

**TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 114007**

I. INTRODUCTION

This Class II air quality permit is for the continued operation of International Paper Company's International Paper facility. The facility is located at 2641 East 24th Street, Yuma, AZ 85365. Permit No. 114007 renews and supersedes Permit No. 88378.

The facility's potential to emit is greater than the significant thresholds identified in Arizona Administrative Code (A.A.C.) R18-2-101.132, but below major source thresholds. Therefore, a Class II permit is required for this facility in accordance with A.A.C. R18-2-302.B.2.a.

Company Information

Facility Name: International Paper

Mailing Address: 2641 East 24th Street, Yuma, AZ 85365

Facility Location: 2641 East 24th Street, Yuma, AZ 85365

Attainment Classification

The facility is located in Yuma County that is in a nonattainment area for PM₁₀. The area is in attainment or unclassified for all other criteria pollutants.

II. PROCESS DESCRIPTION

Process Equipment

International Paper manufactures corrugated containers, commonly referred to as "corrugated cardboard boxes". The first step in constructing a corrugated container is the construction of the corrugated sheet of paperboard. Generally, three layers of paper are used in the construction; the two outer layers are known as linerboard and the wavy middle layer is called medium. The adhesive used to join the three layers is primarily corn starch.

Starch delivered to the facility is stored in a silo equipped with a baghouse to control particulate matter during silo loading. The starch is then transferred from the storage silo to the starch kitchen via a pneumatic system. Some final products require an additive be used in the corn starch adhesive to help maintain a bond in moist environments. This additive will result in emissions of volatile organic compounds (VOC) from the plant. The adhesive is then pumped to the glue rolls on the corrugator.

The corrugator unwinds the medium, which is conditioned with steam produced by a boiler, and run through flute rolls to make the paper wavy. The peaks of the medium roll across the glue roll to pick-up adhesive. The first layer of linerboard is

then brought into contact with the medium forming a sheet known as 'single face'. The single face runs over another glue roll, the peaks picking up adhesive and the second layer of linerboard is brought into contact to form the corrugated sheet. Next the sheet travels through a series of hot plates, heated with steam generated by the boiler. The edge of the sheet is trimmed off with the trim sent to the scrap collection system. The sheet is scored or slit as needed and sent to the knife which cuts it into individual sheets that are stacked and transported to the finishing area.

In the finishing area the sheets will be run through one of four pieces of equipment. Three are of the type known as flexo-folder-glue and one is a rotary die-cutter. The flexo-folder-glue will print using flexography with water-based inks, die-cut, glue and fold the sheet into a container. The glue and flexographic ink each contain a small percentage of VOCs that are released as fugitives within the plant. The die-cutter functions essentially the same as the flexo-folder glue without the gluing and folding. The scraps generated by die-cutting operations drop onto a small belt that carries the scrap to an entrance of the pneumatic scrap collection system.

