United States Environmental Protection Agency
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AFS Plant I.D. Number: 53-071-00003

# FACT SHEET

## Prevention of Significant Deterioration Permit

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## Packaging Corporation of America - Wallula Mill
## dba Boise White Paper, LLC

Wallula, Washington

### Purpose of Permit and Fact Sheet

New major stationary sources of air pollution and major modifications to major stationary sources are required by the Clean Air Act (CAA) to obtain an air pollution permit before commencing construction whether or not the area is attaining the National Ambient Air Quality Standards (NAAQS). Permits for sources in attainment and unclassifiable areas are referred to as prevention of significant air quality deterioration (PSD) permits, and Title 40 of the Code of Federal Regulations (CFR), 52.21, establishes the federal PSD program that applies.

40 CFR Part 124 establishes the EPA procedures for issuing PSD permits. This document, the Fact Sheet, fulfills the requirements of 40 CFR 124.8 by setting forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. Unlike the PSD permit, this Fact Sheet is not legally enforceable. The Permittee is obligated to comply with the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the Permittee from the requirements of the permit.

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# 1. Introduction and Project Summary

On May 22, 2018, the EPA received a PSD application from Packaging Corporation of America, doing business as Boise White Paper, LLC (PCA), requesting authorization to modify their pulp and paper mill located near Wallula, Washington. Additional information (applicability calculations) was received on June 19, 2018. The application was determined to be complete on June 21, 2018. Additional information (SEPA application) was also received on August 2, 2018.

PCA proposes to rebuild its No. 3 paper machine to increase the maximum daily capacity of this machine. The project also entails replacement of the Bauer valve and sawdust blower for the No. 2 M&D digester to increase pulp production. A non-condensable gas white liquor scrubber system will be added as a chemical recovery unit for sulfur recovery and cost reduction as part of the project. The project will result in an increase in the utilization of several emission units throughout the facility.

The project is subject to PSD for carbon monoxide (CO), nitrogen oxides (NOx) and greenhouse gases (GHGs). As explained in Section 3 of this Fact Sheet, the Washington Department of Ecology (Ecology) is the PSD permitting authority for CO and NOx, while the EPA is the PSD permitting authority for GHG.

The EPA relied upon information provided in PCA's permit application and supplementary information provided by PCA to draft the permit.

# 2. Source Information

PCA's kraft pulp and paper mill and corrugated container plant is an existing major source of several "regulated NSR pollutants" as defined in 40 CFR 52.21(b)(50) for PSD permitting purposes according to its Title V operating permit (AOP #000092-2) issued by Ecology. The area in which the Wallula Mill is located is currently a Class II area designated unclassifiable/attainment for all criteria pollutants for which a NAAQS has been established.

The proposed project will result in some emission units being physically modified, some experiencing an increase in utilization and some unaffected by the project. None of the emission units at the facility have add-on control equipment to reduce GHG emissions.

Physically Modified Emission Units:

The No. 3 Paper Machine Forming Section, Press Section, and Dryer Section will each be rebuilt. The following pollutants from the No. 3 Paper Machine will increase as a result of the proposed project: particulate matter (PM), particulate matter less than 10 micrometers (PM10), particulate matter less than 2.5 micrometers (PM2.5), and volatile organic compounds (VOC).

In addition, the Bauer valve for the No. 2 M&D Digester will be replaced with a larger Bauer valve to increase the pulping capacity of the digester. The rotational drive system for the valve will also be replaced with a higher powered hydraulic drive power unit and hydraulic motor due to the greater mass and friction load of the larger valve. This change will increase the nominal daily maximum throughput of the No. 2 M&D Digester from 210 to 300 oven-dried tons pulp (ODTP) per day. A non-condensable gas (NCG) white liquor scrubber system will be added as a chemical recovery unit for sulfur recovery and cost reduction as part of the project.

To accommodate the higher digester capacity, the sawdust blower feeding the No. 2 M&D Digester will be replaced with a larger blower. The horsepower of the blower will remain the same after the project, and this blower only feeds the No. 2 M&D Digester.

None of the physically modified emission units emit GHGs.

