Counting Dangerous Waste

Under the *Dangerous Waste Regulations*

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Hazardous Waste and Toxics Reduction Program
Washington State Department of Ecology
Olympia, Washington

Table of Contents

Introduction

This document discusses "counting" dangerous waste as described in the *Dangerous Waste Regulations*, Chapter 173-303 WAC. "Counting" means calculating the total weight of dangerous waste generated during a calendar month. Keep in mind that generator status can also be affected by the amount of waste accumulated at any time on site.

This document will help the reader understand when and how to count dangerous waste. It is not intended to replace state or federal regulations or to explain how to designate waste. It is not a "stand-alone" document and does not cover every possible situation.

Because the counting regulations are complicated, the reader may wish to have a current copy of the *Dangerous Waste Regulations, WAC- 173-303*. Contact Ecology to request a copy. You can also view the regulations online at www.ecy.wa.gov/programs/hwtr/reg_comp_guide/173-303.HTM.

Flow diagrams and a counting matrix have been included to help explain counting dangerous waste in the recycling and treatment process.

This document also includes a series of short counting discussions associated with the Domestic Sewage Exclusion (DSE), storage or accumulation, Treatment by Generator (TBG), Permit-by-Rule (PBR), the Multiple Counting Exclusion, and recycling.

Reasons to count dangerous waste

- Determine whether a business is a small, medium, or large quantity generator.
- Understand what is required in the Dangerous Waste Annual Report.
- Determine if a Pollution Prevention Plan should be submitted. (Pollution Prevention Plan requirements outlined in Chapter 173-307 WAC are not covered in this guide.)

