



# Dangerous Waste Permit Application Requirements

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*For facilities that store and/or treat dangerous wastes  
in tank systems and/or containers*



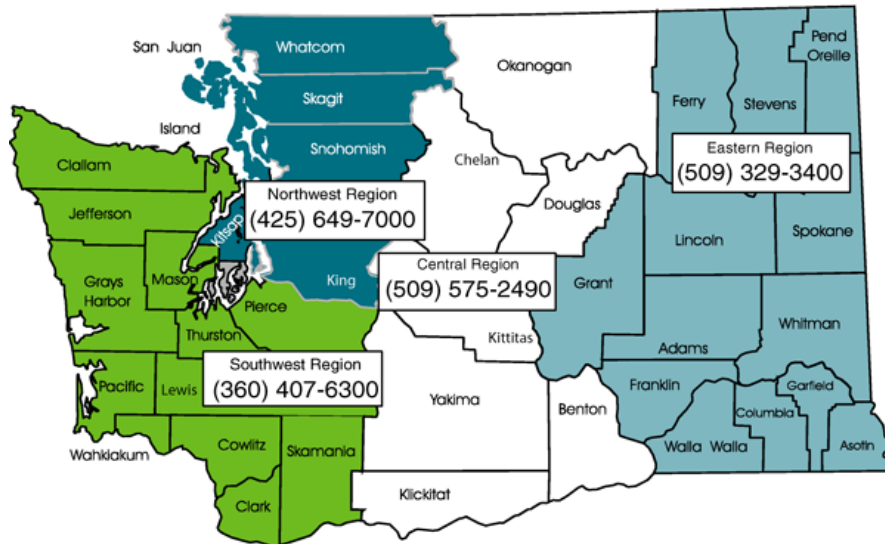
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## Publication and Contact Information

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For additional information, please contact a regional office near you:

### Department of Ecology Regions <http://www.ecy.wa.gov/programs/hwtr>



The Hazardous Waste and Toxics Reduction (HWTR) program is responsible for the management and reduction of hazardous waste and toxic substances in Washington State. We are available to answer your questions. Contact the Hazardous Waste Permits Unit for information on obtaining a permit to treat, store, or dispose of hazardous waste.

For information on reducing or recycling hazardous waste, contact your nearest regional office and ask for a Toxics Reduction Specialist. If you are uncertain about your responsibilities as a hazardous waste generator, ask for a Hazardous Waste Specialist.

*To ask about the availability of this document in a format for the visually impaired, call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.*



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

## **Disclaimer**

Adherence to this guidance does not, in any way, release facility owners or operators from their obligations to comply with the requirements of Chapter 173-303 Washington Administrative Code (WAC) or Title 40 of the Code of Federal Regulations (CFR), Parts 260-270. This guidance does not constitute agency rulemaking and cannot be relied on by any person to create a right or benefit enforceable at law or equity.

## **Publication to be Updated Periodically**

This guidance will be updated periodically to incorporate substantive changes in state and federal requirements. Call (360) 407-6700 and ask for the Permits Unit for the most current version of this publication. The Permits Unit will also be able to tell you if new federal or state regulations are in effect.

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# Introduction

This guidance will assist persons preparing an application for a dangerous waste final status, or Part B, permit for facilities that store and/or treat dangerous wastes in tank systems and/or containers. It is based on requirements in the dangerous waste regulations, Chapter 173-303 of the Washington Administrative Code (WAC), implementing Chapter 70.105 Revised Code of Washington (RCW), the Hazardous Waste Management Act, as amended. Federal requirements in Title 40 Code of Federal Regulations (CFR) are included when no state counterpart exists.

## Existing and past facilities/units versus proposed facilities/units

Most sections of the application must describe the dangerous waste management facility and operations as they will be conducted under the permit. In [section B, Facility Description and General Provisions](#) and [section E, Releases from Solid Waste Management Units](#), the application must also include information on past operations and design. In [section I, Closure and Financial Assurance](#), the application must describe the specific future actions that will be taken to close the facility as permitted. Information required in each section of the application is explained and discussed in the corresponding sections of this guidance.

## "Treatment by generator" and "permit by rule"

Certain treatment by generator (TBG) activities do not require a Part B permit. Activities that meet all requirements for permit by rule (PBR) and satisfy certain conditions do not need a Part B permit (see [WAC 173-303-802](#)). Some facilities may conduct both activities that require a Part B permit and activities that qualify for permit exemption under PBR or TBG requirements. In such cases, the Part B permit may cover only those activities that require a permit. However, the Department of Ecology (Ecology) encourages facilities to include those activities in the permit application and subsequent final permit if that will simplify facility personnel training and make achieving compliance with the dangerous waste regulations more straightforward for the facility.

## Scope of guidance

This guidance addresses only application requirements for container and tank storage and treatment. If you are preparing a dangerous waste permit application for other types of waste management units (such as, incinerators, landfills, or miscellaneous units) contact Ecology permitting staff for available and relevant guidance and information on permit application requirements for those units.

# General Application Requirements

## 1. Performance Standards

While preparing the permit application, keep in mind the performance standards in [WAC 173-303-283](#). Before Ecology can issue a permit, the agency must determine through review of the permit application that the facility will be designed, constructed, operated, and maintained to the maximum extent practicable given the limits of technology, in a manner that will prevent:

- a. Degradation of groundwater quality.
- b. Degradation of air quality by open burning or other activities.
- c. Degradation of surface water quality.
- d. Destruction or impairment of flora or fauna outside of the facility.
- e. Excessive noise.

- f. Conditions that constitute a negative aesthetic impact for the public using rights of ways, or public lands, or for landowners of adjacent properties.
- g. Unstable hillsides or soils because of trenches, impoundments, excavations, etc.
- h. Use of processes that do not treat, detoxify, recycle, reclaim, and recover waste material to the extent economically feasible.
- i. Endangerment to the health of employees or to the public near the facility.

Ecology uses these standards to determine whether more stringent facility standards should be applied than those spelled out in [WAC 173-303-280](#), [290 through 395](#), and [600 through 692](#). In addition, [WAC 173-303-800\(8\)](#) and [815\(2\)\(b\)](#) requires Ecology to ensure permits contain the terms and conditions necessary to protect human health and the environment.

## **2. Confidential Information**

Any claim of confidentiality for information provided in the application must be substantiated in writing. Both state and federal standards must be met, because both the U.S. Environmental Protection Agency (EPA) and Ecology have jurisdiction over dangerous waste management facilities. Ecology will determine whether to grant a request under state laws; EPA will rule on compliance with federal requirements. Until the agencies have made their determinations, access to the material will be restricted to federal and state employees who are involved in making the confidentiality determination.

Once portions of the application are certified as confidential, they will be made available to Ecology and EPA staff reviewing the application, but will not be disclosed to members of the public.

To obtain a certification of confidentiality under state law, show how this information relates to production processes unique to the company, or how disclosure of the information may adversely affect the company's competitive position; see #c below. To be approved, granting a request must not be detrimental to the public interest and must be in accordance with the policies and purposes of [Chapter 43.21A Revised Code of Washington \(RCW\)](#); see [RCW 43.21A.010, 020, and 160](#).

To obtain a certification of confidentiality under federal law, show that the company has treated the information as confidential by restricting access to it (see item d below). The federal requirements are in [\[40 CFR Part 2\]](#) (Public Information).

For each figure or item for which confidentiality is claimed:

- a. Identify which portions of the figure or item are entitled to confidential treatment.
- b. State how long the information should be treated as confidential.
- c. Describe how the processes are unique to the business or how the company's competitive position may be adversely affected if the information is released to the public or to a competitor.
- d. Describe:
  - i. What measures have been taken to guard against undesired disclosure of the information.
  - ii. To what extent the information has been disclosed to others and what precautions were taken in connection with that disclosure.
  - iii. Whether any other state or federal agency has made a determination of confidentiality for the information. If so, include a copy of the determination.



### **3. Application Submittal**

Contact the Ecology office that will process the permit application to find out how many copies to submit. One of the copies must have original signatures for the Part B certification statement and the Part A form.

### **4. Maps, Site Plans, Diagrams**

For each map, site plan, and diagram:

- a. Provide a legend, title, and page number.
- b. For maps and site diagrams:
  - i. Include a direction arrow.
  - ii. Make sure the map or diagram is clear and legible.

### **5. Internal Consistency**

Information provided throughout the application must be consistent. When the same data, procedures, diagrams and other information are provided more than once, Ecology will compare the material. Inconsistent information will result in a Notice of Deficiency (NOD) item. For example, applications often provide inconsistent information on storage capacity.

### **6. Cross-referencing**

Ensure references to tables, figures, appendices, and other sections of the application are complete and accurate.

### **7. Abbreviations and Acronyms**

Define all abbreviations and acronyms used in the application. A glossary of abbreviations and acronyms may assist agency review of the application. Do not create new definitions for terms that are defined in state or federal regulations.

### **8. Revised Applications**

- a. Generally, Ecology will ask that any changes made to the application be marked. Typically, we want to see what was removed and added. This speeds review. If an entire section has been substantially revised, indicate this has been done rather than showing what has been removed and added.
- b. When preparing a revised application in response to a Notice of Deficiency, provide a document that summarizes how you are responding and indicates where in the application the item(s) relating to the response is(are) located. Submit this NOD Response Summary with the revised or new application.

In the rest of this guidance, federal and state citations are provided after headings. Citations for Chapter 173-303 WAC are followed by those for 40 CFR Parts 264 and 270. The federal citations are always in brackets. For example, "-806(2); [270.10(d)]" refers to WAC 173-303-806(2) and 40 CFR 270.10(d).

# A. Part A Form

[WAC 173-303-281](#); [-282](#); [-803\(3\)](#); [-806\(2\)](#); [-810\(12\)\(a\)](#), [\(13\)](#)

## A1. Complete and Submit the Part A Form

Complete the Part A form according to the detailed directions included on the form (link below), and submit as part of your final status permit application. Ensure you provide all the information required by the forms and the accompanying instructions. The current Part A form, including detailed instructions, is at <https://fortress.wa.gov/ecy/publications/SummaryPages/ECY03031.html>.

*[Note: information requirements for the Part A form are also specified in WAC 173-303-803(3).]*

Information in the Part A form submitted with the Part B application for a final status permit should correspond to the dangerous waste management capacity and activities proposed in the final permit (or permit renewal).

Ensure a responsible official signs and certifies the Part A form according to instructions and as specified in WAC 173-303-810(12)(a) and -810(13).

## A2. Notice of Intent and Siting Criteria

[WAC 173-303-281](#), [-282](#)

Under certain circumstances, a facility must notify Ecology and the public that they are applying or reapplying for a dangerous waste management permit. This process is called a “Notice of Intent” (NOI) (WAC 173-303-281) and it includes a demonstration that the facility will comply with Washington State’s “Siting Criteria” (siting criteria) (WAC 173-303-282) for a permitted dangerous waste management facility.

*[Note: the NOI and siting criteria processes are complex. If your facility triggers these processes, you should work with an Ecology permit writer to ensure the processes proceed according to the regulations. In addition, Ecology has written guidance on these processes.]*

The following conditions trigger NOI and siting criteria:

1. A “new” facility is being proposed.

*[Note: In this context, a “new” facility means a facility that did not have interim status or a previous dangerous waste permit.]*

2. An “existing” facility is seeking a “significant expansion.”

*[Note: In this context, an “existing” facility means a facility that has interim status and is seeking a final permit or a facility that has an expiring permit it seeks to renew.]*

“Significant expansion” means:

- Your container or tank storage capacity exceeds a 25 percent increase over the capacity authorized in your original Part A, or the capacity authorized for your facility by the previous NOI and siting criteria process.

- You are seeking any other changes to your facility that are equivalent to changes under a class 3 permit modification.

*[Note: the NOI and siting criteria processes also apply when you are requesting a modification to your permit that is a “significant expansion,” as described above. Procedures and requirements for permit modification are beyond the scope of this guidance.]*

## **B. Facility Description and General Provisions**

[WAC 173-303-806\(4\)\(a\)\(i\), \(xi\), \(xviii\)](#)

### **Overview**

Provide a general description of your facility and its operations, and identify the seismic risk zone in which the facility is located. Also, provide information on traffic routes to and on the site and a topographic map of the facility and surrounding areas.

This section serves several “critical functions,” including:

- Providing a description of your entire facility and its operations to allow for a complete general understanding of ongoing operations. Include operations that will not be addressed in the dangerous waste permit. For example, describe management of solid wastes that do not designate as dangerous waste or require a dangerous waste permit.
- Providing information about operations that you believe are exempt from dangerous waste permitting requirements, so that Ecology can make an independent determination with sufficient information. For example, describe any solid waste management that the facility conducts that they believe to be exempt from dangerous waste permitting requirements.

[Section B](#) is not incorporated into the final dangerous waste permit. It is for informational purposes only. The information in this section allows Ecology to make informed decisions on what needs to be addressed in the final dangerous waste permit and what is outside the authority of the dangerous waste permit. These decisions will determine information requirements in other sections of your application, which are incorporated into the final dangerous waste permit.

*[Note: one exception to the above paragraph: the topographic map required by WAC 173-303-806(4)(a)(xviii) will be incorporated into the final permit.]*

### **B1. General Facility Description**

[WAC 173-303-690; -691; -692; \[40 CFR Part 264 Subparts AA, BB, and CC\]](#)

Describe the facility, including the nature of the business and the types of industries served. Identify existing and proposed structures and processes for generating and/or managing dangerous wastes.

Provide an overview of facility operations, including:

- Facility location.
- Ownership and management.
- Dangerous waste categories managed.
- Production processes.

- Operations to treat and/or store dangerous wastes.
- Waste management processes that generate wastes.
- The history and location of units regulated under the dangerous waste regulations.

Include both narrative and flow diagram descriptions of the dangerous waste management operations and the processes that generate dangerous waste. Provide an integrated representation of:

- How and where dangerous waste is generated at the facility.
- How and where dangerous waste generated off site enters the facility.
- How waste is tracked.
- Where the waste goes as it is treated and/or stored.
- Which equipment and structures are used to treat and/or store different categories of dangerous waste.

While site diagrams and detailed process flow diagrams are needed, it is not necessary to provide construction drawings for this section or to duplicate waste analysis information provided in [section C](#).

Include processes that are regulated under the dangerous waste regulations as "treatment by generator," "permit by rule," and/or recycling activities. This information is needed so Ecology can assess which activities require a permit and which are regulated without a permit. In addition, the recycling information is needed to assist with review of the application for compliance with the air emission control requirements in WAC 173-303-690-692; [§§264 Subparts AA, BB, and CC].

Provide a summary of other environmental permits the facility is required to have for its operations, indicating which ones have already been issued. Examples of permits commonly required for facilities are local building permits, air permits, National Pollutant Discharge Elimination System (NPDES) or State Waste Discharge permits, and polychlorinated biphenyl (PCB) management authorization or permit.

Provide a schedule for constructing the facility, or if the facility is already built and operating, for constructing new dangerous waste management units or for upgrading existing units. Include the time necessary to develop detailed design drawings and obtain local permits in addition to the site preparation and actual physical construction.

## **B2. Seismic Consideration**

[WAC 173-303-806\(4\)\(a\)\(xi\)](#)

If the application is for a proposed facility or an expansion of an existing facility, identify the seismic risk zone for the facility site. Use state or local maps to identify the zone, or if they are not available, use U. S. Geological Survey Open File Report #82-1033. Document that the facility is designed to resist seismic ground motion specified in building codes for its location and that the facility design is sufficient to withstand the maximum horizontal acceleration of the "design earthquake" identified for that seismic risk zone.

## **B3. Traffic Information**

[WAC 173-303-806\(4\)\(a\)\(x\)](#)

Provide traffic-related information for the facility, including:

- Traffic patterns on site.
- Estimated volumes, including number and types of all vehicles that travel on site.

- Traffic control signs, signals, and procedures (for example, show turns across traffic lanes and stacking lanes, if appropriate).
- Adequacy of access and on-site roads, including road surfacing and load-bearing capacity.
- Load-bearing capacity of load/unload areas.
- Show which areas on site are asphalt and which are concrete.
- Indicate routes to the site.

## B4. Topographic Map

[WAC 173-303-806\(4\)\(a\)\(xviii\)](#)

Submit a topographic map showing the facility and a distance of 1,000 feet around it at a scale of one inch equal to no more than 200 feet. The map must include:

- Contours sufficient to show surface water flow around each operational dangerous waste management unit within the facility.
- Map scale, date, and orientation.
- 100-year flood plain area.
- Surface waters.
- Surrounding land uses.
- A wind rose.
- Legal boundaries of facility site.

The map must also indicate the location of:

- Access control.
- Injection and withdrawal wells.
- Buildings.
- Structures (including sewers, loading and unloading areas, fire control facilities).
- Flood control or drainage barriers.
- Run-off control systems.
- New (proposed in application) and existing dangerous waste management units and solid waste management units.

Note that multiple maps may be submitted, but all must be at the required scale. Large treatment, storage, and disposal (TSD) facilities must receive approval to use other scales. Ecology staff will evaluate requests for use of alternate scales on a case-by-case basis.

*[Note: this topographic map does not need to duplicate information that is presented on the map provided as part of the Part A application if the Part A map is at the required scale. If the Part A map has all of the requirements in WAC 173-303-806(4)(a)(xviii), you may simply refer to the Part A map in this section.]*

## C. Waste Analyses

[WAC 173-303-110](#); [-140](#); [-300](#); [-350\(3\)\(b\)](#); [-370](#); [-395](#); [-630\(7\)\(c\)](#) and [\(9\)](#); [-640\(1\)\(b\)](#), [\(2\)\(c\)](#), [\(3\)\(a\)](#), and [\(10\)](#); [-690](#); [-691](#); [-692](#); [-806\(4\)\(a\)\(ii\)](#) and [\(iii\)](#), [\(4\)\(b\)\(ii\)](#) and [\(v\)](#), and [\(4\)\(c\)\(x\)](#); [[40 CFR Part 264 Subparts AA](#), [BB](#), and [CC](#)]

### Overview of Requirements

The information submitted in this section describes requirements for waste analyses, which are complex and demanding. Reliable information about each waste stream managed is essential for the safe and

compliant operation of a dangerous waste management facility. For each waste stream accepted, you will need to characterize the waste stream and ensure proper dangerous waste designation(s).

Identify constituents and properties that affect proper waste management at your facility. This information supports assignment of correct waste codes. It also provides for:

- Proper selections of containers or tanks compatible with each waste stream.
- Safe segregation of wastes in storage areas.
- Compliance with design limits of the storage area and treatment process(es).
- Determination of land disposal restrictions (LDRs).
- Compliant management with air emission control standards in WAC 173-303-690, -691, and -692; [§§264 Subparts AA, BB, and CC].

Verify the identity of each waste stream in each waste shipment to your facility, and conduct sufficient processing analysis to show that your treatment of wastes meets requirements in the dangerous waste regulations and in the dangerous waste permit.

Your waste analysis plan (WAP) needs to specify sampling and analysis methods, associated quality assurance measures, and how you document and record compliance with waste analysis requirements.

## **C1. Introduction to Waste Analysis Plan**

Provide a brief overview of the goals of the waste analysis plan (WAP) and how the WAP satisfies performance requirements in WAC 173-303-300(1)-(4) in this section. Include a brief description of facility operations as they affect waste analysis requirements.

Briefly summarize how this section of the permit application (i.e., the WAP) is organized.

*[Note: this can be effectively done by indicating subsections where specific information requirements in WAC 173-303-806(4)(a)(xii) and specific regulatory requirements in WAC 173-303-300 and other major requirements regarding waste analysis requirements are addressed. The organization of this section is a recommended format for your waste analysis plan.]*

## **C2. Definitions**

Include a list of key terms used in your waste analysis plan. Using key terms consistently in the WAP is important to developing a document that has clear requirements, which can be implemented by the facility in compliance with the dangerous waste permit.

*[Note: [Appendix C1](#) of this guidance has a list of standard definitions included in HWTR permits.]*

## **C3. Chemical, Biological, and Physical Characteristics of Waste Streams**

Provide a general description of the chemical types and physical forms of dangerous waste streams managed at the facility.

Also, describe categories of waste that are prohibited at the facility. For example, many TSDs do not accept wastes that have biological hazards, certain categories of reactive wastes (e.g., explosive wastes), wastes that have radioactive components (i.e., mixed wastes), and perhaps others.

## **C4. Waste Analysis Plan**

[WAC 173-303-110](#); [-140](#); [-300](#); [-395](#); [-630\(7\)\(c\) and \(9\)](#); [-640\(1\)\(b\), \(2\)\(c\), \(3\)\(a\), and \(10\)](#); [-690](#); [-691](#); [-692](#); [-806\(4\)\(a\)\(ii\), \(4\)\(b\)\(ii\) and \(v\), and \(4\)\(c\)\(x\)](#); [40 CFR Part 264 Subparts AA, BB, and CC]

### **C4.1. Waste pre-acceptance procedures - waste stream characterization and profiling**

[WAC 173-303-110](#); [-140](#); [-300](#); [-395](#); [-630\(7\)\(c\) and \(9\)](#); [-640\(1\)\(b\), \(2\)\(c\), \(3\)\(a\), and \(10\)](#); [-690](#); [-691](#); [-692](#); [-806\(4\)\(a\)\(ii\), \(4\)\(b\)\(ii\) and \(v\), and \(4\)\(c\)\(x\)](#); [40 CFR Part 264 Subparts AA, BB, and CC]

Explain your procedures to obtain a detailed chemical, physical, and/or biological analysis for every dangerous “waste stream”<sup>1</sup> before you accept it into your facility. In other words, explain procedures you use to meet the performance requirements in WAC 173-303-300(2). Ensure your system is adequate to obtain sufficient information about each waste stream you manage to meet all dangerous waste regulatory requirements during the management of that waste stream.