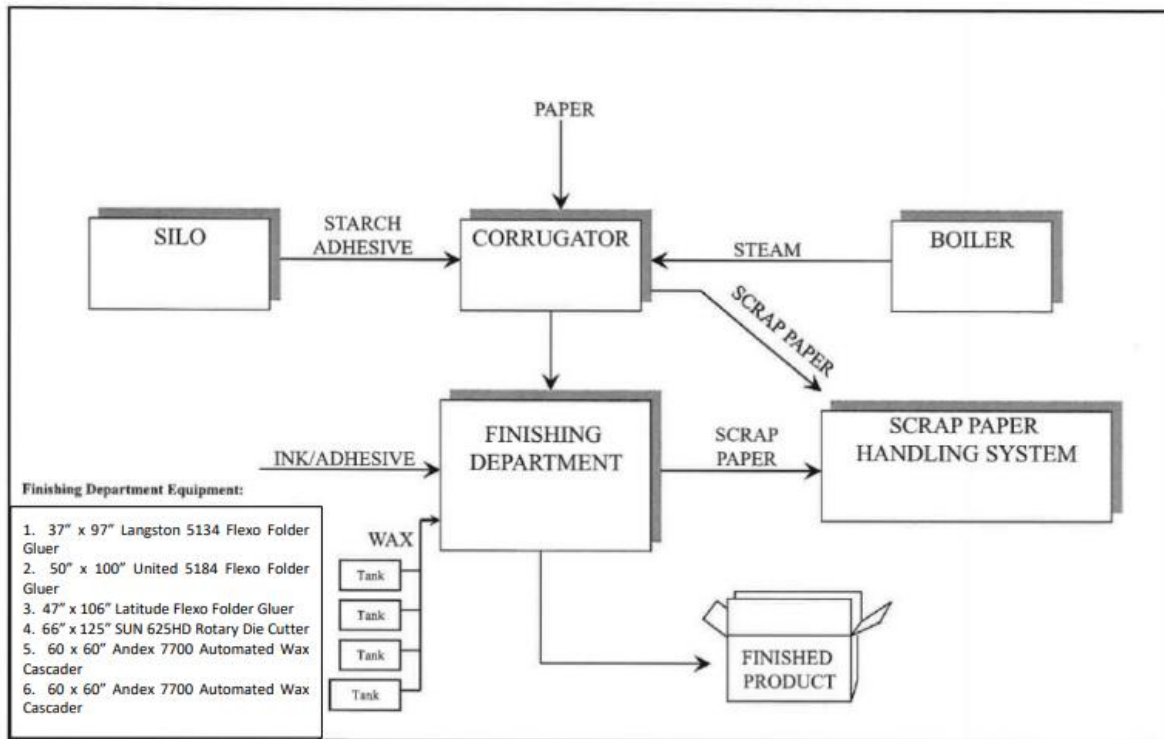
Some of the containers produced (typically for use with field packed vegetables) are saturated with wax to impart moisture resistance. The plant has several wax storage tanks and two wax cascaders.

Finished containers are palletized and shipped to customers.

Control Devices

One baghouse is used to control particulate matter generated during material transfer at the starch silo, and two cyclones are used to control particulate matter generated by the scrap paper handling systems.

Process Flow Diagram



III. COMPLIANCE HISTORY

International Paper received two (2) full inspections during the permit term. International Paper also submitted five (5) compliance certifications. No excess emissions or permit deviations were reported. No formal enforcement cases were generated for this facility during the permit term.

IV. EMISSIONS

International Paper has the potential-to-emit (PTE) nitrogen oxides (NO_x), particulate matter (PM), particulate matter nominally less than 10 micrometers (PM₁₀), particulate matter nominally less than 2.5 micrometers (PM_{2.5}), carbon monoxide (CO), sulfur dioxide (SO₂), volatile organic compounds (VOC) and hazardous air pollutants (HAPs). The facility has a PTE more than the significant threshold of PM. The facility's PTE is provided in Table 1 below:

Table 1: Potential to Emit (tpy)

Pollutant	Previous PTE	Change in PTE	Current PTE
NO _x	9.73	+0.24	9.97
PM	N/A	N/A	63.22
PM ₁₀	13.62	-1.85	11.77

Pollutant	Previous PTE	Change in PTE	Current PTE
PM _{2.5}	0.74	+1.89	2.63
CO	7.43	+0.10	7.53
SO ₂	0.13	+0.01	0.14
VOC	46.88	-22.50	24.38
HAPs	0.24	+0.38	0.62
GHG (CO ₂ e)	N/A	N/A	10,560

Boiler

The PTE for the Boiler is based on maximum potential fuel combustion for 8,760 hours of operation per year. Emission factors used to calculate PM₁₀, PM_{2.5}, CO, SO₂, VOC and HAPs were sourced from AP-42 Tables 1.4.1 through 4.

