Non-Attainment Area New Source Review

Preliminary Determination

August 15, 2016

Facility Name: WestRock CP, LLC - Lithia Springs
City: Lithia Springs
County: Douglas
AIRS Number: 04-13-097-00089
Application Number: 23884
Date Application Received: July 1, 2016

Review Conducted by:
State of Georgia - Department of Natural Resources
Environmental Protection Division - Air Protection Branch
Stationary Source Permitting Program

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SUMMARY

The Environmental Protection Division (EPD) has reviewed the application submitted by WestRock CP, LLC - Lithia Springs for a permit to construct and operate a flexographic printing facility. The new facility will be housed in an existing building. The proposed project will include a nine-color flexographic press for the manufacture of preprint linerboard. The preprint linerboard is then shipped off-site and manufactured into corrugated cardboard for boxes and other packaging. There is also a flexographic printing plate processor with a solvent recovery system and associated storage tanks. A public advisory was issued for the application on July 5, 2016 and it expired on August 5, 2016, with no comments received by the Division.

WestRock CP, LLC - Lithia Springs will be located in Douglas County, which is classified as "attainment" or "unclassifiable" for SO_2, PM_{10}, PM $_{2.5}$, and CO. Although Douglas County is attainment for PM $_{2.5}$, Georgia rules for nonattainment permit review are still in effect. Douglas County is classified as "non-attainment" for ozone (NO_X and VOC). Georgia implements the federal nonattainment permitting regulations of 40 CFR 51.165 as Georgia Rules Chapter 391-3-1-.03(8)(c).

The WestRock CP, LLC - Lithia Springs project will result in an emissions increase in VOC, NO_x, $PM_{2.5}$, PM_{10}, SO_2, and CO. A Prevention of Significant Deterioration (PSD) analysis for SO2, PM_{10}, $PM_{2.5}$, and CO and a Non-Attainment Area New Source Review (NAA-NSR) analysis for VOC and NO_x was performed for the facility to determine if any increase was above the "significance" level. The potential VOC emissions are above the NAA-NSR significant level threshold of 25 tons per year.

The EPD review of the data submitted by WestRock CP, LLC - Lithia Springs related to the proposed project indicates that the project will be in compliance with all applicable state and federal air quality regulations.

The Federal Land Manager (FLM) for any Class I area within 200 km of the proposed WestRock facility has been notified and given the opportunity to review the application. The only Class I area within 200 km of the proposed WestRock facility is the Cohutta Wilderness Area.

It is the preliminary determination of the EPD that the proposal provides for the application of Best Available Control Technology (BACT) for the control of VOC, as required by NAA-NSR regulation 391-3-1-.03(8)(c)13 for sources with potential emissions of less than 100 tons per year of VOC. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth should be inconsequential. To satisfy the offsetting emission reduction credit requirement of 391-3-1-.03(8)(c)13, 40 CFR 51.165, WestRock will obtain and retire VOC emission reduction credits for 50 tons of VOC emissions.

This Preliminary Determination concludes that an Air Quality Permit should be issued to WestRock CP, LLC - Lithia Springs for the construction and operation of a flexographic printing facility. Various conditions have been incorporated into the permit to ensure and confirm compliance with all applicable air quality regulations. A copy of the draft permit is included in Appendix A. This Preliminary Determination also acts as a narrative for the Air Quality Permit.

1.0 INTRODUCTION – FACILITY INFORMATION AND EMISSIONS DATA

On June 30, 2016, WestRock CP, LLC - Lithia Springs (hereafter WestRock) submitted an application for an air quality permit to construct and operate a flexographic printing facility. The facility will be located at 600 Riverside Parkway, Building A in Lithia Springs, Douglas County.

Table 1-1: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	y			x
PM_{10}	y			x
$PM_{2.5}$	y			x
SO_2	y			x
VOC	y	x		
NO_x	y			x
CO	y			x
TRS	n			--
H_2S	n			--
Individual HAP	y			x
Total HAPs	y			x
Total GHGs	y			x

Based on the proposed project description and data provided in the permit application, the estimated increases of regulated pollutants from the facility are listed in Table 1-2 below:

Table 1-2: Emissions from the Project

Pollutant	Potential Emissions (tpy)	PSD Significant Emission Rate (tpy)	Subject to PSD Review	NAA-NSR Significant Emission Rate	Subject to NAA-NSR Review
PM	0.41	25	No	--	
PM_{10}	0.41	15	No	--	
$PM_{2.5}$	0.41	10	NAA NSR	15	No
VOC	38.46	40	NAA NSR	25	**Yes**
NO_X	5.46	40	NAA NSR	25	No
CO	4.58	100	No	--	
SO_2	0.03	40	No	--	
TRS	0	10	No	--	
Pb	0	0.6	No	--	
Fluorides	0	3	No	--	
H_2S	0	10	No	--	
SAM	0	7	No	--	

The emissions calculations for Table 1-2 can be found in detail in the facility's NAA-NSR application (see Section 3 and Appendix C of Application No. 23884). These calculations have been reviewed and approved by the Division.

