

**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **042018-007**

Project Number: 2018-01-034  
Installation Number: 145-0036

Parent Company: WestRock

Parent Company Address: 4200 E 32nd Street, Joplin, MO 64804

Installation Name: WestRock Converting Company

Installation Address: 4200 E 32nd Street, Joplin, MO 64804

Location Information: Newton County, S20, T27N, R32W

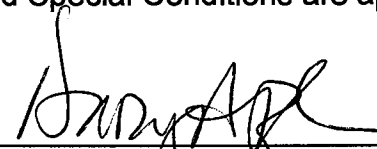
Application for Authority to Construct was made for:  
Addition of one Heidelberg lithographic offset press. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Prepared by  
Chad Stephenson  
New Source Review Unit

  
\_\_\_\_\_  
Director or Designee  
Department of Natural Resources

**APR 04 2018**

\_\_\_\_\_  
Effective Date

**STANDARD CONDITIONS:**

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

**Contact Information:**  
Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

WestRock Converting Company  
Newton County, S20, T27N, R32W

1. Alternative Coating and Solutions
  - A. WestRock Converting Company shall not use any ink/coating/solutions or any combination of ink/coating/solutions on SP-01c which result in individual HAP emissions greater than the SMAL. A listing of SMALs can be found in Appendix B.
  - B. When considering using an alternative material that is different than a material listed in the Application for Authority to Construct, WestRock Converting Company shall calculate the potential emissions of each individual HAP in the alternative material using the Safety Data Sheet (SDS) of the new material. If the SDS lists a range for a HAP content, use the highest value in this range. Alternatively, WestRock Converting Company may use vendor HAP reports from the manufacturer to demonstrate compliance with Special Condition 1.A.
  - C. WestRock Converting Company shall seek approval from the Air Pollution Control Program before use of the alternative material in the following cases:
    - 1) If the potential individual HAP emissions for the alternative material is equal to or greater than the Screening Model Action Levels (SMAL) for any compound listed in Appendix B. The proper calculation method is given in Attachment B.
  - D. Attachment A or an equivalent form shall be used to show compliance with Special Condition 1.A.
  - E. WestRock Converting Company shall maintain records of individual HAP potential emissions and combined HAP potential emissions for SP-01c.
2. Operational Requirement - Solvent/Ink Cloths  
WestRock Converting Company shall keep the inks, solvents, coating solutions, fountain solutions, glue, and cleaning solutions in sealed containers whenever the materials are not in use. WestRock Converting Company shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with this equipment.

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

**3. Record Keeping and Reporting Requirements**

- A. WestRock Converting Company shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.**
  
- B. WestRock Converting Company shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at [AirComplianceReporting@dnr.mo.gov](mailto:AirComplianceReporting@dnr.mo.gov), no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.**

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2018-01-034

Installation ID Number: 145-0036

Permit Number: **042018-007**

Installation Address:

WestRock Converting Company  
4200 E 32nd Street  
Joplin, MO 64804

Parent Company:

WestRock  
4200 E 32nd Street  
Joplin, MO 64804

Newton County, S20, T27N, R32W

REVIEW SUMMARY

- WestRock Converting Company has applied for authority to install and operate a new sheet fed press that is a Heidelberg Speed Master Model 145-7 color lithographic press.
- The application was deemed complete on January 24, 2018.
- HAP emissions are expected from the proposed equipment. The HAP of concern from this process is ethylene glycol. Some of the inks used contain manganese and cobalt, but the compounds are expected to be retained in the paperboard and produce negligible emissions. The other HAP emissions are limited to the Screen Model Action Level (SMAL).
- None of the NESHAPs apply to the proposed equipment. None of the currently promulgated MACT regulations apply to the proposed equipment. The MACT National Emissions Standards for Hazardous Air Pollutants 40 CFR, Part 63, Subpart KK does not apply to lithographic printing presses.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels and SMALs.
- This installation is located in Newton County, an attainment/unclassified area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed for this review. No model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions. HAPs are limited to the SMAL.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- A submittal of an application for an Intermediate Operating Permit is required for this installation within 90 days of equipment startup or a Part 70 Operating Permit is required within a year of equipment startup.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

