



**SOLID WASTE HANDLING PERMIT
For Packaging Corporation of America**

ISSUANCE DATE: July 22, 2021
EFFECTIVE DATE: July 22, 2021
EXPIRATION DATE: July 21, 2026

This permit authorizes the following solid waste handling activities at the facility address listed below:

Limited Purpose Landfill per WAC 173-350-400
Composting per WAC 173-350-220

Facility Address:
Packaging Corporation of America
31831 West Highway 12
Wallula, WA 99363

The Permittee
Packaging Corporation of America
PO Box 1383
31831 West Highway 12
Wallula, WA 99363
Jeff Stevens
509-545-3271
jeffstevens@packagingcorp.com

By: 
James DeMay, P.E.
Industrial Section Manager
Solid Waste Management Program

Please direct any questions about this permit or regulatory requirements to Emily Toffol, 360-407-6954, or emily.toffol@ecy.wa.gov.

Table of Contents

Facility Description	3
Permitting History	3
Changes to this Permit as Issued by Ecology	5
Summary of Permit Report Submittals.....	6
Special Conditions	7
A. Limited Purpose Landfill.....	7
B. Alternatives for Limited Purpose Landfill Permitted Under WAC 173-350-400.....	10
C. Variances for Limited Purpose Landfill	11
D. Composting.....	11
E. Alternatives for Composting Permitted Under WAC 173-350-220.....	13
F. Plan of Operation.....	14
G. Monitoring Plan	14
H. Closure Plan.....	14
I. Post-Closure Plan	15
J. Historical Groundwater Monitoring Report.....	15
K. General Conditions	15
Appendix A – Facility Maps.....	18
Appendix B – Monitoring Well Testing Parameters.....	20
Appendix C – Groundwater Quality Standards for Groundwater of the State of Washington	22
Appendix D – Compost Testing Parameters	24

Table of Figures

Figure 1. A map of the facility's water monitoring wells and groundwater contours.	18
Figure 2. A map of the facility with updated cell boundaries.	19

Table of Tables

Table 1. Summary of Permit Report Submittals	6
Table 2. Field Parameters	20
Table 3. Geochemical Indicator Parameters	20
Table 4. Leachate Indicators	20
Table 5. Other Parameters	20
Table 6. Groundwater Quality Criteria for the State of Washington - Primary Contaminants	22
Table 7. Groundwater Quality Criteria for the State of Washington - Secondary Contaminants	23
Table 8. Compost Testing Parameters	24

Facility Description

PCA owns and operates a compost facility and limited purpose landfill east of Highway 12, on the banks of the Columbia River in Wallula, WA. Directly southwest of the landfill and compost facility is PCA's pulp and paperboard mill and corrugated fiber box plant (Wallula Mill).

All waste that is disposed in the permitted landfill is generated at the Wallula Mill. Fly ash and lime grits come from the operation of the mill's boilers and lime kiln, respectively. The Wallula Mill also sends any acceptable demolition debris to the landfill. Landfilled demolition debris must meet the definition of inert waste in WAC 173-350-410(1). The main waste stream disposed in the landfill is wood "overs". These come from wood chips or hog fuel delivered to the mill that are not suitable for pulping or burning for fuel. The landfill facility contains two cells. They are designated as the "wood and fly ash cell" which also contains lime grits, and the "demolition cell", which contains debris from demolition projects around the mill. PCA is also currently landfilling compost from its composting facility. It may mine it out should a market for use of the compost be found, so it is placed in designated areas.

The compost feedstock is composed of primary clarified solids from the mill and paunch (partially digested cattle feed, a waste stream from a slaughterhouse processes) from Tyson Foods, which is located adjacent to PCA's facility. Woody material is also used as a bulking agent in the compost operations. PCA does not currently have any customers for its compost business. Finished compost is currently disposed in the landfill or used as a form of dust control.

The compost facility and limited purpose landfill operations have been operated by contractors since 1998. A company called Soil Life was the original contractor. In 2014, a company called American Fiber Products took over the operation.

Permitting History

The Department of Ecology (Ecology) promulgated Minimum Functional Standards for Solid Waste Handling (chapter 173-304 WAC) in 1985. Facilities had until June 30, 1986 to submit a permit application. Boise Cascade White Paper (Boise) submitted a compliance schedule to Ecology and the Walla Walla County Health Department on June 30, 1986 and submitted a permit application for the landfill and compost operations on September 3, 1986. The permit application stated that the landfill operation began in 1979. The facility began composting in 1981 (per "Work Plan for WAC 173-350 Compliance, Wallula Mill Landfill and Compost Facility", 2004).

The facility was not required to have a liner under chapter 173-304 WAC because it qualified as an arid design landfill. The landfill was instead required to perform vadose zone monitoring in lieu of operating with a liner. WAC 173-304-460(3)(c)(iv) specifies that an arid design landfill is a landfill in a location which has less than twelve inches of precipitation annually. The 1986 permit application states that the area receives less than eight inches of precipitation per year.

The limited purpose landfill and compost operations were permitted by the Walla Walla County-City Health Department. The permit for the facility was initially issued on February 13, 1987. Two variances were granted in the February 13, 1987 letter.

The variances were for WAC 173-304-130(2)(b)(iii), which specified that no facility's active area shall be located closer than one thousand feet to a down-gradient drinking water supply well, and WAC 173-304-130(2)(j)(iii), which requires that the active area of the landfill not be any closer than one hundred feet to the facility property line.

On May 27, 1992, Ecology took over permitting of the limited purpose landfill via written agreement with the Walla Walla County Health Department. Ecology began also permitting the compost facility by agreement between the Walla Walla County Health Department and Ecology in the spring of 2004.

Ecology created a new set of regulations for solid waste handling under WAC 173-350, Solid Waste Handling Standards. The new regulations were effective on February 10, 2003. Facilities with existing permits were required to meet all applicable monitoring, closure and post-closure planning, and financial assurance requirements within eighteen months of February 10, 2003. Per WAC 173-350-030(2)(a)(ii) facilities were also required to meet all applicable performance and design requirements, other than location or setback requirements, within twenty-four months of February 10, 2003. Note that this facility was granted both a location and setback variance under chapter 173-304 WAC in the February 13, 1987 issuance letter mentioned above. Therefore, this variance was carried forward into the issuance of the permit under chapter 173-350 WAC.