Based on the information presented in Table 1-2 above, WestRock's proposed facility, as specified per Georgia Air Quality Application No. 23884, is classified as a major modification under NAA-NSR because the potential emissions of VOC are greater than 25 tons per year.

Through its new source review procedure, EPD has evaluated WestRock's proposal for compliance with State and Federal requirements. The findings of EPD have been assembled in this Preliminary Determination.

2.0 PROCESS DESCRIPTION

According to Application No. 23884, WestRock has proposed to operate a new facility for the manufacturing of preprint linerboard for the consumer packaging industry. The facility will have a new nine-color flexographic printing press, a flexographic print plate processor with associated equipment including storage tanks, and a solvent recovery system.

WestRock is planning to install a state of the art, nine color flexographic preprint press, machinery for the production of preprint linerboard, printing plates and associated equipment in an existing, leased building located at 600 Riverside Parkway, Lithia Springs, Douglas County, Georgia. The Lithia Spring preprint plant will produce high quality printed linerboard that is incorporated into corrugated boxes and other packaging, as well as point of purchase displays.

"Preprint" generally refers to the printing that is done on the outside liner of a box, before the linerboard undergoes corrugating and/or converting operations. The Lithia Springs plant will use a water based flexographic process to print on various substrates, including kraft and coated white top linerboard, supplied by paper mills within the WestRock system and by third parties. A top coat or overprint varnish will be applied to the printed surface to protect against damage when the sheet is subjected to high heat, steam, hot plate pressure, scuffing from belts and rollers, and rubbing during box forming operations (performed at other manufacturing locations). Drying via in-line natural gas burners occurs after initial ink application and after overprint varnish application. Finished product will be rewound onto a roll or fed through a splicing unit. The finished, preprinted rolls will be shipped to corrugated and folding carton plants, including WestRock facilities throughout the country, where they will be converted into packaging and merchandising display products.

The Lithia Springs production line has been designed to print rolls of linerboard (110" max web width) at a maximum speed of 2,500 feet per minute, with anticipated sustained speeds of 1,500-1,800 feet per minute. The plant's production volume is targeted at 12,000 rolls per year, but actual volume will be driven by customer demand. The maximum production rate is estimated at 15,000 rolls per year. The main chemicals used in the process will be water-based inks and overprint varnish with a low VOC content (approximately 1-3% by weight on average).

The press will be supplied with plates made onsite with a digital solvent plate maker. The plate making process involves exposing pre-formed photopolymer sheets to ultraviolet light by a digital laser to form a graphic image through a carbon ablative mask. Once exposed, the sheets are fed into the sheet processor. The sheets are showered with a washout solvent and gently brushed with rotary brushes. Solvent is recovered and processed in a closed loop distillation column, then combined with virgin solvent and returned to the process. Brushes remove unexposed areas creating "relief" in the plate. The plate automatically processes through the machine in a series of post exposures and electrical dryers. Total plate production for the Lithia Springs plant is conservatively estimated at 288,000 square feet per year.

The WestRock permit application and supporting documentation are included in Appendix A of this Preliminary Determination and can be found online at http://www.epd.georgia.gov/air/psd112gnaa-nsrpcp-permits-database.

3.0 REVIEW OF APPLICABLE RULES AND REGULATIONS

State Rules

Georgia Rule for Air Quality Control (Georgia Rule) 391-3-1-.03(1) requires that any person prior to beginning the construction or modification of any facility which may result in an increase in air pollution shall obtain a permit for the construction or modification of such facility from the Director upon a determination by the Director that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated thereunder. Georgia Rule 391-3-1-.03(8)(c) continues that no permit to construct a new or modified major stationary source to be located in any area of the State determine and designated by the U.S. EPA Administrator or the Director as not attaining a National Ambient Air Quality Standard or in areas contributing to the ambient air levels of such pollutants in such areas of non-attainment shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in 391-3-1-.03(8)(c)13 [nonattainment new source review] and 391-3-1-.02(7) [PSD permits] if applicable.