WestRock Company (formerly known as Rock-Tenn) manufactures folding cartons and prints paperboard at their Joplin facility. This installation currently has four printing presses in operation: two Komori web press (permit 0796-020 and permit 122010-003), and two Manroland sheet fed presses (permit 0897-015 and permit 0799-016) An electric dryer is used to dry the wet ink on the paperboard. The facility's Operating Permit was reclassified from a Part 70 to a Basic Operating Permit on March 6, 2003. In permit 122010-003, the Air Pollution Control Program requested WestRock Converting Company calculate the new installation-wide PTE calculations and use this as supporting documentation with their next operating permit application or renewal. The calculations were submitted as part of their Basic Operating Permit Notification (Project #2014-11-003). The following construction permits have been issued to WestRock Converting Company from the Air Pollution Control Program.

**Table 1: Construction Permit History**

Permit Number	Description
0590-005	Folding food cartoon manufacturing
0692-007	A web fed offset press
0294-005	Two Lemanic 1150 natural gas dryer units and two gravure units in line with the new Bobst Lemanic 1150 cutter
0796-020	Komori Web press
0897-015	MAN Roland 900 Sheetfed
0799-016	MAN Roland 900 Sheetfed
042000-015	2.4 MMBtu/hr natural gas dryer and flexographic printing
0799-016A	Ozone emissions and press venting
122010-003	Komori web, offset lithographic press

## PROJECT DESCRIPTION

WestRock Converting Company has applied for authority to install and operate one sheet fed Heidelberg Speed Master Model 145-7 color lithographic offset press (SP-01c). The proposed press is capable of printing 18,000 sheets per hour with a sheet size capability of 41.73 inches by 57 inches. The pollutant emissions for this project are not controlled by any specialized equipment.

The maximum hourly design rates (MHDR) for the ink and coating operations were calculated using a representative amount of material that would be applied per each sheet processed and multiplying that by 18,000 sheets per hour. The MHDRs for the fountain solution and wash materials reflect the amount of material applied per the maximum amount of applied ink. These design rates are based on maximum historical usage of similar existing presses. The new press will be able to apply 0.022 tons of ink per hour, 0.12 tons of coating per hour, 0.0032 tons of fountain solution per hour, and 0.0019 tons of wash material and clean up solvent per hour.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained using SDS sheets for the VOC containing materials used. This includes the inks, coatings, fountain solution, wash materials, and clean up solvents. A list of all the material that had safety data sheets supplied from the application can be found in the following table.

**Table 2: Materials with Supplied Safety Data Sheets**

Material List	
Ink	Coatings
Arrowstar Black #5/SBS	Coating & Adhesives Corporation Coating 1919
	Coating & Adhesives Corporation Coating 1324
Fountain Solution	Wash Materials And Clean Up Solvents
Fountain Concentrate 2451 Plus 2G	Bottcherin 6003
	VQA0-4797-3PA9 BLEND #4772 TYPE WASH 32.00
Note 1: The applicant provided information for each material on the list.	

The applicant expected that some of the inks they will use in the future will contain a higher VOC content than the ones safety data sheets were provided for. The following table summarizes the expected worst case materials and the values used in the potential to emit calculations.

**Table 3: Theoretical Worst-Case Materials**

<b>Theoretical Worst-Case Material<sup>2</sup></b>		
<b>Material</b>	<b>Pollutant</b>	<b>Composition By Weight</b>
Ink	VOC	30.00 %
	VOC HAP	N/D
Coating	VOC	3.60 %
	HAP	0.10 %
Fountain Solution	VOC	27.10 %
	HAP	10.00%
Wash Material & Clean Up Solvent	VOC	96.10 %
	Methanol	1.40 %
	Xylenes	28.00%
	Toluene	1.00%
	Ethylbenzene	7.00%

N/D = Not Determined

The theoretical worst case VOC HAP composition in the ink was not determined. The provided safety data sheets showed no volatile HAPs in the ink. Historic ink usage from the facility indicated that some inks contain volatile HAPs. The applicant may use these inks and other materials with higher VOC/HAP values than those listed in Table 3; however, the restrictions in Special Condition 1 ensure that individual HAP emissions do not exceed the SMAL.

Per the April 27, 2005 memorandum issued by Leanne Tippett Mosby, Director Air Pollution Control Program, a 95% VOC retention factor was applied when calculating the PTE for the ink non-heatset solvents.