*[Note: critical information on the waste stream to meet this important performance requirement is often summarized in a waste stream “profile.” See [Appendix C1](#) for definition of a profile.]*

The following paragraphs summarize information you must have on each waste stream you manage. Your WAP must explain your overall system and specific procedures to obtain this information reliably.

- First, ensure each waste stream managed in the facility is properly designated for its federal and state waste codes, as applicable. This includes ensuring the designation procedures in WAC 173-303-070 were followed, and use of the proper sampling and analytical methods outlined in WAC 173-303-110.
- Ensure adequate information and proper documentation (including LDR notification and certification, where appropriate) to satisfy necessary LDRs for each waste stream. This not only depends on proper designation, but also may include obtaining information on underlying hazardous constituents.
- Ensure sufficient characterization of the waste stream to determine its compatibility with other waste streams and with the types of containers and tanks used at the facility. This is very important to safely manage the waste stream at your facility, and such characterization often requires more information than is needed just to designate the waste stream.
- Ensure the waste stream meets your facility’s storage and process design limits.
- Ensure any waste streams you claim to have no free liquids have been specifically analyzed to demonstrate no free liquids.
- Ensure adequate information on the waste stream to satisfy requirements for air emission standards in WAC 173-303-690, -691, and -692; [§§264 Subparts AA, BB, and CC].
- Where applicable, ensure the proper methods are used for meeting waste analysis requirements for specific waste management methods as specified in WAC 173-303-110 and -300(5)(f).

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<sup>1</sup> “Waste stream” means a dangerous waste from a single generator specific and unique to the waste generation process.

#### **C4.1.1 Confirming/reconfirming waste stream profiles**

[WAC 173-303-300\(1\), \(4\), and \(5\)\(d\)](#)

Explain in detail, procedures your facility uses to confirm generator information used for the detailed chemical, physical, and/or biological analyses and used to develop a waste stream “profile.”

Although you may use generator information for all or part of the waste stream analysis required by WAC 173-303-300(2), your facility is responsible for the quality of the information according to WAC 173-303-300(1). Inaccurate or inadequate information from the generator is not a defense for noncompliant management of the waste stream by your facility.

Also, if your facility relies on “knowledge” by the generator for a waste stream, specify how you meet the requirements in WAC 173-303-300(2)(a) and that you maintain records to document these procedures for each waste stream according to WAC 173-303-300(2)(b).

*[Note: “knowledge” as used above is defined in WAC 173-303-040 and [Appendix C1](#). “Acceptable knowledge” is discussed in [Appendix C1](#).]*

Specify the frequency for reconfirmation of the “profile” to ensure it is accurate and current in accordance with WAC 173-303-300(4) and (5)(d).

*[Note: in current permits, HWTR requires this review and reconfirmation step for profiles every other year.]*

Specify conditions that require the waste profile (including supporting waste analysis information) to be reviewed or repeated to ensure the analyses are accurate and current. At a minimum, specify that analyses will be reviewed or repeated if the process generating the waste stream significantly changes and if the waste stream does not match the identity specified on the manifest or shipping papers (WAC 173-303-300(4)).

#### **C4.1.2. Formal profile approval**

Describe your process for specified trained facility staff to evaluate waste analysis information to determine whether it is accurate and sufficient. Explain how you formally approve (and re-approve) a waste stream profile, and how that approval is indicated and documented in your operating record.

### **C4.2. Incoming waste procedures**

[WAC 173-303-300\(3\); -370](#)

#### **C4.2.1. Manifest review and procedures**

[WAC 173-303-370](#)

Specify procedures used to review the paperwork on an incoming waste shipment to determine whether it accurately represents the quantity and identity of waste streams on that shipment. For both containerized and bulk waste shipments, outline all steps taken from the shipment first entering the facility to signing the manifest.

Discuss what will be considered a manifest discrepancy at this stage of the incoming waste shipment review. Present, or reference another section of the WAP (e.g., [C4.3](#)) that presents procedures at the facility to address a manifest discrepancy.

*[Note: flow charts are effective to present steps taken to review and accept a waste shipment.]*



## **C4.2.2. Waste stream verification analyses**

[WAC 173-303-300\(3\), and \(6\); -370\(4\)](#)

Testing is necessary to verify that each waste stream in each waste shipment matches the waste stream represented by its profile on the manifest. Screening type testing is often sufficient for this purpose.

*[Note: current HWTR dangerous waste permits require a minimum of ten percent of containers of each waste stream in each waste shipment and 100 percent of each bulk load shipment be sampled for these verification analyses.]*

Describe the method used to ensure an adequate representative sampling of the incoming waste streams. For example, how do you ensure the minimum required percentage of containers is sampled and what method do you use to ensure containers for sampling are selected using a statistically random method? Also, specify the sampling method(s) used to obtain the sample(s).

Identify and describe chemical and physical parameters for which samples will be inspected and/or analyzed to verify the waste's constituents and properties match those in the profile for the waste stream. The fingerprinting or verification parameters should also assess whether the waste shipment includes wastes not allowed at the facility under its permit; if the waste is ignitable, reactive, or potentially incompatible with other wastes; and if the waste's properties are within the design limits of the storage area or treatment process(es) for which it is destined.

The parameters may be set up in a two-tiered system with qualitative "fingerprinting" analyses followed by quantitative analyses to verify any anomalous results (i.e., results outside the acceptable range for the waste stream). The latter is often called "supplementary analyses."

Include criteria for determining whether the results of the analysis indicate the waste shipped does or does not match the identity of the waste shown on the manifest or shipping paper. A difference in the numerical value obtained from a test performed on the sample(s) may indicate normal variation or it may indicate that the waste is a different type and must be managed differently than the waste reported on the manifest or shipping paper. Acceptable ranges of values for each parameter could be provided for different groups of similar waste streams.

Describe the method(s) of obtaining and testing for each fingerprinting parameter used to confirm the identity of wastes. Include sampling, sample preparation methods, if applicable, and testing methods.

## **C4.3. Discrepancy resolution**

[WAC 173-303-350\(3\)\(b\); -370](#)

Describe facility procedures to resolve any significant discrepancy. Present steps taken if differences between waste profile information and verification analysis results exceed criteria that indicate the waste stream identity may not match (see section [C4.2](#)). Describe procedures to reconcile the discrepancy with the waste generator and/or transporter. Describe how the wastes will be managed while the discrepancy is being resolved, considering that the composition of the waste stream may be unknown and therefore must be isolated. Also describe actions taken in the event that a discrepancy is not resolved, including compliance with manifest discrepancy resolution outlined in WAC 173-303-370(5). Identify facility personnel (by position titles) who work to resolve manifest and/or verification discrepancies.

Describe reasons and procedures for rejecting waste shipments, and procedures for addressing shipments in damaged containers, including potential activation of the contingency plan.

For cases in which a shipment is denied, present specific criteria or examples for determining if containers cannot leave the facility. For example,

- When the container(s) is damaged to such an extent that it would present a hazard to the public health or the environment in the process of further transportation.
- When the waste is in such a condition as to present a hazard to the public health or the environment in the process of further transportation.
- When there are unexpected constituents in the wastes that are not safe to transport.

Describe the procedures for using these criteria to determine when to activate the contingency plan for a shipment.

#### **C4.4. Process analyses**

Process analyses are required to ensure safe, compliant, and effective management of wastes. Typically, waste streams destined for treatment or consolidation at the facility are subject to processing analyses. Compatibility testing is an example of a simple process analysis. Different waste streams consolidated into tanks or containers should be subject to compatibility testing. This testing helps ensure no adverse or unexpected reactions between the wastes being mixed together. Similarly, water compatibility testing is often required when non-aqueous wastes are mixed with water-based wastes in tanks and containers.

Other process analyses are more involved. For example, waste streams being treated to meet land disposal restrictions are subject to testing to demonstrate the success and effectiveness of the treatment. Treatment of dangerous waste may be subject to bench scale testing to develop effective doses of treatment chemical (for example, when the process is wastewater treatment).

Process analyses are very specific to the management operations and types of waste treatment authorized for that individual facility in its dangerous waste permit. In addition to the treatment process employed, engineering design of tanks and processing equipment must be evaluated to determine process limits, and the supporting process analyses needed to ensure operations within those limits. The facility staff and Ecology must carefully consider and evaluate facility operations, and determine for that facility the type of processing analyses required for its safe, compliant, and effective operation.

#### **C4.5. Waste generated on site**

New waste streams are generated when the facility treats and consolidates wastes. This subsection of the WAP should outline steps to characterize and designate the new waste streams and to create an adequate waste profile.

#### **C4.6. Sampling and analyses methodologies**

[WAC 173-303-110](#); [-300\(5\)\(f\)](#)

Describe the method(s) of sampling and testing for each parameter. Federal and state rules set standards for how certain types of information must be obtained. For example:

For parameters that will be used to designate the waste, EPA methods or Washington State WAC 173-303-110 methods must be used. For each such parameter, reference the test method(s) chosen. Include both sample preparation methods, if applicable, and testing methods.

EPA Methods are in [Test Methods for Evaluating Solid Waste, Physical/Chemical Methods](#) (EPA SW-846), available online at ([www.epa.gov/osw/hazard/testmethods/sw846/index.htm](http://www.epa.gov/osw/hazard/testmethods/sw846/index.htm)).

Specific testing methods are also required for compliance with land disposal restrictions and to determine and demonstrate compliance with the air emission standards in 173-303-690, through -692; [§§264 Subparts AA, through CC]. Specify methods used at your facility for these purposes. For parameters used to obtain information needed for other reasons (e.g., verification screening, compatibility with containers, compatibility with other wastes, or treatment process control), reference standard test procedures or describe test procedures that will be used.

Different types of analytical methods are used for different purposes. For example, approved standard methods must be used for waste designation whereas the facility has additional options for screening methods used for incoming waste verification and for process control. For example, the American Society of Testing and Materials (ASTM) method that is not referenced in WAC 173-303-110 or [SW-846](#) may be included in a formal WAP for incoming verification testing. In addition, the facility may develop its own methods for process control and present them in their WAP for Ecology review and acceptance. The WAP will be part of the draft permit subject to formal review by the public during the draft permit's public comment period.

*[Note: it may be more convenient for the facility to present sampling and analysis method and procedures in the other subsections instead of consolidating them into this single subsection. For example, methods for characterizing and profiling wastes may be placed in section [C4.1](#); methods for waste verification into subsection [C4.2](#); methods for process control into subsection [C4.3](#); etc.]*

## **C4.7. Quality Assurance Program**

Provide a quality assurance program for sampling and analysis required under the WAP. When an off-site contract laboratory is used, state that the facility selects laboratories that comply with quality assurance procedures included in the formal test method being used. If an in-state laboratory is used, Ecology recommends a Washington State accredited laboratory. The facility is responsible for ensuring the contract laboratory is complying with procedures required in their quality assurance program and the specified analytical methods. This may be accomplished using some form of auditing procedure.

For analyses conducted by the facility's on-site laboratory, develop and present a Quality Assurance Program Plan that includes:

- Quality assurance objectives.
- Sampling procedures, including sample custody procedures.
- For *each analytical method*, specify the detection and practical quantitation limits for *each parameter* (or constituent), or the acceptable parameter range, as appropriate. If more than one method will be used to test for a specific parameter, describe the circumstances under which each method will be used; for example, for measuring pH, [SW-846](#) provides three methods, each of which has limitations and is used under certain circumstances.
- Calibration and quality control procedures.
- Performance and system audits.

- Data reduction, review, and reporting.
- Data quality assessment and corrective action.
- Preventive maintenance.

Ecology strongly encourages facilities to develop a self-audit program on their waste profiling system. For example, randomly select a number for waste streams for which profiles have been developed over the past year based on “acceptable knowledge” instead of actual laboratory analyses. Submit samples of those waste streams to a third party laboratory to conduct comprehensive laboratory analyses. Compare and report on how the facility’s profiling system performed when results are compared with the third party laboratory results.

#### **C4.8. Waste tracking**

[WAC 173-303-300\(6\)](#)

Describe the system used to track each dangerous waste received or generated at the facility from point/time of receipt or generation through shipment off site. Show how each container or bulk waste shipment placed into a tank is tracked as it moves through the facility. Include a discussion of the method(s) used to uniquely identify each container, and track waste as it is processed through a tank system.

#### **C4.9. Recordkeeping**

[WAC 173-303-300\(2\)\(b\)](#); [-380\(1\)\(c\)](#)

Describe record keeping procedures which ensure all records of test results, waste analysis, and other waste determinations performed for the purposes of designating, characterizing, profiling, verifying, treating, storing, and preparing for disposing are kept in the operating record until final facility closure.

#### **C4.10. Waste analysis personnel responsibilities**

Identify personnel (e.g., by position description or work task) responsible for key functions described in this WAP. For example, these may include, but not be limited to, positions responsible for the following:

- Customer (generator) contact and assistance.
- Profile development, review and approval.
- Incoming waste procedures, including checking the manifest, verification analyses, discrepancy identification and resolution.
- Determining waste stream management process, and conducting and interpreting process analyses.
- Laboratory (e.g., verification) analyses.
- Record keeping.
- Supervision.

Providing this information will allow the facility and Ecology to ensure training under the dangerous waste permit will support adequate waste analysis procedures.

*[Note: it may be more convenient for the facility to present personnel responsibilities in the other subsections of the WAP instead of consolidating them into this single subsection. Also, it may be convenient to present this information in flow charts.]*

# Appendix C1: Definitions

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**Compatibility** – waste streams, when mixed, do not create fire, explosion, sudden or non sudden excessive heat generated, or other unexpected reactions that would affect safe handling or storage.

**Confirmation** - checking that the profile is accurate before approving the waste stream for shipment to the facility.

**Fingerprint** (*see verification*) - the results of screening analysis that provides the key elements of the waste stream for comparison with the profile.

**Full Characterization** – completing the profile by laboratory analysis using methods approved by [WAC 173-303-110](#).

**Initial Confirmation Sample** - a sample provided by the generator or taken by facility personnel to verify the waste stream meets the profile before the first waste shipment.

**Knowledge** - sufficient information about a waste to reliably substitute for direct testing of the waste. To be sufficient and reliable, the "knowledge" used must provide information necessary to manage the waste in accordance with the requirements of this chapter.

*Acceptable knowledge* means information that is known about the generation of a waste that can be used in place of laboratory analysis. For example, if all chemical constituents used in an industrial process that generates a waste are known and the formation of the waste by-products from the industrial process is well understood, then that information might be adequate, without direct analysis of the waste, to complete a waste profile.

**Process Limitation** - has two components - physical (equipment) e.g., specific gravity to maintain tank integrity, and treatment (chemical and regulatory) limits.

**Profile** - a detailed and comprehensive physical, chemical and regulatory description of a waste stream to assist the TSD in determining whether a waste can be safely managed in compliance with the Part B permit.

**Profiling** - completing the initial profile through acceptable knowledge and/or laboratory analysis.

**QA/QC** - Assurance that chemical analyses are consistent and accurate ([see SW 846](#)).

**Re-profiling** - completing the profile at a regular interval as required by the permit.

**Screening Analysis** (*see verification*) - provides a general identification of waste to verify against the profile. Identify characteristics needed for suitable management and hazard avoidance.

**Verification** – Procedures with criteria for determining waste stream received is the same as the waste stream described on the manifest and matches the profile. This may include visual inspection, screening analysis, drum count, and fingerprinting.

**Waste Shipment** - dangerous wastes transferred from point A to point B by a single waste manifest or shipping paper.

**Waste Stream** - dangerous waste from a single generator (described by a unique waste profile) specific and unique to the waste generation process.

## D. Process Information

[WAC 173-303-160\(2\)](#); [-190\(2\), \(3\)](#); [-340\(3\)](#); [-395](#); [-630](#); [-640](#); [-690](#); [-691](#); [-692](#); [-806\(4\)\(a\)\(viii\)-\(x\)\(i\), \(b\), \(c\), \(j\), \(k\), \(m\)](#)

### Overview of Requirements

This section of the permit application describes procedures, equipment, structures, and processes the facility uses to safely manage dangerous waste in compliance with the dangerous waste regulations. This description encompasses all activities and structures for receiving, loading/unloading, storing, transferring, processing, and treating dangerous waste.

*[Note: a facility may be comprised of any number of different “dangerous waste management units,” each with unique design and operations. Information in the dangerous waste permit must comprehensively address regulatory requirements that ensure each “dangerous waste management units” is designed, maintained, and operated in compliance with the dangerous waste regulations. See WAC 173-303-040 for the regulatory definition of “facility” and “dangerous waste management unit.”]*

The dangerous waste regulations have comprehensive and extensive requirements to provide information on all of these aspects of dangerous waste management for a facility seeking a permit, including detailed engineering design and technical waste processing information. This section of the guidance outlines these information requirements for your application.

### D1. Introduction

Provide a brief overview of the following for your facility:

- Overall site plan.
- Waste storage and management capacity.
- Classes of dangerous waste managed.
- Structures used to load/unload, contain, store, and process dangerous wastes.
- Processes used to transfer, consolidate, and treat dangerous waste.

### D2. Containers

[WAC 173-303-160\(2\)](#); [-190\(2\)\(3\)](#); [-340\(3\)](#); [-395](#); [-630](#); [-690](#); [-691](#); [-692](#); [-860\(a\)\(viii\)-\(x\)\(i\), \(b\), \(k\), \(m\), and 4\(b\)](#)

This portion of the application describes management of containers and design of all container management areas used to load/unload, transfer, stage, store and treat dangerous waste.

#### D2.1. Description of containers

[WAC 173-303-160\(2\)](#); [-630\(2\), \(4\)](#)

Provide the following information about the containers used to treat and/or store dangerous waste: construction materials, dimensions and useable volumes, and other manufacturer specifications. Provide liner specifications (if applicable), and waste type(s) stored in each container type.

In many cases, facilities can rely on [U.S. Department of Transportation](#) (DOT) container specifications. Ensure in the application that you will use those containers according to DOT limitations and material compatibility requirements. If this approach is used, ensure reference to the appropriate DOT container requirements. If some of your containers will not comply with or address DOT requirements, describe how those containers are adequate for the waste streams to be stored or otherwise managed.

Sufficient detail is needed to demonstrate that containers are made of or lined with materials which will not react, and are not otherwise incompatible, with the dangerous waste to be stored. You must ensure the ability of the container to contain the waste stream.

Describe actions taken at the facility if a container's structural integrity is compromised, or if the container is otherwise damaged (e.g., severe rusting) or is leaking. Describe how many empty containers and overpack drums are kept on site to respond to inadequate or compromised containers, or discuss other provisions to address substandard containers.

Discuss management of empty containers. Ensure compliance with WAC 173-303-160(2).

## **D2.2. Container management practices**

[WAC 173-303-340\(3\)](#); [-395\(4\)](#); [-630\(5\), \(6\), \(8\), \(9\), \(11\)](#); [-692\(2\)](#); [-806\(4\)\(a\)\(viii\), \(b\)](#)

Describe the specific container management practices (including procedures, equipment, and structures) used to ensure that dangerous waste containers are always kept closed during storage, except when wastes are added or removed, and that containers are not opened, handled, or stored in a manner that may cause them to rupture or to leak. Include (or reference other parts of the application which have) procedures to comply with air emission requirements in WAC 173-303-692(2); [[40 CFR 264.1086\(c\) and \(d\)](#)].

### **Spills and hazards**

Describe procedures, structures and equipment used at the facility to prevent hazards and contain spills during dangerous waste container loading and unloading operations. Ensure the load/unload areas are designed, constructed, operated, and maintained to meet performance requirements in WAC 173-303-395(4).

### **Traffic flow and staging areas**

Describe equipment, procedures, and routes for transferring containers to and between storage units and for moving and managing waste containers within units. Also describe areas used to prepare containers for placement into storage or into a treatment or recycling process (sometimes called staging areas).

*[Note: staging areas must be designed and maintained to the same standards as storage areas.]*

### **Aisle spacing**

Indicate the aisle space maintained between rows of containers. WAC 173-303-630(5) specifies a minimum 30-inch aisle space. WAC 173-303-340(3) specifies there must be sufficient aisle space to allow the unobstructed movement of emergency response personnel and equipment. The International Fire Code requires a four-foot aisle space for some hazardous materials, such as certain classes of flammables. WAC 173-303-630(5) states each row of drums must be no more than two drums wide. Ensure these requirements are satisfied.

## **Capacity**

Provide the maximum number, volume (i.e., capacity), and stacking height of containers for each area in which containers are stored or staged and indicate the volume of the largest container that will be held in the area. For staging areas, describe time limits (usually, no more than 24 hours) for holding containers in the area. Provide a diagram (or diagrams) or description showing the stacking pattern(s) for containers, including the stacking arrangements for the various sizes of containers and types of dangerous wastes that will be stored in the container storage area(s).

## **Compatibility**

List compatibility classes of wastes the facility will manage in containers. Clearly establish classes of waste that cannot be placed or stored in the same secondary containment system because they are incompatible. Include detailed information on how incompatible waste streams will be kept separate. Include all design features and management practices the facility uses to prevent reactions between incompatible waste streams during every aspect of container management at the facility.

