

DNR Proposed Guidance

Program area: Hazardous Waste Program, Waste and Materials Management

Subject: How to make a waste determination and document the information for compliance purposes.
Waste Determinations and Documentation – WA-1152

Length of Public Input Period: 21 days

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DNR has updated the 2007 document, WA-1152 “Is Your Waste Hazardous?” to provide assistance to generators, consultants, and environmental contractors when making waste determinations for hazardous and non-hazardous wastes, and documenting those decisions for compliance and disposal purposes.

The draft document has been renamed ***Waste Determination and Documentation*** and includes an improved waste evaluation flowchart, a discussion on applying objective knowledge - sometime referred to as ‘*generator knowledge*,’ and a sample waste determination documentation form. It also makes reference to the U.S. Environmental Protection Agency’s 2015 “Waste Analysis at Facilities that Generate, Treat Store and Dispose of Hazardous Wastes” and provides a link for additional information.

The Department is soliciting comments from the public on this draft guidance. Once the 21 day notice period is complete, all comments will be considered by the Department. After considering all public comments, revisions may be made to the guidance document and final guidance will be made available to internal and external stakeholders. Comments related to this draft guidance document should be sent to: DNRWasteMaterials@Wisconsin.Gov.

Waste Determinations and Documentation

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Introduction

Wisconsin businesses and institutions are required by federal and state law to determine if their waste materials are hazardous waste. Accurate waste determinations are the foundation of a good hazardous waste management program and may reduce management and disposal costs.

Hazardous Waste regulations are found in chapters [NR 660-679](#) of the Wisconsin Administrative Code (WAC)

Beyond conducting a waste determination for each waste stream generated, it is important to *properly* document the waste determinations. This document contains information to help understand the various waste types, categories and thought processes used to make and document a correct hazardous waste determination.

Generator Requirements

There are five principal steps the generator must take:

1. **Identify all waste streams:** Make a list of all waste streams generated at the facility. List what process generates each waste and document how many pounds of each waste is generated each calendar month.
2. **Determine whether the waste stream is a solid waste:** Check to see if each waste meets the definition of “solid waste” as found in s. NR 661.02.
3. **Determine if the solid waste is excluded** from regulation under s. NR 661.04.
4. **Determine whether the solid waste is a hazardous waste:** For each waste that meets the definition of solid waste, determine if the waste is any of the following:
 - Characteristic hazardous waste
 - Hazardous waste mixture
 - Listed hazardous waste
 - Is derived from a hazardous waste
5. **Document the information in steps 1-4:** Compile the information and thought process used to make the waste determination including a statement whether or not the waste is hazardous. If it is hazardous, list the applicable waste codes (D001, F003, U183, etc.) and what the generation rate of this waste is per month. Knowing the generation rate will help in determining the correct generator status and applicable regulations for your facility. ***This documentation is an important final step in the hazardous waste determination process.***

What is a Solid Waste?

Wisconsin’s hazardous waste rules define solid waste as any material which is discarded, abandoned, recycled, or is inherently waste-like. In general, if you can no longer use the material for its intended purpose that material would be classified as a solid waste per s. 289.01(33) Wisconsin Statutes.

Under the federal Resource Conservation and Recovery Act (RCRA) and state law the term “solid waste” does not refer to the physical state of the waste. Solid waste is any material – solid, liquid or containerized gas – that is no longer used for its original intended purpose and is being discarded,

Solid wastes can be **solid, liquid or containerized gas.**

treated to reclaim its original properties, or processed for an alternative purpose. Certain wastes that meet the above definition of solid waste may be excluded from solid waste regulation.

Recycled materials that are excluded from being a solid waste under hazardous waste rules include materials:

- Used as ingredients in an industrial process to make a product, provided the materials are not being reclaimed.
- Used as an effective substitute for another commercial chemical product.
- Returned to the original process from which it was generated without being reclaimed.