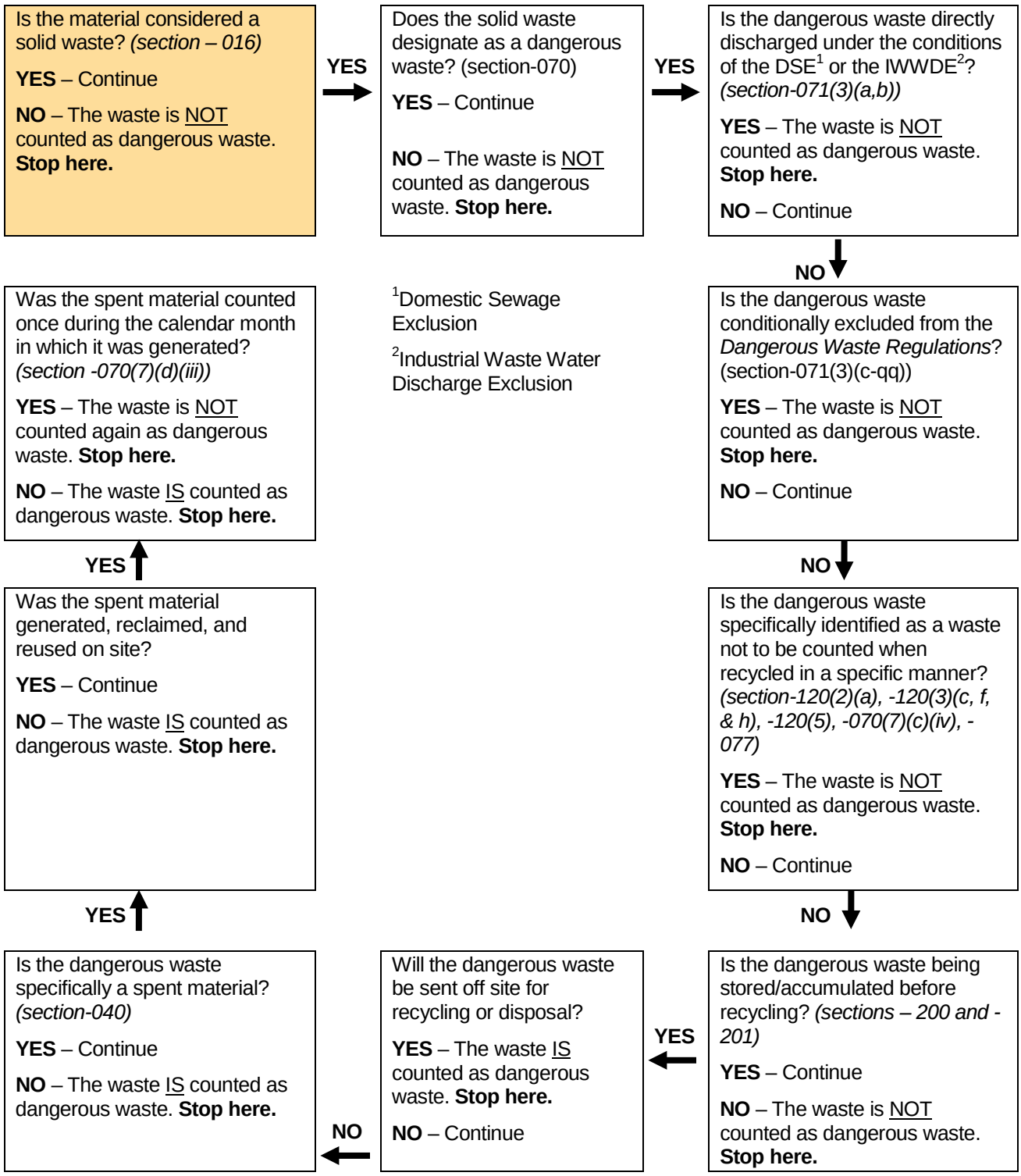
Counting frequency

Generators must count their dangerous waste each calendar month. Significant changes in the amount of dangerous waste counted can change a generator's status (small, medium, or large quantity generator).

Flow Chart 1:

Counting Dangerous Waste Involved in Recycling

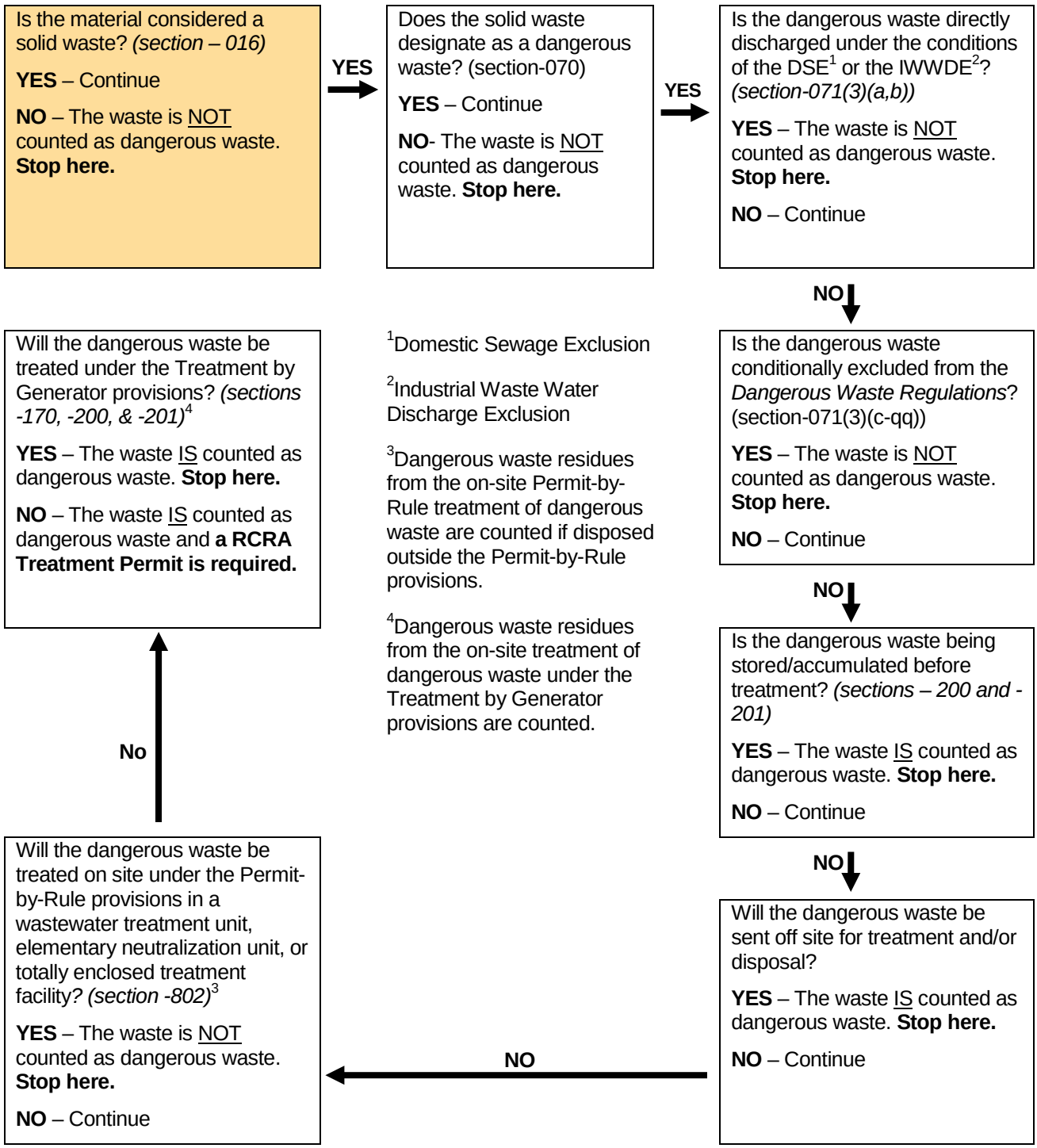
The sections listed after questions refer to WAC 173-303. For example, "section -016" is WAC 173-303-016.