*[Note: “incompatible wastes” is defined in WAC 173-303-040, which includes references to federal regulations for examples and guidance for hazardous wastes. The federal Department of Transportation and the International Fire Code also have requirements and guidance on identifying “incompatible” materials. Most facilities that handle “incompatible wastes” will need to devise a system that concurrently meets requirements of these different authorities. This is a complex issue, and you are encouraged to work closely with Ecology permitting staff to ensure you design and operate your facility to keep incompatible wastes and materials separated.]*

## **Waste tracking**

Include procedures to track waste containers from their initial acceptance through storage and processing to their ultimate discharge, recycling, reuse, or shipment off site.

## **Waste discrepancy**

Describe how you manage incoming waste streams that do not match information on their manifest and supporting shipping papers (i.e., manifest or verification discrepant wastes).

## **Waste processing**

Describe any processing of wastes in containers, including but not limited to, procedures such as waste consolidation and labpacking.

**Generated waste:** Describe procedures when a new waste stream is generated at the facility and accepted into the permitted facility, including waste characterization, marking, labeling, and placing into permitted storage.

*[Note: you also have the option of managing new waste stream generated at your facility under generator requirements. HWTR does not encourage that option because you will need to train facility staff and manage dangerous wastes according to two different regulatory schemes; permitting requirements for some wastes and generator requirements for other wastes.]*

## **D2.3. Container labeling**

[WAC 173-303-395\(6\)](#), [-630\(3\)](#), [-806\(4\)\(b\)\(iii\)](#)

Describe the system used to label containers and to destroy or remove labels from empty containers.



Container labels must include accumulation or generation start date or date received at the facility, the words "hazardous waste" or "dangerous waste," and major risks (for example, toxic, carcinogenic, persistent).

*[Note: the applicable US DOT label with the graphic symbol may be used to meet the requirements for identifying the major risks of the waste. Washington state-only toxic wastes should be labeled or marked as "toxic" during storage; however this label is not for shipping purposes. Also, the Class 9 shipping label does not adequately identify the inherent risk of the waste during storage.]*

All required labels must be legible and placed to ensure their visibility during inspections. Describe actions taken if a label is found to be missing, obscured, illegible, or partially separated from the container.

*[Note: for facilities that receive dangerous waste containers from off site, the generator should have labeled and marked the container according to requirements in WAC 173-303-190(2) and (3). Maintaining those labels and marking will meet some of your facility container labeling requirements.]*

## **D2.4. Secondary containment requirements for staging, storing and processing dangerous waste containers**

[WAC 173-303-630\(7\)](#), [-806\(4\)\(b\)](#)

Secondary containment systems are required for areas in which containers hold free liquids, or wastes with the designations F020, F021, F022, F023, F026, and F027, whether or not the wastes contain free liquids. They are also required for wastes exhibiting the characteristic of ignitability or reactivity as described in WAC 173-303-090(5) and (7). The secondary containment system must meet the design and operating requirements described in this section.

### **D2.4.1. Secondary containment system design for containers**

Provide the following design information to demonstrate that each system is capable of collecting and holding spills and leaks and that each uncovered storage area is capable of holding the additional volume resulting from the precipitation of a maximum 25-year storm of 24-hours duration.

All design drawings must be certified by an independent qualified register professional engineer.

### **D2.4.2. System design**

Provide design and profile drawings of the existing and/or planned container storage and staging area(s), showing the secondary containment system(s). Include design parameters, dimensions, and materials of construction.

- Indicate which areas will be covered and which uncovered. For covered areas, show gutters and downspouts or other methods for conveying water away from the secondary containment.
- To show that the base is sufficiently impervious to contain leaks and spills of waste and accumulated precipitation until it is detected and removed, demonstrate that the secondary containment system(s) and floors of the storage area(s) are:
  - Designed, constructed, and maintained to be free of cracks or gaps.
  - Provide design details for expansion, control, and construction joints.
  - Provided with an impermeable sealant, coating, or lining compatible with the waste(s).

- Managed in the area(s).
  - Describe the sealant(s), coating(s), and/or lining(s), including information about the compatibility with the wastes.
  - For new structures, ensure container management area(s) will be constructed with chemical-resistant water stops at all joints.
- Demonstrate that the base of each storage area is:
  - Sloped or that each containment system is designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation. Alternatively, demonstrate the containers are elevated or are otherwise protected from contact with accumulated liquids.
  - Is designed for positive drainage control (such as a floor sloping to a blind sump) to prevent release of contaminated liquids and so uncontaminated precipitation can be drained promptly.
- If required by Ecology, demonstrate that containers are protected from the elements by means of a building or other protective covering that allows for adequate inspection. Such a demonstration is required if Ecology determines protection is necessary to prevent a release of waste or waste constituents due to the nature of the waste or the design of the container.

#### **D2.4.3. Structural integrity of base**

Provide an engineering assessment, certified by an independent qualified register professional engineer, of the structural integrity of the base of each storage area. Include calculations showing the foundation and floor are capable of supporting the equipment operating in the storage area, such as forklifts carrying full pallets, along with the weight of a full capacity of containers. Describe the foundation preparation, base design, and construction procedures to control cracking due to uneven settling.

#### **D2.4.4. Containment system capacity**

Demonstrate that each containment system will have sufficient capacity to contain ten percent of the volume of all the containers stored within the system or the volume of the largest container within the system, whichever is greater. In making this determination, only consider containers holding either free liquids or wastes designated as F020, F021, F022, F023, F026, and F027 or both.

For uncovered areas, demonstrate that each containment system has the additional capacity to hold the volume that would result from a maximum 25-year storm of 24-hours duration. Provide calculations used to determine the additional volume(s) resulting from the 25-year storm of 24-hour duration.

*[Note: for areas with automatic sprinkler systems, also consider that you must design your facility to contain up to 20 minutes of fire fighting water according to requirements in the International Fire Code.]*

For each storage area and its containment system, this demonstration must discuss the volume of the largest container, total volume of containers, containment structure capacity and volume displaced by containers and other structures in the containment system. (Include drawings or other forms of detailed descriptions to document the dimensions of the secondary containment structures and other structures within the system.) The demonstration must show calculations. If a storage unit consists of "cells" or "rooms" separated by a structure, such as a wall, berm, trench, or other device that keeps spilled material from moving into other cells or rooms in the unit, then the capacity determination for each cell or room must be determined separately.

#### **D2.4.5. Control of run-on**

Describe the dikes, berms, drainage system, rooms, etc., used to prevent run-on from entering the system. Or, if you request this requirement be waived, provide calculations demonstrating that the containment system has sufficient excess capacity to contain run-on.

#### **D2.4.6. Removal of liquids from containment system**

[WAC 173-303-630\(7\)\(a\)\(ii\)](#); [-806\(4\)\(b\)\(i\)\(E\)](#)

Spilled or leaked waste and accumulated precipitation must be removed from sumps or collection areas in a timely manner to prevent overflow of any containment system.

Sumps or other collection areas in secondary containment systems must be routinely emptied in as timely a manner as necessary to prevent overflow when liquid not known to be contaminated (e.g., rain water or wash water) is detected. Spills must be removed from secondary containment systems immediately upon their detection.

*[Note: all HWTR permits require liquid not known to be contaminated in outside secondary containment systems to be removed within 24 hours of detection. There are two reasons for this. First, these secondary containment systems must be capable of containing the volume of ten percent of all containers (or the largest container if that volume is greater) plus the volume of a 25-year, 24-hour storm. Therefore, the sumps must be empty at least every 24 hours or part of that design capacity will not be available for the design storm. Second, the liquids may be contaminated with dangerous waste (potentially listed waste). If these liquids are not routinely removed the secondary containment system is being used to store these materials. In that case, the secondary containment system is being managed as an illegal storage tank.]*

Describe the procedures and equipment used to remove liquids. Provide drawings and/or specifications of sumps, pumps, and piping.

Specify procedures and methods for determining whether the removed material is a dangerous waste and for handling it as such, including parameters and test methods (or reference the portion of the Waste Analysis Plan that provides these procedures).

Describe your management of spills and accumulated precipitations collected from secondary containment sumps or collection areas.

#### **D2.4.7. Demonstration that containment is not required because containers do not contain free liquids, wastes that exhibit ignitability or reactivity, or wastes designated F020 – 023, F026, or F027**

[WAC 173-303-630\(7\)\(c\)](#), [-806\(4\)\(b\)\(ii\)](#)

Demonstrate that the storage area will hold only containers that do not contain free liquids, are not wastes that exhibit ignitability or reactivity, and are not wastes designated F020-023, F026, or F027. Describe how the storage area is sloped or designed and operated to drain and remove liquids resulting from precipitation. Show containers are elevated or otherwise kept from contact with standing liquids.

*[Note: WAC 173-303-804(4)(b)(ii)(A) requires the application to include a demonstration, including test procedures and results or other documentation or information, to show the wastes do not contain free liquids. Present this demonstration in [section C - Waste Analysis Plan](#) - and reference it here.]*

## **D2.5. Prevention of reaction of ignitable, reactive, and incompatible wastes in containers**

### **D2.5.1. Management of certain reactive wastes in containers**

[WAC 173-303-630\(8\)\(a\)](#), [-806\(4\)\(b\)\(iv\)](#)

Provide sketches, drawings, or data demonstrating that containers of reactive waste exhibiting a characteristic specified in [WAC 173-303-090\(7\) \(vi\), \(vii\), or \(viii\)](#) are stored in a manner equivalent to requirements in the current edition of International Fire Code Table 3304.5.2(2) and Table 3304.5.2(3) or the version adopted by the local fire district. Design drawings must be certified by an independent qualified registered professional engineer.

### **D2.5.2. Management of ignitable and certain other reactive wastes in containers**

[WAC 173-303-630\(8\)\(b\)](#), [-806\(4\)\(b\)\(iv\)](#)

Provide sketches, drawings, or data demonstrating that container storage of ignitable waste and reactive waste is designed, operated, and maintained in a manner equivalent with the current edition of International Fire Code. Where no specific standards are specified in International Fire Code or in existing state or local fire codes, use applicable sections of the NFPA Pamphlet #30, Flammable and Combustible Liquid Code. Design drawings must be certified by an independent qualified registered professional engineer.

### **D2.5.3. Design of areas to manage incompatible wastes**

[WAC 173-303-630\(9\)\(c\)](#), [-806\(4\)\(b\) \(iv\)](#)

Provide sketches, drawings, and/or data. Demonstrate that a container holding a dangerous waste that is incompatible with any waste or other materials stored nearby in other containers or tanks will be separated from the other materials or protected from them by means of a dike, berm, wall, or other device. Provide sketches, drawings, or data to document that containment systems for incompatible wastes are separate. Describe or show where different classes of incompatible wastes will be stored. Design drawings must be certified by an independent qualified registered professional engineer.

## **D3. Tank Systems**

[WAC 173-303-395\(6\)](#); [-640](#); [-806\(4\)\(c\)](#)

### **D3.1. Design, installation and assessment of tank systems**

[WAC 173-303-395\(4\)](#); [-640\(2\)](#); [-806\(4\)\(a\)\(viii\)-\(x\)\(i\), \(4\)\(c\)\(i\), \(ii\), \(v\), and \(vi\)](#)

#### **D3.1.1. Design requirements**

[WAC 173-303-640\(2\)\(c\), \(3\)\(a\)\(b\)](#); [-806\(4\)\(c\)\(i\),\(ii\), \(iii\), and \(v\)](#)

Provide design specifications that demonstrate tank(s) and ancillary equipment will not collapse or rupture, including consideration of earthquake stresses. Required specifications include materials of construction; lining or coating materials; tank dimensions; tank capacity; actual and minimum acceptable shell thickness; materials and equipment to ensure corrosion protection; connections; anchorage, pressure controls; level controls, and design and materials of construction of the foundation, structural support, and seams.

*[Note: including detailed “tank data sheets” is an effective way to present this information.]*

Provide drawings and engineering calculations to demonstrate adequate design. Include references to design standards or other available information used in design and construction of tanks and ancillary equipment.

*[Note: industry standards for designing tanks include those of the American Petroleum Institute and Underwriter Laboratory. This is not an extensive list but does include common industry design standards for non pressurized welded steel tanks used in dangerous waste service.]*

Include information on design of the tank leveling pads and anchorage system, including wind and seismic load design standards. Reference relevant building code standards.

Identify all waste type(s) managed in each tank system and all uses of the tank system, including all treatment and storage activities. Submit information ensuring the tank system is designed for all intended uses considering, at a minimum, compatibility with the waste(s), structural strength, and corrosion protection.

### **D3.1.2. Integrity assessments**

[WAC 173-303-640\(2\)\(a\), \(c\), and \(e\), \(3\)\(a\), \(b\), and \(g\); -806\(4\)\(c\)\(i\),\(ii\), \(iii\), \(v\), and \(vi\)](#)

Submit a written assessment certified by an independent qualified registered professional engineer that attests to adequate design and integrity of the tank(s) and ancillary equipment ensuring they will not collapse, rupture or fail over the intended life considering intended uses. At a minimum, the assessment must document consideration of the following: adequacy of and compliance with the design standards (including minimum shell thicknesses) used for the tank system; dangerous characteristics of the wastes managed; corrosion protection; age of the tank system; and results of tank shell measurements, internal inspections (notes on any cracks, leaks, erosion, corrosion, condition of lining, etc), and other integrity examinations. Include reference to the inspection standard used by the certifying engineering.

*[Note: industry standards for inspecting and certifying aboveground tanks include the American Petroleum Institute Number 653 Tank Inspection, Repair and Reconstruction Standard and Steel Tank Institute SP001-00 Standard for Inspection of Aboveground Tanks for Storage of Combustible and Flammable Liquids. This is not an extensive list but include common inspection standards for steel tanks used in dangerous waste service.]*

Provide a schedule for additional integrity assessments over the intended life of the tank system to ensure it will not collapse, rupture, or fail. The schedule must be supported by any past integrity assessments, age and condition of the tank system, materials of construction, characteristics of dangerous wastes managed, actual and estimated corrosion rates, and other relevant information.

*[Note: in previous HWTR permits, comprehensive integrity assessments were required every five years for existing tanks.]*

### **D3.1.3. Additional requirements for existing tanks**

[WAC 173-303-640\(2\)\(a\) and \(c\)\(v\)](#)

As part of the integrity assessment certifying the system, document that existing shell thicknesses meet or exceed minimum acceptable thicknesses, and that corrosion protection measures are adequate.

Demonstrate the following were evaluated and found acceptable for ongoing use of the tank system:

- Results of leak tests.
- Internal inspections, and other integrity examinations.

- Shell thickness measurements.
- Coating inspection.
- Characteristics of the wastes managed.
- Intended uses of the tank and ancillary equipment.

Specify actual or estimated corrosion and erosion rates, as appropriate. Demonstrate the existing schedule for additional integrity assessments is adequate considering results of the current assessment.

#### **D3.1.4. Additional requirements for new tanks**

[WAC 173-303-640\(3\)\(c\), \(e\), \(f\), and \(g\)](#)

Describe proper handling procedures to prevent damage during tank system installation. Include procedures for testing for tightness; protection of ancillary equipment against physical damage and stress; and inspection of the installation by an independent, qualified, registered professional engineer. At a minimum the independent inspection must document the presence of any weld breaks, punctures, damage to protective coatings, cracks, corrosion, or other structural damage; or inadequate construction or installation. Provide assurance that installation of corrosion protection systems that are field fabricated will be supervised by an independent corrosion expert. The independent inspections must document actions taken to remedy any problems encountered during installation, or document that the tank and corrosion protection system were not damaged during installation.

Document that the type and degree of corrosion protection recommended by an independent corrosion expert are provided.

#### **D3.1.5. Additional requirements for new on-ground or underground tanks**

[WAC 173-303-640\(3\)\(a\)\(iii\), \(iv\), and \(v\), -640\(3\)\(d\)](#)

Demonstrate that:

- Tank system assessment by the independent corrosion expert accounts for conditions of the soil and underground environment when evaluating the adequacy of corrosion protection.
- The design of the tank system and its foundation are adequate to support the full tank and any surface load (e.g., vehicular traffic).
- Suitable backfill will be used and its placement will provide adequate support of the tank system.
- There is protection from floatation or dislodgement due to soil saturation, seismic forces, and frost heave.

### **D3.2. Secondary containment and release detection for tank systems**

[WAC 173-303-640\(4\), -806\(4\)\(c\)\(vii\)](#)

#### **D3.2.1. Requirements for all tank systems**

Provide information, including material specifications, detailed design drawings, design evaluations, design calculations and documentation of all assumptions, demonstrating that secondary containment systems are:

- Placed on a foundation capable of supporting the tank system and any equipment operating in the tank system, resisting pressure gradients above and below the system, and preventing failure due to settlement, compression, or uplift. Describe foundation preparation, design, and construction procedures to control cracking due to uneven settlement.
- Constructed of or lined with materials compatible with waste(s) placed in the tank system.

- Constructed with sufficient strength and thickness to prevent failure from pressure gradients (including static head and external hydrological forces), physical contact with the waste, climatic conditions, and stresses of daily operations (e.g., vehicular traffic).
- Provided with a leak-detection system designed and operated to detect failure of either the primary or secondary containment structure or the presence of any release of dangerous waste or accumulated liquid within twenty-four hours (or at the earliest practicable time if the owner or operator can demonstrate that existing detection technologies or site conditions will not allow detection of a release within twenty-four hours).
- Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Ensure the design provides assurance that spilled or leaked waste and accumulated precipitation can be removed from the secondary containment system within twenty-four hours (or in as timely a manner as is possible to prevent harm to human health and the environment, if it can be demonstrated that removal of the released waste or accumulated precipitation cannot be accomplished within twenty-four hours).
- Constructed and operated so run-on from a 25-year, 24-hour storm will be excluded from the system, unless sufficient excess volume is provided by the system to contain such run-on.

Document with material specifications, design drawings, and calculations, as appropriate, that:

- All concrete secondary containment systems will be free of cracks or gaps, constructed with chemical-resistant water stops at all joints, and provided with an impermeable coating or lining compatible with the waste managed in the area. Provide location and design of expansion and control joints used to control cracking.
- Secondary containment systems, excluding double walled tanks, have sufficient volume to contain contents of the largest tank in the system plus any precipitation which could enter the system from a 25-year, 24-hour storm.
- All areas with automatic sprinkler systems have additional capacity to contain 20 minutes of fire water, consistent with the International Fire Code.

### **D3.2.2. Additional requirements for specific types of systems**

In addition to the requirements in D3.2.1, demonstrate the additional requirements for vault systems, double wall tanks, and ancillary equipment are satisfied.

#### **D3.2.2.1. Vault systems**

[WAC 173-303-640\(4\)\(e\)\(ii\)](#)

Demonstrate a means to protect against the formation and ignition of vapors if ignitable ([WAC 173-303-090\(5\)](#)) or reactive ([WAC 173-303 -090\(7\)](#)) wastes are managed within the vault. Provide an exterior moisture barrier or otherwise prevent migration of moisture into the vault if the vault is subject to hydrostatic pressure. In addition to showing the system is designed or operated to prevent run-on, also show the system is designed or operated to prevent infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain the run-on and infiltration. The excess capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event.

### **D3.2.2.2. Double-walled tanks**

[WAC 173-303-640\(4\)\(e\)\(iii\)](#)

Demonstrate that the inner tank is completely enveloped within the outer shell, corrosion protection is provided for both the inner and outer shells if these are constructed of metal, and a built-in continuous leak detection system capable of detecting a release within twenty-four hours is included between the walls.

### **D3.2.2.3. Ancillary equipment**

[WAC 173-303-640\(4\)\(f\)](#)

Provide secondary containment, or provide assurance that equipment meets design requirements and other conditions in WAC 173-303-640(4)(f) and will be inspected daily.

### **D3.2.3. Variances from secondary containment requirements**

[WAC 173-303-640\(4\)\(g\) and \(h\); -640\(1\)\(b\); -806\(c\)\(viii\)](#)

If requesting a variance, provide a detailed demonstration on how alternate design and operating practices will prevent migration of dangerous wastes or constituents to the ground water or surface water at least as effectively as secondary containment during the active life of the tank. Alternatively, demonstrate that a release that migrates to the ground water or surface water would not pose a substantial threat to human health or the environment.

If claiming a tank system is exempt from secondary containment requirement because wastes contain no free liquid, then demonstrate that the tank system is within a building with an impermeable floor and provide procedures to ensure all wastes entering the tank system will contain no free liquids by using the paint filter test (SW-846 Test Method 9055).

### **D3.3. Tank management practices**

[WAC 173-303-395\(4\); -640\(5\)\(a\) and \(b\); -806\(4\)\(a\)\(viii\), \(4\)\(c\)\(iii\), \(iv\), and \(ix\)](#)

Provide operational controls to ensure waste or treatment agents that could cause a tank system to rupture, leak, corrode or otherwise fail will not be placed in such systems.

Describe the operating practices and controls used to prevent overfilling (e.g., tank level monitoring, feed cut-off system, pressure controls, or bypass system to a standby tank) and to maintain sufficient freeboard to prevent overtopping of uncovered tanks by wave or wind action or by precipitation. Provide diagrams of piping, control instrumentation and process flow. Provide descriptions of the procedures for the treatment of dangerous waste in tanks, if applicable.

Describe waste loading and unloading operations. Specify where these operations occur and provide engineering design drawings for the construction of the load/unload areas.

### **D3.4. Labels or signs**

[WAC 173-303-395\(6\); -640\(5\)\(d\); -806\(4\)\(c\)\(xi\)](#)

Demonstrate that all tanks holding dangerous waste will be marked with labels or signs to identify the waste contained, and major risks associated with the wastes. Demonstrate that labels or signs will be visible from at least fifty feet away.