The proposed facility will be located in Douglas County, which is designated non-attainment for ozone (VOC and NOx).

Georgia Rule 391-3-1-.02(2)(b), "Visible Emissions"
This Rule is applicable and it limits visible emissions from the facility to less than forty (40) percent opacity. The equipment at the facility are anticipated to be in compliance with this opacity limit. Given the nature of printing operations, it is unlikely that any visible emissions from the processes would exceed 40 percent.

Georgia Rule 391-3-1-.02(2)(e), "Particulate Emission from Manufacturing Processes"
This Rule is applicable and it limits particulate matter emissions per the following formula for the new process equipment: $E = 4.1(P^{0.67})$, where E = Emission rate in pounds per hour and P = Process input rate in tons per hour, for process input weight rates up to and including 30 tons per hour. The equipment at the facility is anticipated to be in compliance with this particulate matter limit. Given the nature of printing operations, it is unlikely that any particulate emissions from the processes would exceed the allowable limit calculated using the equation above.

Georgia Rule 391-3-1-.02(2)(g), "Sulfur Dioxide"
This Rule is not applicable as the dryers in the flexographic printing press line do not meet the definition of "fuel burning equipment" stated in the following paragraph. However, the burners that supply heat to the dryers only combust natural gas, which is inherently compliant as it is a low sulfur content fuel.

Furthermore, Georgia defines fuel-burning equipment as, "…equipment the primary purpose of which is the production of thermal energy from the combustion of fuel. Such equipment is generally that used for, but not limited to, heating water, generating or superheating steam, heating air as in warm air furnaces, furnishing process heat indirectly, through transfer by fluids or transmissions through process vessel walls."

Although the dryers on the preprint press will combust natural gas, they are part of a manufacturing piece of equipment for which the primary purpose is not the production of thermal energy. Due to this explanation, there are no Georgia Rules that apply to the control of NOx from these sources.

Georgia Rule 391-3-1-.02(2)(w), "VOC Emissions from Paper Coating"
This Rule is not applicable as the facility has no paper coating lines. The flexographic printing press has one station as part of the print line that applies a clear coat, but as this is applied as part of the print line and not in a stand-alone coater, this Rule is not applicable. The clear coat station will comply with the standards and the VOC limits of Georgia Rule (mm) as part of the flexographic printing line. As such the VOC limits on the clear coat will be just as stringent as those stated in Rule (w).

Georgia Rule 391-3-1-.02(2)(mm), "VOC Emissions Graphic Arts Systems"
This Rule is applicable as the facility will operate a flexographic printing press. The flexographic press will be subject to Section 1, subpart (i) which limits the VOC content of any ink or coating, as applied, to either: less than 25 percent by volume of the volatile content of the ink/coating; or 40 percent by volume of the coating ink, less water; or 0.5 pound of VOC per pound of coating solids. This Rule also requires good housekeeping practices to minimize fugitive VOC emissions. The VOC content of the water-based coatings will be less than 5%, so the facility will be inherently compliant with this rule. The requirements of this Rule will be subsumed under the BACT requirements.

Georgia Rule 391-3-1-.02(2)(tt), "VOC Emissions from Major Sources"
This Rule is not applicable since the VOC emissions from equipment that is not covered by another VOC regulating state rule, which would be the plate processors, do not have potential VOC emissions greater than 25 tpy, the major source threshold in a non-attainment county.

Georgia Rule 391-3-1-.02(2)(vv), "Volatile Organic Liquid Handling and Storage"
This Rule is applicable to the solvent storage tank as it has a capacity of 4,000 gallons and stores a volatile organic liquid. As required by this Rule, the facility will install submerged fill pipes for this tank.

Georgia Rule 391-3-1-.02(2)(ccc), "VOC Emissions from Bulk Mixing"
This Rule is not applicable as the facility does not manufacture inks or coatings.

Georgia Rule 391-3-1-.03(8)(c)
This Georgia Rule contains the adopted elements of the Federal New Source Review provisions which the United States Environmental Protection Agency (EPA) has approved as part of Georgia's State Implementation Plan (SIP). This means that Georgia EPD issues NAA-NSR permits for new major sources pursuant to the requirements of Georgia's regulations.

This section of the Georgia Rules for Air Quality Control applies to newly constructed or modified existing sources, located in a Non-Attainment Area, whose potential emissions of any regulated pollutant exceed the major source threshold (in this case, 25 tons per year of VOC). This section also applies to existing sources making a modification whose potential emissions exceed the major modification emission thresholds listed in 40 CFR 52.24(f)10.