Flow Chart 2

Counting Dangerous Waste Involved in Treatment

The sections listed after questions refer to WAC 173-303. For example, "section -016" is WAC 173-303-016.



1: Domestic Sewage Exclusion (DSE)

The Domestic Sewage Exclusion (DSE) allows dangerous waste to be discharged to a publicly-owned treatment works (POTW) under specific conditions. Discharge is allowed only when the wastes are treatable at the POTW, and the discharger has a permit or other specific permissions from the POTW that authorizes the discharge of specific wastes. In most cases the dangerous waste is excluded from reporting only after it enters the sanitary sewer system.

For additional guidance on the Domestic Sewage Exclusion, refer to *Domestic Sewage Exclusion* (publication #94-136) and WAC 173-303-071(3)(a).

Dangerous waste counted under the DSE
Dangerous waste is counted when it is stored, treated, or recycled before direct discharge.

Dangerous waste not counted under the DSE
Dangerous waste mixed with domestic sewage is not counted when the waste is **being directly discharged into the POTW system** (see the DSE exclusion at WAC 173-303-071(3)(a)).

The following flow diagram illustrates when counting is applicable under the DSE:

Diagram: How counting applies to the Domestic Sewage Exclusion

Point of generation*	→	(NC)	→	Direct discharge to	→	(NC)	→	POTW
Point of generation	→	(C)	→	Treat prior to direct discharge to*	→	(NC)	→	POTW
Point of generation	→	(C)	→	Store/recycle prior to direct discharge to*	→	(NC)	→	POTW

*The Domestic Sewage Exclusion applies when the waste enters the sanitary sewage system.
(C) Means dangerous waste is Counted.
(NC) Means dangerous waste is Not Counted.

2: Storage and Accumulation

Storage means the holding of dangerous waste for a temporary period and is subject to RCRA storage permit requirements. *Accumulation* of dangerous waste by the generator on the site of generation is not storage as long as the generator complies with the requirements of WAC 173-303-200 and 173-303-201.

For more guidance on storage and accumulation refer to Ecology publications:

- *Effective Date of the 90-Day Storage (Accumulation) Requirement* (publication #82-5).
- *Satellite Accumulation Technical Information Memorandum* (publication #94-120).