The cleaning operations cannot be performed at the same time as the printing operations. The printing operations have the potential to emit more pollutants than the cleaning operations, as a worst-case scenario the cleaning operations VOC emissions were left out of the final PTE. The ink that is proposed to be used contains manganese compounds. These compounds are considered to be particulate (PM) HAPs. Because this printing press transfers the inks by contact, PM<sub>10</sub> and PM HAP emissions are considered negligible.

The following table provides an emissions summary for this project. Existing potential emissions were taken from the potential to emit calculations from Basic Operating Permit Application Project #2014-11-003. Existing actual emissions were taken from the installation's 2016 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).



**Table 4: Emissions Summary (tpy)**

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2016 EIQ)	Potential Emissions of the Project
PM	25.0	4.82	N/D	N/A
PM <sub>10</sub>	15.0	4.82	3.21	N/A
PM <sub>2.5</sub>	10.0	4.82	3.09	N/A
SOx	40.0	N/D	N/A	N/A
NOx	40.0	N/D	N/A	N/A
VOC	40.0	53.18 <sup>1</sup>	27.71	47.12
CO	100.0	N/D	N/A	N/A
HAPs	10.0/25.0	9.02 <sup>1</sup>	0.08	<SMAL/<25.0 <sup>2</sup>
Ethylene Glycol	10.0	N/D	N/D	<SMAL
Methanol	10.0	N/D	N/D	<SMAL
Xylenes	10.0	N/D	N/D	<SMAL
Toluene	10.0	N/D	N/D	<SMAL
Ethylbenzene	10.0	N/D	N/D	<SMAL

N/A = Not Applicable; N/D = Not Determined

<sup>1</sup>Calculated based on 8,400 hours of operation

<sup>2</sup>This permit does not contain a special condition limiting combined HAPs to less than 25.0 tons per year. The potential combined HAP emissions using the provided SDS with the application are less than 25.0 tons per year. Special Condition 1 of this permit allows alternative materials that could result in greater HAP emissions; however historic usage for similar presses at the facility indicate that combined HAPs from this press will not exceed 25.0 tons per year so no permit condition limiting combined HAPs to 25.0 tons per year was included in this permit.

Following the issuance of this permit, the installation will require an Intermediate or Part 70 operating permit as the VOC PTE from the entire installation will be above major source levels. The VOC emissions from this project and the existing potential emissions combine for greater than 100.0 tons per year of VOC. The existing potential emissions calculated in the Basic Operating Permit Application Project #2014-11-003 were calculated based on the facility operating 24 hours per day, 7 days per week and 50 weeks per year for a total of 8,400 hours as opposed to 8,760 hours. For permit applicability 8,760 hours is used and as a result the 53.18 tons per year VOC PTE in the most recent basic operating permit was underestimated. Despite the PTE being underestimated it still demonstrates that when combined with the new project PTE that the VOC PTE from the entire installation will be above major source levels.

This permit contains no VOC limitation since the facility will have to apply for an Intermediate or Part 70 operating permit. If the facility chooses to apply for an Intermediate operating permit, the VOC emissions from the material used on the new press (SP-01c) will be tracked and recorded as part of a voluntarily agreed to installation wide VOC emission limitation.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are above de minimis levels.

## APPLICABLE REQUIREMENTS

WestRock Converting Company shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

## GENERAL REQUIREMENTS

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
  - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

## SPECIFIC REQUIREMENTS

- *Control of Emissions From Lithographic and Letterpress Printing Operations*, 10 CSR 10-5.442 does not apply as the facility is not in Clay, Jackson or Platte County.

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 17, 2018, received January 21, 2018, designating WestRock as the owner and operator of the installation.