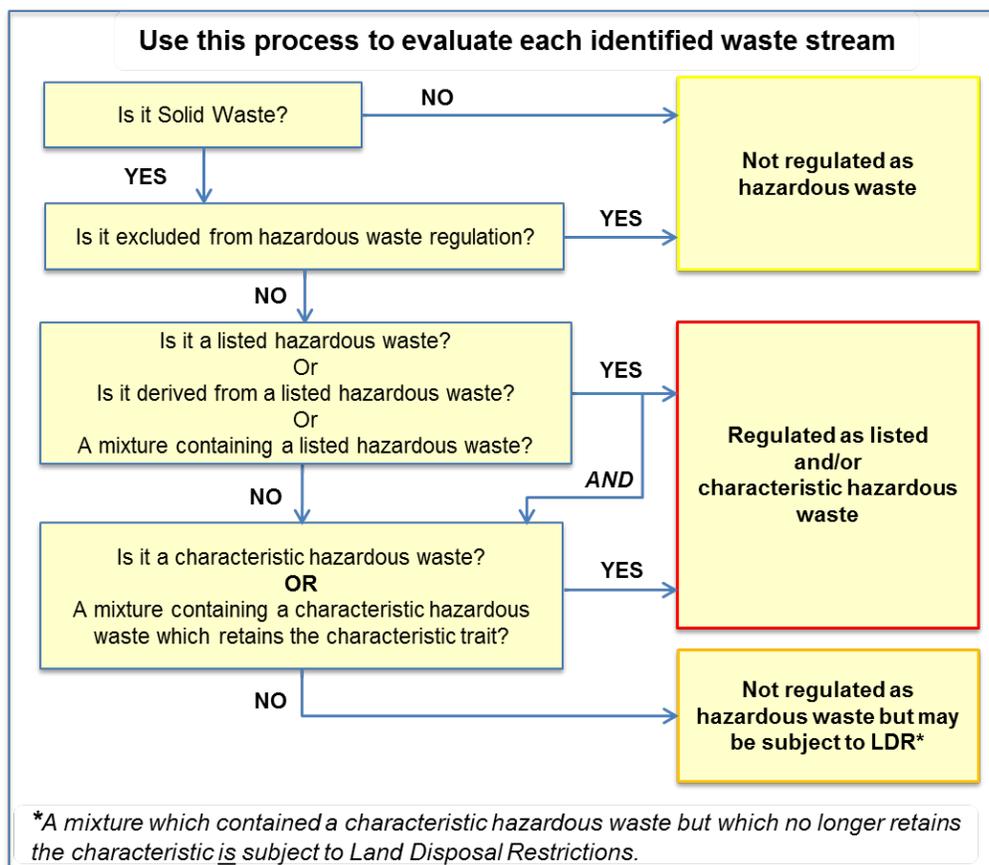
There are other solid wastes excluded from this regulation, such as domestic sewage, certain wastewater discharges, and certain materials headed for specific recycling processes. The solid waste exclusions are listed in s. [NR 661.04](#). **It is important to document the reasoning behind any exclusions used in the waste determination process.**

What is a Hazardous Waste?

A hazardous waste is a solid waste – that is not excluded from the regulations – and meets any of the following conditions:

Exhibits any of the characteristics of hazardous waste	Subchapter C, NR 661
Has been named as a hazardous waste and listed as such in the regulations	Subchapter D, NR 661
Is a mixture containing a listed hazardous waste and non-hazardous waste	s. NR 661.03(1)(b)4
Is derived from the treatment, storage, or disposal of listed hazardous waste.	s. NR 661.03(3)(b)1 & s. NR 661.03(4)(b)

Understanding the definitions and descriptions of hazardous waste, both characteristic and listed, will help you navigate the waste determination flow chart below.



Additional Considerations

There may be other factors to consider when making a waste determination:

- **Waste derived or generated** from treatment, storage or disposal of a listed hazardous waste, including sludge, spill residues, air emission control dust or leachate, is considered a listed hazardous waste.
- **Mixtures** of listed hazardous waste and other solid waste results in the mixture becoming a listed hazardous waste.
- **Dilution** of hazardous waste to remove hazardous characteristics is not allowed except in very limited circumstances.
- **Treatment or mixing** of hazardous waste is only allowed in very limited circumstances. Prior to treating or mixing hazardous waste at a facility, the Wisconsin Department of Natural Resources (DNR) strongly encourages you to contact the hazardous waste program to determine what rules apply and if a license is required.