Under chapter 173-350 WAC, Boise was required to either operate the landfill with a "presumptive liner" or with an approved facility-specific liner. In a document submitted to the Department of Ecology on March 25, 2004, titled "Variance and Permit Renewal Conditions Requests, Wallula Mill Landfill and Compost Facility", Boise submitted water balance calculations which evaluated for the potential of leachate generation in the landfill based on the moisture holding capacity of compost, flyash, lime, and wood waste, monthly precipitation, and average evaporation. The water balance concluded that leachate generation is negligible for the site. Boise also demonstrated satisfactorily that they were able to operate with native soils as their liner while still being able to meet explosive gas limits, as required by liner system designed per WAC 173-350-400(4)(c). Ecology approved the native soils as the facility-specific liner.

In a document submitted to Ecology on March 25, 2004, titled "Variance and Permit Renewal Conditions Requests, Wallula Mill Landfill and Compost Facility", Boise submitted the permeability data to evaluate the effectiveness of using native soils as a compost pad. The permeability was estimated using falling head permeability tests. The data showed that the compost pad was up to two orders of magnitude less permeable than nearby on-site soils. Ecology permitted PCA to continue to compost on the native soils. Later, in 2015 PCA began the practice of mixing boiler ash and lime with native soils under the compost pad to increase the shear strength of the soil to more easily maneuver heavy equipment over the compost pad.

Boise submitted a new permit application for the composting facility and limited purpose landfill to Ecology on May 27, 2004. The permit application included submittals which satisfied the requirements of chapter 173-350 WAC.

Changes to this Permit as Issued by Ecology

The November 19, 2004 permit modification solely addressed ownership change. Boise Cascade Corporation, the original permittee, entered into an agreement to sell, among other assets, its Wallula, Washington paper facility to Boise White Paper, L.L.C., a Delaware limited liability company. Closing occurred on October 29, 2004.

The January 12, 2007 permit modification acknowledged coating material and “broke” (paper that is waste because it does not meet specifications) from the production of coated paper (used to make labels and stickers) as acceptable compost feedstock. The compost testing frequency was changed from quarterly to semi-annually. The metals analysis methodology was expanded to include method SW 6020 in addition to method SW 6010. The compost fecal coliform analysis method was changed from SM 9222D to SM 9221, as SM 9221 is considered more appropriate for solids.

The July 1, 2009 renewal of this permit added grass clippings from landscaping at the Wallula Mill site as an authorized compost operation feed stock.

The July 1, 2014 renewal of the permit made changes to the allowable feedstock components. These changes were made to increase the opportunities for use of the composted material rather than landfill disposal. The new feedstocks consisted of nitrogen sources and bulking agents. The two nitrogen sources were manures in general and "Bio CAT" basin wash water from Verdesian (formerly Northwest Agricultural Products). The bulking agent consisted of wood chips.

The following changes were made in this June 2021 renewal:

1. The Permittee is identified as Packaging Corporation of America (PCA). On July 1, 2019 the facility's assets were assigned to its parent corporation, PCA.
2. This renewal removes coated “broke” and coating material from the approved list of feedstocks for composting and the limited purpose landfill. This material was a byproduct of a grade of paper that is no longer produced by PCA.
3. This renewal removed “Bio CAT” basin wash water from Verdesian as an approved compost feedstock. It is no longer being used.
4. This renewal removes wastewater treatment plant solids from the Port Townsend mill as a composting feedstock.
5. This renewal adds secondary wastewater treatment plant solids as an acceptable material to be landfilled.
6. Clarification has been added that demolition debris waste approved for landfilling at this facility is defined as: cured concrete, asphaltic materials, brick and masonry, ceramic materials, glass, stainless steel and aluminum that meets the definition of inert waste in WAC 173-350-410(1).
7. This renewal incorporates changes to chapter 173-350 WAC that were adopted in 2019 for groundwater monitoring. Two additional dissolved metals must be tested for (manganese and potassium), plus total metals for iron, magnesium, and manganese are now required.

8. Condition I of this permit also incorporates the new requirement in chapter 173-350 WAC that the facility's post-closure care program be based upon the time it takes for the landfill to achieve "functional stability" rather than a prescribed 20-year closure period.
9. The previous issuance of the permit required compost sampling and analysis to be performed semi-annually. This has been changed to reflect the sampling frequency of every 5,000 cubic yards of finished compost or annually (whichever is more frequent) as required by WAC 173-350-220.
10. PCA's sampling frequency for groundwater monitoring has been increased to quarterly from semi-annually (semi-annual sampling is the minimum groundwater monitoring frequency per WAC 173-350-500). Ecology has identified deficiencies in PCA's groundwater monitoring reporting. Ecology may consider reducing the monitoring frequency at PCA's request after reviewing complete groundwater monitoring reports prepared by a licensed professional. Procedures under WAC 173-350-500(g) must be followed for the reduction in groundwater monitoring frequency to be granted.
11. Semiannual sampling for 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) and 2,3,7,8-Tetrachlorodibenzofuran (TCDF) in groundwater monitoring wells for two years has been added. These pollutants are not required to be included in statistical analyses.
12. This renewal includes an updated facility map (Figure 2) which reflects that PCA has merged their wood waste and fly ash cells.
13. This renewal requires PCA to update their Plan of Operation, Monitoring Plan, Closure Plan, and Post-Closure Plan (as necessary).
14. The options of aerated static pile and in-vessel composting have been removed from the permit. Per WAC 173-350-710(4), "Any change to the operating, design, site or processing capacity, performance, or monitoring of a permitted facility requires a modification to the permit when such a change is tied to a regulatory design or operating standard in this chapter". There are specific operating standards tied to different forms of composting. Therefore, this permit must be modified before PCA can perform aerated static pile or in vessel composting.
15. This renewal documents that Ecology approved the incorporation of lime and fly ash into the compost pad soil in 2015 in order to strengthen the compost pad.
16. This renewal includes the requirement to submit annual compost reports and groundwater monitoring data to Ecology electronically.