### **D3.5. Management of ignitable or reactive wastes in tank systems**

[WAC 173-303-640\(9\)](#); [-806\(4\)\(c\)\(x\)](#)

Demonstrate compliance with National Fire Protection Association's buffer zone requirements for tanks (i.e., in NFPA-30), or other more stringent state and local buffer zone requirements.

### **D3.6. Management of incompatible wastes in tank systems**

[WAC 173-303-640\(10\)](#); [-806\(4\)\(c\)\(x\)](#)

Demonstrate design and operation of tank system(s) prevent incompatible wastes and materials from being placed within the same tank system (including accidental releases to secondary containment areas), unless compliance with [WAC 173-303-395\(1\)\(b\)](#) is ensured.

### **D3.7. Process equipment and controls**

[WAC 173-303-640\(5\), \(9\), \(10\), \(11\)](#); [-806\(c\), \(iii\), \(iv\), \(xii\), \(xiii\)](#)

Describe waste treatment and processing you conduct in tanks, including waste transfer operations. Examples of simple processing that need to be described when conducted are waste consolidation and blending. Examples of more complex processing include dangerous waste water treatment and stabilization. Provide a diagram of piping, instrumentation, and process flow for each tank system.

*[Note: process flow charts which include individual tank identification are an effective way to illustrate waste management processes.]*

Describe all operational measures you take to prevent unexpected reactions, control expected reactions, and ensure treatment efficacy in tank systems. Include measures used to prevent or control air emissions.

## **D4. Air Emissions Control**

[\(WAC 173-303-110; -640\(5\)\(e\); -690; -691; -692; -806\(4\)\(c\)\(xii\) and \(xiii\), \(4\)\(j\), \(k\), \(m\)](#)

*[Note: detailed regulatory requirements for WAC 173-303-690-692 are in [\[40 CFR 264 Subparts AA, BB, and CC\]](#). The detailed federal regulations are referenced in this section.]*

Pursuant to WAC 173-303-640(5)(e), each tank system holding dangerous wastes which are acutely or chronically toxic by inhalation, must demonstrate the system is designed to prevent escape of vapors, fumes or other emissions into the air. Include design diagrams, calculations and data used for designing emission control devices.

*[Note: this is a state-only regulatory requirement. However, compliance with the federal air emission requirements in [\[40 CFR 264 Subparts AA, BB and CC\]](#) (as referenced in WAC 173-303-690-692) will usually satisfy this requirement for tanks managing waste streams with organic constituents. ]*

Facilities must demonstrate compliance with the air emissions control requirements of WAC 173-303-690; [\[40 CFR Part 264 Subpart AA\]](#), [-691 \[Subpart BB\]](#), and [-692 \[Subpart CC\]](#) for process vents, equipment leaks, and tanks and containers.

## **D4.1. Process vents**

[WAC 173-303-110](#); [-690](#); [-806\(4\)\(j\)](#)

[*Note: detailed regulatory requirements for WAC 173-303-690 are in [40 CFR 264 Subparts AA](#). The detailed federal regulations are referenced in this section.*]

Facilities must limit or reduce organic emissions from process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least ten parts per million by weight (ppmw). Process vents associated with recycling units having these operations at permitted facilities are also subject to the requirements. These process vents are called *affected vents* in subsection D4.1. Also, standards for process vents are sometimes called *Subpart AA standards* in subsection D4.1.

### **D4.1.1. Applicability of Subpart AA standards**

[WAC 173-303-690](#); [[40 CFR Part 264.1030](#), [264.1034\(d\)](#), [264.1035\(b\)\(2\)](#)]

#### **D4.1.1.1. Process vents subject to AA standards**

Identify all affected vents, including affected vents associated with recycling units. For example, show their locations on piping and instrumentation diagrams. Describe the location within the facility of each treatment and recycling unit with affected vents. These units are called affected units in subsection D4.1. Provide the annual throughput and operating hours for each affected unit.

#### **D4.1.1.2. Process vents not subject to AA standards**

Identify any process vents which you believe are not subject to Subpart AA standards and provide support for your determination. For each of these vents:

- Identify the vent and the unit in which it is located.
- Show one of the following:
  - Time weighted average annual organic concentration of wastes fed to unit is below ten ppmw. Follow the procedures in [[40 CFR Part 264.1034\(d\)\(1\)\(i\)-\(iv\)](#)] and:
    - Provide the calculated time-weighted, annual average concentration of total organics in wastes fed to the unit. Identify which of the following SW-846 methods was used to determine the total organic concentration: 9060, total organic carbon, or 8240, gas chromatography/mass spectrometry for volatile organic compounds; and
    - Provide information supporting the determination. Include waste analysis data for waste streams, annual quantities of each waste stream processed, calculations, sample collection information such as sampling point and preservation methods, and the SW-846 method used to determine the "total organic concentration"; or
  - Organic concentration of each waste stream fed to unit is less than ten ppmw.
    - Provide documentation showing that each waste stream fed into the unit has an organic concentration of less than ten ppmw. See [[40 CFR Part 264.1034\(d\)\(2\)](#)] for examples of acceptable documentation; and
    - If waste analysis data is used to determine the organic concentration, identify the SW-846 method used – 9060, total organic carbon, or 8240, gas chromatography/mass spectrometry for volatile organic compounds; or

- No federal hazardous wastes managed. Show that only "state-only" wastes are managed in the unit. "State-only" wastes are those that designate as dangerous wastes under Chapter 173-303 WAC but not as "hazardous wastes" under [[40 CFR Part 261](#)].

#### **D4.1.1.3. Re-evaluating applicability of Subpart AA standards**

[WAC 173-303-690](#); [[40 CFR Part 264.1030](#)]

Describe circumstances and criteria that will prompt a re-evaluation of the applicability of the Subpart AA emission limits/reductions to facility operations. Describe the procedures for re-evaluation, referencing the Waste Analysis Plan, as appropriate. At a minimum, include:

- An annual re-evaluation of the organic concentration of "continuously generated" wastes (this includes wastes that are routinely generated through a batch process). Describe what documentation will be used to support the determination that organic concentrations are below the limit. Documentation may include MSDS, waste analysis data, or process description, see [[40 CFR Part 264.1034\(d\)\(2\)](#)]; and
- Provide for re-evaluating the determination whenever there is a change in the waste being managed in the unit or a change in the process that generates or treats the waste.

#### **D4.1.2. Process vents - demonstrating compliance**

[WAC 173-303-690](#); [-806\(4\)\(j\)](#); [[40 CFR Part 264.1030 - 264.1035](#)]

##### **D4.1.2.1. The basis for meeting limits/reductions**

[WAC 173-303-690](#); [-806\(4\)\(j\)\(ii\)](#); [[40 CFR Part 264.1032](#); [Part 264.1034\(c\)](#); [Part 264.1035\(b\)\(2\) and \(b\)\(3\)](#)]

Describe the basis for meeting the Subpart AA emission limits or reductions. Choose one of the following four methods.

- A. Meet limits without air pollution control devices. To successfully use this method, the total air emissions from all affected vents at the facility must not exceed the emissions thresholds when equipment is operated without add-on air emissions control devices. The emissions thresholds are 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr).
- B. Meet limits with air pollution control devices. To successfully use this method, the total air emissions from all affected vents at the facility must not exceed the emissions thresholds when equipment is operated with add-on air emissions control devices.
- C. Demonstrate a 95 weight percent reduction in emissions as shown via manufacturer's specifications. To successfully use this method, manufacturer's specifications for add-on air pollution control devices must show a 95 weight percent, or more, reduction in emissions. In addition, the facility must show it operates within the specifications. Provide engineering literature to support the statement of 95 weight percent reductions. The reduction may be shown for each affected vent or for the total emissions for all affected vents at the facility ("facility-wide emissions").
- D. Demonstrate a 95 weight percent reduction in emissions via testing or estimating emissions and calculating reductions. To successfully use this method, testing or estimating facility emissions with add-on air pollution control devices in place must show emissions will be reduced by 95 weight percent or more. The reduction may be shown for each affected vent or for facility-wide emissions.

#### **D4.1.2.2. Demonstrating compliance via selected method**

[WAC 173-303-690](#); [-806\(4\)\(j\)\(ii\)](#); [\[40 CFR Part 264.1032](#); [Part 264.1034\(c\)](#); [Part 264.1035\(b\)\(2\) and \(b\)\(3\)](#); [Part 270.24\(b\)](#)]

Show the facility meets emission limits or reductions by providing the information described below in (i) through (iv) for the compliance method selected under [D4.1.2.1](#). For the demonstration, use operating parameter values (e.g., temperatures, flow rates, or concentrations) that represent the conditions that result in the maximum organic emissions. Generally, this will be when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. The requirements for detailed design and operating information and the parameters for control devices and closed vent systems are described in subsection [D4.1.2.3](#). When providing emission rates or reductions:

- If *engineering calculations* are used, describe the assumptions and provide the calculations; and
- If *source tests* are used, demonstrate the methods detailed in [\[40 CFR Part 264.1034\(c\)\]](#) were followed. Provide data and calculations and describe or show the location of sampling ports (e.g., on piping diagrams).
  - Meets limits without air pollution control devices. To make this demonstration, provide measured or calculated emission rates for each affected vent and the total emissions for all affected vents at the facility.
  - Meet limits with controls. To make this demonstration, provide measured or calculated emission rates for each affected vent and the total emissions for all affected vents at the facility with air emission control devices in place. It is not necessary to provide emission measurements or calculations for these same vents without control devices.
  - Meets limits by demonstrating a 95 weight percent reduction in emissions as shown via manufacturer's specifications. Describe each air emission control device that will be used for affected units at the facility and provide the manufacturer's specifications for the device. Include the manufacturer's name and the model number(s) of the control device(s). For each affected unit:
    - Identify which device(s) will be used for each affected unit; and
    - Provide support that waste stream(s) entering the unit and the unit's operating conditions meet the specifications. For example, describe how the physical and chemical characteristics (e.g., volatility) of waste streams placed in the unit meet specifications for the device; describe parameters for distillation, fractionation, thin-film evaporation, solvent extraction, and/or air or steam operations in the unit (e.g., operating temperatures and flow rates).
  - Meet limits by demonstrating a 95 percent reduction in emissions via testing or by estimating emissions and calculating reductions. To show that add-on emissions control devices achieve the 95 weight percent reduction requirements, provide data for both controlled and uncontrolled emissions.
  - Identify which of the following two approaches is being used:
    - Facility-wide emissions are reduced by 95 weight percent; or
    - The emissions for each affected vent have been reduced by 95 weight percent.
  - Provide estimates of emission rates without air emission control devices. Provide measured or calculated emission rates for each affected vent, if showing reduction for each vent, or the total emissions for all affected vents at the facility, if showing a facility-wide reduction.
  - Estimate emissions with emission control devices. Provide measured or calculated emission rates with air emission control devices for each affected vent, if showing reduction for each vent, or the total emissions for all affected vents at the facility, if showing a facility-wide reduction.

#### **D4.1.2.3. Design information and operating parameters for closed vent systems and control devices**

[WAC 173-303-690](#); [-806\(4\)\(j\)\(iv\)](#); [\[40 CFR Part 264.1032\(b\)](#); [Part 264.1033](#); [Part 264.1034](#); [Part 264.1035\(b\)\(3\) and \(b\)\(4\)](#); [Part 264.1035\(c\)](#); [Part 270.24\(d\)](#)]

Provide information on design, operation, and monitoring devices for add-on control devices and closed vent systems to demonstrate compliance with the standards in [40 CFR Part 264.1033]. Include:

- A list of all information references and sources used in preparing the documentation; (ii) Records, including the dates, of each compliance test required by [40 CFR Part 264.1033(k)];
- A design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions." The design analysis must address the vent stream characteristics and control device operation parameters discussed in [40 CFR Part 264.1035(b)(2) and (b)(3)]. Documentation provided by the vendor or manufacturer of the device may be used if it provides the required information;
- Operating parameters and monitoring devices. Provide the following information. Documentation provided by the vendor or manufacturer of the device may be used if it provides the required information.
  - Identify specific operating parameters and parameter values/ranges that will be used to monitor control device performance. They must be consistent with 40 CFR Part 264.1033, including (f), monitoring requirements, and 40 CFR Part 264.1035(c); and
  - Describe monitoring devices used to monitor parameters identified in (iv)(A) above. Provide a diagram(s) of monitoring sensor locations used to comply with 40 CFR Part 264.1033(f)(1) and (f)(2).
  - To propose an alternate parameter for monitoring, describe the control device, the affected unit it is in, and the parameter(s) proposed for monitoring. Show that the parameter(s) will ensure the control device is operated to meet the emission limits/reductions and the control device's design specifications. Describe the device(s) that will be used to monitor for the parameter and show where they will be installed [40 CFR Part 264.1033(i)];
- Procedures in the appropriate sections of the application to ensure the assumptions in the emissions limit/reduction calculations are not violated; e.g., in the Waste Analysis and Inspection Plans. Briefly describe the procedures here and provide a reference to the appropriate sections of the application;
- A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur; and
- A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 weight percent or greater unless the total organic concentration limit of [40 CFR Part 264.1032(a)] is achieved at an efficiency less than 95 weight percent or the total organic emission limits of [40 CFR Part 264.1032] for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

#### **D4.1.2.4. Re-evaluating compliance with Subpart AA standards**

[WAC 173-303-690](#); [-806\(4\)\(j\)\(ii\)](#); [[40 CFR Part 264.1030](#); [Part 264.1035\(b\)\(2\)](#)]

Describe circumstances and criteria that will prompt a re-evaluation of the facility's compliance with the air emission limits/reductions. Describe the procedures for re-evaluation. Include:

- Data sources to be used;
- Assumptions about maximum operating capacity;
- Criteria for recalculating emissions (e.g., add vent, remove vent, change operating hours, manage waste of a different composition);
- Intervals for recalculating emissions to check whether they are under the threshold limits or meet reduction requirements (e.g., annually); and
- For cases where performance testing will be used to check limits or reductions or to ensure standards in [[40 CFR Part 264.1033](#)] are being met, the performance test plan as required by [Part 264.1035(b)(3)].

#### **D4.2. Equipment leaks**

[WAC 173-303-110](#); [-691](#); [-806\(4\)\(k\)](#)

*[Note: detailed regulatory requirements for WAC 173-303-691 are in [[40 CFR 264 Subparts BB](#)]. The detailed federal regulations are referenced in this section.]*

The equipment leak detection and repair standards in [[40 CFR Part 264 Subpart BB](#)], Equipment Leaks, apply to equipment that contains or comes into contact with waste with a total organic concentration of ten percent by weight, or more. They are designed to reduce emissions from valves, pumps, compressors, pressure relief devices, sampling connection systems, and open-ended valves or lines. The standards apply to waste management units, recycling units, and accumulation areas.

##### **D4.2.1. Applicability of BB standards**

[WAC 173-303-691](#); [-806\(4\)\(k\)](#); [[40 CFR Parts 264.1050-264.1063](#)]

###### **D4.2.1.1. Equipment subject to Subpart BB**

Describe procedures and criteria for evaluating equipment to determine if it is subject to the Subpart BB standards. Identify which method(s) will be used to determine organic concentration (must use one of the ASTM or SW-846 methods listed in [[40 CFR Part 264.1063\(d\)\(1\) or \(2\)](#)] and/or knowledge of the nature of the waste streams or the process generating the waste streams). If knowledge will be used to determine the organic concentration, describe how the knowledge will be documented as required by [[Part 264.1063\(d\)\(3\)](#)]. Note that [D4.2.2.1](#) describes the records that must be maintained to document the results of the evaluation.

For equipment to be exempt from Subpart BB standards, one of the following must be shown:

- Organic concentration of the waste is below ten percent by weight. Equipment must contain or contact wastes with total organic concentrations of less than ten percent by weight at the point they enter the equipment. To determine organic concentration, use ASTM or SW-846 methods listed in [[40 CFR Part 264.1063\(d\)\(1\) or \(2\)](#)] or use knowledge of the nature of the waste streams or the process generating the waste streams, documenting the knowledge as required by [[Part 264.1063\(d\)\(3\)](#)]; or

- No federal hazardous wastes are managed. Show that only "state-only" wastes are contained in, or have contact with, the equipment. "state-only" wastes designate as dangerous wastes under [Chapter 173-303 WAC](#) and not as "hazardous wastes" under [\[40 CFR Part 261\]](#).

#### **D4.2.1.2. Re-evaluating the applicability of Subpart BB standards**

[WAC 173-303-691\(1\)](#); [\[40 CFR Part 264.1063\(d\)-\(g\)](#); [Part 264.1064\(k\)\]](#)

Describe circumstances under which the facility must evaluate or re-evaluate whether equipment is subject to the Subpart BB standards. This may include changes in facility operations, changes in the process generating a waste, the presence of organic emissions when equipment is monitored according to [\[Part 264.1063\(c\)\]](#), or other circumstances.

For example, if the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in [\[40 CFR Part 264.1052 through Part 264.1060\]](#), then a re-evaluation is required.

#### **D4.2.2. Equipment leaks - demonstrating compliance**

##### **D4.2.2.1. Procedures for identifying equipment location and method of compliance, marking equipment, and ensuring records are up-to-date**

[WAC 173-303-691](#); [-806\(4\)\(k\)](#); [\[40 CFR Part 264.1050-264.1064\]](#)

Provide the following procedures:

##### **D4.2.2.1.1. Identifying equipment subject to Subpart BB standards and to mark equipment. Provide procedures to**

- Show the approximate location within the facility of equipment to which Part 264 Subpart BB applies. For example, show the equipment locations on a facility plot plan; and
- Ensure that each piece of equipment subject to Subpart BB standards is physically marked to distinguish it readily from other equipment. The system for identifying equipment must result in permanent markings that are permanently attached to each piece of equipment; and

##### **D4.2.2.1.2. Ensuring records required by [\[40 CFR Part 264.1064\]](#) are kept and updated**

[\[40 CFR Part 264.1052\(d\)\(5\)\(ii\)](#); [Part 264.1053\(e\)\(2\)](#); [Part 264.1064\(b\), \(g\), \(h\), \(j\), and \(k\)\]](#)

Describe procedures for ensuring that records and logs required by [\[40 CFR Part 264.1064\]](#) are complete and kept up-to-date in the operating record. These records identify equipment subject to Subpart BB standards and describe the method of compliance with leak detection and repair standards. An agency inspector must be able to tell readily what is subject to subpart BB and what is not. Include procedures to:

- Establish and update the information required for each piece of equipment subject to standards in Subpart BB, including:
  - The equipment's identification number and which hazardous waste management area the equipment is located in;
  - The type of equipment (e.g., a pump or pipeline valve);
  - The percent by weight of total organics in the hazardous waste stream and the state of the hazardous waste (i.e., gas, liquid, etc.) at the inlet to the equipment;

- The hazardous waste state at the equipment (e.g., gas/vapor or liquid); and
- Method of compliance with standards in [[40 CFR Part 264.1052 through 1059](#)] (e.g., monthly leak detection and repair or equipped with dual mechanical seals).
- Establish and update a log with lists of equipment identification numbers for:
  - All equipment subject to the standards in [[40 CFR Part 264.1052 through 1060](#)]; (II) Pressure relief devices required to comply with [[Part 264.1054\(a\)](#)].
  - Equipment in vacuum service. While [[40 CFR Part 264.1064\(g\)\(5\)](#)] requires a list of identification numbers for equipment in vacuum service, [[Part 264.1050\(e\)](#)] states that such equipment does not have to comply with standards in [[Part 264.1052 through 264.1059](#)].
  - Valves subject to [[40 CFR Part 264.1057\(g\) and \(h\)](#)]:
    - That are designated as "unsafe to monitor" under [[Part 264.1064\(h\)\(1\)](#)]; and
    - That are designated as "difficult to monitor" under [[Part 264.1064\(h\)\(2\)](#)]; and
  - Equipment designated "for no detectable emissions" under [[Part 264.1052\(e\)](#), [Part 264.1053\(i\)](#), and [Part 264.1057\(f\)](#)]. Also provide for recording the following information:
    - The designation of this equipment signed by the owner or operator; and
    - For existing facilities, the results from the most recent compliance test(s) required under [[Part 264.1052\(e\)](#), [Part 264.1053\(i\)](#), and [Part 264.1057\(f\)](#)], including the dates of the test, background level measured, and the maximum instrument reading at the equipment.
- Establish and update a log for pumps and compressors with dual mechanical seal systems [[40 CFR Part 264.1052\(d\)](#) and [Part 264.1053\(e\)](#)] that includes recording for each pump and compressor:
  - The criteria that indicates failure of the seal system, the barrier fluid system, or both (see [[Part 264.1052\(d\)\(5\)\(ii\)](#) and [Part 264.1053\(e\)\(2\)](#)]; and
  - Any changes to these criteria and the reasons for the changes.
- Establish and update a log with two lists of valves subject to [[40 CFR Part 264.1057\(g\) and \(h\)](#)]:
  - For each valve designated as "unsafe to monitor," its identification number, an explanation of why the valve is unsafe to monitor, and the plan for monitoring the valve; and
  - For each valve designated as "difficult to monitor," its identification number, an explanation of why the valve is difficult to monitor, and the plan for monitoring the valve;
- Establish and update inspection logs to include equipment subject to Subpart BB standards, including identification and repair of leaking equipment; and
- Establish and update a log for recording the following information on equipment you believe is exempt from the Subpart BB requirements:
  - For each unit with equipment you believe is exempt:
    - An analysis determining the design capacity of the hazardous waste management unit in which the equipment is located; and
    - A statement listing the hazardous waste influent to and effluent from the hazardous waste management unit and an analysis determining whether these hazardous wastes are heavy liquids.
  - For each piece of equipment you believe is exempt, an up-to-date analysis and supporting information and data used to make the determination. Include supporting documentation required by [[40 CFR Part 264.1063\(d\)\(3\)](#)] when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used.