Increased Utilization Emission Units:

The project will result in associated emission increases at other parts of the mill to furnish the pulp used by the No. 3 Paper Machine:

| | |
|---|---|
| No. 2 Recovery Furnace | Brownstock Washers |
| No. 3 Recovery Furnace | Knot Tank |
| No. 2 Smelt Dissolving Tank | Deckers |
| No. 3 Smelt Dissolving Tank | No. 2 Paper Machine |
| Lime Kiln | Softwood Storage Pile |
| Black Liquor Tanks | Sawdust Storage Pile |
| Slaker | Softwood/Sawdust Handling |
| Makedown Tank | Softwood/Sawdust Blowers (Other than Sawdust |
| NCG Auto Vent (Includes all sources routed to the NCG System) | Blower to No. 2 M&D Digester) |
| Kamyr Digester | Vehicle Travel |
| No. 1 M&D Digester | Wastewater Treatment |

Increased utilization of the recovery furnaces will generate sufficient steam to cover any additional steam demand from the project. As a result, the project will not require additional firing from the power boilers.

The overall steam use will be relatively unchanged for the No. 1 M&D Digester. There will be a slight increase in steam demand for the No. 2 M&D Digester due to installation of the new Bauer valve. Before the modification, the mill-wide steam demand is 565,000 lb/hr (annual average). After modification, the projected mill-wide steam demand will be 791,000 lb/hr (annual average), resulting in an increase in steam demand of 226,000 lb/hr (annual average). It is estimated that the recovery furnaces will generate an additional 229,000 lb/hr (annual average) subsequent to completion of the project.

The project will result in an annual increase in pulp production and black liquor solids (BLS) firing; however, the percentage increase in BLS throughput will not be as large as the percentage increase in pulp production. The table below shows historical and projected annual BLS throughput and pulp production for the mill.

| Year | Production Days per Year | Total BLS Throughput (MMlbs/yr) | Total Pulp Production (ODTP/yr) |
|---|---|---|---|
| 2008 | 356 | 1,162 | 293,047 |
| 2009 | 356 | 1,111 | 280,700 |
| 2010 | 356 | 1,169 | 349,829 |
| 2011 | 356 | 1,228 | 307,781 |
| 2012 | 356 | 1,094 | 320,879 |
| 2013 | 356 | 1,041 | 304,523 |
| 2014 | 356 | 1,052 | 297,050 |
| 2015 | 356 | 985 | 278,864 |
| 2016 | 356 | 781 | 247,841 |
| Projected | 356 | 1,327 | 542,954 |

The only emission units experiencing an increase in utilization that emit GHGs are the two recovery furnaces, due to increased combustion of kraft pulping black liquor (a wood derived fuel), and the lime kiln.

Shut Down Emission Units:

The following equipment was formerly shut down (in May 2018, except as noted) in Ecology's Order, No. DE-18AQIS-15757:

| | |
|---|---|
| Bleach Plant Seal Tank | E1 Tower |
| Bleach Plant Scrubber | R8 Scrubber |
| E2 Hood Exhaust | Bleach Plant (General) |
| E2 Tower | No. 1 Paper Machine (Dec 2016) |

# 3. Applicability

The PSD program, as set forth at 40 CFR 52.21, applies to the construction of any new major stationary source or the major modification of an existing major stationary source in an area that has been designated as in attainment of the NAAQS or as "unclassifiable."[1] The objective of the PSD program is to prevent significant adverse environmental impact from air emissions by a proposed new or modified source. The PSD program limits degradation of air quality to that which is not considered "significant." The PSD program also requires best available control technology (BACT) on each new or modified emission unit as determined on a on a case-by-case basis taking into account energy, environmental and economic impacts and other costs.

[1] Section 109 of the CAA requires the EPA to promulgate regulations establishing national ambient air quality standards for those air pollutants (criteria pollutants) for which air quality criteria have been issued pursuant to Section 108 of the CAA. The EPA has set NAAQS for six criteria pollutants: $SO_2$, particulate matter ($PM_{10}$ and $PM_{2.5}$), nitrogen dioxide (as NOx), CO, ozone (precursors NOx and VOC) and lead. 40 CFR Part 50. An area that meets the NAAQS for a particular pollutant is an "attainment" area. An area that does not meet the NAAQS is a "nonattainment" area. An area that cannot be classified due to insufficient data is designated "unclassifiable."