Summary of Permit Report Submittals

To ensure continued issuance of this permit and avoid suspension of all or parts of this permit, the Permittee must complete the following activities by the provided deadline. Refer to the Special and General Conditions of this permit for additional submittal requirements.

Table 1. Summary of Permit Report Submittals

Permit Section	Submittal	Frequency	First Submittal Date
K.11	Annual Report	Annually	April 1, 2022
A.2	Financial Assurance	Annually	April 1, 2022
A.9	Proof of Certified Landfill Operator(s)	Once	July 1, 2022

Permit Section	Submittal	Frequency	First Submittal Date
K.12	Groundwater and Gas Monitoring Report and electronic submission of groundwater monitoring data	Annually	April 1, 2022
A.5.c	Notification of statistically significant increase of groundwater contaminant above background levels	As needed	As needed
A.7.b	Notification of exceedance of explosive gas standards	As needed	As needed
F	Plan of Operation Update	1/permit cycle	July 1, 2022
G	Monitoring Plan Update	1/permit cycle	February 1, 2022
H	Closure Plan Update	1/permit cycle	July 1, 2022
I	Post-Closure Plan Update	1/permit cycle	July 1, 2022
J	Historical Groundwater Monitoring Report	1/permit cycle	February 1, 2022

Special Conditions

The Permittee may operate the following solid waste handling activities, subject to the following conditions:

A. Limited Purpose Landfill

- 1) **Management under WAC and Approved Plans.** The limited purpose landfill must be managed under WAC 173-350-400 and in accordance with the following plans and conditions:
 - Plan of Operation dated August 2014.
 - Groundwater Monitoring and Sampling and Analysis Plan dated May 2004.
 - Closure Plan dated May 2004.
 - Post-Closure Plan dated May 2004.

Modifications of the above plans may be made if approved in writing by Ecology.

- 2) **Financial Assurance.** Permittee must maintain financial assurance to cover the cost of hiring a third party at prevailing wage to close the landfill and complete post-closure activities in accordance with approved Closure and Post-Closure Plans. The Permittee must review costs and accounts annually and submit findings to the Department of Ecology and the Walla Walla County Department of Community Health by April 1 [WAC 173-350-400(9), WAC 173-350-600].
- 3) **Authorized Design Volume.** Permittee must not landfill more than the authorized design volume (including final cover) calculated by Russ Fetrow Engineering, dated July 13, 1986.
- 4) **Acceptable wastes.** The Permittee is permitted to landfill: Primary clarifier solids, boiler ash, wood rejects, lime waste, compost, secondary wastewater treatment plant solids, and demolition debris (cured concrete, asphaltic materials, brick and masonry, ceramic materials, glass, stainless steel and aluminum that meets the definition of WAC 173-350-410(1)) from PCA's Wallula mill. Asbestos-containing materials are not to be landfilled. Hazardous waste is not to be landfilled.

- 5) **Groundwater Monitoring.** The Permittee is required to sample and analyze monitoring wells quarterly beginning in calendar year 2022 (unless otherwise indicated) [WAC 173-350-500(4)(g) for frequency] for the parameters in Appendix B. Semiannual monitoring may be performed through calendar year 2021.
- a) All monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program [WAC 173-350-500(3)(f)].
 - b) The owner or operator must notify the Department of Ecology of any proposed changes to the design, installation, development, and decommission of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices. Notification must also be sent to the Walla Walla County Department of Community Health. Proposed changes must not be implemented prior to the Department of Ecology's written approval. Upon completing changes, all documentation, including date of change, new monitoring well location maps, boring logs, and monitoring well diagrams, must be submitted to the Department of Ecology and must be placed in the operating record [WAC 173-350-500(3)(e)]. A copy must also be sent to the Walla Walla County Department of Community Health.
 - c) If monitoring results of a contaminant show that monitoring wells show a statistically significant increase over background levels, the owner and operator must do the following [WAC 173-350-500(5)(b)(i)]:
 - i) Notify Ecology of this finding via e-mail within 30 days of receipt of this sampling.
 - ii) Re-sample the parameter(s) showing statistically significant increase(s) in the monitoring well(s) within 30 days of the receipt of this sampling data and notify Ecology of the results; and
 - iii) Establish a groundwater protection standard based on the groundwater quality criteria of chapter 173-200 WAC, Water quality standards for groundwaters of the state of Washington. If the background concentration level established in the facility's monitoring record for a constituent is greater than the numeric criterion for the constituent in chapter 173-200 WAC, the owner or operator must use the background concentration for the protection standard.
 - d) The owner or operator may demonstrate that a source other than a landfill caused the contamination, or the statistically significant increase resulted from error in sampling, analyses, statistical evaluation, or natural variation in groundwater quality. If a demonstration cannot be made and the concentrations or levels of the constituents exceed the criteria established by chapter 173-200 WAC, Water quality standards for groundwaters of the state of Washington, the owner or operator must [WAC 173-350-500(5)(b)(ii)]:
 - i) Characterize the chemical composition of the release and the contaminant fate and transport characteristics by installing additional monitoring wells;
 - ii) Assess and, if necessary, implement appropriate intermediate measures to remedy the release. The measures must be approved by the department; and