Attachment A - HAP Compliance Worksheet – SP-01c

WestRock Converting Company  
 Newton County  
 Project Number: 2018-01-034  
 Installation ID Number: 145-0036  
 Permit Number: 042018-007

Volatile HAP Potential Emissions					
Material Type	Maximum Hourly Design Rate (Tons/Hour)	Pollutant <sup>4</sup>	Mass Percentage <sup>5</sup>	Correction Factor <sup>6</sup>	Potential To Emit (Tons/Year) <sup>7</sup>
Ink	0.023			0.05	
Coating	0.116			1	
Fountain Solution	0.0032			1	
Wash Materials & Clean Up Solvent	0.0019			1	
<p>Note 3: If a new material is used that contains a HAP with a potential to emit that is higher than its associate Screen Modeling Action Level in Appendix B then WestRock Converting Company will need to get departmental approval before using that material.</p> <p>Note 4: Hazardous air pollutant with an applicable Screen Modeling Action Level in Appendix B.</p> <p>Note 5: Obtained from the SDS for the material. If a range of values is listed, use the highest value in the range to demonstrate compliance.</p> <p>Note 6: The ink correction factor accounts for the 95% retention factor described in the April 27, 2005 memorandum issued by Leanne Tippett Mosby, Director Air Pollution Control Program for lithographic sheet fed non-heatset offset inks.</p> <p>Note 7: Emissions calculated using <math>PTE = MHDR \times \text{Mass Percentage} \times \text{Correction Factor} \times 8760</math> hours per year</p> <p>Note 8: A total of less than SMAL is necessary for compliance.</p>					

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>Mgal</b> .....1,000 gallons
<b>°F</b> .....degrees Fahrenheit	<b>MW</b> .....megawatt
<b>acfm</b> .....actual cubic feet per minute	<b>MHDR</b> .....maximum hourly design rate
<b>BACT</b> .....Best Available Control Technology	<b>MMBtu</b> ....Million British thermal units
<b>BMPs</b> .....Best Management Practices	<b>MMCF</b> .....million cubic feet
<b>Btu</b> .....British thermal unit	<b>MSDS</b> .....Material Safety Data Sheet
<b>CAM</b> .....Compliance Assurance Monitoring	<b>NAAQS</b> ....National Ambient Air Quality Standards
<b>CAS</b> .....Chemical Abstracts Service	<b>NESHAPs</b> National Emissions Standards for Hazardous Air Pollutants
<b>CEMS</b> .....Continuous Emission Monitor System	<b>NO<sub>x</sub></b> .....nitrogen oxides
<b>CFR</b> .....Code of Federal Regulations	<b>NSPS</b> .....New Source Performance Standards
<b>CO</b> .....carbon monoxide	<b>NSR</b> .....New Source Review
<b>CO<sub>2</sub></b> .....carbon dioxide	<b>PM</b> .....particulate matter
<b>CO<sub>2e</sub></b> .....carbon dioxide equivalent	<b>PM<sub>2.5</sub></b> .....particulate matter less than 2.5 microns in aerodynamic diameter
<b>COMS</b> .....Continuous Opacity Monitoring System	<b>PM<sub>10</sub></b> .....particulate matter less than 10 microns in aerodynamic diameter
<b>CSR</b> .....Code of State Regulations	<b>ppm</b> .....parts per million
<b>dscf</b> .....dry standard cubic feet	<b>PSD</b> .....Prevention of Significant Deterioration
<b>EIQ</b> .....Emission Inventory Questionnaire	<b>PTE</b> .....potential to emit
<b>EP</b> .....Emission Point	<b>RACT</b> .....Reasonable Available Control Technology
<b>EPA</b> .....Environmental Protection Agency	<b>RAL</b> .....Risk Assessment Level
<b>EU</b> .....Emission Unit	<b>SCC</b> .....Source Classification Code
<b>fps</b> .....feet per second	<b>scfm</b> .....standard cubic feet per minute
<b>ft</b> .....feet	<b>SDS</b> .....Safety Data Sheet
<b>GACT</b> .....Generally Available Control Technology	<b>SIC</b> .....Standard Industrial Classification
<b>GHG</b> .....Greenhouse Gas	<b>SIP</b> .....State Implementation Plan
<b>gpm</b> .....gallons per minute	<b>SMAL</b> .....Screening Model Action Levels
<b>gr</b> .....grains	<b>SO<sub>x</sub></b> .....sulfur oxides
<b>GWP</b> .....Global Warming Potential	<b>SO<sub>2</sub></b> .....sulfur dioxide
<b>HAP</b> .....Hazardous Air Pollutant	<b>SSM</b> .....Startup, Shutdown & Malfunction
<b>hr</b> .....hour	<b>tph</b> .....tons per hour
<b>hp</b> .....horsepower	<b>tpy</b> .....tons per year
<b>lb</b> .....pound	<b>VMT</b> .....vehicle miles traveled
<b>lbs/hr</b> .....pounds per hour	<b>VOC</b> .....Volatile Organic Compound
<b>MACT</b> .....Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> .....micrograms per cubic meter	
<b>m/s</b> .....meters per second	