#### **D4.2.2.2. Demonstrating compliance with [D4.2.1](#) and [D4.2.2](#) procedures**

[WAC 173-303-691](#); [-806\(4\)\(k\)](#); [[40 CFR Part 264.1050 - 264.1059](#)]

Demonstrate implementation of the procedures in [D4.2.1](#) and [D4.2.2](#) by providing the following:

- Description of which management or recycling units have equipment to which Part 264 Subpart BB applies, including the approximate location within the facility of each of these units; and
- The records, logs, lists, and facility plot plan described under [D4.2.2.1.2](#) identifying equipment subject to Subpart BB standards, method of compliance with leak detection and repair standards, and equipment exempt from the standards.

*[Note: that any permit issued for the facility will require this information to be kept in the operating record and updated as necessary.]*

#### **D4.2.2.3. Closed vent systems or control devices: showing compliance with emission reduction standards**

[WAC 173-303-690](#); [-691](#); [-806\(4\)\(k\)](#); [[40 CFR Part 264.1033-264.1035](#), [Part 264.1052- 264.1055](#), [Part 264.1059](#), [Part 264.1060](#), [Part 264.1063](#)]

Facilities may use closed vent systems and emission control devices to avoid or reduce the leak detection and repair requirements in [[Part 264.1052 through 264.1055](#)] and in [[Part 264.1059](#)]. To use closed vent systems and control devices, demonstrate the systems and devices reduce emissions by at least 95 weight percent, provide information on their design and operating parameters, and provide information on devices to monitor operation as required under [[Part 264.1033](#)].

- **Identifying Closed Vent Systems and Control Devices.**
  - Identify each piece of equipment subject to Subpart BB standards for which a closed vent system and emissions control device will be used to reduce emissions. Show where this equipment is; e.g., show their locations on equipment diagrams;
  - Describe the location within the facility of each waste management unit with such equipment. For example, identify the units on a facility plot plan; and
  - Provide the annual throughput and operating hours of each unit.
- **The Basis for Showing Compliance with Standards.** Describe the basis used to show compliance with emission reduction standards. Choose one of the following two methods:
  - Demonstrate a 95 weight percent reduction in emissions as shown via manufacturer's specifications. To successfully use this method, manufacturer's specifications for add-on air pollution control devices must show a 95 weight percent, or greater, reduction in emissions, and the facility must operate within the specifications.
  - Demonstrate a 95 weight percent reduction in emissions via testing or estimating emissions and calculating reductions. To successfully use this method, testing or estimating facility emissions with add-on air pollution control devices in place must show emissions will be reduced by 95 weight percent or more.
- **Demonstrating Compliance via Selected Method.** Show the facility meets emission limits or reductions by providing the information described below for the compliance method selected under this subsection. For the demonstration, use operating parameter values (e.g., temperatures, flow rates, or concentrations) that represent the conditions that result in the maximum organic emissions. Generally, this will be when the waste management unit is operating at the highest load or capacity level reasonably expected to occur.

- **Meets limits by demonstrating a 95 weight percent reduction in emissions as shown via manufacturer specifications.** Describe each air emission control device that will be used for equipment subject to Subpart BB and provide the manufacturer's specifications for the device (any photocopies must be readable). Include the manufacturer's name and the model number(s) of the control device(s). For each unit with such equipment:
  - Identify which device(s) will be used; and
  - Provide support that waste stream(s) entering the unit and the unit's operating conditions will meet the specifications. For example, describe how the physical and chemical characteristics (e.g., volatility) of waste streams placed in the unit meet specifications for the device; describe parameters for distillation, fractionation, thin-film evaporation, solvent extraction, and/or air or steam stripping operations in the unit (e.g., operating temperatures and flow rates).
- **Meet limits by demonstrating a 95 percent reduction in emissions via testing or estimating emissions and calculating reductions.** To show that add-on emissions control devices achieve the 95 weight percent reduction requirements, provide data for both controlled and uncontrolled emissions:
  - Provide estimates of emission rates without air emission control devices. Provide measured or calculated emission rates for each piece of equipment.
    - If engineering calculations are used, describe the assumptions and provide the calculations;
    - If source tests are used, demonstrate the methods detailed in [\[40 CFR Part 264.1034\(c\)\]](#) were followed and describe the performance test plan. For each affected unit, the performance test plan must include information described in [\[40 CFR Part 264.1035\(b\)\(3\)\]](#); and
    - Include any other information and data supporting the emission estimates.
- Estimate emissions with emission control devices. Provide measured or calculated emission rates with air emission control devices for each piece of equipment.
- Provide the support described in (I) above for engineering calculations or source tests.
- Demonstrate the weight percent reduction achieved by add-on air emissions control devices. Provide calculations using the data from (I) and (II) above to show the weight percent reduction achieved by control devices for each piece of equipment.
- Design Information and Operating Parameters for Closed Vent Systems and Control Devices: [\[40 CFR Part 264.1033\]](#); [Part 264.1034](#); [Part 264.1035\(b\)\(3\), \(b\)\(4\), and \(c\)](#); [Part 264.1060](#); [Part 264.1064\(b\)\(3\) and \(e\)](#). Provide information on design, operation, and monitoring of add-on control devices and closed vent systems to demonstrate compliance with the standards in [\[40 CFR Part 264.1033\]](#). Include all the information described in [D4.1.2.3](#).

### **D4.3. Tanks and containers**

[WAC 173-303-110](#); [-692](#); [-806\(m\)](#)

*[Note: detailed regulatory requirements for WAC 173-303-692 are in [\[40 CFR 264 Subparts CC\]](#). The detailed federal regulations are referenced in this section.]*

Air standards in WAC 173-303-692 [40 CFR 264 Subparts CC] apply to hazardous waste containers having a design capacity greater than 0.1 cubic meters (26.4 gallons) and to hazardous waste tanks.

*[Note: these standards do not apply containers and tanks used solely to manage radioactive mixed waste in accordance with applicable regulations of the Atomic Energy Act and the Nuclear Waste policy Act.]*

*There are other specific units exempt from these standards. For example, units which the facility certifies as being equipped with and operating air emission controls in accordance with certain Clean Air requirements are exempt. Exemptions are presented in WAC 173-303-692(1)(b); to date, these exemptions have not applied to HWTR permitted facilities.*

*These standards do not apply to "state-only" wastes. Those are dangerous wastes that designate under [Chapter 173-303 WAC](#), but do not designate as "hazardous wastes" under [\[40 CFR Part 261.\]](#)*

The facility must control air emissions from applicable containers and tanks in accordance with technical requirements in [WAC 173-303-692\(2\)](#) [[40 CFR 264.1084](#) and [1086](#)] when the hazardous waste has volatile organic content (VO) at the point of waste origination of less than 500 parts per million by weight (ppmw).

*[Note: containers and tanks containing hazardous waste with less than 500 ppmw VO do not have to be managed under the technical requirements in WAC 173-303-692(2) [[40 CFR 264.1084](#) and [1086](#)]. However, they are still subject to overall requirements in WAC 173-303-692, because the facility must demonstrate the waste streams VO is less than 500 ppmw according to requirements in WAC 173-303-692 [[40 CFR 264.1083](#)].*

#### **D4.3.1. Applicability of WAC 173-303-692 (Subpart CC) standards** [WAC 173-303-692\(1\)](#); [-806\(m\)](#); [[40 CFR 264.1080](#), [1083](#)]

Identify the tanks and the container areas subject to the Subpart CC standards.

Identify any tanks or container areas which you believe are not subject to Subpart CC standards and provide support for the determination. If you believe there are exempt tanks or containers at the facility because the VO of the hazardous waste is less than 500 ppmw at the point of waste origination, provide procedures in the Waste Analysis Plan for the analyses necessary to make the exemption determinations.

##### **D4.3.1.1. Containers**

[WAC 173-303-692\(2\)](#); [-806\(m\)](#); [[40 CFR Part 264.1086](#)]

For containers subject to these standards, discuss how you meet requirements in WAC 173-303-692 [[40 CFR 264.1086](#)]. Include design standards for containers, required inspections, and operating procedures for each container level standard (i.e., container level 1, container level 2, and container level 3) you manage at the facility.

For each uniquely designed container area, provide the applicable documentation required by WAC 173-303-806(4)(m); [[40 CFR 270.27\(a\)\(2\)](#) and [\(a\)\(3\)](#)].

##### **D4.3.1.2. Tank systems**

[WAC 173-303-692\(2\)](#); [-806\(m\)](#); [[40 CFR Part 264.1086](#)]

For tank systems subject to these standards, discuss how you meet requirements in WAC 173-303-692 [[40 CFR 264.1084](#)]. Include design standards for tanks, required inspections, and operating procedures for each tank level standard (i.e., tank level 1 and tank level 2) you manage at the facility. Specify which of our tanks systems are subject to which tank level standard.

For each uniquely designed tanks system, provide the applicable documentation required by WAC 173-303-806(4)(m); [[40 CFR 270.27\(a\)\(1\)](#), [\(a\)\(3\)](#), [\(a\)\(5\)](#), and [\(a\)\(6\)](#)] for that system.

## E. Releases from Solid Waste Management Units

[WAC 173-303-646](#); [-646920](#); [-806\(4\)\(a\)\(xxiv\)](#)

### Overview of Requirements

Facilities must identify locations where solid wastes have been or are managed, and provide information on known and suspected releases of dangerous wastes and/or dangerous constituents. In addition, facilities must describe work completed under a RCRA Section 3008(h), 7003, or 3013 order; the EPA Superfund program; a Model Toxics Control Act (MTCA) order; or an independent cleanup. Reference key reports related to cleanup investigations and other cleanup actions.

Information provided in this section of the application will assist Ecology in assessing the need for corrective action at the facility or portions of the facility. The facility permit will include specific requirements for corrective action and schedules for completing required corrective action activities. It will also include public involvement requirements, requirements for notification of newly identified releases, and cost assurance for corrective action.

### E1. Solid Waste Management Units and Known/Suspected Releases of Dangerous Wastes or Constituents

Information in this section will be used to evaluate the need for corrective action at your facility necessary to protect human health and the environment.

The following information requirements relate to the entire facility. For corrective action, the definition of *facility* includes *all contiguous property under the control of the facility owner and/or operator*. The facility owner is the entity that owns the property on which the facility is located. This may mean that some of the solid waste management units at your *facility* are outside areas you usually consider when preparing the permit application.

#### E1.1. Solid waste management units

Provide information on each solid waste management unit at the facility, even if the unit may not pose a threat to human health or the environment. Ecology needs the information to make an accurate evaluation of corrective action requirements at the facility.

A *solid waste management unit* is any discernible location where solid waste has been placed at any time, even though the location may not have been intended for the management of solid or dangerous waste (see [WAC 173-303-040](#) for the complete definition).

*Solid waste* is any material you have discarded, intend to discard, or are accumulating, storing, treating, or recycling. By definition, solid waste includes liquids, sludges, and contained gases. Waste management units typically exempt from portions of the dangerous waste rules are considered solid waste management units; these include wastewater treatment units, recycling units, and accumulation areas.

If EPA or Ecology conducted a RCRA Facility Assessment (or "RFA") at your facility, solid waste management units should be listed in the RFA report. Call the appropriate [Ecology regional office](#) to find out if an RFA has been conducted at your facility or to obtain a copy of the RFA report.

At a minimum, provide the following information for **each** solid waste management unit:

- The location of the unit on the topographic map.
- A description of the type of unit (e.g., storage, treatment, landfill), how it was used to manage solid waste, and the period over which it operated.
- A general physical and structural description of the unit, including any available drawings of the unit.
- A list of all solid wastes which were (or are) managed at the unit to the extent the information is available.
- Any other information you believe may help Ecology make a decision about the need for corrective action at the unit.

If an RFA is used for this summary, include reference to the report and the date the report was completed.

## **E1.2. Releases**

Provide information on known and suspected significant<sup>2</sup> releases of dangerous waste and/or dangerous constituents at and from each solid waste management unit at the facility. Also, include information on any known and suspected significant releases from sources other than solid waste management units (e.g., a large spill or a leak from processing equipment). At a minimum, for *each release*:

1. Mark the location of the release on a topographic map.
2. Describe the following based on information that is already available to you. Sources of this information include the RCRA Facility Assessment (RFA), operator's facility operating record, reports of spills filed with Ecology or EPA, and knowledge of facility employees.
  - Extent and general dimensions of the release and the dangerous constituents present in the release.
  - Results of sampling and analysis of the release or its source.
  - Time frame over which the release occurred.
  - Impacts or potential impacts to humans or the environment.
  - Any other information you believe may help Ecology make a decision about the need for corrective action for the release.
3. If you have already cleaned up some or all releases, describe these actions. The description may be brief, but should include enough information for Ecology to evaluate the need for additional corrective action. For example, describe how you determined the extent of the release; what you did to remove and/or treat the released materials, including how much soil and/or debris was removed; what equipment or structures, if any, were removed; what was done to decontaminate structures and equipment that remained; and the steps you took to verify the release had been adequately remediated.

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<sup>2</sup> A *significant release* is a release, which has affected or has the potential to affect human health or the environment at or beyond the facility.

## E2. Corrective Actions Implemented

If you have been conducting corrective action under a RCRA Section 3008(h), 7003, or 3013 order; under a Model Toxics Control Act (MTCA) order; as an independent MTCA cleanup; or under another authority:

1. Briefly describe the work that has been completed.
2. If the corrective action is ongoing, briefly describe the work planned and the anticipated final result (e.g., corrective action will be considered complete when all contaminated soil is removed and the achievement of cleanup levels has been confirmed).
3. Indicate the authority under which the work was done (e.g., MTCA order, RCRA order, other).
4. List reports that have been submitted to Ecology and/or EPA: provide the titles of the reports, the dates they were submitted, and the offices they were submitted to (e.g., Ecology's Southwest Regional Office; Ecology's Headquarters Office, Hazardous Waste Permits Unit; Ecology's Richland Office).

## F. Procedures to Prevent Hazards

[WAC 173-303-310](#); [-320](#); [-340](#); [-395\(1\)](#); [-630\(3\), \(6\), \(9\)](#); [-640\(2\), \(3\), \(6\), \(7\), \(9\), \(10\)](#); [-806\(4\)\(a\)\(iv\), \(v\), \(vi\), \(viii\), \(ix\), \(b\)\(v\), and \(c\)\(x\)](#)

### Overview of Requirements

This section of the permit application addresses several related requirements at a dangerous waste management facility. Management areas include where dangerous waste is received, transferred, staged, stored, processed and/or treated. First, it addresses structures and procedures to provide facility security. Second, it provides detailed information on facility inspections, including their frequency and content. Third, it outlines equipment, structures, and procedures at the facility to prevent emergencies, and to prepare for emergencies if they do occur.

### F1. Security

[WAC 173-303-310](#); [-806\(4\)\(a\)\(iv\)](#)

Unless a waiver is granted under [F1.2](#), the facility must demonstrate compliance with the procedures, structures, and equipment in [F1.1](#) for the areas in which dangerous wastes are managed.

#### F1.1. Security procedures and equipment

[WAC 173-303-310\(2\)](#); [-806\(4\)\(a\)\(iv\)](#)

The facility must:

**F1.1.1.** Have signs with the legend "Danger - Unauthorized Personnel Keep Out" posted at each entrance to the portion(s) of the facility where dangerous wastes are being treated or stored. The same type of signs must also be posted at other locations in sufficient numbers to be seen from any approach to these areas. The legend must be written in English and in any other language predominant in the area surrounding the facility and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the area and that entry onto the area can be dangerous.

**F1.1.2.** Have either a 24-hour surveillance system or a barrier and means to control entry.

Demonstrate either:

- That the facility has a 24-hour surveillance system that continuously monitors and controls all entry onto the portion(s) of the facility where dangerous wastes are being treated or stored. Examples of surveillance systems include television monitoring or surveillance by guards or facility personnel, or
- That the facility has an artificial or natural barrier (or a combination) that completely surrounds any portion of the facility where dangerous wastes are being treated or stored and a means to control entry, at all times, through the gates or other entrances. Examples of barriers include a fence in good repair or a fence combined with a cliff. Examples of means to control entry include an attendant, television monitors, locked entrance, or controlled roadway access to the facility.

## **F1.2. Waiver**

[WAC 173-303-310\(1\)](#); [-806\(4\)\(a\)\(iv\)](#)

If a waiver of the security procedures and equipment requirements is requested, the owner or operator must demonstrate the following in their permit application:

- Physical contact with the waste, structure, or equipment within the active portion of the facility will not injure persons or livestock that may enter the active portion of a facility.
- Disturbance of the waste or equipment within the active portion(s) of the facility by persons or livestock will not cause violations of the Dangerous Waste Regulations, Chapter 173-303.

## **F2. Inspection Plan**

[WAC 173-303-320](#); [-340](#); [-806\(4\)\(a\)\(v\)](#)

The inspection plan must demonstrate that inspections will be conducted, the results recorded, and timely remedies implemented, to prevent malfunctions, deterioration, operator errors, and discharges that may cause or lead to the release of dangerous waste constituents to the environment or threaten human health.

### **F2.1. General inspection requirements**

[WAC 173-303-320\(1\)](#), and [\(2\)\(a\)](#), [\(b\)](#), and [\(c\)](#); [-340\(1\)\(d\)](#); [-806\(4\)\(a\)\(v\)](#)

Inspections address all of the following items: safety and emergency equipment, security equipment, operational equipment, load/unload areas, container staging and storage areas, and tank systems.

Describe the items, or groups of items, to be inspected and the schedule(s) for inspecting them. Be specific in identifying items to be inspected.

Areas subject to spills such as load/unloading areas, transferring area, staging areas, storage areas, processing areas and treatment areas must be inspected daily when in use.

*[Note: in their permits, HWTR has consistently held that waste in storage means that area is “in use.” Therefore, HWTR has required inspections every day for storage areas that have any waste. Load/unload and transfer areas are “in use” only when waste is present, or has been present since the previous daily inspection.]*

Identify the types of problems to look for during inspections. For example, wet spots and other signs of leaks, measured organic emissions exceeding 10,000 ppm, or number of emergency response items below required minimum. Describe acceptable conditions for the items to be inspected.

Describe the frequency of inspection for specific items on the schedule. It should be based on specific regulatory requirements, the rate of possible deterioration of equipment, and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. In many cases, the dangerous waste regulations specify the required frequency. Where a specific frequency is not specified by regulation, provide justification for the frequency proposed.

Describe where the schedule will be kept at the facility and identify the employee position(s) responsible for conducting inspections.

*[Note: including blank/example inspection logs is an effective way to specify much of the information described in the above paragraphs. They can be designed to include item inspected, observations checklist, acceptable conditions, and inspection frequency.]*

## **F2.2. Inspection log**

[WAC 173-303-320\(2\)\(d\)](#)

Describe the inspection log(s) used to record data from inspections and provide example logs. Show that the logs will include, at a minimum:

- Date and time of inspection.
- Printed name and the handwritten signature of the inspector.
- A notation of the observations made.
- An account of spills or discharges in accordance with [WAC 173-303-145](#).
- The date and nature of any repairs or remedial actions taken.

Also, demonstrate that logs will be organized by location (e.g., container storage area "A") and by frequency (e.g., daily, weekly, monthly, quarterly).

*[Note: these inspection logs can also include other information described in subsection [F2.1](#) above.]*

Ensure these inspection logs will be kept in the operating record for at least five years from the date of the inspection.

## **F2.3. Schedule for remedial action for problems revealed**

[WAC 173-303-320\(3\)](#)

**F2.3.1.** Describe schedule(s) and procedures for remedying problems revealed by inspections to ensure hazards to human health and the environment are prevented. The schedule(s) and procedures:

- Must demonstrate that when a hazard is imminent or has already occurred action will be taken immediately.
- Should take into account the rate of possible deterioration of equipment and the probability of an environmental or human health incident before the remedy is implemented.



- Must specify actual timelines for taking corrective measures for each type or category of problems that could be encountered. For example, the schedule should require that remedies for certain types of conditions (e.g., a leaking container) be performed immediately; other remedies performed within 24 hours of detection (e.g., removing liquid from a sump); and others over a longer specified period, such as when there is no immediate hazard and remedy necessitates ordering supplies or developing contracts for the work to be completed.
- Must identify which position(s) is (are) responsible for taking corrective action or ensuring other staff remedy the problem(s).

**F2.3.2.** For major categories of problems, describe the remedies to be taken; for example, to:

- Repair cracks in the secondary containment or floor of a storage/ treatment area.
- Repair deterioration of joint seal compound or water stops (show that the compound used to repair the joint seal is resistant to the wastes stored in the area).
- Respond to leaks in equipment regulated by [WAC 173-303-691](#).
- Obtain needed supplies.

In some cases, part of the response to certain problems could include more frequent inspections for a period of time.

