporting

LQGs are required to submit a Biennial Report (BR) by March 1st of each even numbered year covering the prior year's waste generation activities. Generators may complete the BR by registering online at https://rcrainfo.epa.gov/rcrainfoprod/action/secured/login. The instructions to create an account are the same as described in Section 2.6.1 above. RIDEM may also require small quantity generators (SQG's) to complete a biennial report on a periodic basis. The report requests information such as:

- The EPA identification number, name, and address of the generator.
- The EPA identification number, name, and address for each off-site treatment, storage, or disposal facility in the United States to which waste was shipped during the year.
- The name and EPA identification number of each transporter used during the reporting year for shipments to a treatment, storage, or disposal facility within the United States.
- A description, EPA hazardous waste number (from 40 CFR part 261, subpart C or D), DOT hazard class, and quantity of each hazardous waste shipped off-site for shipments to a treatment, storage, or disposal facility within the United States.
- A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.
- A description of the changes in volume and toxicity of waste achieved during the year in comparison to previous years.

A generator must keep a copy of each Biennial Report for a period of at least three years from the due date of the report. Digital copies of the BR are considered to meet this requirement.

In the event of an actual or threatened spill or release of hazardous waste or material which presents any risk of injury to health or the environment, or during an emergency event where the facility must implement its contingency plan, the generator must notify the Department (401-222-4700 during business hours, and after hours at 401-222-3070), and the National Response Center (1-800-424-8802) immediately. The generator must also immediately take steps to prevent, contain and/or clean up the spill or release.

After such notification, the generator must note in the operating record of the facility the date, time, and details of the incident, and also must submit a written report on the incident to the Regional EPA Administrator within 15 days of the incident. The report must include:

1. Name, address, and telephone number of the owner or operator;
2. Name, address, and telephone number of the facility;
3. Date, time, and type of incident (e.g., fire, explosion);
4. Name and quantity of material(s) involved;
5. The extent of injuries, if any;

6. An assessment of actual or potential hazards to human health or the environment, where this is applicable, and;
7. Estimated quantity and disposition of recovered material that resulted from the incident.

3.0 Hazardous Waste Self-Audit Checklist

The hazardous waste self-audit checklist on the following page is provided as an example and may not contain every applicable regulatory requirement. Generators should prepare their own document to ensure complete coverage.

	Hazardous Waste Self-Audit Checklist	
1.	Does your facility generate hazardous wastes? [See Section 2.1 (p. 7) of the workbook.] If no, then the state and federal Hazardous Waste Regulations do not apply to your current operations but may apply in the future.	☐ Yes ☐ No
2.	What is your facility's EPA identification number? [If you do not currently have one, refer to Section 2.6 (p. 21) of the workbook.]	RI_____
3.	What is your generator status? [See Section 2.1.5 (page 11) of the workbook] a) Large Quantity Generator (LQG) [produces >2,200 lb/month of hazardous waste or >2.2 lb/month of acutely hazardous waste] b) Small Quantity Generator (SQG) [produces >220 lb/month] c) Conditionally Exempt Small Quantity Generator (CESQG) [produces <220 lb/month]	☐ LQG ☐ SQG ☐ CESQG
4.	How much hazardous waste did you ship from your facility in the last 12 months?	_____ gal or _____ lbs
5.	Do you have appropriate documentation which shows where hazardous waste is being shipped? [See Section 2.6 (p. 21) and Section 2.9 (p. 28) of the workbook.]	☐ Yes ☐ No
6.	Is all hazardous waste stored in either a satellite accumulation area and/or a separate hazardous waste storage area? [See Section 2.2 (p. 12) of the workbook.]	☐ Only satellite area ☐ 90/180/365-day storage area ☐ Both satellite & storage area
7.	Regarding the satellite accumulation area: [See Section 2.2 (p. 12) of the workbook.] a) Is the area clearly marked and the container properly labeled with the words "hazardous waste" and the contents of the container? b) Is the container under the control of an operator at or near the point of generation? c) Is the container kept closed when not being filled or emptied?	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA

8.	Regarding the hazardous waste storage area: [See Section 2.3 (p. 13) of the workbook.] a) Are all containers in good condition? b) Are containers labeled with the words "Hazardous Waste", the name, EPA ID number and address of the facility? c) Are containers labeled with name of the waste? d) Are containers labeled with the date that waste was first placed in the container? e) Are the containers marked with the date the waste first began to accumulate in excess of the satellite accumulation? f) Is the area itself secure and protected from stormwater? g) Is there adequate aisle space between drums? h) Are the containers kept closed except when removing/adding waste? i) Are the containers compatible with the hazardous waste? j) Do containers holding liquid hazardous waste have secondary containment? k) Are containers holding ignitable hazardous waste greater than 50 feet from property line?	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
9.	Does your hazardous waste storage area meet the criteria for secondary containment, if applicable? [Section 2.3.2 (p. 15) of the workbook]	☐ Yes ☐ No ☐ NA
10.	Is the area inspected weekly for signs of spills or container deterioration, and is this inspection documented? [See Section 2.3 (p. 13) of the workbook.]	☐ Yes ☐ No
11.	Are you shipping your hazardous waste off-site within 90 days of Generation for LQGs, 180 days for SQGs and 365 days for CESQGs? [See Section 2.2 (p. 12) of the workbook.]	☐ Yes ☐ No
12.	If the storage area contains ignitable wastes: [See Section 2.3 (p. 13) of the workbook.] a) Is it located 50 feet from the property line? b) Is the area separated from sources of ignition?	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
13.	Is your shop operated in a manner to minimize the possibility of an explosion, fire, or unplanned release of hazardous materials? [Full provisions are contained in Section 2.7 (p. 25) of the workbook.]	☐ Yes ☐ No

14.	a) Does your shop have a **written** contingency plan designed to minimize hazards associated with the possibility of an explosion, a fire, or an unplanned release of hazardous materials (LQG)? [Full provisions are contained in Section 2.7.2 (p. 26) of the workbook.] b) Has this plan been submitted to local emergency response providers? [Full provisions are contained in Section 2.7 (p. 26) of the workbook.] c) Or do you comply with 1.7.13(I) /1.7.14(I) (SQG and CESQG)?	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
15.	Does your shop have one employee on-site or on-call to act as an emergency response coordinator? [See Section 2.7 (p.25) of the workbook.]	☐ Yes ☐ No
16.	Does your shop have a list of emergency contacts posted near all phones in the vicinity of the hazardous waste storage area? [See Section 2.7 (p.25) of the workbook.]	☐ Yes ☐ No
17.	Does your shop mark the location of fire extinguishers, spill control equipment and fire alarm (if present)? [See Section 2.7 (p.25) of the workbook.]	☐ Yes ☐ No
18.	Does your shop take immediate action to clean-up spills of hazardous wastes and any contaminated materials or soils? [See Section 2.7 (p.25) of the workbook.]	☐ Yes ☐ No
19.	a) Does your shop have an employee training program that teaches them proper hazardous waste management procedures including contingency plan implementation? [Full provisions are contained in Section 2.8 (p. 27) of the workbook.] b) Does your shop have records indicating that an employee training program is occurring on an annual basis? [See Section 2.8 (p. 27) and 2.9 (p. 28) of the workbook]	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
20.	If tanks are used for hazardous waste storage, are you in compliance with the tank storage and inspection requirements listed in Section 2.4 (p. 19) of the workbook.	☐ Yes ☐ No ☐ NA

21.	Are your manifests, waste analyses, and other hazardous waste management records maintained on-site and available for inspection? Note: As a generator, you are required to identify all your hazardous waste streams. [See Section 2.9 (p. 28) of the workbook]	☐ Yes ☐ No
22.	Has the facility implemented any of the following toxic use reduction measures over the past 3 years? • substitution/replacement of a toxic raw material with a non-toxic or less toxic substance • substitution/reformulation of an existing end-product for one that is non-toxic or less toxic upon use, release, or disposal • redesign, modification, or modernization of production equipment (including integral or closed loop recycling or filtration) to reduce the amount of raw toxic material needed in the production process • improved operation and maintenance of the production process or equipment (e.g. housekeeping practices, system adjustments, product, and process inspections), so that less raw toxic material is required in the production process IF YES, BRIEFLY DESCRIBE the toxics use reduction projects:	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No
23.	Has the facility undertaken recycling projects over the past three years? IF YES, BRIEFLY describe the recycling projects:	☐ Yes ☐ No
24.	Has the facility implemented water conservation projects over the past three years? IF YES, BRIEFLY describe the water conservation projects:	☐ Yes ☐ No
25.	Has the facility implemented energy conservation/alternative energy projects over the past three years? IF YES, BRIEFLY describe the energy conservation/alternative energy projects:	☐ Yes ☐ No

4.0 Important Phone Numbers for Hazardous Waste Issues

Rhode Island Department of Environmental Management
235 Promenade Street
Providence, RI 02908

(401) 222-4700	Central Information
(401) 222-6822	Office of Customer and Technical Assistance
(401) 222-3070	24-hour emergency number (after hours)
(401) 222-1360	Office of Compliance and Inspection - EPA ID numbers/Reporting Spills
(401) 222-1360	Office of Compliance and Inspection – Aboveground Tanks
(401) 222-2797	Office of Land Revitalization and Sustainable Materials Management
(401) 222-2797	Office of Land Revitalization and Sustainable Materials Management – Underground Tanks
(401) 222-6820	Office of Water Resources – Wetland and ISDS Permitting
Website:	http://www.dem.ri.gov

