

**Fact Sheet for NPDES Permit WA0003697
Packaging Corporation of America**

September 12, 2019

The Department of Ecology (Ecology) issued NPDES Permit No. WA0003697 to Boise White Paper L.L.C. (“Boise”, now Packaging Corporation of America, “PCA”) on February 23, 2018. The permit became effective on April 1, 2018. Since the initial issuance of this permit, there have been changes to PCA’s operations. This permit is being modified at PCA’s request to reflect the below changes.

- 1. Permit Transfer:** Boise submitted a *Transfer of Permit to a New Owner/Operator* form to Ecology on June 10, 2019. Boise was previously a subsidiary of the Packaging Corporation of America (PCA). The form indicated that Boise’s assets would be assigned to PCA effective July 1, 2019.
- 2. Conversion to Unbleached Operations:** On August 30, 2017 PCA sent Ecology a letter indicating their intent to convert the mill to all unbleached products in the second quarter of 2018. PCA shutdown bleaching operations May 2018. Paper Machine No.3 was previously producing a grade of fine and coated bleached kraft paper. Paper Machine No.3 was temporarily shutdown with the bleaching operations in May 2018. In June 2018, Paper Machine No.3 was brought back online, now producing unbleached kraft linerboard.
- 3. Paper Machine No.3 Rebuild Project:** PCA’s Paper Machine No.3 Rebuild Project was permitted by Notice of Construction Order No. 15873 and Prevention of Significant Deterioration Permit No. 18-01, issued on September 26, 2018 and September 18, 2018 respectively. The Paper Machine No.3 Rebuild Project increased the design capacity of Paper Machine No.3 and replaced the Bauer valve on M&D Digester No.2 to increase pulp production. The project was completed November 2018.

Ecology considers this a major permit change. Examples of a minor permit change include the correction of typographical errors, incorporating more frequent monitoring, changing compliance dates, or incorporating a change in ownership. The proposed permit changes described below are more extensive than those defined in 40 CFR Part 122.63, and therefore does not qualify as a minor change.

This proposed modification includes removal of sections from the existing permit and the addition of other sections. As a result, the permit conditions are not the same between the existing permit and the proposed modified permit. For the purposes of this support document, references to permit conditions are for the proposed permit, unless otherwise specified.

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PROPOSED PERMIT CHANGES

1. Permit Transfer to a New Owner/Operator

The Boise Wallula mill was previously a subsidiary of the Packaging Corporation of America (PCA). Boise's assets have been assigned to PCA effective July 1, 2019. The modified permit identifies PCA as the Permittee.

2. Derivation of New Technology-Based Effluent Limits

For pulp and paper mills, effluent limits are dependent upon paper grades and production rates. This permit modification includes new effluent limits because both the production rate and grades of paper produced at PCA's Wallula Mill have changed.

Previously, PCA produced both bleached and unbleached products. In May 2018, the mill shutdown bleaching operations and now only produces unbleached products. The original permit calculated effluent limits assuming Paper Machine No.3 would produce bleached kraft fine and coated paper. As of June 2018, Paper Machine No.3 only produces unbleached kraft linerboard. The effluent limits have been updated to include this change in paper grade.

PCA's Paper Machine No.3 Rebuild Project was permitted by Notice of Construction Order No. 15873 and Prevention of Significant Deterioration Permit No. 18-01, issued on September 26, 2018 and September 18, 2018 respectively. The Paper Machine No.3 project increased the design capacity of Paper Machine No.3 and replaced the Bauer valve on M&D Digester No.2 to increase pulp production. The effluent limits have been updated to include this increase in production.

These changes effected both monthly average and daily average limits for five-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS). A detailed derivation of the new limits with comparison to the limits in the unmodified permit are presented in section 2.A through 2.C of this document.

A. Production Basis

The production basis used in the unmodified permit to calculate effluent limits was the maximum monthly average production rate from 2012 to 2016, shown below in Table 1.

Table 1 Production Basis for Unmodified Permit, Maximum Monthly Average Production Rate 2012-2016

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Machine Dried Tons/ Day
No. 1	Bleached Kraft Market Pulp	B	453

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Machine Dried Tons/ Day
No. 2	NSSC Corrugated Medium	C	434
No. 3	Bleached Kraft Fine and Coated Paper	B	630
	Total Production		1,517

The production rates above are based on normal moisture content at the reel for each paper machine. This is the production basis that should be used for production which is applicable to 40 CFR Part 430 Subpart B, the Bleached Papergrade Kraft and Soda Subcategory. The original permit notes that moisture content at the reel was 10% for Paper Machine No.1 and No.2, and 4-6% for Paper Machine No.3.