Dangerous Waste counted under the accumulation regulations

Dangerous waste is counted when generated, *prior* to storage or accumulation in the generator's Satellite, 90-day, or 180-day accumulation area.

Dangerous waste accumulated under the satellite accumulation (SA) provisions is also counted on a monthly basis. (See WAC 173-303-200 and Flow Chart 2 on page 3).

Dangerous waste not counted under the accumulation regulations

It is not necessary to count the dangerous waste again when it is moved from satellite accumulation to the generator's 90- or 180-day accumulation area.

Point of generation	→	(C)	→	To 90 or 180-day accumulation unit			→	(NC)	→	
Point of generation	→	(C)	→	To on-site RCRA permitted storage unit			→	(NC)	→	Removed for proper management
Point of generation	→	(C)	→	To Satellite Accumulation container			→	(NC)	→	
Point of generation	→	(C)	→	Satellite Accumulation container	→	(NC) → To 90 or 180-day accumulation unit	→	(NC)	→	

(C) Means dangerous waste is Counted.
(NC) Means dangerous waste is Not Counted.

3: Recycling and Excluded Wastes

As a general rule, dangerous wastes that are stored, disposed, treated, recycled, or manifested, are counted. However, in some circumstances, dangerous wastes do not need to be counted.

Wastes are not counted when they are:

- **Recycled following a specific type of management**

  Recycle: to use, reuse, or reclaim a material.
  Use or *reuse*: to employ a material as an ingredient in an industrial process without first being reclaimed.
  Certain wastes are not counted toward the generator's status when recycled following specific types of management. Examples are used oil, spent **chlorofluorocarbon (**CFC) and **hydrochlorofluorocarbon** (HCFC refrigerants, spent lead acid batteries, used batteries, scrap metal, spent antifreeze, waste recycled without prior storage or accumulation (see Counting Discussion 4), and waste recycled under the "multiple counting exemption" (see Counting Discussion 5). See WAC 173-303-070(7)(c & d) and Flow Chart 1.

- **Conditionally exempt**

  Some dangerous wastes are exempt when managed under WAC 173-303-017 (2 & 3). They are not counted and are exempt from reporting. See Flow Chart 1.

- **Conditionally excluded by a type of waste management**

  Some dangerous wastes are conditionally excluded from the Dangerous Waste Regulations and do not need to be counted. Specific terms must be met.

  Conditionally excluded materials are not dangerous waste, regulated under other state and federal programs, or recycled in ways that do not threaten public health or the environment. Examples include treated wood waste, polychlorinated biphenyls (PCBs) managed under the Toxic Substances Control Act (TSCA), waste generated in a product or raw material storage tank until removed, and waste reclaimed and reused in a closed loop system (see WAC 173-303-071 and Flow Chart 1).

- **Special waste**
  Special Waste is state-only dangerous waste that is conditionally excluded by WAC 173-303-073. A waste must be fully designated before it can be identified as Special Waste. Special Wastes are defined in WAC 173-303-040.

  Generators with special waste can either manage it as fully regulated dangerous waste or follow the conditional exclusions of WAC 173-303-073. Special waste does not count in

determining generator status, but does count in Pollution Prevention Planning fees. For more information see *Focus on Managing Special Waste* (publication #96-1254).

4: Recycling Without Prior Accumulation or Storage

Without prior storage or accumulation means that as soon as the waste is generated, it immediately enters the recycling unit; it is NOT counted.

Under this counting exclusion, recycling must come before accumulation or storage. Wastes in containers meets the definition of "without prior accumulation or storage" only if the waste is transferred immediately upon generation to the recycling unit. For more detail, see WAC 173-303-070(7)(c)(iv).

Dangerous waste stored or accumulated prior to recycling is counted

Refer to Counting Discussion 5 for information about the multiple counting exemption.