Under the PSD program, a stationary source is "major" for the purpose of pre-construction permit review if, among other things, its "potential to emit" as defined in 40 CFR 52.21(b)(4) is equal to or greater than 100 tons per year for at least one regulated NSR pollutant and the stationary source is one of a named list of source categories. 40 CFR 52.21(b)(1). Because of the Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*, 134 S. Ct. 2427, however, a major source is not required to obtain a PSD permit when GHGs are the only pollutant (i) that the source emits or has the potential to emit above the major source thresholds, or (ii) for which there is a significant emissions increase and a significant net emissions increase from a physical change or change in the method of operation of a major stationary source.[2] The BACT requirement, however, remains applicable to GHGs from a source that is subject to PSD because it is major for another regulated NSR pollutant (what is known as an "anyway source") and which would emit a significant amount of GHGs (*i.e.*, more than 75,000 tons per year carbon dioxide equivalent ($CO_2e$) emissions,[3] as defined in 40 CFR 52.21(b)(49)).

As discussed in the EPA's 2015 approval of Ecology's PSD permitting program, under a provision contained in Revised Code of Washington (RCW) 70.235.020, *Greenhouse Gas Emissions Reductions — Reporting Requirements,* Ecology is statutorily barred from regulating certain GHGs under PSD. 80 Fed. Reg. 23721, 23722-23 (April 29, 2015). Specifically, RCW 70.235.020(3) states, "[e]xcept for purposes of reporting, emissions of carbon dioxide from industrial combustion of biomass in the form of fuel wood, wood waste, wood by-products, and wood residuals shall not be considered a greenhouse gas as long as the region's silvicultural sequestration capacity is maintained or increased." Therefore, under the restrictions of this state statute, if a source of $CO_2$ emissions is subject to PSD solely due to biogenic $CO_2$ emissions and is major for another regulated NSR pollutant (an anyway source), Ecology is prohibited from issuing a PSD permit regulating $CO_2$ emissions.

To address RCW 70.235.020(3), the EPA retained a Federal Implementation Plan (FIP) under 40 CFR 52.21 and is responsible for issuing partial PSD permits to ensure that major sources in Washington have a means to satisfy the CAA PSD requirements for GHGs when $CO_2$ emissions from the industrial combustion of biomass in Washington cannot be considered or regulated by Ecology under its PSD rules. See 40 CFR 52.2497, 80 Fed. Reg. 23722-3. Note that under the FIP, the EPA is the CAA PSD permitting authority for all GHGs where any GHGs attributable to the proposed new source major source or major modification fall within RCW 70.235.020(3), even where some of the $CO_2$ emissions are not from the industrial combustion of biomass.

The area in which the Wallula Mill is located is currently designated unclassifiable/attainment for all NAAQS pollutants. The actual-to-projected-actual applicability test, found in 40 CFR 52.21(a)(2)(iv)(c), is used to determine which increased pollutants are subject to PSD. As explained in Ecology's draft Technical Support Document for Boise White Paper, LLC and Ecology's draft minor NSR NOC Order No. 15873, this project is subject to PSD for CO, NOx and GHGs and subject to minor NSR for PM, PM10, VOC and toxics air pollutants (a state-only

[2] Under this decision, the Supreme Court held that the EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source (or major modification thereof) required to obtain a PSD permit, but that the EPA could continue to require that PSD permits, otherwise required based on emissions of pollutants other than GHGs, contain limitations on GHG emissions based on the application of BACT. See 80 FR at 842.
[3] See 40 CFR 52.21(b)(49)(definition of "subject to regulation").

pollutant). Ecology's documents related to this project are available online at https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Industrial-facilities-permits/Boise-Wallula.

Most of the GHG emission increase is caused by the increased utilization of the recovery furnaces burning black liquor solids which are considered a wood residual and, therefore, biomass. The emissions from the combustion of biomass are considered biogenic emissions, and thus fall within RCW 70.235.020(3), which Ecology is statutorily barred from regulating under Ecology's PSD program as a matter of State law. PCA's application included emission estimations used in the applicability analysis. PSD applicability is presented in the table below when counting only non-biogenic GHGs (as required by state law) and when counting all GHGs (as required by federal law).