The original permit's fact sheet does not note that production rates which fall under 40 CFR Part 430 Subcategory C, the Unbleached Kraft Subcategory, should be measured in terms of air-dried tons, which is defined as having 10% moisture content. This stipulation is found under 40 CFR Part 320.01(n)(1). Paper Machine No.2 is subject to Subpart C. This omission did not result in an incorrect production rate being used for the calculations, as the actual moisture content measured at the reel of Paper Machine No.2 is also 10%.

The technology-based effluent limits in the modified permit are calculated using the production rates in Table 2. Because bleaching operations have stopped, guidelines are used only from Part 430 Subpart C (Unbleached Kraft Category) for the modified permit. Paper Machine No.1 is no longer operated per Condition R.5 in the proposed modification of Air Operating Permit No. 0003697, which was originally issued on March 30, 2018. This condition is also in Notice of Construction Order No. 15873, Condition No.4. The paper grade produced at Paper Machine No.2 is now "NSSC/Kraft Corrugated Medium" rather than "NSSC Corrugated Medium" because Paper Machine No.2 is now fed a percentage of kraft pulp.

Table 2 Production Rates Used to Calculate Technology-Based Effluent Limits in Modified Permit

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Air Dried Tons/ Day
No. 1	Shutdown	N/A	N/A
No. 2	NSSC/Kraft Corrugated Medium	C	434

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Air Dried Tons/Day
No. 3	Unbleached Kraft Linerboard	C	1,447
	Total Production		1,881

The production rates in Table 2 are in terms of air-dried tons (ADT), which is defined as having 10% moisture content. Because bleaching operations have ceased, all of PCA's paper grade now falls under Subcategory C, the Unbleached Kraft Subcategory. 40 CFR 430.01(n)(1) states that pulp and paperboard production for Subcategory C shall be measured in air-dried tons (10%).

The paper production rate at Paper Machine No.2 did not change due to the Paper Machine No.3 Rebuild Project. The production basis used for Paper Machine No.2 in the modified permit is the same as in the original permit, 434 ADT/day.

Projected future rates are used to calculate the effluent limits applicable to production from Paper Machine No.3. The Paper Machine No.3 Rebuild Project was not completed until November 2018. There is not enough operating history available to use actual production rates for Paper Machine No.3. Typically, Ecology uses data from the prior few years to determine the production basis. PCA is still working to ramp up their rates to fully utilize their new processing capacity. Per 40 CFR 430.01(n), "Production shall be determined for each mill based upon past production practices, present trends, or committed growth." Projected future rates are based off of permitting for PCA's Paper Machine No.3 Project. This project was permitted by Prevention of Significant Deterioration (PSD) Permit No. 18-01 and Notice of Construction (NOC) Order 15873. The permits allowed PCA to operate their Paper Machine No.3 at an annual average of 1,400 MDT/day (a moisture content of 7% as measured at the reel). This is equivalent to 1,447 ADT/day (a moisture content of 10%).

B. Effluent Limitation Guidelines Used to Calculate Technology-Based Effluent Limits

Technology based limits are calculated using effluent guidelines in 40 CFR Part 430. At the time that the original permit was written, Paper Machines No.1 and No.3 were subject to Subpart B (Bleached Papergrade Kraft and Soda Category). There are several different categories under Subpart B. The effluent guidelines used for PCA's Subpart B production are listed under the table for "effluent limitations for bleached kraft facilities where market pulp is produced". Paper Machine No.2 was subject to Subpart C (Unbleached Kraft Category). There are also several different categories under Subpart C. The effluent limitations used for PCA's Subpart C production are listed under the table for "effluent limitations for unbleached kraft facilities producing pulp and paper using the unbleached kraft-neutral sulfite semi-chemical (cross-recovery) process".

i. Five-Day Biochemical Oxygen Demand (BOD₅)

As discussed in the fact sheet for the unmodified permit, the federal effluent guidelines are made up of three different categories. They are best practicable control technology (BPT), best conventional pollutant control technology (BCT), and new source performance standards (NSPS). For 40 CFR Part 430 Subpart B and C, BPT and BCT guidelines are equivalent. NSPS guidelines are more stringent, but they are only applicable to sources that commence discharge after June 15, 1988. NSPS standards are not applicable to PCA because they commenced discharge prior to this date. However, in 1985 the Ecology used Best Professional Judgement (BPJ) to apply NSPS guidelines for BOD₅ to Paper Machine No.3, which was constructed in 1980.