Dangerous waste residues generated from the recycling activity must be counted

The following flow diagram illustrates when counting is applicable:

Diagram: How counting is applied to recycling

Point of generation	→	(NC)	→	Immediately enters on-site recycling unit	→	(C)	→	Generates residues such as still bottoms
Point of generation	→	(C)	→	90 or 180-day accumulation	→	(NC)	→	Enters recycling unit
Point of generation	→	(C)	→	Storage	→	(NC)	→	Enters recycling unit
Point of generation	→	(C)	→	Satellite accumulation	→	(NC)	→	Enters recycling unit

(C) Means dangerous waste is Counted.
(NC) Means dangerous waste is Not Counted.

5: Multiple Counting Exemption

Businesses that store or accumulate spent solvents on site before they are recycled must count them as dangerous waste. There are two reasons for counting these wastes:

1. To determine whether a generator is a small, medium, or large generator for that particular month.
2. To report the combined monthly total on the Dangerous Waste Annual Report (see Counting Discussion 8).

The multiple counting exemption benefits generators because it removes the need to count solvents twice when generated in the same month. Frequent recycling increases the benefit from this exemption.

Facilities that have reclaimed and reused solvents multiple times during the month:

- May qualify for a lower generator status and fewer regulatory requirements.
- May lower their Pollution Prevention fees.

Spent materials generated, reclaimed, and reused on site are counted only once per month, (WAC 173-303-070(7)(d)(iii)). Therefore, generators do not need to count every single batch of spent solvent that is distilled.

When are spent solvents counted?

Spent solvents should not be counted when there is no accumulation or storage. For example, if a still is hard-piped directly to a production process and the reclaimed solvent is returned to that process also by hard pipe, there has been no accumulation or storage and spent solvents are not counted.

Spent solvents must be counted when there is storage or accumulation. Solvents accumulated in one or more containers should be recorded on a Monthly Generator Status Form until the shop is ready to operate the still (see an example of a form on page 11). Each time a volume of spent solvents is accumulated before recycling, it must be recorded (including satellite accumulation containers). At the end of the month, the largest amount recorded in Column 2 is the quantity of solvent waste to be counted.

> *Note: Small quantity generators (SQGs) are not required to report this activity. However, it is recommended they keep a log so they can demonstrate their generator status accurately.*

Two or more still runs may be required to process the total amount accumulated. Carefully keep track of each accumulated quantity of spent solvent to record the amount properly.

Each month, the generator must count the largest amount of spent solvent accumulated prior to on-site recycling, whether recycling has actually taken place or not. Spent solvents accumulated and not recycled by the end of the month must be carried over into the next month.

In the new month, the solvent that has not been recycled is added to any recently generated spent solvents. The combined amount may be the largest amount accumulated in the second month. To avoid this larger count in the second month (of the material carried over from the previous month), the generator may consider recycling all waste before the end of the month. End-of-month recycling will eliminate accumulated solvent carry-over into the following month. Most businesses find it is easier to recycle often and avoid counting these larger volumes.

Any spilled or mishandled waste must be counted towards the generator's status. In addition, dangerous waste residues (e.g., still bottoms) produced from the recycling process must also be counted. (Refer to Flow Chart 1).

Don't count lost solvent

During production and cleaning processes, solvents may be "lost" by evaporation or on cleaned parts. These solvents should not be counted. Replenishing the lost solvent with virgin solvent should not be counted either.

Assess evaporative loss from still operation

Evaporative loss from operating the still should be counted. However, if a still is operating efficiently, this loss should be negligible and do not need to be reported. If the still is in poor condition, the facility should calculate evaporative loss for the month. This should be included as part of the total dangerous waste generated. Stills should be well maintained. For example, seals and gaskets should be replaced when needed.

Example

This example uses a generator status form and flow diagram to clarify this exemption. Keep in mind that this is only an example and does not cover every situation or counting method in relation to the "multiple counting exemption."

> A fiberglass shop recycles acetone on site. Spent solvent is accumulated and distilled three times during the month.

1. On January 10, the shop starts distilling 160 pounds of collected spent solvent (counting from January 1). They may or may not distill all 160 pounds in a single still run, depending on the capacity of the still.