**PSD Applicability based on biogenic and total greenhouse gases ($CO_2$ equivalent), tpy**

| Emission Unit | Non-Biogenic $CO_2e$ | Total $CO_2e$ |
|---|---|---|
| No 2 Recovery Furnace | 1,922 | 7,644 |
| No. 3 Recovery Furnace | 2,730 | 97,596 |
| Lime Kiln | 6,478 | 5,364 |
| Total | 11,130 | 110,603 |
| Significant Emission Rate | 75,000 | 75,000 |
| Subject to PSD? | No | Yes |

Because non-biogenic GHG emissions from the project are less than the PSD significance threshold of 75,000 tpy, the project is not subject to PSD under Washington State law. Total GHG emissions from the project are greater than the significance threshold, however, and so the project is subject to PSD as a matter of federal law. As a result, as provided in 40 CFR 52.2497, the EPA is the CAA PSD permitting authority for GHG emissions associated with this project. Ecology, however, is the CAA PSD permitting authority for CO and NOx and proposes to issue a draft Notice of Construction Order for PM, PM10, VOC and toxic air pollutants.

# 4. Best Available Control Technology (BACT)

PCA is required to apply best available control technology for each regulated NSR pollutant for which the major modification would result in both a significant emission increase and a significant net emission increase at the source. This requirement only applies, however, to each proposed emission unit at which a net emission increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit. See 40 CFR 52.21(j). For this project, all GHG emission increases occur as a result of increased utilization at existing emission units (No. 2 and 3 recovery furnaces and the lime kiln). The recovery furnaces and lime kiln are not being physically changed or undergoing a change in the method of operation. Therefore, the recovery furnaces and lime kiln, the only sources of GHG emissions in the project, are not subject to BACT for GHG emissions.

# 5. Ambient Air Quality Impact Analysis (AQIA)

PCA is required to demonstrate that allowable emission increases from the proposed modification will not cause or contribute to a violation of any NAAQS or any applicable maximum allowable increase over the baseline concentration (increment). See 40 CFR 52.21(k).

There are no NAAQS or baseline concentrations for GHGs. Therefore, no ambient air quality analysis is required for this permit.

# 6. Additional Analyses

EPA Trust Responsibility. As part of the EPA's direct federal implementation and oversight responsibilities, it has a trust responsibility to each of the 271 federally recognized Indian tribes within the Pacific Northwest and Alaska. The trust responsibility stems from various legal authorities including the U.S. Constitution, Treaties, statutes, executive orders, historical relations with Indian tribes. In general terms, the EPA is charged with considering the interest of tribes in planning and decision-making processes. Each office within the EPA is mandated to establish procedures for regular and meaningful consultation and collaboration with Indian tribal governments in the development of EPA decisions that have tribal implications. Based on the location of the facility and the level of expected GHG emissions increases associated with the proposed project, the EPA has determined that issuance of the proposed permit does not have Tribal implications.

Endangered Species Act. Under this act, the EPA is obligated to consider the impact that a federal project may have on listed species or critical habitats. The State Environmental Policy Act (SEPA) application submitted by PCA to Ecology for this project assessed the project's potential impact on endangered and threatened species and critical habitats. Ecology's review of the project under SEPA concluded "no new significant impacts have been identified." Based on the information submitted by the permittee and the level of increased emissions involved in the project, the EPA concludes that the issuance of this PSD permit will not affect a listed species or critical habitat. The EPA's no-effect determination concludes the EPA's obligations under Section 7 of the ESA. For more information about the EPA's obligations, see the Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities under Section 7 of the ESA, published by the FWS and NMFS (March 1998, Figure 1).

National Historic Preservation Act. Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout the country. If a federal or federally-assisted project has the potential to affect historic properties, a Section 106 review will take place. The State Environmental Policy Act application submitted by PCA to Ecology for this project noted that the Washington Information System for Architectural and Archaeological Records data shows that seven surveys have been conducted within 1 mile of the area of potential effect (APE). One archaeological site (45WW126), 0.5 mile from the APE, has been recorded. No cultural resources have been observed. As noted earlier, the issuance of this PSD permit would authorize modifications to the existing pulp and paper mill with respect to GHG emissions. The physical modifications will occur within the existing footprint of the mill. In the event of an inadvertent discovery of cultural resources, PCA is governed by Washington State law provisions protecting cultural resources in Chapter 27.53 of the RCW. Based on this information, the EPA concludes that this project will not adversely affect historical or cultural resources, and thus further review under the NHPA is not necessary.