BCT guidelines were used to calculate BOD₅ limits applicable to production for Paper Machines No.1 and No.2 in the unmodified permit. A summary of the effluent guidelines used in the unmodified permit are shown in Table 3. Note that factors in 40 CFR Part 430 are provided in lbs per 1,000 lbs of product. The below factors have been converted to lbs per ton of product to better illustrate the calculation of limits.

Table 3 Basis for Effluent Guidelines for BOD₅ in Unmodified Permit

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Basis	Maximum Monthly (lbs/ton)	Maximum Daily (lbs/ton)
No. 1	Bleached Kraft Market Pulp	B	BCT	16.1	30.9
No. 2	NSSC Corrugated Medium	C	BCT	8.0	16.0
No. 3	Bleached Kraft Fine and Coated Paper	B	BPJ ^a	6.2	11.4

a. Based on NSPS effluent guidelines that were promulgated in 1982, around the time that Paper Machine No. 3 was being constructed (1980).

Because PCA has converted to all unbleached products, all of PCA's production is now subject to Subpart C, specifically guidelines for "unbleached kraft facilities producing pulp and paper using the unbleached kraft-neutral sulfite semi-chemical (cross recovery) process". The BOD₅ effluent guidelines for the production from Paper Machine No.2 is unchanged in the modified permit. BCT guidelines are applied. For Paper Machine No.3, Ecology continues to use BPJ to apply NSPS effluent guidelines for Paper Machine No.3, but for the new applicable subpart, Subpart C. A summary of the effluent guidelines used for BOD₅ in the modified permit is presented in Table 4.

Table 4 Basis for Effluent Guidelines for BOD5 in Modified Permit

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Basis	Maximum Monthly (lbs/ton)	Maximum Daily (lbs/ton)
No. 1	Shutdown	N/A	N/A	N/A	N/A
No. 2	NSSC/Kraft Corrugated Medium	C	BCT	8.0	16.0
No. 3	Unbleached Kraft Linerboard	C	BPJ	4.2	7.8

ii. Total Suspended Solids (TSS)

The unmodified permit used BCT effluent guidelines from applicable 40 CFR Part 430 Subparts to calculate TSS limits for production from Paper Machine No.1 and No.2.

For Paper Machine No.3, Ecology used BPJ and derived limits for bleached kraft fine and coated paper using an engineering study and technical analysis that determined PCA's maximum treatment capabilities. The limits derived were roughly halfway between BCT and NSPS guidelines. A summary of the effluent guidelines used in the unmodified permit are presented in Table 5.

Table 5 Basis for Effluent Guidelines for TSS in Unmodified Permit

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Basis	Maximum Monthly (lbs/ton)	Maximum Daily (lbs/ton)
No. 1	Bleached Kraft Market Pulp	B	BCT	32.8	60.8
No. 2	NSSC Corrugated Medium	C	BCT	12.5	25.0
No. 3	Bleached Kraft Fine and Coated Paper	B	BPJ	17.5	35.1

The TSS effluent guidelines for the production from Paper Machine No.2 are unchanged in the modified permit. BCT guidelines are applied. Because PCA only produces unbleached products, only the factors from 40 CFR Part 430 Subpart C, "Unbleached Kraft Subcategory" are now applicable.

In the modified permit, BCT guidelines rather than BPJ are applied to Paper Machine No.3. The BCT for Subpart B are more protective than the BPJ guidelines derived for Paper Machine No.3 in the unmodified permit. A detailed engineering study was used to determine BPJ guidelines in the unmodified permit.

Ecology is not able to calculate a similar limit using this study, as PCA's operations have changed significantly. PCA's modified permit includes a requirement to perform a Treatment System Efficiency Study for TSS in order to evaluate the ability of their wastewater treatment system to remove TSS. This new requirement has been added under condition S.17. This report may be used to develop new BPJ effluent guidelines for Paper Machine No.3 in the next permit cycle.

A summary of the effluent guidelines used for TSS in the modified permit is presented in Table 6.