- iii) Evaluate, select, and implement remedial actions in accordance with chapter 173-340 WAC, Model Toxics Control Act—Cleanup.
- 6) **Inspections.** Inspections must be at least monthly and performed according to the Plan of Operation [WAC 173-350-400(6)(a)(viii)].
- 7) **Explosive Gas Monitoring.** The Permittee is required to meet the standards of WAC 173-350-400(4)(b).
- a) The Permittee must monitor for explosive gases at a minimum quarterly and in accordance with their approved Monitoring Plan to ensure that the standards of WAC 173-350-400(4)(b) are met [WAC 173-350-400(6)(a)(vii)(B)]. The standards are as follows:
 - i) Twenty-five percent of the lower explosive limit for gases in facility structures (excluding the gas control or recovery system components);
 - ii) The lower explosive limit for gases in soil or in ambient air at the property boundary or beyond; and
 - iii) One hundred parts per million by volume of hydrocarbons (expressed as methane) in off-site structures.
 - b) If explosive gas levels exceed the standards, the facility must take all necessary steps to ensure the protection of human health including [WAC 173-350-400(6)(a)(vii)(C)]:
 - i) Notifying Ecology;
 - ii) Notifying the local fire authority;
 - iii) Monitoring off-site structures;
 - iv) Monitoring explosive gas levels daily, unless otherwise authorized by Ecology;
 - v) Evacuating buildings affected by landfill gas until determined to be safe for occupancy;
 - vi) Within seven calendar days of the explosive gas levels detection, placing in the operating record the explosive gas levels detected and a description of the steps taken to protect human health and providing written notification to Ecology;
 - vii) Within sixty days of the explosive gas levels detection, implementing a remediation plan for the explosive gas releases, describing the nature and extent of the problem and the remedy. The plan must be sent to Ecology for approval as an amendment to the plan of operation. A copy of the remediation plan shall be placed in the operating record and also provided to the Walla Walla County Department of Community Health; and
 - viii) When constructing and decommissioning gas monitoring and extraction wells, do so in a manner that protects groundwater and meets the requirements of chapter 173-160 WAC, Minimum standards for construction and maintenance of wells.

- 8) **Closure.** The Permittee must notify Ecology, and where applicable, the financial assurance instrument provider, one hundred eighty days in advance of the closure of the facility, or any portion thereof [WAC 173-350-400(8)(b)]. An environmental covenant must be filed following closure [WAC 173-350-400(8)(e)]. Implementation of the closure plan must commence in part or whole within thirty days after the receipt of the final volume of waste and/or attaining the final landfill elevation at part of or at the entire landfill as identified in the approved facility closure plan unless otherwise specified in the closure plan [WAC 173-350-400(8)(c)].
- 9) **On-Site Personnel.** In accordance with chapter 173-300 WAC, *Certification of Operators of Solid Waste Incinerator and Landfill Facilities*, the Permittee must have an on-site certified landfill operator in charge during all hours of operation, except the certified operator may be away from the facility on official business or personal emergencies for one day or less if they are on-call and available to respond in case of emergency [WAC 173-300-060(1)]. The Permittee has until July 1, 2022 to come in to compliance with this condition. Proof of the training must be submitted to Ecology on or prior to July 1, 2022. Records of current valid certification shall be made available to Ecology upon request.

B. Alternatives for Limited Purpose Landfill Permitted Under WAC 173-350-400

- 1) **Liner and Leachate.** WAC 173-350-400(4)(c)(ii)(C) allows for the Permittee to operate without an engineered liner provided that the owner and operator demonstrates that certain criteria can be met. Given the arid climate, nature of the material, historical groundwater monitoring data, and proposed operational standards, the Permittee is not required to install an engineered liner. The on-site soils act as the facility's liner. Because the Permittee has been approved to operate without an engineered liner, the Permittee is not required to install a leachate control system per WAC 173-350-400(4)(d).
- 2) **Final Cover.** The Permittee proposes an alternative final cover to the presumptive design in WAC 173-350-400(4)(f)(ii) that meets the requirements of WAC 173-350-400(4)(f)(i). The Permittee's proposed alternative cover design, which meet the requirements of WAC 173-350-400(4)(f)(i) includes:
 - A 6-inch thick layer of native coarse sand placed over the compacted final lift of waste overlain by
 - A 24-inch thick layer of compacted compost overlain by
 - A 6-inch thick layer of uncompacted compost overlain by
 - A 6-inch thick layer of topsoil or additional uncompacted compost seeded to provide native vegetative cover
- 3) **Water Balance.** WAC 173-350-400(4)(g) specifies requirements associated with water balance and groundwater contaminant fate and transport modeling. Alternative methods can be approved per WAC 173-350-400(g)(i)(B), when such modeling is required.
- 4) **Inspection Frequency.** WAC 173-350-400(6)(a)(viii) allows for less frequent inspections than weekly if approved as part of the permitting process. The Permittee has been approved for monthly inspections.

C. Variances for Limited Purpose Landfill

- 1) **Proximity to Water Supply Wells.** WAC 173-350-400(3)(b) states that no landfill's active area may be located closer than one thousand feet to an existing water supply well. A potential, but currently inactive, drinking well owned by Burlington Northern Santa Fe railroad is within the minimum setback distance. The Permittee is granted a variance from the minimum setback requirement for that specific well. This variance is rescinded in the event that the drinking well become active again.
- 2) **Proximity to Property Boundary.** WAC 173-350-400(4)(j) requires a minimum one-hundred-foot setback between the active area and the property boundary. The landfill boundary is as close as 50 feet from the property boundary along the east and west sides. The Permittee is granted a variance from the minimum setback requirement along the east and west sides of the property boundary.
- 3) **Background Water Quality.** WAC 173-350-500(4)(f) requires that background groundwater quality be established based on a specified number of wells evaluated over a specified time frame. Existing monitoring well data is considered to have met this requirement.

D. Composting

- 1) **Management Under WAC and Approved Plans.** Composting must be managed under WAC 173-350-220 and in accordance with the following plans and conditions:
 - Plan of Operation dated August 2014.
 - Closure Plan dated May 2004.
- 2) **Acceptable wastes:** primary clarifier solids, grass clippings, fly ash and lime from the Wallula mill, and secondary treatment plant solids from the Wallula mill with paunch from Tyson Foods. Additionally, approved material includes wood chips in general, yard waste from PCA grounds, and manures. The facility is authorized to compost additional material upon approval from Ecology.
- 3) **Dust and Nuisance Odors.** Operate the facility to control air contaminants such as dust and nuisance odors to prevent other contaminants from migrating beyond property boundaries in accordance with WAC 173-500-040 [WAC 173-350-220(6)(a)(i)].
- 4) **Vectors.** Operate the facility to prevent the attraction of vectors [WAC 173-350-220(6)(a)(ii)].
- 5) **Pests.** The Permittee must prevent the migration of agricultural pests identified by local pest and disease control boards, as applicable [WAC 173-350-220(6)(a)(iii)].
- 6) **Restricted Access.** Ensure access to the facility is restricted when the facility is closed [WAC 173-350-220(6)(a)(iv)].
- 7) **Supervision and Training.** Ensure that the facility operates under the supervision and control of a properly trained individual during all hours of operation [WAC 173-350-220(6)(a)(vi)].
 - a) Facility supervisors responsible for daily operation must receive training, or be able to document prior training, in the basics of composting within the first year of supervising the facility. Training must consist of classroom and hands-on course work and conclude with a certificate of completion that must be kept on-site at all times.