Environmental Justice Policy. Under Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed on

February 11, 1994, the EPA is directed, to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. The EPA is not aware of any EJ communities in the area surrounding the facility. The EPA therefore concludes that this permit action will not have a disproportionately high or adverse human health effects on nearby communities.

# 7. Permit Content

The permit is organized into the following two sections:

Permit Section 1: Source Information and Project Description
Permit Section 2: Generally Applicable Requirements

The permit conditions are explained below. Specific analyses that were performed in development of the permit are also described or referenced.

**Permit Section 1 – Source Information and Project Description**

This permit section contains a brief description of the facility and the project. A more detailed description of the facility can be found in Section 2 of this Fact Sheet.

**Permit Section 2 – Generally Applicable Requirements**

This permit section contains conditions that apply generally to PCA and generally relate to permit administration and enforcement. These conditions are based on requirements of 40 CFR 52.21(r), based on general permit administration and enforcement provisions specifically required in Title V operating permits and Tribal minor new source revision permits and equally relevant to PSD permits (40 CFR 71.6 and 49.155), or created under EPA's inherent authority to provide for the administration and enforcement of permits it issues. Note that Permit Condition 2.15 includes specific notification requirements regarding construction and startup.

# 8. Public Participation

## 8.1 Public Notice and Comment

The EPA's procedures for issuing PSD permits are in 40 CFR 124, and include an opportunity for public comment and a hearing. For this project, an opportunity to submit written comments on the draft permit will be held from August 20 to September 24, 2018. EPA will hold a public hearing on the draft permit, pursuant to 40 CFR 124.12, if EPA determines that there is a significant degree of public interest in the draft permit, based on timely written requests. If no timely requests for a public hearing are received or if EPA determines there is not a significant degree of public interest in the draft permit, the hearing will be cancelled. Notice of the cancellation of the public hearing will be posted on EPA's website. For more details about the public review process, please see the public notice in Appendix A to this fact sheet.

The public notice, describing how to comment and how to request a public hearing, will be mailed to those persons listed in 40 CFR 124.10(c) and will be posted on the EPA's website at https://www.epa.gov/publicnotices/notices-search/location/Washington. The administrative record for the project will also be posted on the same web address. The record consists of the

application and any supporting data furnished by the applicant, the draft permit, the fact sheet, all documents cited in the fact sheet, and other documents contained in the supporting file for the draft permit. Material readily available at the EPA's Region 10 office or published material that is generally available, and that is included in the record, need not be posted with the rest of the record as long as it is specifically referred to in the fact sheet.

### 8.2 Response to Public Comments and Permit Issuance

The public comment process was held as described above. No requests for a public hearing were received, so the EPA canceled the scheduled public hearing and posted the cancelation on its website. No comments were received during the public comment period. Because no comments were received, the final permit decision becomes effective immediately upon issuance pursuant to 40 CFR 124.19. As required in 40 CFR 124.15, the EPA will notify the applicant.

## 9. Abbreviations and Acronyms

| | |
|---|---|
| BACT | Best available control technology |
| BLS | Black liquor solids |
| CAA | Clean Air Act [42 U.S.C. section 7401 et seq.] |
| CFR | Code of Federal Regulations |
| CO | Carbon monoxide |
| $CO_2e$ | Carbon dioxide equivalent |
| EJ | Environmental Justice |
| EPA | United States Environmental Protection Agency (also U.S. EPA) |
| ESA | Endangered Species Act |
| hr | Hour |
| lb | Pound (lbs = pounds) |
| mm | Million |
| NAAQS | National Ambient Air Quality Standard |
| NCG | Non-condensable gas |
| NHPA | National Historical Preservation Act |
| $NO_X$ | Nitrogen oxides |
| NSR | New source review |
| ODTP | Oven-dried tons pulp |
| PM | Particulate matter |
| $PM_{10}$ | Particulate matter less than or equal to 10 microns in aerodynamic diameter |
| $PM_{2.5}$ | Particulate matter less than or equal to 2.5 microns in aerodynamic diameter |
| PSD | Prevention of significant deterioration |
| PTE | Potential to emit |
| Region 10 | U.S. EPA, Region 10 |
| $SO_2$ | Sulfur dioxide |
| tpy | Tons per year |
| VOC | Volatile organic compound |