U.S. Environmental Protection Agency
Region 1, New England
5 Post Office Square
Boston, MA 02109-3912
1-888-372-7341
http://www2.epa.gov/aboutepa/epa-region-1-new-england

U.S. Department of Transportation
Federal Highway Administration
Rhode Island Division
380 Westminster Street, Suite 547
Providence, RI 02903
Phone: (401) 528-4541
https://www.fhwa.dot.gov/ridiv/

EPA Asbestos and Small Business Ombudsman
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
Mail Code: 1230T
Hotline: 1-800-368-5888
https://www.epa.gov/resources-small-businesses/asbestos-small-business-ombudsman/

National Response Center
1-800-424-8802
https://nrc.uscg.mil/

U.S. Government Printing Office
John F. Kennedy Federal Building
15 New Sudbury Street, E-270
Boston, MA 02203-0002
(617) 565-1370
http://www.gpo.gov/

U.S. Department of Transportation
Federal Motor Carrier Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
855-368-4200
http://www.fmcsa.dot.gov/

RI Department of Health
OSHA Consultation Program
3 Capitol Hill
Providence, RI 02908
(401) 222-5960
http://www.health.ri.gov/programs/oshaconsultation/

Appendix A

Commercial Hazardous Waste Storage Lockers & Cabinets

Gilmore-Kramer Company 50 Sprague Street Providence, RI 02907	Telephone: Fax: Website: E-mail:	(401) 331-4149 (401) 454-1391 www.gilmorekramer.com contact@gilmorekramer.com
Hazmat Chemical Storage 1225 Wakeham Santa Ana, CA 92705	Telephone: Fax: Website: E-mail:	(800) 401-5877 (714) 542-6338 www.hazmatstorage.com info@hazmatstorage.com
Safety Storage, Inc. 2301 Bert Drive Hollister, CA 95023	Telephone: Fax: Website: E-mail:	800) 344-6539 (831) 637-7405 www.safetystorage.com info@safetystorage.com

Note: This information is intended as advisory guidance only in developing approaches for pollution prevention and environmental compliance. Any and all products and companies identified (through the manufacturer's supplied product literature) in this report are for example only. No endorsements are implied, nor should any be inferred. The Office of Customer and Technical Assistance advises that prior to implementation of any suggestion or recommendation, the company should consult with proper Federal, State, and Local regulatory agencies.

Appendix B

EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE
(APPENDIX V TO 40 CFR PART 265)

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases. Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit-granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components. This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze their wastes so that they can avoid creating uncontrolled substances or reactions of the type listed below, whether the wastes are listed below or not. It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator). In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1–A	Group 1–B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkaline	Pickling liquor
Lime wastewater and other corrosive acids	Spent acid
Lime and water	Spent mixed acid
Spent caustic	

Potential consequences: Heat generation; violent reaction.

Group 2–A	Group 2–B
Aluminum Beryllium Calcium Lithium Magnesium Potassium Sodium Zinc powder Other reactive metals and metal hydrides	Any waste in Group 1–A or 1–B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3–A	Group 3–B
Alcohols Water	Any concentrated waste in Groups 1–A or 1–B Calcium Lithium Metal hydrides Potassium SO_2Cl_2, $SOCl_2$, PCl3, CH_3SiCl_3 Other water-reactive Waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4–A	Group 4–B
Alcohols Aldehydes Halogenated hydrocarbons Nitrated hydrocarbons Unsaturated hydrocarbons Other reactive organic compounds and solvents	Concentrated Group 1-A or 1–B wastes Group 2–A wastes

Potential consequences: Fire, explosion, or violent reaction.

Group 5–A	Group 5–B
Spent cyanide and sulfide solutions	Group 1–B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6–A	Group 6–B
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorites	Group 2–A wastes
Chromic acid	Group 4–A wastes
Hypochlorites	Other flammable and combustible wastes
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction.

SOURCE: ‘‘Law, Regulations, and Guidelines for Handling of Hazardous Waste.’’ California Department of Health, February 1975.

Appendix C

GHS Hazard Labels & GHS Hazard Placards

OSHA Hazard Communication Standard is now aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The GHS is a system for standardizing and harmonizing the classification and labelling of chemicals. It is a logical and comprehensive approach to defining health, physical and environmental hazards of chemicals; creating classification processes that use available data on chemicals for comparison with the defined hazard criteria; and communicating hazard information, as well as protective measures, on labels and Safety Data Sheets (SDS).

For more information on GHS, please consult "The Purple Book", published by the United Nations and found at the OSHA website at the following address:
https://www.osha.gov/dsg/hazcom/