2. Meanwhile, the shop generates more spent solvent. It accumulates 150 pounds and starts distilling it on January 17.

3. Again, the shop generates 180 more pounds of solvent and begins distilling it on January 28.

   The quantity of spent solvent (not including still bottoms) reported for the month should be 180 pounds. This is the largest amount of spent solvent accumulated prior to on-site recycling.

A monthly generator status form like the example below may be helpful for determining the monthly reportable quantity of spent solvent. Its use is not required, but is recommended so the generator can demonstrate they accurately counted and reported the recycling amount.

Monthly Recycling Form Example

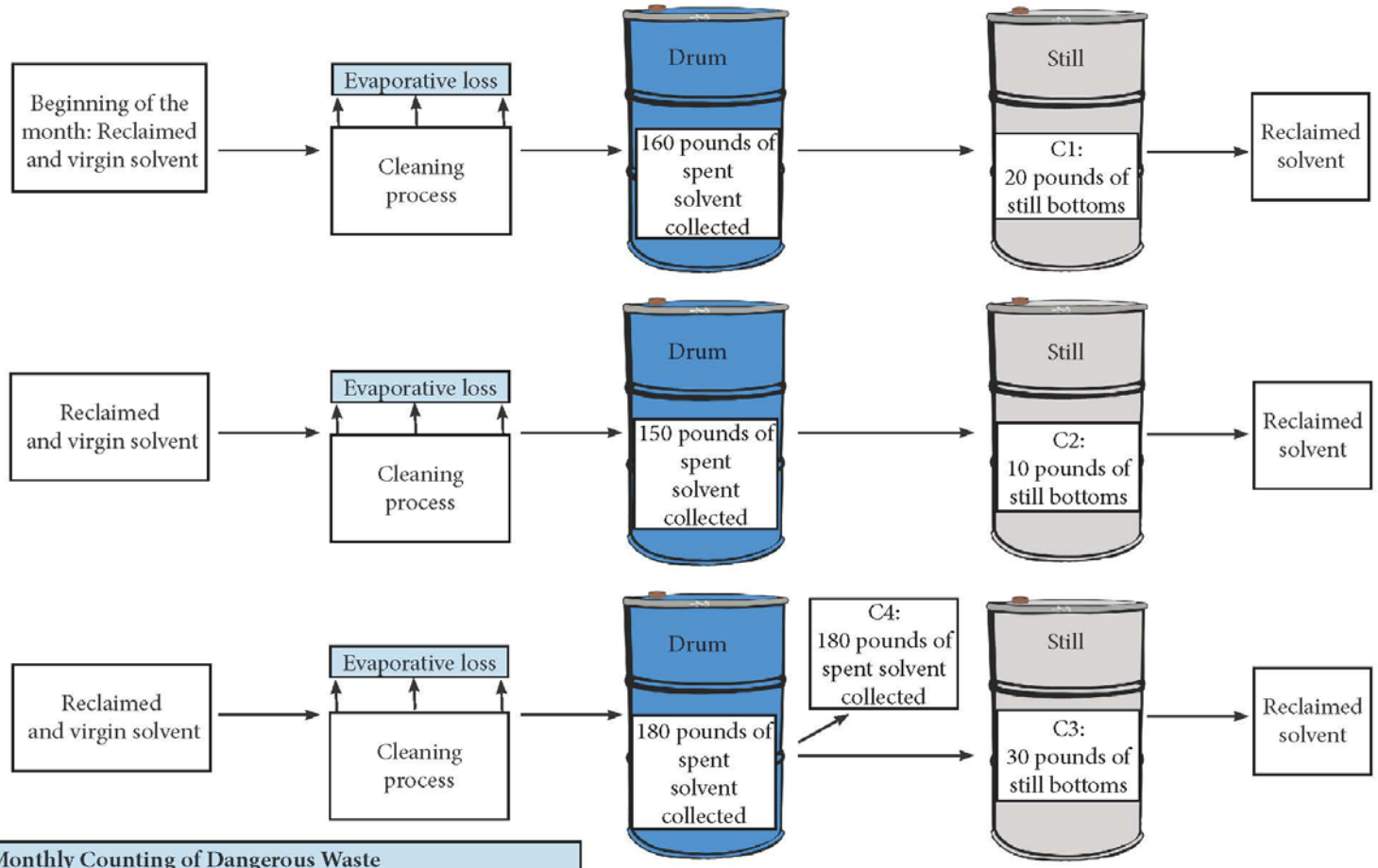
Column 1	Column 2	Column 3
Distillation Start Date	**Pounds collected before recycling**	**Pounds of still bottoms generated**
Jan. 10th	160	20
Jan. 17th	150	10
Jan. 28th	180	30
	Largest value = 180	Total = 60