Corrugator

Emission factors for starch, borax, caustic soda, IP resin, IPX adhesive additive, and corrugated sheet come from *NCASI Corrugator Sheet Plant Testing for VOCs and Selected HAPs*, May 2018, NCASI, using Plant C, 100% double-walled corrugation factors. VOC emissions from the wax were determined with the product safety data sheet.

Scrap Paper Handling System

The emission factors used to calculate PM, PM₁₀, and PM_{2.5} were sourced from *NCASI Plant Specific Report on EPA M201A/M202 Testing for Trim/Scrap Handling Cyclones at PCA Corrugating/Converting Plant E*, February 2, 2023, NCASI.

Finishing

Finishing consists of the Flexo-Folder Gluers, Rotary Die Cutter, Wax Cascaders, and Wax Storage Tanks. Emissions for VOC and HAPs were calculated with the average pollutant content from vendor data and the product safety data sheet of the wax. Tank emission calculations were based on AP-42 Chapter 7 (October 2024), vendor safety data sheets, and historical data for throughput.

Silo

PTE for the Silo is based on maximum potential starch usage. Emission factors used to calculate PM₁₀ and PM_{2.5} were sourced from AP-42 Table 9.9.1-1 then adjusted based on an assumed 99% filter efficiency (AP-42 Table B.2-3).

Emergency Fire Pump Engine

The PTE for the Emergency Fire Pump Engine was based on 500 hours of operation per year in accordance with EPA guidance for emergency engines. Emission factors used to

calculate PM₁₀, CO, SO₂, VOC and HAPs were sourced from AP-42 Tables 3.3-1 and 2. PM and PM_{2.5} are assumed to be equal to PM₁₀.

V. MINOR NEW SOURCE REVIEW (NSR)

This permit renewal application does not propose to make any changes that would increase potential to emit in excess of the permitting exemption thresholds. As a result, minor NSR does not apply.

VI. APPLICABLE REGULATIONS

Table 2 identifies applicable regulations and verification as to why that standard applies. The table also contains a discussion of any regulations the emission unit is exempt from.

Table 2: Applicable Regulations

Unit	Control Device	Rule	Discussion
600 HP Boiler	N/A	A.A.C. R18-2-724; 40 CFR 60 Subpart Dc	This standard is applicable to fuel burning equipment used to produce steam. 40 CFR 60 Subpart Dc for Small Industrial-Commercial-Institutional Steam Generating Units is applicable because the maximum heat input of the boiler is greater than 10 MMBtu/hr and the boiler was manufactured in 2019. 40 CFR 63 Subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boiler Area Sources is not applicable to gas-fired boilers.
Starch Silo, Corrugator, Flexographic Folder Gluers (3), Rotary Die Cutter, Wax Cascaders (2), Wax Storage Tanks (5), and Scrap Handling Systems (2)	Baghouse and Scrap System Cyclones (2)	A.A.C. R18-2-702.B.1; A.A.C. R18-2-730	These standards are General Provisions applicable to existing sources (702.B.1) and Standards of Performance for Unclassified Existing Sources (730).

Unit	Control Device	Rule	Discussion
Emergency Fire Water Pump Engine	N/A	A.A.C. R18-2-719; 40 CFR 63 Subpart ZZZZ	The applicability date for New Source Performance Standards (NSPS) Subpart IIII is April 1, 2006 for compression ignition engines. The emergency engine was manufactured before this date, therefore NSPS Subpart IIII is not applicable. Engines not subject to Subpart IIII are subject to Existing Stationary Rotating Machinery standards under A.A.C. R18-2-719. 40 CFR 63 Subpart ZZZZ NESHAP for Stationary Reciprocating Internal Combustion Engines is applicable to internal combustion engines at an area source for HAPS.
Fugitive Dust Sources	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6; A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R18-2-702; A.A.C. R18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702; A.A.C. R18-2-727	These standards are applicable to any spray-painting operation.
Demolition/Renovation Operations	N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.