Listed or Characteristic Hazardous Wastes

Hazardous wastes can be designated as “listed wastes,” such as process wastes, chemicals, and compounds or they can exhibit hazardous characteristics (ignitability, corrosivity, reactivity or toxicity). The waste codes outlined below are used for shipping manifests to identify and track the wastes from transportation through treatment and disposal or recycling.

A hazardous waste may be listed, characteristic or both.

Listed Wastes

F-list wastes

These waste types (F001-F039) typically include certain spent solvents, paint thinners, brake and carburetor cleaners, vapor degreasing and dry cleaning solvents, electroplating wastes and manufacturing and process wastes. [NR 661.31]

K-list wastes

These waste types (K001-K178) typically come from specific sources such as industrial processes like wood preserving, manufacturing pesticides, organic chemicals and veterinary drugs. [NR 661.32]

P-list wastes

These wastes are identified as acute hazardous wastes (P001-P205) and include discarded commercial chemical products, off-specification species, container and spill residues including unused chemicals such as cyanides, arsenic compounds and several pesticides. These wastes are extremely dangerous to human health and the environment in very small doses or short-term exposure. [NR 661.33]

U-list wastes

These wastes are identified as toxic wastes (U001- U411) and include discarded commercial chemical products, off-specification species, container residues and spill residues including used chemicals which pose health risks due to their persistence in the environment or their potential for migrating through the environment. These wastes are dangerous to humans and the environment in small doses, but are not as toxic as “P listed” wastes. [NR 661.34]

Characteristic Wastes

Waste Code D001

Ignitability represents the ability of the waste to burn. Liquid wastes are ignitable if their flash point is below 140 degrees F (e.g. gasoline, solvents, and paint

thinners). Some non-liquids, flammable gases and oxidizers also have this characteristic. [NR 661.21]

Waste Code D002

Corrosivity represents the ability of the waste to destroy or deteriorate materials, chemically burn skin, enhance movement of toxic chemicals in the environment, react dangerously with other wastes, or harm fish and other aquatic life. Aqueous wastes (>50% water) are corrosive if their pH is less than or equal to 2 or greater than or equal to 12.5 (e.g. rust remover, descaling products). Liquid wastes are corrosive if they corrode steel by more than one-quarter inch per year. [NR 661.22]

Waste Code D003

Reactivity is the waste's tendency to react violently or explode. Wastes are reactive if they are unstable either alone or in the presence of water. These wastes can form explosive mixtures with water and produce dangerous quantities of toxic gases, vapors or fumes when mixed with water or when exposed to mild acids or bases. They can detonate, react or decompose explosively (e.g. hydrogen sulfide). [NR 661.23]

Waste Code
D004 - D043

Toxicity is the ability of hazardous constituents to leach out of the waste. Wastes are toxic if they release or leach any of thirty-nine specified heavy metals, pesticides or other organic chemicals above their regulatory level concentrations (e.g. benzene, carbon tetrachloride, chromium, Chlordane, Endrin, lead, mercury). [NR 661.24]

Waste Determination Methods

To make a waste determination, per s. NR 662.011(3), the generator can use either laboratory analysis results and/or apply objective knowledge of the waste based on the materials and processes used to generate the waste. While sampling and analysis might not be considered as convenient as relying solely on applying knowledge, it provides advantages. An accurate waste determination is a critical factor for demonstrating compliance with hazardous waste regulations. Additionally, accurate determinations can help avoid over-classification of wastes as hazardous and could potentially generate cost savings.

Choosing a Lab

Select a DNR certified laboratory before collecting the representative waste samples. Contact the lab to discuss sample volumes and containers required, collection methods, and to determine analytical test methods required. [NR 149]

For technical assistance regarding test methods or lab analysis contact the DNR's Laboratory Certification Program chemist at 608-264-6006.

Sampling for Analysis

Sampling guidance for generators, along with key issues to identify when developing a waste analysis plans, can be found in the U.S. EPA's 2015 guidance document [Waste Analysis at Facilities that Generate, Treat, Store and Dispose of Hazardous Wastes](#).