## **F2.4. Specific process or waste type Inspection requirements**

**F2.4.1** Container Inspections: [WAC 173-303-320\(2\)\(c\), \(3\)](#); [-630\(3\), \(6\)](#); [-806\(4\)\(a\)\(v\)](#)

Ensure that, when in use, the containers and the container storage area will be inspected at least:

- Daily for leaks, spills, and accumulated liquids and for ensuring that container labels are not obscured, removed, or otherwise unreadable.
- Weekly for deterioration of containers (including corrosion and other factors) and of the secondary containment system, including cracks in the chemically-resistant coating or the foundation, deterioration of coating and/or sealants, or dirt or other materials preventing inspection of protective coatings or foundations.

Describe the actions taken to ensure that:

- Spilled and leaked material will be immediately removed from secondary containment.
- Removing rainwater and spilled material from sumps and other parts of secondary containment systems are adequate to prevent overflow.
- Problems with container condition and container management will be properly remedied.
- Problems with secondary containment or the base under containers is properly remedied. For example, describe actions to repair cracks in secondary containment or the base under containers.

*[Note the facility and Ecology permit writer should anticipate and include as many potential facility-specific problems and proposed response as possible. However, the application should state that the facility will also respond to substandard conditions that were not anticipated when writing the permit application.]*

## **F2.4.2. Tank system inspections, assessments, and corrective actions**

[WAC 173-303-640\(6\), \(7\)](#); [-806\(4\)\(a\)\(v\)](#)

### **F2.4.2.1. Tank System Inspections:** [WAC 173-303-640\(6\)](#); [-806\(4\)\(a\)\(v\)](#)

Demonstrate that tank systems will be adequately inspected, including the following.

- Describe the schedule and procedures for inspecting overfill controls such as level sensing devices, high-level alarms, automatic feed cutoff, or bypass to standby tank.
- Show the following will be inspected at least once each day when in use:
  - Aboveground portions of the tank system, if any, to detect corrosion, weld breaks, punctures, or releases of waste.
  - Data gathered from monitoring any leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.
  - The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion, signs of releases of dangerous waste or deterioration of the secondary containment (such as gaps or cracks in an external liner system or vault, or deterioration of sealants for expansion joints or of water stops).
- Show tank systems with cathodic protection systems will be inspected according to, at a minimum, the following schedule to ensure that they are functioning properly.
  - The proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter.
  - All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

The practices described in the National Association of Corrosion Engineers (NACE) standard, *Recommended Practice (RP-02-85)--Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems*, and the American Petroleum Institute (API) Publication 1632, *Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*, may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.

### **F2.4.2.2. Tank System Integrity Assessments:** [WAC 173-303-640\(2\), \(3\)](#); [-806\(4\)\(a\)\(v\)](#)

Submit the schedule and procedure for assessing the condition of the tank. This procedure must be adequate to detect corrosion, erosion, cracks, leaks, pitting, or wall thinning to less than sufficient shell strength and be based on corrosion rate of tank sources. In addition, describe the procedures for emptying the tank to allow adequate inspection of the interior to detect corrosion or erosion of the tank sides and bottom.

### **F2.4.2.3. Tank Systems - Corrective Actions:** [WAC 173-303-640\(7\)](#); [-806\(4\)\(a\)\(v\)](#)

Describe the actions taken to ensure that a tank system is removed from service immediately when there has been a leak or spill from it or the system is unfit for use. Demonstrate that:

- Flow of waste into the system will be stopped.
- Waste will be removed from the system within 24 hours.
- The system will be closed, repaired, or provided with secondary containment.
- Major repairs will be certified according to WAC 173-303-640(7) before the tank system is returned to service.
- Visible releases to the environment will be contained.
- Non-exempted leaks or spills will be properly reported.

## **F2.5. Storage of ignitable or reactive wastes**

[WAC 173-303-395\(1\)\(d\)](#); [-806\(4\)\(a\)\(v\)](#)

Demonstrate that the owner/operator will inspect the areas where ignitable or reactive wastes are stored, at least yearly. Describe who will conduct the inspection, and demonstrate the person is familiar with the International Fire Code or that the inspection will be conducted in the presence of the local, state, or federal fire marshal.

*[Note: the demonstration that the inspector is familiar with the International Fire Code should be done in the job description and training requirement of the “Training Program” section of your permit application.]*

Demonstrate that the following information will be entered in the inspection log or operating record: the date and time of inspection, the name of the inspector or fire marshal, a notation of the observations made, and any remedial actions, which were taken because of the inspection.

## **F2.6. Air emissions control and detection - inspections, monitoring, and corrective actions**

[WAC 173-303-690](#); [-691](#); [-692](#); [-806\(4\)\(a\)\(v\)](#)

Describe how the specific inspection, monitoring, and corrective action requirements for air emission control devices, closed vent systems, equipment leaks, tanks, and containers will be performed and recorded.

## **F2.7. Process vents**

[WAC 173-303-690](#); [-806\(4\)\(a\)\(v\)](#)

Describe how the closed vent systems and control devices used to meet requirements in WAC 173-303-690 [[40 CFR Part 264 Subpart AA](#)] will be inspected and monitored to ensure they are operating according to design specifications and operating parameter required by the regulations.

Depending on your process vent and the air emission control system, you will have different monitoring and inspection requirements. You will need to evaluate the regulations to develop the specific requirements for your unique system.

*[Note: WAC 173-303-690 does not include the detail information you need to meet air emission standards for process vents. Instead, it references the federal regulations at [40 CFR 264 Subpart AA] for those details. Ecology is fully authorized to implement the regulations in [40 CFR 264 Subpart AA].*

Include the following in the inspection plan:

- Type and frequency for inspecting and monitoring closed vent systems, control devices, and monitoring devices. Cite the specific regulatory requirement that relevant for your system.

*[Note: these requirements are complicated and different depending on the system (i.e., your combination of process vent and air emission control system). Careful evaluation of the regulations in [40 CFR 264 Subpart AA] is required to determine the specific inspection and monitoring requirements for your system.]*

- Descriptions of unacceptable conditions. For example, for a carbon adsorption system, unacceptable conditions are carbon breakthrough or the existing carbon exceeding its service life pursuant to WAC 173-303-690(2); [[40 CFR Part 264.1033\(h\)](#)].

- Demonstrate records required by the regulations for your system will be made and maintained.
- Outline procedures and timelines to ensure actions are implemented to correct problems.

**F2.7.1 Equipment Leaks:** [WAC 173-303-691](#); [-806\(4\)\(a\)\(v\)](#)

Demonstrate the required daily, monthly, quarterly, and annual inspections will be conducted as appropriate for specific equipment, closed vent systems, and air emissions control devices regulated under WAC 173-303-691; [[40 CFR Part 264 Subpart BB](#)]. Also, demonstrate repairs will be attempted and completed within required deadlines.

Include provisions to:

- Ensure identification numbers are present and readable.
- Check for leaking equipment, emissions, failure of dual mechanical seals and barriers, functioning of audible alarms (if present), and other parameters that reveal whether monitoring or emission control devices are operating as designed.
- Tag (or mark) leaking equipment consistent with requirements in WAC 173-303-691(2); [[40 CFR Part 264.1064\(c\)](#)].
- Monitor "unsafe-to-monitor valves" and "difficult-to-monitor valves" consistent with the conditions in WAC 173-303-691(2); [[40 CFR Part 264.1057\(g\) and \(h\)](#)].
- Inspect and monitor as required for closed vent systems and control devices with WAC 173-303-691(2); [[40 CFR Part 264.1052-1059](#)].
- Maintain required inspection and other operating records. For example:
  - When leaks are detected, the recordkeeping and inspection log requirements in [[§264.1064\(c\) and \(d\)](#)].
  - For equipment designated as "no detectable emissions" under [[§264.1057\(f\)](#)] and [[§264.1064\(g\)\(4\)](#)], each required compliance test, including the dates of the test, background level measured, and the maximum instrument reading at the equipment.
  - When the facility chooses to comply with [[§264.1061](#)], the percent of valves found leaking during each monitoring period must be recorded in the operating record ([[§264.1064\(i\)](#)]).
- Ensure that monitoring equipment, for example the portable organic vapor analyzer for method 21, will be inspected to ensure it is calibrated and operates properly. Be instrument- specific when describing the problems to look for.
- Ensure the test methods and procedures in [[§264.1063](#)] will be used for monitoring (method 21 for monitoring for leaks; method in [[§264.1063\(c\)](#)] to monitor for "no detectable emissions" equipment).
- Ensure repairs are attempted and completed on time and repair methods/procedures used are described in the record.

**F2.7.2. Tanks and Containers:** [WAC 173-303-692](#); [-806\(4\)\(a\)\(v\)](#)

Demonstrate that the required inspections, monitoring and recordkeeping will be conducted. For example, ensure containers subject to these standards are inspected when first accepted at the facility and at least annually as required by WAC 173-303-692(2); [[40 CFR Part 264.1086\(c\) or \(d\)](#)], as appropriate.

Likewise, ensure tanks subject to level 1 standards are inspected according to [WAC 173-303-692\(2\)](#) [[40 CFR 264.1084\(c\)\(4\)](#)] and tanks subject to level 2 standards have their closed vents and control systems inspected according to [WAC 173-303-692\(2\)](#) [[40 CFR Part 264.1087\(b\)\(4\), \(c\)\(7\)](#) and [§264.1088](#)].

## F3. Preparedness and Prevention Requirements

[WAC 173-303-340](#); [-806\(4\)\(a\)\(vi\)](#)

Describe the preparations and preventive measures required to help avoid or mitigate the possibility of a fire, explosion or any unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, or surface water that could threaten human health or the environment.

Alternatively, request, and justify, a waiver(s) of the requirements in WAC 173-303-340.

### F3.1. Equipment requirements

[WAC 173-303-340\(1\) and \(2\)](#); [-806\(4\)\(a\)\(vi\)](#)

All facilities must be equipped with the following, unless it can be demonstrated that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified:

**F3.1.1. Internal Communications:** Describe the internal communications or alarm system used to provide immediate emergency instruction (voice or signal) to facility personnel. Demonstrate that whenever dangerous waste is being poured, mixed, spread, or otherwise handled, all personnel involved will have immediate access to this communication system, either directly or through visual or voice contact with another employee.

**F3.1.2. External Communications:** Describe the device, such as a telephone (immediately available at the scene of operations) or a handheld two-way radio, for summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams. Demonstrate that if there is ever just one employee on the premises while the facility is operating, that employee will have immediate access to this device.

**F3.1.3. Emergency Equipment:** Demonstrate that 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 are available at the facility.

**F3.1.4. Water for Fire Control:** Demonstrate that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

### F3.2. Aisle space requirement

[WAC 173-303-340\(3\)](#); [-806\(4\)\(a\)\(vi\)](#)

Document that the facility maintains required aisle space, which allows the unobstructed movement of personnel, fire protection equipment, or spill control equipment to any area of facility operation in an emergency.

*[Note: details on requirements for aisle space should be in the process information section of the permit application. The inspection plan simply commits to inspecting the aisle spaces to ensure they meet those requirements.]*

Any request for a waiver of these aisle space requirements must be accompanied by a demonstration that aisle space is not needed for any, or all, of the purposes detailed above.

## **F4. Preventive Procedures, Structures, and Equipment**

[WAC 173-303-806\(4\)\(a\)\(viii\)](#)

Describe the procedures, structures, and/or equipment used to:

- Prevent hazards and contain spills in unloading/ loading operations (e.g., use of ramps, berms, pavement, or special forklifts; maximum number of hours containers are allowed to be in load/unload area; what load/unload areas will be used for; procedures for loading/unloading wastes and for holding wastes; etc.).
- Prevent run-off from dangerous waste handling areas to other areas of the facility or environment, or prevent flooding (e.g., berms, dikes, trenches).
- Prevent contamination of water supplies.
- Mitigate the effects of equipment failure and power outage.
- Prevent undue exposure of personnel to dangerous waste (e.g., protective clothing).

## **F5. Prevent Reaction of Ignitable, Reactive, and/or Incompatible Wastes**

[WAC 173-303-395\(1\)\(a\), \(b\), and \(c\); -630\(9\)\(a\) and \(b\); -640\(9\)\(10\); -806\(4\)\(a\)\(ix\), \(b\)\(v\), and \(c\)\(x\)](#)

If the facility treats and/or stores ignitable, reactive, and/or incompatible dangerous wastes, describe precautions to prevent the accidental ignition or reaction of these wastes as presented below.

### **F5.1. Precautions to prevent ignition or reaction of ignitable or reactive waste:**

[WAC 173-303-395\(1\)\(a\) and \(c\); -806\(4\)\(a\)\(ix\)](#)

If the facility handles ignitable or reactive waste, demonstrate that:

- These wastes will be separated and protected from sources of ignition or reaction such as open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., heat-producing chemical reactions), and radiant heat.
- When ignitable or reactive waste is being handled, the owner or operator confines smoking and open flames to specially designated locations.
- "NO SMOKING" signs are conspicuously placed wherever a hazard exists from ignitable or reactive waste.

Procedures, structures and measures described in this section must be site-specific. Examples include procedures and equipment to empty and inert tanks before welding on or near the tanks, to ground containers before adding or removing waste, and to ground tanks and bulk waste trucks before adding or removing waste; and site diagrams showing the locations of "no smoking" signs and of specially designated "smoking" areas.

Provide documentation demonstrating implementation of these precautions will be placed in the operating record as required by WAC 173-303-395(1)(c).

## **F5.2. Precautions for handling ignitable or reactive waste and mixing incompatible wastes:**

[WAC 173-303-395\(1\)\(b\), \(c\); -630\(9\)\(a\) and \(b\); -640\(9\) and \(10\); -806\(4\)\(a\)\(ix\), \(b\)\(v\), and \(c\)\(x\)](#)

Provide the information described below and present documentation demonstrating implementation of these precautions will be placed in the operating record as required by WAC 173-303-395(1)(c).

### **F5.2.1. Ignitable or Reactive Wastes In Tanks: WAC 173-303-640(9), -806(4)(c)(x)**

**F5.2.1.1.** Describe facility-specific measures and procedures to ensure ignitable or reactive waste will not be placed in tank systems unless one of the following three conditions is met:

#### **F5.2.1.1.1.** That both:

- The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under [WAC 173-303-090](#); **and**
- Precautions are taken to prevent reactions which: (1) generate extreme heat or pressure, fire or explosions, or violent reactions; (2) produce uncontrolled flammable fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; (3) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions; (4) damage the structural integrity of the device or facility; or (5) by similar means threaten human health or the environment.

If the facility will use this condition, describe the site-specific treatment, rendering or mixing processes that will render the waste non-ignitable or non-reactive and the site-specific precautions to prevent the listed reactions. Examples of such processes include lab-scale testing of treatment, lab-scale testing of mixing procedures, and air-venting and treatment; or

**F5.2.1.1.2.** The waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react (include facility-specific measures to protect the waste here and/or under F5.1); or

**F5.2.1.1.3.** The tank system is used solely for emergencies.

**F5.2.1.2.** Demonstrate that your tanks are located in a manner consistent with requirements in WAC 173-303-640(9)(b).

## **F5.2.2. Incompatible wastes in containers or tanks:**

[WAC 173-303-630\(9\)\(a\) and \(b\); -640\(10\); -806\(4\)\(b\)\(v\) and \(4\)\(c\)\(x\)](#)

**F5.2.2.1.** Describe the procedures used to ensure that the following activities are conducted only if the precautions in [WAC 173-303-395\(1\)\(b\)](#) are taken:

- Incompatible wastes, or incompatible wastes and materials, are placed in the same tank system or container.
- Dangerous waste is placed in a tank system or container that has **not** been decontaminated and that previously held an incompatible waste or material.

- Containers holding dangerous wastes incompatible with other wastes or materials stored in nearby containers, piles, open tanks, or surface impoundments are separated or protected by a dike, berm, wall or other device. Secondary containment systems for incompatible wastes must be separate.

**F5.2.2.2.** Describe the site-specific precautions to prevent the reactions described in [WAC 173-303-395\(1\)\(b\)](#). These include reactions which (1) generate extreme heat or pressure, fire or explosions, or violent reactions; (2) produce uncontrolled flammable fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; (3) produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions; (4) damage the structural integrity of the device or facility; or (5) by similar means threaten human health or the environment. Also, describe the site-specific precautions to prevent the reactions listed above.

## G. Contingency Plan

[WAC 173-303-145](#); [-340](#); [-350](#); [-360](#); [-630\(2\)](#); [-640\(7\)](#); [-806\(4\)\(a\)\(vii\)](#)

### Overview of Requirements

Facilities must develop a contingency plan that describes procedures, equipment, and actions to respond to fires, explosions, or any unplanned sudden or nonsudden release or spills of dangerous waste or dangerous waste constituents to air, soil, ground water, or surface water at the facility, and the receipt of a shipment of dangerous wastes that presents a hazard to human health or the environment.

The contingency plan must be developed to lessen the potential impacts of such emergency circumstances, and the plan must be implemented immediately in such emergency circumstances. The contingency plan must also be able to "stand on its own," without references to other portions of the application, because it is sent to organizations that respond to emergencies.

### G1. General Facility Information

Provide basic information about the facility, such as the facility name and location. Provide a site plan and an overview description of the facility's operating schedule, dangerous wastes managed at the facility, and the facility's management operations.

### G2. Emergency Coordinators

[WAC 173-303-350\(3\)\(d\)](#); [-360\(1\)](#); [-806\(4\)\(a\)\(vii\)](#)

Provide names, titles, addresses, phone numbers, and duties of primary and alternate emergency coordinators. Provide a statement authorizing the coordinator to commit the necessary resources to carry out the plan; the statement must be signed by someone with the authority to commit the facility's resources.

Describe the minimum qualifications (training and experience) that will be required of people hired to fill positions designated with the duties of the emergency coordinator and alternates. The minimum qualifications must show that employees will be qualified to act as emergency coordinator.

Describe responsibilities of the assigned emergency coordinators during and after an emergency.



## **G3. Circumstances Prompting Implementation**

[WAC 173-303-350\(1\) and \(2\)](#); [-360\(2\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe when the contingency plan will be implemented to respond to “emergency circumstances.” An “emergency circumstance” may include fire, explosion, unplanned sudden or nonsudden release of dangerous waste or dangerous waste constituents to air, soil, surface water, or ground water, damaged or unacceptable waste shipment, and natural disasters.

*[Note: HWTR has developed a list of “emergency circumstance” that requires implementation of a facility’s contingency plan. Those are included in [Appendix G1](#), and should be incorporated into your facility’s contingency plan.]*

## **G4. Emergency Response Procedures**

[WAC 173-303-350\(3\)\(a\), \(b\)](#); [-360\(2\)\(a\), \(b\), \(c\), and \(d\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the actions and emergency procedures facility staff must implement to lessen the potential impact on human health and the environment in the event of an “emergency circumstance.”

### **G4.1. Incident response, assessment, and identification**

[WAC 173-303-350\(2\)\(a\), \(b\), \(c\), and \(d\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe immediate action any employee will take when faced with an actual or imminent emergency. Include how employees will be trained and instructed to attend to their own safety, request assistance from others, notify the emergency coordinator, take initial actions to mitigate the emergency when that is safe to do, and describe the incident.

Describe immediate actions the emergency coordinator will take when informed of an actual or imminent emergency. Include steps of agency notification, emergency assessment, and implementation of emergency action.

### **G4.2. Notification**

[WAC 173-303-145\(2\)](#); [-360\(2\)\(d\), \(e\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the procedures and methods for immediately notifying the following of an imminent or actual emergency:

- Facility personnel; and
- Ecology and other appropriate state and/or local agencies if their help is needed. Briefly describe the circumstances requiring help by other agencies along with which agency(ies) would be called upon to provide the help.

*[Note that the facility must also notify under [WAC 173-303-145\(2\)](#).]*

*[Note: HWTR has developed a list of potential imminent or actual emergencies that requires notification of Ecology. Those are included in [Appendix G2](#), and should be incorporated into your facility’s contingency plan.]*

### **G4.3. Containment and control of emergencies**

[WAC 173-303-145](#); [-350\(3\)\(a\), \(b\)](#); [-360\(2\)\(f\), \(g\), \(i\)](#); [-630\(2\)](#); [-640\(7\)](#); [-806\(4\)\(a\)\(vii\)](#)

Different types of incidents (for example a fire compared to a sudden spill) require different responses. Therefore, your contingency plan should identify specific types of emergencies that could occur at your facility and explain steps that will be taken to address each.

### **G4.4. Identification of dangerous materials**

[WAC 173-303-360\(2\)\(b\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe procedures and equipment for identifying the character, source, amount, and extent of the area of any released materials when there has been a release to the environment, a fire, or an explosion. Include a generic sampling and analysis plan outlining the basic steps that will be taken to quantify the extent of contamination.

### **G4.5. Hazard assessment and report**

[WAC 173-303-360\(2\)\(c\), \(d\), \(e\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the criteria used to assess the possible hazards to human health and the environment that may result from the fire, release, spill, or explosion, considering direct, indirect, immediate, and long-term effects. Also, describe the criteria used to assess the need for evacuation and notification of authorities.

Identify the state and local authorities to be notified in the event a release, fire, or explosion has occurred which could threaten human health or the environment; this list should include the government official designated as the *on-scene coordinator* for the area or the National Response Center.

Ensure the “assessment report” to Ecology includes all of the information under WAC 173-303-360(2)(e).

### **G4.6. Prevention of recurrence or spread of fires, explosions, or releases**

[WAC 173-303-360\(2\)\(f\) and \(g\)](#); [-630\(2\)](#); [-640\(7\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the necessary steps that will be taken to ensure that fires, explosions, or releases do not occur, reoccur, or spread to other dangerous waste at the facility. These measures must include where applicable, stopping processes and operations, collecting and containing released waste (including waste-contaminated soil or surface water), removing waste from tanks, and removing or isolating containers. Include clean-up levels and procedures for cleaning up waste-contaminated soil and other media or debris.