Calculating solvent waste for January:

1) Largest number in column 2: 180
2) Total of column 3: 60

TOTAL: 240 = Amount of solvent waste counted during January

Diagram 5: Example of the Multiple Counting Exemption for One Month's Activity



Monthly Counting of Dangerous Waste

C1:	20 pounds of still bottoms
C2:	10 pounds of still bottoms
C3:	30 pounds of still bottoms
C4:	180 pounds of spent solvent collected
Monthly Total:	240 pounds of dangerous waste

Note 1: Without the multiple counting exemption, a generator would have counted 550 pounds instead of 240 pounds.

Note 2: In this example, evaporative loss from the still is zero, with inefficient stills this loss may need to be caculatedand added to monthly dangerous waste total.

More Examples

Example 1
A small shop paints steel objects. They use one five-gallon container to collect all spent cleaning solvent. When the container is full, the spent solvent is transferred into a five-gallon still for recycling.

This recycling process is repeated ten times during the month. Five gallons of spent solvent *converted to pounds* are reported for the month, plus the total still bottoms from all ten still runs.

Example 2
A large auto body paint shop has three different painters. Each generates five gallons of spent solvent from paint mixing and clean-up. When each individual container is full, they combine them in a drum for a total of 15 gallons. The 15 gallons is then distilled, one batch at a time, in a still with a five-gallon capacity. The generator should count 15 gallons on Column 2 of the generator status form, not just the five gallons that ran through the still one time.

They continue to generate and accumulate 20 gallons of additional spent solvent for the rest of the month and a total of 5 pounds of still bottoms. The still bottoms should be counted in Column 3. The shop should count a total of 20 gallons of spent solvent for the month, whether it was recycled or not. If this additional amount was not recycled by January 31, it should be counted again prior to the next recycling event.

Column 1	Column 2	Column 3
Distillation Start Date	**Gallons* collected prior to recycling**	**Pounds of still bottoms generated**
Jan. 15th	15	XX*
Jan. 31st	20	5 lbs
	Largest value = 20	

**For simplicity, numbers are in gallons. Remember to convert to pounds for reporting purposes.*

6: Treatment by Generator

The Treatment by Generator (TBG) provisions allow generators to treat their own dangerous waste on site without obtaining a Resource Conservation and Recovery Act (RCRA) treatment, storage, and disposal (TSD) treatment permit. For additional guidance, see *Treatment by Generator*, publication #96-412 and WAC 173-303-170(3) and -200.

Dangerous waste counted under TBG

Under the TBG allowance, dangerous waste intended for treatment counts toward the generator's status before it is treated (see Flow Chart 2). A TBG activity is considered separate from the production or cleaning process that generates the dangerous waste. Therefore, dangerous waste generated from a TBG activity is also counted toward the generator's status.

Dangerous waste not counted under TBG

Waste generated from a treatment activity that does not designate as dangerous waste should not be counted. Also, dangerous wastes generated from treatment activities that are directly discharged into the POTW system in compliance with the domestic sewage exclusion (WAC 173-303-071(3)(a)) are not counted.