A *representative* sample of each waste stream must be collected and analyzed in order to provide sufficient data to make the waste determination. The sample collected should reflect an unbiased representation of the waste. As the referenced EPA guidance states:

Visit www.dnr.wi.gov and search for 'accredited labs' to find a list of commercial state [certified labs](#).
A generator is required to use a certified lab, for most tests, when using analysis for waste determination as per s. NR 662.001(3)(a)1.

To be representative, a sample needs to be collected and handled in a way that preserves its original physical form and chemical composition and prevents contamination. For a sample to provide meaningful data, it is important that it reflect the properties of the waste from which it was obtained, that its physical and chemical integrity be maintained, and that it be analyzed within a dedicated quality assurance program.

To determine how many sampling locations to select from the waste stream, and how frequently sampling should be conducted, it is important to determine potential variations in the waste generated. If a waste stream is highly uniform one representative sample collected annually may be sufficient. However, if a single waste stream is a mixture of materials generated in several locations under varying conditions over time, additional samples are likely required.

"Representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole. Approved representative sampling methods for specific waste types are located in [NR 661 Appendix 1](#).



How frequently do I need to make a hazardous waste determination? At a minimum, sampling must be conducted when the process or materials that generate the waste change, or if a visual inspection of the waste reveals it has changed. The department recommends a re-characterization be performed every one to three years. During the re-characterization the safety data sheets (SDSs) and other "knowledge of process" information should be reviewed to ensure that neither the raw materials nor the process associated with the waste have changed.

Applying objective knowledge

When determining whether a waste material is hazardous or non-hazardous, objective knowledge of the input materials and processes must be **supported with documentation**. Examples of supporting documentation include: SDSs, published information, process flow diagrams, chemical reaction diagrams, breakdown products and other process reactions or chemical information. **Typically, none of these documents are acceptable as a stand-alone waste determination**, as most do not state conclusively whether or not the waste is hazardous or non-hazardous. This information should be kept up-to-date as materials and processes that generate the waste change.

While SDSs can provide useful information regarding ignitability (flash point), corrosivity (pH), or reactivity of the material going into the process, they tend to be less useful when it comes to identifying the toxic characteristics of waste generated from that process. The safety data sheet only lists ingredients that make up greater than 1% of the total constituents (0.1% if they are carcinogens). This means that a material used in a process may contain a toxic constituent that is not listed on the SDS, but which contributes to the generation of a hazardous waste. Additionally, the process itself may chemically or physically change the properties of the materials such that the generated waste is hazardous.



In most cases knowledge alone cannot properly characterize the waste, particularly when the waste is non-homogenous or has become cross-contaminated. Therefore, to accurately characterize the waste collect representative samples for laboratory analysis.

A **waste profile sheet** alone from a waste contractor is not adequate documentation. These forms are often not completed by the generator and may not be supported by sufficient understanding of the process or products generating the waste. In addition, profiles may include data from incorrect analytical test methods or analysis conducted in laboratories that are not certified by the DNR.

Documentation

Adequate documentation should include a statement regarding the waste determination **for each waste stream**. It should state whether or not the waste is hazardous and include copies of all information used to

support the determination. A sample waste determination documentation form is attached to this publication. This specific form is not required and generators may create their own form to meet the needs of their individual facilities.