## Appendix B: Table of Hazardous Air Pollutants and Screening Model Action Levels

Chemical	CAS #	HAZ (OSHA)	CFR	PM	Chemical	CAS #	HAZ (OSHA)	CFR	PM	Chemical	CAS #	HAZ (OSHA)	CFR	PM			
ACETALDEHYDE	75-07-0	9		Y	N	CARBARYL	63-25-2	10	V	Y	Y	DICHLOROPROPANE, [1,2-]	78-67-5	1	Y	N	
ACETAMIDE	60-35-5	1		Y	N	CARBON DISULFIDE	75-15-0	1		Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
ACETONITRILE	75-05-6	4		Y	N	CARBON TETRACHLORIDE	56-23-5	1		Y	N	DICHLORVOS	62-73-7	0.2		Y	N
ACETOPHENONE	96-96-2	1		Y	N	CARBONYL SULFIDE	463-68-1	5		Y	N	DETHANOLAMINE	111-42-2	5		Y	N
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CATECHOL	120-80-9	5		Y	N	DETHYL SULFATE	64-67-5	1		Y	N
ACROLEIN	107-02-8	0.04		Y	N	CHLORAMBEN	123-90-4	1		Y	Y	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
ACRYLAMIDE	79-06-1	0.02		Y	N	CHLORDANE	57-74-9	0.01		Y	Y	DMETHOXYBENZDINE, [3,3-]	119-90-4	0.1	V	Y	Y
ACRYLIC ACID	79-10-7	0.6		Y	N	CHLORINE	7782-50-5	0.1		N	N	DIMETHYL BENZDINE, [3,3-]	119-93-7	0.008	V	Y	Y
ACRYLONITRILE	107-13-1	0.3		Y	N	CHLOROACETIC ACID	79-11-8	0.1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	DIMETHYL FORMANIDE	68-12-2	1		Y	N
AMINOBIHENYL, [4-]	92-07-1	1	V	Y	N	CHLOROBENZENE	108-90-7	10		Y	N	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
ANILINE	62-53-3	1		Y	N	CHLOROBENZYLATE	510-15-6	0.4	V	Y	Y	DIMETHYL PHTHALATE	131-11-3	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CHLOROFORM	67-66-3	0.9		Y	N	DIMETHYL SULFATE	77-78-1	0.1		Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
ANTIMONY COMPOUNDS		5	H	N	Y	CHLOROPRENE	126-99-8	1		Y	N	DIMETHYLANILINE, [4-N-]	121-59-7	1		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	CHROMIUM COMPOUNDS		5	L	N	Y	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
ANTIMONY TRIOXIDE	1303-04-4	1	H	N	Y	CHRYSENE	218-31-9	0.01	V	Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	COBALT COMPOUNDS		0.1	M	N	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
ASBESTOS	1332-21-4	0	A	N	Y	CRESOL, [META-]	108-39-4	1	B	Y	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-86-8	0.1	V	Y	Y
BENZ(A)ANTHRACENE	58-55-3	0.01	V	Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N	EPICHLOROHYDRIN	126-83-8	2		Y	N
BENZENE	71-43-2	2		Y	N	CRESOL, [PARA-]	109-44-5	1	B	Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
BENZDINE	92-87-5	0.0003	V	Y	N	CRESOLS (MIXED ISOMERS)	1219-77-3	1	B	Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-5	5	P	Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	CUMENE	98-62-8	10		Y	N	ETHYL ACRYLATE	140-88-5	1		Y	N
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N	ETHYL BENZENE	100-41-4	10		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DDE	72-95-9	0.01	V	Y	Y	ETHYL CHLORIDE	75-00-3	10		Y	N
BENZO TRICHLORIDE	98-07-7	0.002		Y	N	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N	ETHYLENE GLYCOL	107-21-1	10		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N	ETHYLENE GLYCOL MONOBUTYL ETHER (Deisted)	111-75-2				
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DIAZOMETHANE	334-88-3	1		Y	N	ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N
BERYLLIUM SALTS		2E-05	J	N	Y	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N	ETHYLENE GINE [AZDRONE]	151-66-4	0.003		Y	N
BIPHENYL, [1,1-]	93-52-4	10	V	Y	N	DIOXINS/FURANS	6E-07	D,V	Y	N	ETHYLENE OXIDE	75-21-8	0.1		Y	N	
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DIBENZO FURAN	132-64-9	5	V	Y	N	ETHYLENE THIOUREA	96-45-7	0.6		Y	Y
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N	FORMALDEHYDE	50-00-0	2		Y	N
BROMOFORM	75-25-2	10		Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N	GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIBUTYL PHTHALATE	64-74-2	10		Y	Y	GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3		Y	N	HEPTACHLOR	76-44-6	0.02		Y	N
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DICHLOROBENZDENE, [3,3-]	91-94-1	0.2	V	Y	Y	HEXACHLOROBENZENE	118-74-1	0.01		Y	N
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N	HEXACHLOROSUTADENE	87-68-3	0.9		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N	HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N	HEXACHLOROCYCLOHEXANE, [BETA-]	319-86-7	0.01	F	Y	N
CAPROLACTAM (Deisted)	108-60-2					DICHLOROMETHANE	75-09-2	10		N	N	HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N
CAPTAN	133-06-2	10		Y	Y	DICHLOROPHENOXYACETIC ACID, [2,4-]	84-75-7	10	C	Y	Y	HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N