VII. PREVIOUS PERMIT REVISIONS AND CONDITIONS

Changes to Current Renewal

Table 3 addresses the changes made to the sections and conditions from Permit No. 88378:

Table 3: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "A"		X		General Provisions: Revised to represent the most recent template language
Att. "B" Section I		X		Facility Wide Requirements: Revised to represent the most recent template language
Att. "B" Section III		X		Process Sources: Revised to represent the swap of two rotary die cutters to a single unit.
Att. "B" Section IV		X		Internal Combustion Engines: Revised to represent changes to 40 CFR Part 60 Subpart IIII and Part 63 Subpart ZZZZ
Att. "B" Section V		X		Fugitive Dust Requirements: Revised to represent the most recent template language
Att. "B" Section VI		X		Other Periodic Activities: Revised to represent the most recent template language
Att. "C"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility.

VIII. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 4 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the Permittee is required to demonstrate compliance with the emission limits in the permit. Records are required be kept for a minimum of 5 years as outlined in Section XIII of Attachment “A” of the permit.

Table 4: Permit No. 114007

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping/Reporting Requirements
Boilers	SO ₂	Burn only natural gas	N/A	Record the amount of each fuel combusted during each operating day OR record the amount of each fuel combusted during each calendar month OR record the total amount of each steam generating unit fuel delivered during each calendar month.
Process Sources	PM	20% Opacity	A certified Method 9 observer is required to conduct a quarterly survey of visible emissions.	Maintain logs of all maintenance activities performed on the baghouse and cyclones.
	VOC & HAPs	N/A	N/A	Maintain monthly usage records and safety data sheets of all inks, additives/cleaners, adhesives, wax, glues, and VOC and Federal HAP containing materials used in the finishing process and the corrugator
Emergency Fire Pump Engine	PM	40% opacity – for any period greater than 10 seconds	A certified Method 9 observer is required to conduct a quarterly survey of visible emissions.	Keep records of fuel supplier certifications regarding the name of fuel supplier and lower heating value of the fuel.
	SO ₂	1.0 lb/MMBtu and no high sulfur diesel fuel	N/A	Record the daily sulfur content of the fuel used in the engines. Report to the ADEQ Director any daily period which the sulfur content exceeds 0.8%.

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping/Reporting Requirements
	HAPs	N/A	N/A	Maintain records of oil analysis, oil/filter changes, hours of operation and use case, and maintenance conducted.
Fugitive Dust	PM	40% Opacity	A Method 9 observer is required to conduct a monthly survey of visible emissions.	Maintain records of the dates and types of dust control measures employed, and if applicable, the results of any Method 9 observations, and any corrective action taken to lower the opacity of any excess emissions.
Abrasive Blasting	PM	20% Opacity	N/A	Record the date, duration and pollution control measures of any abrasive blasting project.
Spray Painting	VOC	20% Opacity Control 96% of the overspray	N/A	Record the date, duration, quantity of paint used, any applicable material safety data sheets, and pollution control measures of any spray painting project.
Demolition/ Renovation	Asbestos	N/A	N/A	Maintain records of all asbestos related demolition or renovation projects including the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents

IX. LEARNING SITE EVALUATION

In accordance with ADEQ's Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools in the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This renewal will not result in an increase in emissions above permitting exemption thresholds and thus, it is exempt from a learning sites evaluation.

X. LIST OF ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂ e	CO ₂ equivalent basis
EPA	Environmental Protection Agency
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
hp	Horsepower
hr	Hour
MMBtu	Million British Thermal Units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
PM	Particulate Matter
PM ₁₀	Particulate Matter less than 10 µm nominal aerodynamic diameter
PM _{2.5}	Particulate Matter less than 2.5 µm nominal aerodynamic diameter
PTE	Potential to Emit
SO ₂	Sulfur Dioxide Significant Impact Levels
TPY	Tons per Year
VOC	Volatile Organic Compound