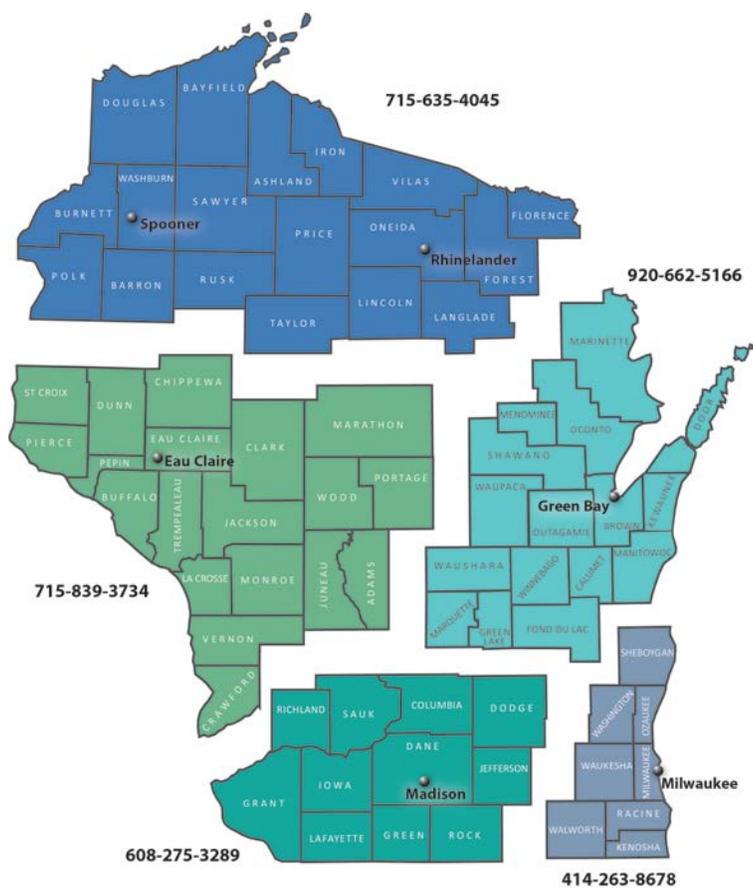
The documentation must be kept for three years from the last date the waste was shipped off-site. During a hazardous waste facility inspection, this information will be requested by the inspector to determine compliance with hazardous waste regulations.

Documentation is required for all wastes, both hazardous and non-hazardous, that may reasonably be suspected of being hazardous waste.

Waste determinations should occur following process or material changes, or if the waste is highly variable. **It is the responsibility of the generator to make a correct waste determination and retain the supporting documentation.** [NR 662.011]

Resources and DNR Contact Information

For more information on this subject, including other publications, staff contacts and administrative codes and statutes, search by topic, WA publication number or “hazardous waste” at dnr.wi.gov, or contact Waste & Materials Management staff by searching “[waste regional office](http://dnr.wi.gov)” at dnr.wi.gov.



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Waste Determination Documentation Form

Waste Name/Type: _____ Date: _____

Waste Information		
Description of process generating the waste:		
Amount generated per month (lbs)		
Does the waste meet the definition of solid waste? <i>See s. 289.01(33) and NR 661.02 W.A.C.</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> No, explain why:
Is this solid waste excluded from regulation? <i>See NR 661.04 W.A.C.</i>	<input type="checkbox"/> No	<input type="checkbox"/> Yes, explain why:
Is this solid waste a hazardous waste?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <i>Attach supporting documentation</i>
Is the waste exempt from hazardous waste regulations?	<input type="checkbox"/> No	<input type="checkbox"/> Yes, explain why/ provide code citation: <hr/>
Is this waste a listed hazardous waste?	<input type="checkbox"/> No	<input type="checkbox"/> Yes, list waste code(s): <hr/>
Is this waste a characteristic hazardous waste?	<input type="checkbox"/> No	<input type="checkbox"/> Yes, list waste code(s): <hr/>
Is the waste Universal Waste?	<input type="checkbox"/> No	<input type="checkbox"/> Yes, list waste type:
Is the waste Used Oil?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Supporting Documentation		
Was laboratory analysis used to make this decision?	<input type="checkbox"/> No	<input type="checkbox"/> Yes, Laboratory / DNR certification #: <hr/> <i>Attach a copy of the analytical results to this sheet</i>
Was objective knowledge of the material and process used to make this determination?	<input type="checkbox"/> No	<input type="checkbox"/> Yes Name and date of supporting documents: <hr/> <i>Attach a copy of supporting documents to this sheet</i>
Safety Data Sheet(SDS):	<input type="checkbox"/> No	<input type="checkbox"/> Yes, attach the SDS to this sheet
Process Flow Diagram:	<input type="checkbox"/> on reverse of this form <input type="checkbox"/> attached	
Research Data:		
Other:		
Facility Information		
Name of Facility / Business		
EPA ID # / Facility ID # (FID)		
Name/Title of Person making determination:		
Signature:		Date:

Use the reverse side to include additional information and/or process flow diagram.