Chemical	CAS #	SMAL (mg/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (mg/yr)	Group ID	VOC	PM	Chemical	CAS #	SMAL (mg/yr)	Group ID	VOC	PM
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	NITROSODIMETHYLAMINE, [M-]	62-75-9	0.001		Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
HEXACHLOROETHANE	57-72-1	5		Y	N	NITROSONORPHOLINE, [N-]	59-83-2	1		Y	N	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
HEXAMETHYLENE-1,3-DIISOCYANATE	822-06-0	0.02		Y	N	NITROSO-N-METHYLUREA, [N-]	284-93-5	0.0002		Y	N	VINYL ACETATE	108-05-4	1		Y	N
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	OCTACHLORONAPHTHALENE	2234-12-1	0.01	V	Y	N	VINYL BROMIDE	583-80-2	0.6		Y	N
HEXANE, [N-]	110-54-3	10		Y	H	PARATHION	56-38-2	0.1		Y	Y	VINYL CHLORIDE	75-01-4	0.2		Y	N
HYDRAZINE	302-01-2	0.004		N	H	PCB [POLYCHLORINATED BIPHENYLS]	1336-23-3	0.009	X	Y	Y	XYLENE, [META-]	108-38-3	10	G	Y	H
HYDROGEN CHLORIDE	7647-01-0	10		N	H	PENTACHLORONITROBENZENE	82-69-3	0.3		Y	N	XYLENE, [ORTHO-]	95-47-6	10	G	Y	N
HYDROGEN FLUORIDE	7624-39-3	0.1		N	N	PENTACHLOROPHENOL	87-56-5	0.7		Y	N	XYLENE, [PARA-]	106-42-3	10	G	Y	N
HYDROQUINONE	123-31-9	1		Y	H	PHENOL	108-95-2	0.1		Y	N	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
INDENO(1,2,3-CD)PYRENE	193-39-5	0.01	V	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N						
ISOPHORONE	78-59-1	10		Y	N	PHOSGENE	75-44-5	0.1		Y	N						
LEAD COMPOUNDS		0.01	Q	N	Y	PHOSPHINE	7808-81-2	5		N	N						
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-59-9	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N	Legend					
MALEIC ANHYDRIDE	108-31-6	1		Y	N	PHTHALIC ANHYDRIDE	85-44-9	5		Y	N	Group ID	Aggregate Group Name				
MANGANESE COMPOUNDS		0.3	R	N	Y	POLYCYCLIC ORGANIC MATTER		0.01	V	Y	N	A	Asbestos				
MERCURY COMPOUNDS		0.01	S	N	N	PROPANE SULFONE, [1,3-]	1120-71-4	0.03		Y	Y	B	Cresols/Cresylic Acid (isomers and mixtures)				
METHANOL	67-58-1	10		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N	C	2,4-D, Salts and Esters				
METHOXYCHLOR	72-43-5	10	V	Y	Y	PROPIONALDEHYDE	123-38-6	5		Y	N	D	Dibenzofurans, Dibenzodioxins				
METHOXYETHANOL, [2-]	109-88-4	10	P	Y	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y	E	4,6-Dinitro-o-cresol, and Salts				
METHYL CHLORIDE	74-87-3	10		Y	H	PROPYLENE OXIDE	75-56-9	5		Y	N	F	Lindane (all isomers)				
METHYLETHYL KETONE (Methyl Ethyl Ketone)	78-93-3					PROPYLENEMINE, [1,2-]	75-55-8	0.003		Y	N	G	Xylenes (all isomers and mixtures)				
METHYL HYDRAZINE	60-34-4	0.06		Y	N	QUINOLINE	91-22-5	0.006		Y	N	H	Antimony Compounds				
METHYL IODIDE	74-88-4	1		Y	N	QUINONE	106-51-4	5		Y	N	I	Arsenic Compounds				
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y	J	Beryllium Compounds				
METHYL ISOCYANATE	624-83-9	0.1		Y	N	SELENIUM COMPOUNDS		0.1	W	N	Y	K	Cadmium Compounds				
METHYL METHACRYLATE	80-82-6	10		Y	N	STYRENE	100-42-5	1		Y	N	L	Chromium Compounds				
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	STYRENE OXIDE	96-09-3	1		Y	N	M	Cobalt Compounds				
METHYLCYCLOPENTADIENYL MANGANESE	12109-13-3	0.1	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN, [2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y	N	Coke Oven Emissions				
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N	O	Cyanide Compounds				
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N	P	Glycol Ethers				
METHYLNAPHTHALENE, [2-]	81-57-8	0.01	V	Y	N	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N	Q	Lead Compounds (except elemental Lead)				
MINERAL FIBERS		0	T	N	Y	TOLUENE	108-88-3	10		Y	N	R	Manganese Compounds				
NAPHTHALENE	91-20-3	10	V	Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N	S	Mercury Compounds				
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	TOLUIDINE, [ORTHO-]	95-53-4	4		Y	N	T	Fine Mineral Fibers				
NAPHTHYLAMINE, [BETA-]	91-59-3	0.01	V	Y	N	TOXAPRENE	8001-35-2	0.01		Y	N	U	Nickel Compounds				
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	TRICHLOROETHYLENE, [1,1,2,1-]	120-82-1	10		Y	N	V	Polycyclic Organic Matter				
NICKEL COMPOUNDS		1	U	N	Y	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N	W	Selenium Compounds				
NICKEL REFINERY DUST		0.08	U	N	Y	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N	X	Polychlorinated Biphenyls (Aroclors)				
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y	TRICHLOROETHYLENE	79-01-6	10		Y	N	Y	Radionuclides				
NITROBENZENE	98-95-3	1		Y	N	TRICHLOROPHENOL, [2,4,6-]	85-95-4	1		Y	N						
NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N	TRICHLOROPHENOL, [2,4,6-]	88-06-2	8		Y	N						
NITROPHENOL, [4-]	100-02-7	5		Y	N	TRIMETHYLAMINE	121-44-8	10		Y	N	Note 1	The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 mSv per year for 7 years exposure associated with a cancer risk of 1 in 1 million				
NITROPROPANE, [2-]	79-46-9	1		Y	N	TRIFLURALIN	1582-09-6	9		Y	Y						