Appropriate compost training can be obtained through organizations such as the Washington organic recycling council, the Solid Waste Association of North America, the U.S. Composting Council, or other training as approved by the Department of Ecology.

- b) Ensure facility employees are trained in appropriate facility operations, maintenance procedures, and safety and emergency procedures according to individual job duties and according to an approved plan of operation. A trained supervisor may provide appropriate training to employees responsible for daily operations.
- 8) **Pathogen Reduction Activities.** Implement and document pathogen reduction activities. Documentation must include compost pile temperatures representative of the composting materials, and notation of turnings. Pathogen reduction activities must at a minimum include the following for windrow composting [WAC 173-350-220(6)(a)(vii)]:
- a) The temperature of the active compost pile must be maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher for fifteen days or longer. During the period when the compost is maintained at fifty-five degrees Celsius (one hundred thirty-one degrees Fahrenheit) or higher, there must be a minimum of five turnings of the windrow
- 9) **Monitoring.** Monitoring must be performed according to the plan of operation and include inspection of incoming loads and pathogen reduction activities. [WAC 173-350-220(6)(a)(viii)]
- 10) **Sampling and Analysis.** Sample compost in accordance with the following:
- a. Sample every 5,000 cubic yards of finished compost or every 365 days, whichever is more frequent [WAC 173-350-220(6)(a)(x)(B)].
 - b. Collect composted material samples for analysis that are representative of the pile using a sampling method such as described in the U.S. Composting Council 2002 Test Methods for the Examination of Composting and Compost, Method 02.01-A through E.
 - c. The sample shall be analyzed for the parameters in Appendix D (Table 220-B to WAC 173-350-220) [WAC 173-350-220(6)(a)(ix), (x)]
- 11) **Management of Composted Material Piles.** Materials which have met the testing parameter limits in Appendix D of this permit (Table 220-B to WAC 173-350-220) must be managed in the following manner:
- a. Complies with the performance standards of WAC 173-350-040;
 - b. Minimize and control runoff through the use of covers, diversion swales, berms, ditches, or other features designed to prevent runoff and divert stormwater from the compost material; and
 - c. Minimize odors by maintaining porosity of composted material piles and managing moisture levels in composted material piles, not to exceed sixty percent moisture. [WAC 173-350-220 (6)(g)]
- 12) **Leachate.** Compost facilities must minimize the production of leachate and runoff by designing stormwater management features such as run-on prevention systems, which may include covered areas (roofs), diversion swales, ditches, or other features designed to divert stormwater from areas of feedstock preparation, active composting and curing. [WAC 173-350-220(4)(e)].

- 13) **Materials not meeting requirements.** Composted materials that do not meet the limits in Appendix D of this permit (Table 220-B to WAC 173-350-220) are solid waste and subject to management under chapter 70A.205 RCW, Solid waste management – Reduction and recycling [WAC 173-350-220(11)].
- 14) **Inspections.** Inspect the facility monthly to prevent malfunctions and deterioration, operator errors and discharges that may cause or lead to the release of the environment or a threat to human health [WAC 173-350-220(6)(b)].
- 15) **Records.** Maintain operating records of daily temperatures representative of compost piles, additional monitoring data as prescribed in the plan of operation, results of analyses for composted materials, and inspections. Significant deviations from the plan of operation must also be noted in the operating records. Maintain records for five years [WAC 173-350-220(6)(d)].
- 16) **Closure.** Notify Ecology and the Walla Walla County Department of Community Health sixty days in advance of closure. At closure, the facility owner or operator is financially responsible for the removal of all solid waste, including but not limited to, raw or partially composted feedstocks, composted material and leachate from the facility in accordance with the closure plan required by Condition G. The materials must be sent to another facility that complies with the applicable regulations for handling wastes. [WAC 173-350-220 (8)].

E. Alternatives for Composting Permitted Under WAC 173-350-220

- 1) **Waste Piles.** WAC 173-350-320(1)(b)(ii) states that waste piles that are an integral part of a composting operation are subject to composting regulations and not WAC 173-350-320 which addresses waste piles. The Permittee requested the flexibility to adjust the ratios of primary clarifier solids/secondary treatment solids in order to better manage the nitrogen content of the composting material. This permit clarifies that the periodic accumulation of primary clarifier solids is considered an integral part of the composting operation when managed in accordance with the operating standards set forth in Table 220-A of WAC 173-350-220(2), as well as the conditions in WAC 173-350-220(2)(a), and are not subject to WAC 173-350-320.
- 2) **Alternative Pad.** WAC 173-350-220(4)(f) specifies design criteria for the compost pad but allows alternative pad construction that meets the same criteria. The Permittee demonstrated that lining was not necessary for the adjacent landfill. The same reasoning justifies the unlined compost operation. Ecology approved the use of native soil as the effective “pad” in the June 2004 cover letter accompanying permit renewal. In 2015, Ecology approved the incorporation of boiler ash and lime into the compost pad to improve the strength of the pad. Groundwater monitoring will be performed per Section G of this permit to confirm that the Permittee’s composting operations and alternative compost pad under Section D.2 of this permit continues to meet the performance standards of WAC 173-350-040.
- 3) **Inspection Frequency.** WAC 173-350-220(6)(b) allows for less frequent inspections than weekly if approved as part of the permitting process. The Permittee has been approved for monthly inspections.