Table 6 Basis for Effluent Guidelines for TSS in Modified Permit

Paper Machine	Paper Grade	Applicable 40 CFR Part 430 Subpart	Basis	Maximum Monthly (lbs/ton)	Maximum Daily (lbs/ton)
No. 1	Shutdown	N/A	N/A	N/A	N/A
No. 2	NSSC/Kraft Corrugated Medium	C	BCT	12.5	25.0
No. 3	Unbleached Kraft Linerboard	C	BCT	12.5	25.0

C. Calculation of Effluent Limits

The effluent limits are calculated by multiplying the production rate by the effluent guidelines limits. A summary of the calculations of the effluent limits in the modified permit are shown in Tables 7 and 8. A comparison of the effluent limits in the unmodified and modified permits is presented in Table 9.

Table 7 Calculation of BOD₅ limits for Outfall 001 in Modified Permit

Paper Machine	Production Rate (ADT/day)	Monthly Effluent Guideline Maximum (lbs/ton)	Daily Effluent Guideline Maximum (lbs/ton)	Calculated Monthly Maximum (lbs/day)	Calculated Daily Maximum (lbs/day)
No. 2	434	8.0	16	3,472	6,944
No. 3	1447	4.2	7.8	6,077	11,287
Total				9,549	18,231

Table 8 Calculation of TSS limits for Outfall 001 in Modified Permit

Paper Machine	Production Rate (ADT/day)	Monthly Effluent Guideline Maximum (lbs/ton)	Daily Effluent Guideline Maximum (lbs/ton)	Calculated Monthly Maximum (lbs/day)	Calculated Daily Maximum (lbs/day)
No. 2	434	12.5	25	5,425	10,850
No. 3	1447	12.5	25	18,088	36,175
Total				23,513	47,025

Table 9 Comparison of Effluent Limits for Outfall 001 in Unmodified and Modified Permit

Limit	Unmodified Permit (lbs/day)	Modified Permit (lbs/day)
BOD ₅ Monthly Average Maximum	14,671	9,549
BOD ₅ Daily Maximum	28,124	18,231
TSS Monthly Average Maximum	31,307	23,513
TSS Daily Maximum	60,505	47,025

Affected permit conditions: S1.A (BOD₅ and TSS limits in table *Effluent Limits: Outfall 001*), S.16.

3. Production Recording and Reporting

In the unmodified permit, PCA was required to record monthly average paper production. In the modified permit, PCA is required to both record and report monthly average paper production. Ecology will collect this data throughout the remainder of the permit cycle, and the data will be used when determining a production basis to use to calculate effluent limits.

In the original permit, PCA was required to record daily Paper Production at the reel in terms of machine-dry tons per day (MDT/day). The modified permit has been updated to require PCA to record paper production for both Paper Machine No.2 and Paper Machine No.3 in terms of air-dry tons per day (ADT/day). Production in terms of air-dry tons rather than machine-dry tons is the correct basis to use for calculating effluent limits for paper production subject to 40 CFR Part 430, Subpart C.

Affected permit conditions: S2.A.4, S2.A footnote e

4. Secondary Effluent Flow Recording and Reporting

The unmodified permit does not require PCA to report secondary effluent flow rates. Currently PCA only reports the flow rate of the final effluent, which includes non-contact cooling water. Secondary effluent is the point of compliance for BOD₅ and TSS. Because secondary effluent flow rates are used to calculate the mass of BOD₅ and TSS discharged, it is of value to have this information reported to Ecology. The modified permit includes a requirement to report a 24-hour average flow rate. The flow rate shall be the average flow during the 24-hour period the composite sample used for BOD₅ and TSS analysis is collected.

Affected permit conditions: S2.A(2)

5. pH Monitoring Location

The unmodified permit required pH monitoring at the final effluent, which includes secondary effluent and non-contact cooling water. In the modified permit, the point of compliance for pH has been moved to secondary effluent. The pH limit in PCA's permit is a technology-based limit. Technology-based limits apply to the performance of the wastewater treatment system, and do not account for additional dilution from non-contact cooling water.