Unit	Unit Description	SCC	Process Description	MHDR	UbH	Materials Evaluated	Density (lbs/gal)	Pollutant	CAS	Category Classification	% Weight	Emission Factor	EF UoM	PTE (Tons/Yr)	SMAL (Tons/Yr)
SP-01 Heidelberg Press	Lithographic Offset Printing - Inks	40500401	Lithographic Printing	0.0225	tons/hr	Arrowstar Black #5/SBS		VOC		VOC	30	30	lbs/ton	2.9585	
								Volatile HAP		2 - HAP/VOC	N/D	N/D		N/D	
SP-01 Heidelberg Press	Lithographic Offset Printing - Coatings	40500401	Lithographic Printing	0.1161	tons/hr	Coating & Adhesives Corporation Coating 1816	8.8	VOC		VOC	3.6	72	lbs/ton	38.813298	
								Volatile HAP		2 - HAP/VOC	0	0		0	
SP-01 Heidelberg Press	Lithographic Offset Printing - Fountain Solution As Applied	40500401	Lithographic Printing	0.0031824	tons/hr	Fountain Concentrate 2451 Plus 2G	8.84	VOC		VOC	27.1	542	lbs/ton	7.5548903	
								Ethylene Glycol	107-21-1	2 - HAP/VOC	10	200	lbs/ton	2.7877824	10
SP-01 Heidelberg Press	Lithographic Offset Printing - Wash Materials And Clean Up Solvents	40500401	Lithographic Printing	0.0018684	tons/hr	VQA0-4797-3PA9 BLEND #4772 TYPE WASH 32.00 Botcherin 6003	6.92	VOC		VOC	98.1	1922	lbs/ton	15.728864	
								Methanol	67-56-1	Methanol	1.4	28	lbs/ton	0.2281406	10
								Xylenes	1330-20-7	Xylenes	28	580	lbs/ton	4.5828116	10
								Toluene	108-88-3	Toluene	1	20	lbs/ton	0.1636718	10
								Ethylbenzene	100-41-4	Ethylbenzene	7	140	lbs/ton	1.1457029	10