Describe procedures for ensuring that if the facility stops operations in response to an emergency the emergency coordinator will monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Discuss other procedures you follow to evaluate the incident and its cause(s) to prevent recurrence of a similar incident in the future.

## **G4.7. Post-Emergency Actions**

[WAC 173-303-360\(2\)\(h\), \(i\), \(j\), and \(k\)](#); [-640\(7\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe:

- Procedures to ensure that, immediately after the emergency, any material that results from a release, fire, or explosion at the facility will be properly treated, stored, or disposed of.
- Provisions to prevent incompatible waste from being treated, stored, or located in the affected areas until clean-up procedures are completed.
- Procedures and provisions to ensure tank systems are promptly repaired or closed.
- Procedures and provisions to ensure container storage areas are promptly repaired or closed.
- Procedures to ensure that all emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.
- Provisions for records of the incident to be placed in the facility's operating records.
- Procedures to notify Ecology and the appropriate local authorities (list the authorities) that the facility has completed clean-up procedures and that emergency equipment is clean and ready for its intended use.

Outline the contents of the report on the incident to Ecology (often called the "15-day report"). Ensure that it will contain all of the information required in WAC 173-303-360(2)(k).

## **G5. Emergency Equipment**

[WAC 173-303-340\(1\)](#); [-350\(3\)\(e\)](#); [-806\(4\)\(a\)\(vii\)](#)

List and describe the emergency equipment and show on-site plans where the equipment is kept. Include minimum stock that will be kept at the facility at all times. Provide a brief outline of the emergency equipments' capabilities (for example, specify the rating and size of fire extinguishers for the various facility locations).

Emergency equipment includes, and is not limited to:

- Fire extinguishing systems.
- Spill control equipment.
- Monitoring equipment (such as meters that measure combustible gas, oxygen, and/or levels of specific toxic gases that might be present at the facility).
- Communications and alarm systems.
- Decontamination equipment.

## **G6. Coordination Agreements**

[WAC 173-303-340\(4\)](#); [-350\(3\)\(c\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the coordination agreements with local police and fire departments, hospitals, contractors, equipment suppliers, and state and local emergency response teams, including designation of a primary emergency authority if more than one party might respond and the agreements for other entities to provide support to the primary authority. List all the entities with which the facility has made arrangements.

Describe arrangements:

- To familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of dangerous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes; and
- To familiarize local hospitals with the properties of dangerous wastes handled at the facility and the types of injuries or illnesses, which could result from emergencies.

If state or local authorities decline to enter into arrangements for coordination or familiarization, provide documentation of the refusal.

## **G7. Evacuation Plan**

[WAC 173-303-350\(3\)\(f\)](#); [-806\(4\)\(a\)\(vii\)](#)

Describe the planned and alternate evacuation routes and the signal(s) that will be used to begin evacuations. Also, specify assembly areas. The routes and assembly areas must consider wind direction.

## **G8. Required Reports, Recordkeeping, and Certifications**

[WAC 173-303-360\(2\)\(k\)](#); [-640\(7\)\(d\)\(iii\)](#); [-640\(7\)\(f\)](#). [-806\(4\)\(a\)\(vii\)](#)

### **G8.1. General requirements**

Describe the provisions for noting in the operating record the time, date, and details of any incident that requires implementing the Contingency Plan. Describe the procedures for submitting a report on the emergency incident within 15 days of its occurrence. Demonstrate that the report will include the elements required by WAC 173-303-360(2)(k).

### **G8.2. Requirements for tank systems**

Describe:

- Procedures for reporting to Ecology any release to the environment within 24 hours of its detection.
- Procedures for submitting a written report within 30 days of a release to the environment. Demonstrate that the report will include the elements required by [WAC 173-303-640\(7\)\(d\)\(iii\)](#); and
- Provisions for certifying that a major repair of a tank system has been completed and the tank system has been placed back into service.

## **G9. Amendment to Contingency Plan**

[WAC 173-303-350\(5\)](#); [-806\(4\)\(a\)\(vii\)](#)

State that the contingency plan will be reviewed and amended for the following reasons:

- Applicable regulations or the facility permit are revised.
- The plan fails in an emergency.

- The facility changes (in its design, construction, operation, maintenance, or other circumstances) in a way that materially increases the potential for fires, explosions, or releases of dangerous waste or dangerous waste constituents, or in a way that changes the response necessary in an emergency.
- The list of emergency coordinators changes.
- The list of emergency equipment changes.

Amendments to the contingency plan must be made according to procedures for permit changes in [WAC 173-303-830](#). Copies of the updated contingency plan must be distributed to the emergency agencies listed under [section G6, Coordination Agreements](#).

## Appendix G1: Implementation of the Contingency Plan

The following situations and emergencies would call for the implementation of the Contingency Plan:

### Fire/Explosion

- Any fire or explosion at the facility.
- Any fire or explosion that could spread to or otherwise affect operations at the facility.

### Release of Dangerous Waste or Hazardous Substance

- A sudden or non-sudden spill, release, or other discharge of a dangerous waste or hazardous substance, which poses a threat to human health or the environment, regardless of quantity.
- A spill, release, or other discharge that has the potential for contamination of soil, surface water, or groundwater, regardless of size. Examples are spills or releases to soil and releases of organic solvents to asphalt.
- An uncontrolled spill, release, or other discharge originating from a damaged shipment, which has arrived at the facility in such a condition.
- A spill, release, or other discharge of a dangerous waste or hazardous substance greater than 100 pounds (12 gallons) or the “reportable quantity” established in the most recent version of [\[40 CFR Part 302 Table 302.4\]](#) (whichever is less) when any portion of the release extends beyond secondary containment.
- A release of gas to the air originating from an unplanned reaction of materials.
- Emissions to the air from a spill, release, or other discharge (including to secondary containment) of a dangerous waste or hazardous substance when:
  - The spill or release is greater than 100 pounds (12 gallons) or a reportable quantity in the most recent version of [\[40 CFR 302 Table 302.4\]](#) (whichever is less), and
  - Any constituents in the dangerous waste or hazardous substance has a Henry’s Law constant of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase at 25 degrees Celsius or is a volatile organic compound detected by SW 846 Method 8260B. Appendix VI in [\[40 CFR 265\]](#) has a list of compounds known to have a Henry’s law constant value less than the cutoff level.

### Incidents Due to Natural Disasters

- A spill, release, or other discharge or potential for release of dangerous waste or hazardous substance caused by a natural disaster including but not limited to:

- Earthquake or severe flooding conditions that damage equipment, foundations, structures, or tanks.
- Severe storm involving high winds or lightning, which could damage or overturn tanks, containers, or other equipment.

### **Damaged/Unacceptable Waste Shipment**

- A container(s) of dangerous waste arriving at the facility is damaged so as to present a hazard to public health and the environment.
- The shipment cannot be transported because the containers are damaged to such an extent, or the waste is in such a condition, as to present a hazard to the public health or the environment in the process of further transportation.

## **Appendix G2: Notification to Ecology**

Immediately notify Ecology when any one of the following occurs, (some of these thresholds are below those for full implementation of the contingency plan):

- A fire or explosion at the facility, or any fire or explosion that could spread to or otherwise affect operations at the facility.
- An incidence of noncompliance with this Permit that could threaten human health or the environment. Any natural disaster at the facility that could threaten human health or the environment.
- In accordance with [WAC 173-303-145\(2\)](#) and [WAC 173-303-360\(2\)\(a\)](#), a sudden or non-sudden release of a dangerous waste or hazardous substance which poses a threat to human health or the environment, regardless of quantity.
- A spill, release, or other discharge of dangerous waste or hazardous substance greater than ten pounds (1.2 gallons) or the “reportable quantity” established in the most recent version of [[40 CFR Part 302 Table 302.4](#)] (whichever is less) outside of secondary containment.
- A spill, release, or other discharge of dangerous waste or hazardous substance greater than 100 pounds (12 gallons) or the “reportable quantity” established in the most recent version of [[40 CFR Part 302 Table 302.4](#)] (whichever is less) inside secondary containment.
- Any incident that causes implementation of the Contingency Plan.

## **H. Personnel Training**

[WAC 173-303-330; -806\(4\)\(a\)\(xii\)](#)

### **Overview of Requirements**

The information submitted under this section describes the “Training Program” the facility must implement to operate and maintain the facility in a safe manner to demonstrate compliance with WAC 173-303-330(1). You must include complete information on your “Training Program” in the dangerous waste permit application.

The “Training Program” makes up **only part** of the “Training Plan.” The entire “Training Plan” must be maintained in the operating record, but not all aspects of the “Training Plan” are required in your permit application. The following two paragraphs highlight the content of and differences between the “Training Program” **and** “Training Plan.”

The “Training Program” must provide descriptions for each position or job title involved with aspects of dangerous waste management and permit compliance. It must also provide brief outlines of required training courses. It must ensure the facility commits to providing sufficient training to ensure safe and compliance operations. The “training program” does not include information that is expected to change frequently, such as employee names and specific details of course curricula.

The “Training Plan” includes descriptions for each position or job title involved with aspects of dangerous waste management or permit compliance, and it specifies the name of the actual employee(s) filling each of those position description or job title. The Training Plan should have a complete curriculum for each required training course, not just their brief outlines. It also includes ongoing training records required by WAC 173-303-330(3).

The remainder of this section describes information requirements for the “Training Program” in the permit application.

## H1. Introduction

[WAC 173-303-330; -806\(4\)\(a\)\(xii\)](#)

Provide a brief overview of the goals of the training program and how the training program satisfies performance requirements in WAC 173-303-330(1) in this section.

Briefly summarize how this section is organized.

*[Note: this can be effectively done by indicating subsections where specific information requirements in WAC 173-303-806(4)(a)(xii) and specific regulatory requirements in WAC 173-303-330 are addressed. The organization in this section of this guidance document is a recommended format for your training program.]*

## H2. Initial Training

[WAC 173-303-330\(1\)\(c\), 1\(d\), \(2\)\(b\); -806\(4\)\(a\)\(xii\)](#)

Explain how the facility ensures a new employee, or an existing employee assigned to a new task, will be trained to meet the following requirements:

- Employee must be supervised until fully train according to this “training program” to complete assigned tasks related to any aspect of dangerous waste management and emergency response procedures.
- Employee must successfully complete training program within six months of their employment or assignment to a new tasks.

Specify all courses that are required for this initial training for each position description or job task.

*[Note: this can be done effectively by using a training matrix, which is described in [subsection H3](#), below.]*

Ensure the required initial training for all positions includes a course (or set of courses) to familiarize personnel with emergency equipment and systems, and emergency procedures. Demonstrate that the program ensures personnel are able to respond effectively to emergencies and familiarizes them with emergency procedures, equipment, and systems, including:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment.
- Key parameters for automatic waste feed cut-off systems, if the facility has such systems.
- Communications or alarm systems and how and when to use them.
- Response to fires and explosions.
- Response to groundwater contamination incidents.
- Shutdown of operations.
- Other aspects of facility waste and/or emergency procedures and operations.

*[Note: For many facilities, the requirements outlined above for emergency equipment, systems and procedures will apply to all positions facility-wide. However, some facilities are so extensive that personnel will be strictly assigned to only a portion of the facility. In that case, the personnel may not need to be trained for all aspects of emergency equipment, systems and procedures facility-wide. If a position is not trained for facility-wide activity, the permit application should clearly specify the limits of each position's activity and related training requirement.]*

### **H3. Task Specific Training**

[WAC 173-303-330\(1\), \(1\)\(d\), \(2\)\(b\); -806\(4\)\(a\)\(xii\)](#)

Describe the content, frequency, and techniques (for both classroom and on-the-job training) used in both initial and continuing training (including an annual review of the initial training) to prepare employees to operate and maintain the facility in a safe manner and in a way that ensures the facility's compliance with the dangerous waste regulations.

Explain how the facility ensures each employee will be trained on procedures relevant to their position and assigned tasks. The training must be adequate to ensure the employee is trained to perform their assigned duties so the facility is operated safely and in compliance with this permit and the dangerous regulations.

Describe how the training is designed to meet actual job tasks. Ensure the program teaches personnel to perform their duties in a way that ensures the facility's compliance with the dangerous waste regulations.

*[Note: this can be done effectively by using a "training matrix," which has all position descriptions or job duties on one axis, and every facility-training course to be required by the permit to meet the dangerous waste regulations on the other axis. Where a position description or job duty intersects with a training course, an "x" indicates that training course is required. ]*

### **H4. Continuing Training**

[WAC 173-303-330\(1\), \(1\)\(b\), \(2\)\(b\); -806\(4\)\(a\)\(xii\)](#)

Explain how the facility ensures each employee will receive an annual review of all required training.

*[Note: the training matrix described in [subsection H3](#), above can include a column of required annual refresher courses for each position descriptions or job duties.]*



## H5. Training Program Administration

[WAC 173-303-330\(1\)\(a\), 1\(c\); -806\(4\)\(a\)\(xii\)](#)

Identify the person or position who directs the training program. Specify how you ensure the training program director is knowledgeable on dangerous waste management procedures and otherwise qualified to direct the training program. Discuss how you ensure assigned instructors are qualified in their subject matter.

Describe the schedule for employees to complete training to demonstrate facility personnel will successfully complete it within six months of their employment or assignment to the facility or of their transfer to a new position within the facility, whichever is later.

Discuss how you assess the effectiveness of the training program (i.e., how you ensure employees are adequately trained to perform their duties).

Discuss the format of training. For example, briefly discuss the amount of time used for classroom training vs. on-the-job training, the use of live instructors vs. online training, how employees' questions are addressed for online training, and other logistical issues unique to your training program.

## H6. Job Title/Job Description

[WAC 173-303-330\(2\)\(a\); -806\(4\)\(a\)\(xii\)](#)

Provide the job title for each position at the facility with duties related to dangerous waste management. This includes, but is not limited to, positions responsible for developing and implementing the training program, performing inspections, loading/unloading dangerous waste at the treatment or storage areas, processing wastes, participating in emergency responses, sampling and/or testing wastes according to the Waste Analysis Plan, and accepting or rejecting waste streams or waste shipments.

- Describe job description and duties for each job title.
- Describe specific skills and minimum education required for each job title.
- Identify the position that directs the training program according to WAC 173-303-330(1)(a).
- Indicate which position(s) within the organization have the authority to sign the Part A form and the certification statement that must accompany the Part B application; see [WAC 173-303-810\(12\) and \(13\)](#).

*[Note: do not include actual employee's names currently filling the positions. That information will need to be current in your operating record, but would result in unnecessary permit modifications if specified in this "training program." The key requirement established by this "training program" is that any person filling a position must be trained for duties related to dangerous waste management described for that position. Also, a single individual can be assigned to more than one position and/or job title if that person is trained for each of those positions/job titles.]*

Describe the employee organization in sufficient detail to show all positions requiring training under this program and the organization's reporting structure.

*[Note: a "facility organizational chart" is an efficient and effective way to do this.]*

## H7. Documentation and Record Retention

[WAC 173-303-330\(2\)\(c\), \(3\); -806\(4\)\(a\)\(xii\)](#)

Describe the facility's record keeping system used to ensure and document that facility personnel have received and successfully completed all required training for their position descriptions and job duties. Ensure that all training records for current employees are kept until facility closure. Ensure all training records are kept for former employees for at least three years from the date they last worked at the facility.

## I. Closure and Financial Assurance

[WAC 173-303-610; -620; -630\(10\); -640\(8\); -806\(4\)\(a\)\(xiii\)-\(xviii\)](#)

### Overview of Requirements

This section of the permit applications describes actions you will take to “clean close” after you cease operations at the entire facility or a unit at the facility. It also provides a comprehensive and detailed cost estimate for conducting the closure.

This section must result in a complete “closure plan.” The “closure plan” must be a "stand alone" document that can be used without referring to other portions of the application. It must identify and describe all steps necessary to completely or partially close the facility at any point during the facility's active life. It must include the performance requirements that will be achieved to complete a “clean closure” successfully.

“Clean closure” means complete removal of all waste from the facility and removal or decontamination of all structures, equipment, debris and environmental media (such as soil and ground water). If that cannot be accomplished consistent with the performance standards for “clean closure” in WAC 173-303-610(2), then the closure plan and/or the final permit must have requirements for additional post-closure care or corrective action.

Unless your facility is owned by the federal or state government, you are required to have financial assurance to cover the estimated cost for closure plus any additional post-closure care or corrective action requirements in the final permit. The closure cost estimate and mechanism for financial assurance are addressed in the section.

Ecology has prepared guidance on demonstrating compliance with the clean closure performance standard through removal and decontamination of dangerous wastes, constituents, and residues. The guidance, Ecology publication #94-111 (revised 2005), [Guidance for Clean Closure of Dangerous Waste Units and Facilities](#), is available at <https://fortress.wa.gov/ecy/publications/SummaryPages/94111.html>. You may also obtain a copy by contacting the Hazardous Waste Permits Unit. The guidance provides good information on preparing closure plans and it should be consulted while writing your closure plan.

Ecology also has detailed guidance, including spreadsheets, for estimating the cost of closure. It is called the [Closure Cost Estimating Tool User Guide](#) (publication #05-04-009) and is available at <https://fortress.wa.gov/ecy/publications/summarypages/0504009.html>. Again, you can obtain this by contacting the Hazardous Waste Permits Unit.

# 11. Closure Plan

[WAC 173-303-610\(2\)-\(6\); -806\(4\)\(a\)\(xiii\)](#)

## 11.1 Introduction and facility description

[WAC 173-303-610\(3\)](#)

Describe the size, waste management capacity, and location of the facility. Briefly discuss operations at the facility and itemize the individual waste management units and areas (e.g., tank farms, container storage units, loading and unloading areas, etc). Summarize the overall steps you will take to complete “clean closure.” You may reference subsequent sections of the closure plan that present this information in detail.

### 11.1.1 Maximum waste inventory

Give the overall maximum waste inventory at your facility. These must agree with the container storage capacity (SO1) and tank storage capacity (SO2) in your Part A application. Also, list the waste inventories at each individual waste management unit at the facility.

*[Note: a table is an effective way to list waste inventories at each individual waste management unit at the facility.]*

### 11.1.2 Maximum extent of operation

Show the maximum extent of the operation during the active life of the facility. Show location and dimensions of all dangerous waste management units. If one or more units have already been successfully "clean closed," describe the maximum extent of the operation after the date the partial facility closure(s) was completed.

## 11.2 Closure performance standard

[WAC 173-303-610\(2\)](#)

Present the standards you will meet to satisfy the closure performance standards in WAC 173-303-610(2) by implementing closure activities.

WAC 173-303-610(2)(a) has general performance requirements. Specify how you will close the facility to:

- Minimize the need for further maintenance.
- Control, minimize, or eliminate to the extent necessary to protect human health and the environment, post-closure escape of dangerous waste, dangerous constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the ground, surface water, ground water, or the atmosphere.
- Returns the land to the appearance and use of surrounding land areas to the degree possible given the nature of the previous dangerous waste activity.

WAC 173-303-610(2)(b)(i) has specific standards you must meet to satisfy “clean closure” requirements for environmental media such as soil and groundwater. These standards are summarized as:

*For soils, ground water, surface water, and air, the numeric clean closure levels calculated using unrestricted use exposure assumptions according to the Model Toxics Control Act Regulations (MTCA), [Chapter 173-340 WAC](#). Primarily these will be numeric cleanup levels calculated according to MTCA Method B, although MTCA Method A may be used as appropriate, see [WAC 173-340-700 through 173-340-760, excluding WAC 173-340-745](#). Describe which method was used, present the calculations, and provide the calculated clean closure levels.*

WAC 173-303-610(2)(b)(ii) has requirements for closing all structures, equipment, bases, liners, etc. These are paraphrased and discussed below.

Clean closure standards will be set by the department on a case-by-case basis in accordance with the closure performance standards of WAC 173-303-610 (2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents.

Ecology closure guidance ([Guidance for Clean Closure of Dangerous Waste Units and Facilities](#)) discusses options for meeting this requirement. One options used by many permitted facilities is to decontaminate structure sufficiently to achieve a “clean debris surface,” as that term is defined in [[40 CFR 268.45 Table 1](#)]. This option is discussed in detail in the closure guidance cited above.

Describe which technology(ies) will be used for specific structures, equipment, bases, liners, etc. Provide support for the selected technology(ies).

You may propose an alternative decontamination standard if that standard will adequately protect human health and the environment. See Section 5 in the closure guidance for more information. Provide support for the proposed alternative standards.

### **I1.3 Closure activities**

[WAC 173-303-610\(3\)\(a\)\(i\) through \(vi\), \(5\); -620\(3\), -630\(10\); -640\(8\)](#)

Specifically describe how each dangerous waste management unit at the facility will be closed to meet closure performance standards. There are several aspects of closure, as presented in paragraphs I1.3.1 – I1.3.4.

#### **I1.3.1 Removing Dangerous Wastes (or Maximum Waste Inventory Elimination)**

[WAC 173-303-610\(3\)\(a\)\(iii\)-\(iv\); -620\(3\)](#)

Describe in detail each step and the methods to be used for removing, storing, recycling, treating, and transporting the dangerous waste inventory from your facility. You must account for the maximum amount of dangerous wastes that is authorized for each dangerous waste management units and for your overall facility (WAC 173-303-610(3)(a)(iii) and 620(3)(a)(i)). That is, you must account for removing and eliminating the maximum quantity of dangerous waste authorized by your Part A application.