Affected permit conditions: S2.A(2)

6. Removed Permit Conditions

The original permit included the following conditions related to their bleaching operations:

- A. Limits for Absorbable Organic Halides (AOX) and 2,3,7,8 TCDD for Outfall 001, section S.1.A.
- B. 2,3,7,8 TCDF was listed in the monitoring schedule for Secondary Effluent, permit condition S2.A.(2).
- C. Unmodified permit condition S1.B. "Bleach Plant Effluent Discharge at Effective Date", contained conditions limits applicable to the bleach plant effluent. Monitoring requirements for these pollutants were also listed in section S.2.A.(4) and S.2.A.(5) as numbered in the unmodified permit, as well as corresponding entries for these pollutants in Appendix A.
- D. Unmodified permit conditions S2.A(7) contained requirements for monitoring 2,3,7,8 TCDD and 2,3,7,8 TCDF in primary sludge.
- E. A requirement for Dioxin testing in the monitoring requirements for Effluent Characterization under S2.A.(5), and a listing for Dioxin in the Priority Pollutants tables located in Appendix A.
- F. A requirement for PCA to submit a Best Management Practice to Ecology was previously under permit condition S.9 in the unmodified permit. This is only a requirement for facilities with processes subject to 40 CFR Part 430 subcategories B and E. PCA is now only subject to subcategory C.

All of the above conditions and any relevant footnotes have been removed. They are only applicable to bleached operations. PCA's bleach plant is no longer operating.

7. Administrative Modifications

- A. PCA collects composite samples for BOD₅ and TSS analysis over a 24-hour period. Footnote b in permit condition S.1.A Table "Effluent Limits: Outfall 001" defined this time period as a calendar day. PCA instead collects the sample from 7 AM to 7 AM the next day. Footnote b has been updated to reflect this. Also included is clarification as to how each sample result will be reported. Each result will be reported with the date the 24-hour period begins. For example, composite collected from 7 AM on the 1st to 7AM on the 2nd will be reported as the result for the 1st in the discharge monitoring reports.

Affected permit conditions: S1.A footnote b

- B. Additional clarification has been added to footnote c of table S1.A "Effluent Limits: Outfall 001" as well as footnote d of table S2.A "Monitoring requirements" regarding pH reporting. pH excursions will be reported corresponding to each calendar day (12:00 AM to 12:00 AM the next day). Daily instantaneous pH minimums and maximums will also be reported.

Affected permit conditions: S1.A footnote c, S2.A footnote d.

- C. PCA is currently reporting final effluent daily average flow rates to Ecology in their Discharge Monitoring Reports. It is not clear in the original permit that this is a requirement. Permit condition S2.A(3), the Monitoring Schedule for Final Effluent has been updated to include a "daily calendar day average" requirement for flow. Additional language has been added to the monitoring schedule in S2.A to clarify which requirements are only to be recorded, and which are to be both recorded and reported.

Affected permit conditions: S.2.A(2) and (3)

- D. In the original permit, the compound bis(2-chloroisopropyl) ether has the wrong CAS # of 39638-32-9. The correct CAS # is 108-60-1. This has been corrected in the modified permit.

Affected permit conditions: Appendix A

PUBLIC INVOLVEMENT INFORMATION

The Department of Ecology is proposing to modify the NPDES permit for the PCA's Wallula Mill. The Department will publish a Public Notice of Modification (PNOM) on September 16, 2019 in the Tri-City Herald to inform the public that a draft permit modification and fact sheet are available for review.

Interested persons are invited to submit written comments regarding the draft permit modification. The draft permit modification, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the Ecology office listed below.

Department of Ecology
Industrial Section
300 Desmond Drive
Lacey, WA 98503

Call (360) 407-6916 to make an appointment.

Documents are also available:

- At the Burbank Public Library, 875 Lake Road, Burbank, Washington
- Online at <https://fortress.wa.gov/ecy/industrial/UIPermit/DraftPermits.aspx>

Send written comments using the online comment form available at <http://wq.ecology.commentinput.com/?id=p7rF4> or by mail to:

Emily Toffol
Department of Ecology
Industrial Section
P.O. Box 47600
Olympia, WA 98504-7600

Comments should reference specific text followed by the requested change or concern when possible. **Ecology will only consider comments that pertain to the permit conditions we propose to modify.**

The Department will consider all comments received within thirty (30) days from the date of public notice of the draft indicated above, in formulating a final determination to modify the permit. The Department's response to all significant comments is available upon request and will be sent directly to people expressing an interest in this permit.

If you have questions, or need additional information, you may also call Emily Toffol at (360) 407-6954.

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PERMIT MODIFICATION – RESPONSE TO COMMENTS

The public comment period for this permit modification was held from September 16, 2019 to October 17, 2019. No comments were received.