**Notes:**

- In the non-heatset process, the Printing Industries Association (PIA) contends that 95% of the VOC from the ink oil and coatings are retained in the paper due to oxidation and absorption of the ink. On April 27, 2005 in a memorandum issued by Leanne Tippett Mosby, Director Air Pollution Control Program, accepted the position that only 5% of emissions from the ink oil and coatings are emitted.
- The theoretical worst case VOC HAP composition in the ink was not determined. The provided safety data sheets showed no volatile HAPs in the ink. Historic ink usage from the facility indicated that some inks contain volatile HAPs. The applicant may use these inks and other materials with higher VOC/HAP values than those listed in Table 3; however, the restrictions in Special Condition 1 ensure that individual HAP emissions do not exceed the SMAL.
- The cleaning cannot occur at the same time as the printing operations so the clean up solvents VOC emissions were left out of the final PTE.
- HAPs for wash from applicant provided email. Applicant provided SDS does not show these HAPs
- Applicant provided HAP % in Coatings in submitted calcs. Follow up email states no HAPs in coatings. Provided SDS show no HAP in coatings. Permit limits HAPs to SMAL

Taken from Basic Operating Permit Notification 2014-11-003

Pollutant	Potential GPM (tons per year)
CO	N/D
GHG	N/D
HAP	9.02
NO <sub>x</sub>	N/D
PM <sub>10/2.5</sub>	4.82
SO <sub>2</sub>	N/D
VOC	53.18

Total PTE: If Everything Runs 8760 hrs/yr

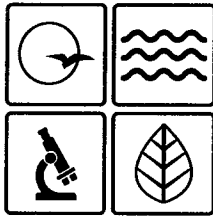
VOC	#VALUE!	Tons/Yr
HAP	#VALUE!	Tons/Yr

Final PTE: Press Cannot Be Cleaned During Printing Operations

VOC	#VALUE!	Tons/Yr
HAP	#VALUE!	Tons/Yr

Max Press Production	18,000	sheets/hr	per press manufacturer
Lithographic Ink Consumption	2.5	lbs/1000 sheets	per plant records
Coating Consumption	12.9	lbs/1000 sheets	per plant records
Auto Wash Consumption	0.03	gal/1000 sheets	per plant records
Fountain Solution Consumption	0.04	gal/1000 sheets	per plant records





Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

APR 04 2018

Mr. Weslee Gamble  
Safety/Environmental Manager  
WestRock Converting Company  
4200 E 32nd Street  
Joplin, MO 64804

RE: New Source Review Permit - Project Number: 2018-01-034

Dear Mr. Gamble:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).



Recycled paper

Mr. Weslee Gamble  
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If you have any questions regarding this permit, please do not hesitate to contact Chad Stephenson, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp  
New Source Review Unit Chief

SH:csj

Enclosures

c: Southwest Regional Office  
PAMS File: 2018-01-034

Permit Number: **042018 - 007**