Discuss, list and quantify the types or categories of dangerous waste you have (for example, flammable liquids, chlorinated solvents, oxidizers, corrosive liquid wastes, metal bearing sludges, stabilized dangerous waste, etc.). Specify the type(s) of off-site dangerous waste management units the wastes will be sent to (for example, incineration, solvent recovery, wastewater treatment, stabilization, hazardous waste landfill, etc.). Provide the distances wastes in the different categories may have to be transported to reach an appropriate facility with the required permitted dangerous waste management unit. Detailed information, including transport distances and management options, are required to determine a reliable closure costs.

Even if you propose to use existing on-site treatment or recycling equipment and operations to process wastes during closure, you must include options for treating or recycling wastes at off-site facilities. This is a regulatory requirement (WAC 173-303-620(3)(a)(ii)) because on-site treatment or recycling units may be inoperable at the time of closure and therefore unavailable. Sufficient funds must be available to pay for off-site treatment and/or recycling.

### **I1.3.2 Decontaminating Structures, Equipment, and Soil**

[WAC 173-303-610\(3\)\(a\)\(v\) and \(vi\)](#); [-620\(3\)](#)

Describe in detail each step and the methods, equipment, and supplies (such as cleansing agents) used to decontaminate or remove all:

- Dangerous waste residues.
- Contaminated containment system components, equipment, and structures.
- Discharge control equipment and structures for container secondary containment and for tank systems, including sumps.
- Equipment used to manage wastes.
- Any contaminated soils.

Describe temporary on-site storage of residues and decontamination waste and any proposed on-site recycling or treatment of wastes. Describe the type(s) of off-site dangerous waste units these wastes will be sent to. Include the following:

*[Note: although you may plan to recycle or treat dangerous wastes onsite using existing systems, you must calculate your closure cost estimate using the assumption that all dangerous waste will be sent offsite for treatment and disposal.]*

- Provisions for sampling and testing soil under foundations and containment structures before any contaminated containment systems are removed.
- Procedures for identifying cracks or other openings in containment structures that could result in a release of waste or waste residues to the environment, then recording their locations and dimensions, and sealing or repairing them. Identify the material used to seal or repair cracks and openings and demonstrate that it is resistant to water and the cleaning solutions to be used during decontamination.
- Procedures for identifying and recording the locations of stains on secondary containment structures, in load/unload areas, or on soils, (these indicate areas of spilled materials).
- Decontamination and/or removal of remaining containers, container storage area secondary containment systems, tank systems, tank discharge control equipment, tank secondary containment systems and underlying bases (where present), and soil containing or contaminated with dangerous waste or dangerous waste residues.

If not all contaminated soils can be practically removed or decontaminated, then the dangerous waste management unit must be subject to corrective action or a post-closure permit. If a unit includes a tank system that is subject to the secondary containment requirements in [WAC 173-303-640\(4\)\(g\)](#), but the tank system does not have secondary containment that meets the requirements of [WAC 173-303-640\(4\)\(b\) - \(f\)](#), then the Closure Plan must include plans both for "clean closure" and for closing as a landfill (this second plan is called a "contingent post-closure plan"). See [WAC 173-303-640\(8\)](#) for more information.

- An estimate of the volume of material that will be removed and recycled, treated, and/or disposed of.
- Where removed materials will be held before transport, the types of containers and/or tanks it will be held in, and the types of management units it will be sent to. Include measures to provide for secondary containment.
- Procedures for decontaminating equipment.
- Plans for disposal of materials that do not designate as dangerous waste but do exceed cleanup levels for one or more constituents.

### **I1.3.3 Sampling and Analysis to Identify Extent of Decontamination/Removal and to Verify Achievement of Closure Standard**

Describe the sampling and analytical testing procedures to ensure that the extent of contamination is defined and to confirm that decontamination and/or removal activities have attained the closure standard. [Section 7 of Ecology’s closure guidance](#) has detailed information you need to consider when designing the sampling and analysis plan.

#### **I1.3.3.1 Sampling to Determine Extent of Contamination**

Describe method(s) for determining sampling locations and numbers for both “area-wide” and for “focused” samples to determine the vertical and horizontal extent of contamination. Provide support for the selected method(s).

*[Note: definitions and purposes for “area-wide” and “focused” sampling are discussed in detail in [Section 7 of Ecology closure guidance](#). Please refer to that document.]*

- Describe sampling methods and equipment for each type of sample (concrete, soil, etc.).
- Present sample container and preservation requirements.
- Describe constituents to test for, laboratory analyses to perform and the rationale for each analysis, test methods, and expected detection limits. Constituents must include the full suite of dangerous constituents generated or managed at the dangerous waste units (i.e., [\[40 CFR 264 Appendix IX\]](#) chemicals managed at the units or that could be breakdown products of chemicals managed there), or a reliable set of indicator compounds that are representative of the managed at the closing unit and their degradation products. If a limited number of indicator constituents is proposed for analysis of certain samples, provide the rationale and support for the proposed indicator parameters, which should include those most likely to have been released at the site.
- Describe how analytical data will be evaluated against the cleanup standards. If a sample exceeds the cleanup standard for any constituent or parameter, then Ecology will generally determine that the material or area represented by the sample does not meet the cleanup standard. However, if contamination is widespread, or if natural background was used to define the clean closure levels, Ecology may require the methods in Ecology publication #92-54, [Statistical Guidance for Ecology Site Managers](#) be used (<https://fortress.wa.gov/ecy/publications/SummaryPages/9254.html>).
- Describe Quality Assurance/Quality Control procedures, including field QA/QC.
- Describe safety procedures and equipment for personnel during sampling and analysis.

#### **I1.3.3.2 Sampling to Confirm Decontamination of Structures and Soils**

- Describe method(s) for determining sampling locations and numbers for both area-wide and bias samples to verify decontamination of tanks, concrete containment systems, and other media or equipment (e.g., final rinse will be sampled and analyzed to determine if all constituents and characteristics have been removed) and to verify removal of contaminated soil. Provide support for the selected method(s).
- Describe sampling methods and equipment for each type of sample (concrete, rinsate, soil, etc.).
- Provide sample container and preservation requirements.
- Describe constituents to test for, laboratory analyses to perform and the rationale for each analyses, and test methods and expected detection limits. Constituents must reflect the full suite of dangerous constituents generated or managed at the dangerous waste units (i.e., [\[40CFR Part 264 Appendix IX\]](#)

chemicals managed at the units or that could be breakdown products of chemicals managed there). If a limited number of indicator constituents is proposed for analysis of certain samples, provide the rationale and support for the proposed indicator parameters, which should include those most likely to have been released at the site.

- Describe how analytical data will be evaluated against the cleanup standards so that if a sample exceeds the cleanup standard for any constituent or parameter, then the material or area represented by the sample does not meet the cleanup standard. If contamination might be widespread, Ecology recommends that the methods in Ecology publication #92-54, [Statistical Guidance for Ecology Site Managers](https://fortress.wa.gov/ecy/publications/SummaryPages/9254.html) be used (<https://fortress.wa.gov/ecy/publications/SummaryPages/9254.html>).
- Describe Quality Assurance/Quality Control procedures, including field QA/QC; and
- Describe safety procedures and equipment for personnel during sampling and analysis.

#### **11.3.4 Other Activities**

[WAC 173-303-610\(3\)\(vi\)](#)

Provide a detailed description of other activities necessary during the closure period to ensure that all partial closures and final closures satisfy the closure performance standards, including, but not limited to, ground water monitoring, leachate collection, run-on and run-off control, and air emissions control.

#### **11.4 Schedule for closure**

[WAC 173-303-610\(3\)\(a\)\(vii\), \(4\)](#)

Provide the schedule for final closure. In your schedule show how closure events will be sequenced (for example, waste inventory elimination, followed by equipment decontamination, and followed by containment decontamination, followed by clean closure verification sampling and analyses). For some large facilities, a schedule should be developed for units or areas (for example, individual container storage areas or tank farm systems). Include the estimated total time to close the entire facility at final closure. Describe the closure schedule in terms of days, weeks, or months from the date the final volume of dangerous wastes is received.

For final closure, you are allowed ninety (90) days to remove the dangerous wastes inventory from your facility. You are allowed an additional 90 days to complete all other closure activities (for example, equipment and structure decontamination, soil sampling, etc).

##### **11.4.1 Extension for closure time**

If the planned closure is expected to exceed the 90 days for treatment, removal or disposal of dangerous waste inventory and/or the 180 days for completion of all closure activities, include in the application a request for a longer schedule for closure and a justification that a longer period of closure time is required. The justification must show that the owner or operator will take all steps to prevent threats to human health and the environment and the activities required to treat and /or remove the dangerous waste inventory will of necessity take longer than 90 days to complete and/or the complete other final closure activities will take longer than 180 days to complete.

Note that the facility may also request a permit modification to change the schedule as long as the demonstration is submitted at least 30 days before the end of the 90-day or 180-day period. The request can be approved only if the requirements in WAC 173-303-610(4) are met.

## 12. Closure Cost Estimate

[WAC 173-303-620\(3\); -806\(4\)\(a\)\(xv\)](#)

Provide a copy of the most recent closure cost estimate, calculated to cover the entire cost of closure when the cost would be greatest (not including partial closures that have occurred previously). Provide support for the cost estimate by itemizing to show the quantities and unit costs used for each of the closure activities described under I1.3.1 through I1.3.1. For example, for removing dangerous wastes: identify tasks (e.g., preparing containers for transport, loading trucks or rail cars, transporting wastes, wastes treated and/or disposed at off-site TSD) and for each task identify unit costs for staff, equipment, and supplies. Also, provide the approximate distance wastes would have to be transported and the unit costs for transporting the waste as well as the costs for treating and/or disposing of each general type of waste. Add costs for equipment mobilization and demobilization and for protective clothing and equipment. Where unit costs vary depending on the type of equipment, identify the type of equipment that will be used.

Ecology has developed comprehensive closure cost estimating software, and encourages all facilities to use it to estimate their closure cost. The software is designed to aid the user in identifying critical information, provide unit cost assumptions for most major closure activities, and complete calculations to arrive at estimates for closure activities. With justification, you can substitute facility specific unit cost assumptions for those in the software for Ecology review.

The software reduces the amount of work required by facilities in developing a closure cost estimate and ensures greater consistency between facilities that use it. It also reduces Ecology review time and helps ensure the facility will meet Ecology's standards for closure cost estimating.

Ecology's closure cost software is called [Closure Cost Estimating Tool User Guide](#) (publication #05-04-009). You can find the software and instructions for its use at the following internet site <https://fortress.wa.gov/ecy/publications/summarypages/0504009.html>. Ecology staff can also help instruct you on its use.

Closure cost must be updated annually using an inflation factor based on information published by the federal Bureau of Economic Analysis. Ecology calculates the annual inflation rate by March 1 of each year. For more about [inflation rates](#) go to [www.ecy.wa.gov/programs/hwtr/manage\\_waste/financial\\_assurance\\_updates.html](http://www.ecy.wa.gov/programs/hwtr/manage_waste/financial_assurance_updates.html) or contact Ecology's Financial Assurance Officer.

### 12.1 Financial assurance mechanism for closure:

[WAC 173-303-620\(4\) and \(10\); -06\(4\)\(a\)\(xv\)](#)

Provide a copy of the current financial assurance mechanism for facility closure and any proposed alternative financial assurance mechanism. Alternatively, if the facility has not yet been constructed, state which mechanism will be used for financial assurance; the owner or operator of such a facility must submit the mechanism at least 60 days before the date dangerous waste is first received for treatment or storage. Ask Ecology for a copy of the federal language incorporating the proper wording for Washington State; see WAC 173-303-620(10).

Use one of the following mechanisms for financial assurance (more information about each choice is at [www.ecy.wa.gov/programs/hwtr/manage\\_waste/financial\\_assurance\\_mech.html](http://www.ecy.wa.gov/programs/hwtr/manage_waste/financial_assurance_mech.html)):



**Trust Fund.** To demonstrate compliance, submit an originally signed duplicate of the trust agreement, using the wording required by [\[40 CFR Part 264.151\(a\)\(1\)\]](#) and modified as required by WAC 173-303-620(10).

**Surety Bond Guaranteeing Payment.** To demonstrate compliance, provide a copy of the surety bond with the wording required by [\[40 CFR Part 264.151\(b\)\]](#) and modified as required by WAC 173-303-620(10), along with a copy of the standby trust agreement.

**Surety Bond Guaranteeing Performance.** To demonstrate compliance, provide a copy of the surety bond with the wording required by [\[40 CFR Part 264.151\(c\)\]](#) and modified as required by WAC 173-303-620(10), along with a duplicate original of the standby trust agreement.

**Letter of Credit.** To demonstrate compliance, provide a copy of the irrevocable letter of credit with the wording required by [\[40 CFR Part 264.151\(d\)\]](#) and modified as required by WAC 173-303-620(10), along with a copy of the standby trust agreement.

**Insurance.** To demonstrate compliance, provide a copy of the certificate of insurance or endorsement with the wording required in [\[40 CFR §264.151\(e\)\]](#) and modified as required by WAC 173-303-620(10).

**Financial Test or Corporate Guarantee for Closure.** To demonstrate compliance, submit a letter signed by the owner's or operator's chief financial officer and worded as specified by [\[40 CFR §264.151\(f\)\]](#) or [\[40 CFR §264.151\(h\)\(1\)\]](#) and modified as required by WAC 173-303-620(10), along with a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If a parent company is guaranteeing closure for a subsidiary facility, the corporate guarantee must accompany the preceding items. If this mechanism is selected, the required demonstration must be provided in the application, even if the facility is new.

**Use of Multiple Financial Mechanisms.** To demonstrate compliance when multiple mechanisms are selected, provide a copy of a combination of trust fund agreements, surety bonds guaranteeing payment into a closure trust fund, and letters of credit or insurance together, which provide financial assurance for the amount of closure.

**Use of Financial Mechanism for Multiple Facilities.** To demonstrate compliance when a mechanism will be used for more than one facility, provide a copy of a financial assurance mechanism showing, for each facility, the Washington State ID number, name, address, and amount of funds closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility.

If you have questions about any of the financial assurance requirements or mechanisms, contact Ecology's Financial Assurance Officer. Ecology can provide samples and templates of the required documents and can talk with your attorney, insurance broker, banker, or other advisors.

### **13. Notice in Deed of Already Closed Disposal Units**

[WAC 173-303-610\(10\)](#); [-806\(4\)\(a\)\(xiii\)](#)

If the facility has closed dangerous waste disposal units, submit a copy of the notice or notation recorded in the deed to the facility property, or on some other instrument that is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that (1) the land has been

used to manage dangerous wastes; (2) its use is restricted; and (3) the survey plot and record of the type, location, and quantity of dangerous wastes disposed of within each cell or area of the facility has been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Department.

## 14. Post-Closure Plan

[WAC 173-303-610\(8\)](#); [-806\(4\)\(a\)\(xiii\)](#)

Post-closure requirements are for land-based units or for tank systems that must be closed as land-based units. They are also for any area that cannot be cleaned up to meet closure standards, if dangerous waste constituents will be left on site.

Including specific requirements for a post-closure plan is beyond the scope of this guidance document. Ecology staff can provide specific guidance on post-closure plan development if that is required for your facility.

## 15. Liability Requirements

[WAC 173-303-620\(8\), \(10\)](#); [-806\(4\)\(a\)\(xvii\)](#)

Facilities must demonstrate financial responsibility for bodily injury and property damages to third parties caused by sudden and non-sudden accidental occurrences arising from operations of the facility. Provide copies of the current financial assurance mechanisms for third-party liability and any proposed alternative financial assurance mechanism, or if the facility has not yet been constructed, state which of the available mechanisms will be used for financial assurance.

Ask Ecology for a copy of the language incorporating the proper wording for Washington State. In most cases, the demonstration must use the exact wording required in [WAC 173-303-620\(10\)](#) and [\[40 CFR §264.151\]](#).

### 15.1 Coverage for Sudden Accidental Occurrences

[WAC 173-303-620\(8\)\(a\)](#); [\[40 CFR Part264.151\(g\), \(h\), \(i\), \(k\), \(l\), \(m\), and \(n\)\]](#)

Liability coverage must be maintained for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million. Liability coverage may be demonstrated by any of the following:

**Trust Fund.** To demonstrate compliance, submit an originally signed duplicate of the trust agreement, using the wording required by [\[40 CFR §264.151\(m\)\(1\)\]](#) or [\[40 CFR §264.151\(n\)\(1\)\]](#) and modified as required by [WAC 173-303-620\(10\)](#).

**Surety Bond.** To demonstrate compliance, provide a copy of the surety bond with the wording required by [\[40 CFR §264.151\(l\)\]](#) and modified as required by [WAC 173-303-620\(10\)](#).

**Letter of Credit.** To demonstrate compliance, provide a copy of the irrevocable letter of credit with the wording required by [\[40 CFR §264.151\(k\)\]](#) and modified as required by [WAC 173-303-620\(10\)](#), along with a copy of the standby trust agreement.

**Insurance.** To demonstrate compliance, provide a copy of the certificate of insurance or endorsement with the wording required in [40 CFR §264.151(i)] and modified as required by WAC 173-303-620(10).

**Financial Test or Corporate Guarantee for Closure.** To demonstrate compliance, submit a letter signed by the owner's or operator's chief financial officer and worded as specified by [40 CFR §264.151(g)] or [40 CFR §264.151(h)(1)] and modified as required by WAC 173-303-620(10), along with a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If a parent company is guaranteeing liability coverage for a subsidiary facility, the corporate guarantee must accompany the preceding items and additional documentation is required from the state Attorney General or Insurance Commissioner in the parent company's home state. If this mechanism is selected, the required demonstration must be provided in the application, even if the facility is new.

**Use of Multiple Financial Mechanisms.** To demonstrate compliance when multiple mechanisms are selected, provide a copy of a combination of trust fund agreements, surety bonds, letters of credit, or insurance, together which provide financial assurance for the amount of closure.

**Use of Financial Mechanism for Multiple Facilities.** To demonstrate compliance when a mechanism will be used for more than one facility, provide a copy of a financial assurance mechanism showing, for each facility, the Washington State ID number, name, address, and amount of funds closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility.

More information about each financial assurance mechanism is at [http://www.ecy.wa.gov/programs/hwtr/manage\\_waste/financial\\_assurance\\_mech.html](http://www.ecy.wa.gov/programs/hwtr/manage_waste/financial_assurance_mech.html). If you have specific questions, contact Ecology's Financial Assurance Officer.

## **15.2 Coverage for Nonsudden Accidental Occurrences**

[WAC 173-303-620\(8\)\(b\)](#)

This requirement applies to facilities with miscellaneous units used for disposal and/or with one or more surface impoundments, landfills, land treatment areas, or waste piles. The facility must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million.

## **15.3 Request for Variance:**

[WAC 173-303-620\(8\)\(c\)](#); [\[40 CFR §264.147\(a\) or \(b\)\]](#)

To request an adjusted level of required liability coverage, describe the level desired and submit detailed support information to demonstrate that established levels of financial responsibility specified in [40 CFR §264.147(a) or (b)] are not consistent with the degree and duration of risk associated with treatment or storage at the applicant's facility or group of facilities.

# **J. Other Federal and State Laws**

[WAC 173-303-806\(4\)\(a\)\(xix\)](#)

List environmental permits and approvals, as well as construction approvals required for the facility.

If you have already applied for or received the approvals, indicate the date the application was submitted or the approval issued. For issued permits and approvals, provide permit/approval numbers. Include applicable laws such as, but not limited to, the following.

- Federal laws - the Wild and Scenic Rivers Act, National Historic Preservation Act of 1966, Endangered Species Act, Coastal Zone Management Act, Clean Water Act, Toxic Substances Control Act (for PCBs), Fish and Wildlife Coordination Act, and Atomic Energy Act (Nuclear Regulatory Commission licenses for "mixed waste").
- State Laws - Chapter 90.48 RCW Water Pollution Control, Chapter 70.94 RCW Washington Clean Air Act, Chapter 90.58 RCW Shoreline Management Act of 1971, Chapter 70.95 Solid Waste Management, and Chapter 70.95C RCW Hazardous Waste Reduction.
- Local requirements - Building permit, grading permit, fire department approval, new source construction permit (an air quality requirement), rezone or conditional use permit, substantial development permit (under Shoreline Management Act), and wastewater pre-treatment discharge authorizations.

Provide a completed environmental checklist prepared under the State Environmental Policy Act (SEPA) or reference an existing SEPA document (determination of nonsignificance or environmental impact statement) already prepared for construction and operation of the facility.

## **K. Part B Certification**

[WAC 173-303-806\(4\)\(a\)](#), [810\(12\)](#) and [\(13\)](#)

Provide a certification letter stating the information submitted in the permit application is true, accurate and complete as specified in WAC 173-303-810(13). Ensure the letter is signed by an authorized and responsible official of the facility as required by WAC 173-303-810(12).

The required signatures are as follows: (1) for a corporation, a principal executive officer (at least at the level of vice-president); (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively; (3) for a municipal, state, federal, or other public agency, either a principal executive officer or ranking elected official. Provide one original signed certification; the extra application copies required by Ecology and EPA may contain copies of the certification rather than original signatures.

If the owner and the operator of a facility are separate entities, the owner and the operator must each provide the certification in WAC 173-303-810(13)(a) and the owner must also provide the certification in WAC 173-303-810(13)(b). This is due to [RCW 70.105.215](#), which requires different permit certification language for situations where the owner and operator of a TSD facility are separate entities.