F. Plan of Operation

The Permittee must develop, keep, and follow a plan of operation approved as part of the permitting process. The plan of operation must be kept on-site and be available for inspection at the request of the Department of Ecology. If necessary, the plan must be modified with the approval of or at the direction of the Department of Ecology. The plan of operation must address all items detailed in WAC 173-350-220 (6)(f)(i) through (ix) for the compost operation and all items detailed in WAC 173-350-400(6)(a)(i) through (xi) for the landfill operation.

The Permittee is required to review and update their plan of operation, as necessary. The plan must be submitted to the Department of Ecology by July 1, 2022.

G. Monitoring Plan

The Permittee is required to update and submit a monitoring plan to the Department of Ecology describing all gas, leachate, surface water, and groundwater monitoring to be conducted in order to meet the requirements of WAC 173-350-400(4), (5), (6), and (7). Ecology publication no. 12-07-072 "Guidance for Monitoring at Landfills and Other Facilities Regulated Under Chapters 173-304, 173-306, 173-350, and 173-351 WAC" should be consulted while creating this plan. Per WAC 173-350-500(1)(c), all groundwater monitoring related portions of this plan must be prepared by a licensed professional in accordance with the requirements of chapter 18.220 RCW, Geologists.

Additionally, the plan will use WAC 173-350-400 and Ecology publication no. 12-07-072 as guidance to propose which existing or new monitoring wells will be used to confirm that the Permittee's composting operations and alternative compost pad under Section E.2 of this permit continues to meet the performance standards of WAC 173-350-040.

The Permittee is required to review and update their monitoring plan. The plan must be submitted to the Department of Ecology and the Walla Walla County Department of Community Health by February 1, 2022.

H. Closure Plan

The Permittee must update, keep, and follow a closure plan approved by the Department of Ecology as part of the permitting process.

At minimum for the composting operation, the closure plan must include methods of removing solid waste, leachate, and other organic materials from the facility. For planning purposes, assume the composting facility is at full, permitted site capacity at the time of closure [WAC 173-350-220(8)(b)]. The closure plan for the composting facility must also state that, because the facility has operated with an alternative pad, an investigation of potential soil contamination shall be conducted when each composting pad is closed.

For the limited purpose landfill operation, the items listed in WAC 173-350-400(8)(a)(i)-(iv) must be included.

The Permittee must review and update their closure plan. The plan must be submitted to Ecology and the Walla Walla County Department of Community Health by July 1, 2022.

I. Post-Closure Plan

The owner or operator must conduct post-closure care for as long as necessary for the landfill to become functionally stable. A landfill is functionally stable when it does not present a threat to human health or the environment at the point of exposure for humans or environmental receptors. The point of exposure is identified as the closest location at which a receptor could be exposed to contaminants and receive a dose by a credible pathway from the landfill. Potential threats to human health or the environment are assessed by considering leachate quality and quantity, landfill gas production rate and composition, cover system integrity, and groundwater quality. The post closure care plan must address the items listed in WAC 173-350-400(11)(a)(i)-(vii).

The Permittee must review and update their post-closure plan. The plan must be submitted to Ecology and the Walla Walla County Department of Community Health by July 1, 2022.

J. Historical Groundwater Monitoring Report

The Permittee must submit to Ecology a Historical Groundwater Monitoring Report (Report) prepared by, signed, and stamped by a licensed professional in accordance with the requirements of chapter 18.220 RCW, Geologists. The Report will be submitted to Ecology and the Walla Walla County Department of Community Health by February 1, 2022. The report will include the following:

1. A review of groundwater monitoring data from 2004 to present, unless otherwise approved by Ecology.
2. Graphs of all constituents monitored at all wells from 2004 to present.
3. The identification of seasonal patterns in groundwater quality, if any.
4. The identification of any trends which do not appear to be seasonal, and potential causes.
5. An analysis of the distribution of the data. Identify if the distribution of the data can be defined mathematically (normal distribution, lognormal distribution, etc.).
6. A brief summary of significant events at the compost and landfill facility. The events shall include but are not limited to:
 - i. The first application of lime and boiler ash into the compost pad soil as a strengthening agent
 - ii. Additional applications of lime and fly ash into the compost pad as a soil strengthening agent, if available.
 - iii. Any expansion or movement of the composting area, including the movement of the composting area which occurred in 2014 due to a natural gas leak.
 - iv. Significant changes in composting feedstocks or materials sent to the landfill.

K. General Conditions

- 1) The Permittee must handle solid waste in conformance with chapters 70A.205 RCW, 173-350 WAC, the local comprehensive solid waste management plan, conditions in this permit, and other federal, state, and local regulations with requirements applicable to the facility.

- 2) The Department of Ecology may suspend this permit if it finds that:
 - a. The Permittee misrepresented or omitted information that could have affected issuance of this permit or will affect operation of the facility; or
 - b. The quantity or character of the solid waste or solid waste handling changed without prior approval from the Department of Ecology; or
 - c. Operating personnel are unfamiliar with or are not following approved plans as referenced above; or
 - d. There has been a violation of any part of this permit.
 - e. If the permit is suspended, the Permittee may appeal the action according to RCW 70A.205.155.
- 3) If the Department of Ecology suspends any part of this permit, or a court of competent jurisdiction finds parts to be invalid, the rest of this permit remains in effect.
- 4) The Permittee must display or store this permit and the approved Plan of Operation in a manner that allows easy access by operating personnel.
- 5) The Permittee must ensure operating personnel receive training and understand the approved Plan of Operation and other requirements of this permit.
- 6) The Permittee must allow agents of the Department of Ecology to enter, inspect, sample, and move freely about the premises of any permitted solid waste handling facility to determine compliance with this permit at any reasonable time.
- 7) The Permittee must submit for approval by the Department of Ecology changes to facility design and permit requirements, including referenced plans, prior to implementation. A copy must be provided to the Walla Walla County Department of Community Health.
- 8) The Permittee must not accept solid waste regulated under Chapter 173-303 WAC, Dangerous Waste Regulation. It may accept solid wastes that have been excluded, exempted or otherwise removed from regulation under Chapter 173-303 WAC if Chapter 173-303 WAC and applicable solid waste handling rules allow its acceptance and the waste has been approved by the Department of Ecology.
- 9) The Permittee must retain environmental monitoring, inspection, waste collection and other required records for five years. The Permittee must retain these records indefinitely during the course of any unresolved problems or litigation regarding solid waste handling at the site or when requested by the Department of Ecology.
- 10) The Permittee must provide environmental monitoring, inspection, waste collection, financial assurance and other records at the request of the Department of Ecology.
- 11) The Permittee must submit an annual report for the previous calendar year to the Department of Ecology and the Walla Walla County Department of Community Health by April 1 each year, on forms supplied by the Washington Department of Ecology. The annual report must meet the requirements of WAC 173-350-220(6)(e) for the composting facility and WAC 173-350-400(6)(c) for the limited purpose landfill. The portion of the annual report for the composting facility must be submitted on Secure Access Washington. Directions are available at the following website: [Solid Waste Reporting Directions](#).