The following flow diagram illustrates when counting applies under TBG provisions:

Diagram for Discussion 6, Treatment by Generator

Point of generation	→	(C)	→	Treat in TBG unit	→	If DW	→	(C)	→	Properly managed
Point of generation	→	(C)	→	Treat in TBG unit	→	If non DW	→	(NC)	→	Properly managed
Point of generation	→	(C)	→	90- or 180-day accumulation	→	(NC)	→	TBG unit	→	If DW	→	(C)	→	Properly managed
Point of generation	→	(C)	→	Treat in TBG unit and then direct discharge to POTW*	→	(NC)	→	POTW						

*Means when the Domestic Sewage Exclusion applies.
(C) Means dangerous waste is Counted.
(NC) Means dangerous waste is Not Counted.

7: Counting and Permit-by-Rule

The Permit-by-Rule (PBR) provisions allow on-site treatment of dangerous waste without a written RCRA TSD treatment permit, under certain conditions. For PBR provisions to apply, generators must only treat their waste in a wastewater treatment unit, elementary neutralization unit, or totally enclosed treatment unit. Details are outlined in Flow Chart 2 and in WAC 173-303-040 and -802(5).

Dangerous waste counted under PBR

Dangerous waste removed from the PBR unit and no longer covered by the PBR provisions, such as sludge removed for land disposal, must be counted.

Dangerous waste not counted under PBR

Wastes managed immediately upon generation in an on-site PBR unit are not counted. The key term in this provision is "immediately." As soon as the waste is generated, it must directly enter a PBR unit. There cannot be temporary storage, accumulation, or other type of management of waste between the point of generation and the PBR unit. Also, dangerous waste discharged in compliance with the PBR provisions and wastes discharged in compliance with the unit's National Pollution Discharge Elimination System (NPDES) discharge permit are not counted.

The following flow diagram illustrates when counting applies under PBR provisions:

Diagram for Discussion 7, Permit by Rule

Point of generation	→	(NC)	→	Immediately managed in a PBR unit	→	(NC)	→ DW disposed in compliance with PBR provisions (i.e., NPDES permit)
Point of generation	→	(NC)	→	Immediately managed in a PBR unit	→	(C)	→ DW disposed "outside" of the PBR provisions (e.g., sludge)
						(NC)	DW disposed in compliance with PBR provisions (i.e., NPDES permit)
Point of generation	→	(C)		90 or 180-day accumulation		To PBR ↕	OR
						(C)	Removed for proper management

(C) Means dangerous waste is Counted.
(NC) Means dangerous waste is Not Counted.

8: Counting and Annual Reporting Requirements

Counting dangerous waste is required for the Dangerous Waste Annual Report. All generators, transporters, TSDs, and recycling facilities with a RCRA Site Identification Number are required to complete the annual report for each calendar year in which their ID number is active.

A generator must count and record the amount of dangerous waste generated, treated, and recycled each month for the reporting year. The generator's reporting status is defined by the greatest quantity of dangerous waste generated or accumulated in any one calendar month.

When submitting the Dangerous Waste Annual Report, it is necessary to convert gallons to pounds. One method is to collect a typical gallon of waste and weigh it. Another method is to multiply the solvent's specific gravity by 8.34 (the weight of a gallon water in pounds) to convert gallons of spent solvent to a weight amount. Refer to the solvent's safety data sheet (SDS) for its specific gravity; note that if your spent solvent contains paint or other materials, the specific gravity may differ from the SDS.

The generator must know whether it is a small (SQG), medium (MQG), or large quantity generator (LQG). For example, if a generator is an SQG for most of the year but becomes an MQG for one month, the generator would fill out the reporting forms for an MQG.

TurboWaste.net and Dangerous Waste Annual Reporting

The Department of Ecology encourages all generators to submit the Dangerous Waste Annual Report electronically using TurboWaste.net (https://fortress.wa.gov/ecy/turbowaste/Login/Splash.aspx) can save time for the annual reporter and eliminates paper forms.

Dangerous Waste Annual Report Book

The *Dangerous Waste Annual Reporting, Forms, and Line-by-Line Instructions* (publication #03-04-018) helps users select the correct reporting status and determine which forms to fill out.

For more information on annual reporting, including TurboWaste.net and paper reporting, please visit Ecology's website at: www.ecy.wa.gov/programs/hwtr/waste-report/index.html