Forms for the compost facility annual report are available in Secure Access Washington. Forms for the limited purpose landfill annual report are available at the following website: Limited Purpose Landfill Annual Report Forms. The annual report for the limited purpose landfill must be submitted by mail. Ecology may require the annual report for the limited purpose landfill be submitted electronically via Secure Access Washington in the future should an electronic reporting system be set up.

- 12) The Permittee must submit by April 1 each year groundwater and gas monitoring reports, if required by applicable solid waste rules or this permit. Groundwater monitoring reports must include the items detailed in WAC 173-350-500(5)(c). Groundwater monitoring data must also be uploaded electronically into the Department of Ecology's Environmental Information Management System [WAC 173-350-500(5)(d)]. Groundwater monitoring reports must be prepared by a licensed professional in accordance with the requirements of chapter 18.220 RCW, Geologists [WAC 173-350-500(1)(c)]. As stated in Section G of this permit, Groundwater monitoring and reporting will be used to confirm that the Permittee's composting operations and use of alternative compost pad under Section E.2 of this permit continues to meet the performance standards of WAC 173-350-040.
- 13) If needed to protect public health or the environment, the Department of Ecology may amend this permit. Amendments may be more stringent and will be in writing.
- 14) The Department of Ecology may temporarily waive or change permit provisions if the President of the United States, the Governor of Washington, the County Executive, or a health order issued by a local health officer declares a state of emergency or imminent public health risk.
- 15) If this permit expires before the Department of Ecology has rendered a decision on renewal of a permit for the facility, the Permittee can continue all activities in conformance with this permit.

In the event the Permittee is unable to comply with any of the conditions of this permit, the Permittee must:

- a. Immediately take action to stop the problem, and if applicable, clean up any spills; and
- b. Immediately notify the Department of Ecology of the failure to comply.

Compliance with this condition does not relieve the Permittee from liability for failure to comply.

Appendix A – Facility Maps

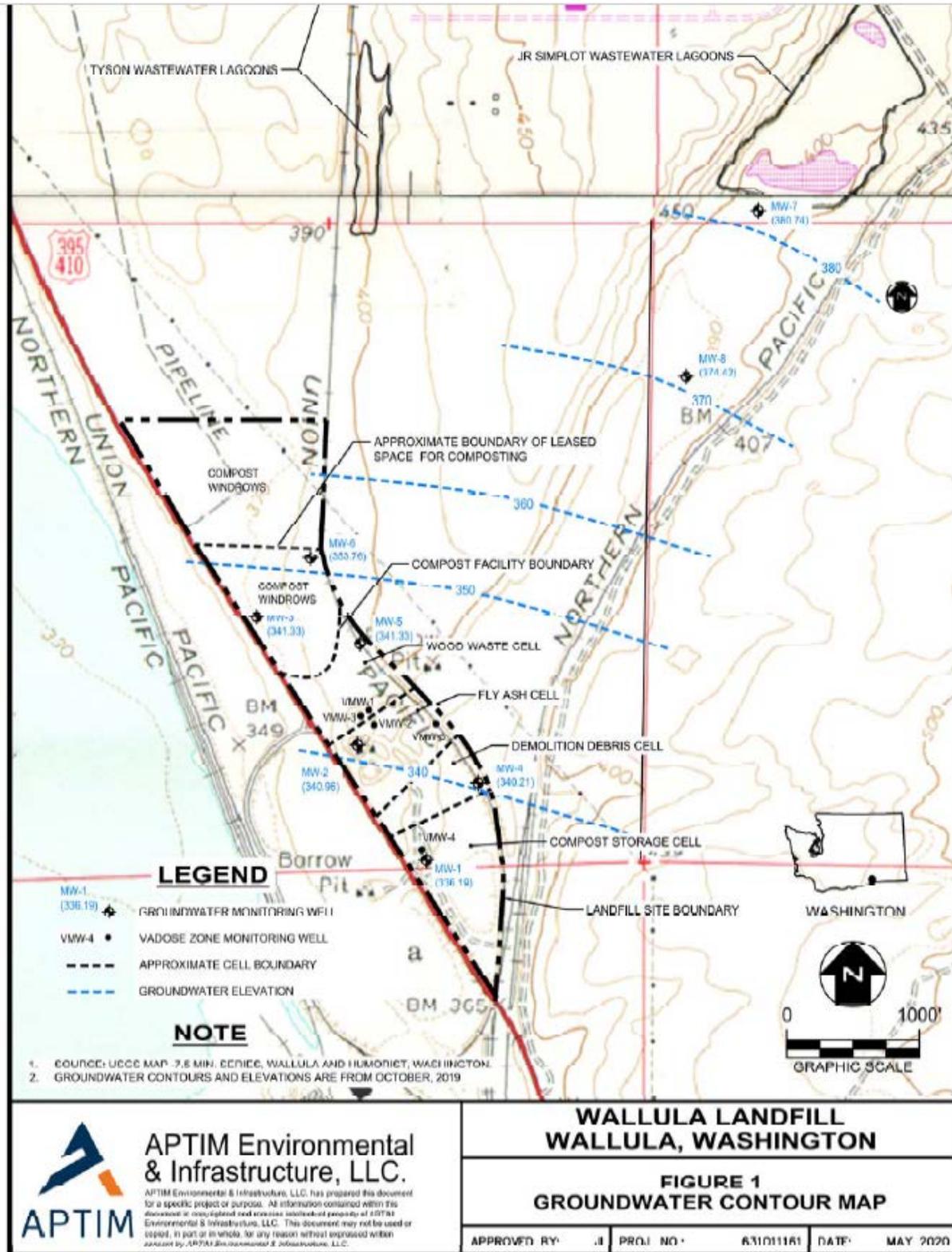


Figure 1. A map of the facility's water monitoring wells and groundwater contours. See figure 2 for correct cell boundaries.



Figure 2. A map of the facility with updated cell boundaries.

Appendix B – Monitoring Well Testing Parameters

Table 2. Field Parameters

Parameter ¹	Frequency ³	Test Method
pH	Quarterly	SM 4500
Specific conductance	Quarterly	SM 2510
Temperature	Quarterly	SM 2550
Static water level	Quarterly	N/A
Rate of flow ²	Quarterly	N/A
Direction of flow ²	Quarterly	N/A

1 WAC 173-350-500(4)(h)(i), unless otherwise noted

2 WAC 173-350-500(4)(d)

3 Semiannual sampling may continue through calendar year 2021. Quarterly sampling shall begin calendar year 2022.

Table 3. Geochemical Indicator Parameters

Parameter ¹	Frequency ²	Test Method
Alkalinity (as CaCO ₃)	Quarterly	SM 2320
Bicarbonate (HCO ₃)	Quarterly	SM 2320
Dissolved calcium (Ca)	Quarterly	6010
Chloride (Cl)	Quarterly	300.0
Total and dissolved iron (Fe)	Quarterly	6010
Total and dissolved magnesium (Mg)	Quarterly	6010
Total and dissolved manganese (Mn)	Quarterly	6010
Nitrate (NO ₃)	Quarterly	300.0
Dissolved potassium	Quarterly	6010
Dissolved sodium (Na)	Quarterly	6010
Sulfate (SO ₄)	Quarterly	300.0

1 WAC 173-350-500(4)(h)(ii)

2 Semiannual sampling may continue through calendar year 2021. Quarterly sampling shall begin calendar year 2022.

Table 4. Leachate Indicators

Parameter ¹	Frequency ²	Test Method
Ammonia (NH ₃ -N)	Quarterly	350.1
Total organic carbon (TOC)	Quarterly	SM 5310-C
Total dissolved solids (TDS)	Quarterly	SM 2540-C

1 WAC 173-350-500(4)(h)(iii)

2 Semiannual sampling may continue through calendar year 2021. Quarterly sampling shall begin calendar year 2022.

Table 5. Other Parameters

Parameter ¹	Frequency	Test Method
2,3,7,8-Tetra-Chlorodibenzo-P-Dioxin (2,3,7,8 TCDD)	Semiannually* (for two years)	EPA 1613

Parameter ¹	Frequency	Test Method
2,3,7,8- Tetrachlorodibenzofuran (TCDF)	Semiannually* (for two years)	EPA 1613

*Sampling to begin in calendar year 2022. Informational only – does not need to be included in statistical analyses. Report values in groundwater monitoring reports.

The detection limit for the analysis shall be less than or equal to 1.3 pg/L, unless otherwise specified by Ecology. detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.

Appendix C – Groundwater Quality Standards for Groundwater of the State of Washington

Primary and secondary contaminants only are shown in the below tables. Radionuclides and carcinogens are excluded. The values below are taken from Table 1 to WAC 173-200-040.

Table 6. Groundwater Quality Criteria for the State of Washington - Primary Contaminants

Parameter	Limit	Units
Barium*	1.0	mg/l
Cadmium*	0.01	mg/l
Chromium*	0.05	mg/l
Lead*	0.05	mg/l
Mercury*	0.002	mg/l
Selenium*	0.01	mg/l
Silver*	0.05	mg/l
Fluoride	4	mg/l
Nitrate (as N)	10	mg/l
Endrin	0.0002	mg/l
Methoxychlor	0.1	mg/l
1,1,1-Trichloroethane	0.2	mg/l
2-4 D	0.1	mg/l
2,4,5-TP Silvex	0.01	mg/l
Total Coliform Bacteria	1/100	ml

*metals are measured as total metals.

Table 7. Groundwater Quality Criteria for the State of Washington - Secondary Contaminants

Parameter	Limit	Units
Copper*	1	mg/l
Iron*	0.3	mg/l
Manganese*	0.05	mg/l
Zinc*	5	mg/l
Chloride	250	mg/l
Sulfate	250	mg/l
Total Dissolved Solids	500	mg/l
Foaming Agents	0.5	mg/l
pH	6.5-8.5	SU
Corrosivity	noncorrosive	N/A
Color	15 color units	color units
Odor	3	threshold odor units

*metals are measured as total metals.

Appendix D – Compost Testing Parameters

Table 8 below contains information from Table 220-B to WAC 173-350-220.

Table 8. Compost Testing Parameters

Metals and other testing parameters	Limit (mg/kg dry weight), unless otherwise specified
Arsenic	≤ 20 ppm
Cadmium	≤ 10 ppm
Copper	≤ 750 ppm
Lead	≤ 150 ppm
Mercury	≤ 8 ppm
Molybdenum	≤ 9 ppm
Nickel	≤ 210 ppm
Selenium	≤ 18 ppm
Zinc	≤ 1400 ppm
Physical contaminants ¹	≤ 1 percent by weight total, not to exceed .25 percent film plastic by weight
Sharps	0
pH	5 - 10 (range)
Biological stability ²	Moderately unstable to very stable
Fecal coliform ³	< 1,000 Most Probable Number per gram of total solids (dry weight)
Salmonella ³	< 3 Most Probable Number per 4 grams of total solids (dry weight)
Dioxin TEQ	N/A

¹ A label or information sheet must be provided with compost that exceeds 0.1 percent by weight of film plastic. See WAC 173-350-220 (6)(f)(iii)(D)(I).

² Tests for biological stability must be done as outlined in the United States Composting Council Test Methods for the Examination of Composting and Compost unless otherwise approved by the jurisdictional health department.

³ Test for either fecal coliform or salmonella.