Sources being permitted under these provisions are required to:

a. Obtain and retire offsetting emission reduction credits prior to startup

Under the provisions of 40 CFR 51.165, offsetting emission reduction credits must be procured by the source prior to commencing operation in lieu of performing an ambient air quality analysis (only applicable for emissions of VOC or NOx). The purpose of the emission offset credits is to ensure that the sum total of the emissions of the non-attainment pollutant, including the emissions from the proposed facility, are less than the sum total of the non-attainment pollutant emissions before the proposed facility begins operation, so as to represent (when considered together with other air pollution control measures legally enforced in such areas or regions) reasonable further progress toward attaining the National Ambient Air Quality Standard for which the area is in non-attainment.

The US EPA has established ratios relating the amount of emission offset credits that must be obtained to the amount of allowable non-attainment pollutant emissions from a major source or modification for the five non-attainment area classifications. The classifications and ratios correspond as follows: marginal (1.1:1), moderate (1.15:1), serious (1.2:1), severe (1.3:1), and extreme (1.5:1). Metro Atlanta is currently "moderate" under the 2008 ozone standard, but Georgia's NAA-NSR rules still reflect when the 13-county Atlanta 1-hour Ozone Non-Attainment Area was designated as "severe", meaning for every 1 ton of allowable emissions from a proposed major source, 1.3 tons of emission offset credits must be procured.

WestRock has requested a 34.8 ton per year VOC emission limit on the flexographic printing press and a 3.66 ton per year VOC emission limit on the flexographic plate processor for a total of 38.46 tons. With a 1.3:1 offset ratio, a total of 50 tons per year of VOC offset credits need to be obtained. WestRock has stated its intention to procure 50 tons of VOC emission reduction credits prior to operation of the facility.

b. Comply with the lowest achievable emission rate (LAER) or Best Available Control Technology (BACT) as determined using the RACT/BACT/LAER Clearinghouse (RBLC) and other authoritative sources

As stated in Georgia Rule for Air Quality Control 391-3-1-.03(8)(c)13(iii), "In the case of any major stationary source located in these counties [Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale] which emits or has the potential to emit less than 100 tons of volatile organic compounds or nitrogen oxides per year, whenever any change (as described in Section 111(a)(4) of the Federal Act; at that source results in any increase (other than a de minimis increase) in emissions of volatile organic compounds or nitrogen oxides from a discrete operation, unit, or other pollutant emitting activity at the source, such increase shall be considered a modification for purposes of this subsection, unless the owner or operator of the source elects to offset the increase by a greater reduction in emissions of volatile organic compounds or nitrogen oxides from other operations, unit or activities within the source at an internal offset ratio of at least 1.3 to 1. If the owner or operator does not make such election, such change shall be considered a modification for such purposes. *In applying this subsection in the case of any such modification, the best available control technology (BACT), as defined by the Federal Act, shall be substituted for the lowest achievable emission rate (LAER)."*

The project emissions exceed the NAA-NSR major source threshold for VOC of 25 tons per five calendar-year period. However, the facility-wide potential emissions of VOC are less than 100 tpy, so the proposed emission sources are subject to Best Available Control Technology (BACT) requirements for VOC rather than Lowest Achievable Emission Rate (LAER) requirements as stated in 391-3-1-.03(8)(c)13(iii).

c. Certify that all other major stationary sources owned or operated by the Permittee are operating in compliance, or are on a schedule of compliance

WestRock has a full or partial ownership interest in three major stationary sources in the State of Georgia: (1) WestRock Southeast, LLC (Dublin, Georgia), (2) Green Power Solutions, LLC (Dublin, Georgia), and (3) WestRock Packaging Systems, LLC (Atlanta, Georgia). All of these facilities are in compliance, or on a schedule for compliance, with all applicable federal and state emission limitations and standards. The most recent Title V compliance reports were relied upon for this determination.

d. Submit an analysis of alternative sites, sizes, production processes and environmental control techniques for the proposed source to determine whether the benefits of the proposed source significantly outweigh the environmental and social costs imposed as the result of its proposed location, construction, or modification

WestRock's site selection process incorporated both internal and external consultants' research and analysis of alternative locations for the facility. Factors considered paramount to the decision as to where to locate the plant included: transportation/logistics access and costs; proximity to customers/vendors; sufficient building and site requirements to accommodate new equipment; and workforce retention and expansion.

Currently, WestRock's Graphic Solutions Business Unit encompasses seven printing machines housed at four locations in North America: four in Canada, and one each in Kentucky, Florida, and Georgia. Numerous challenges and limitations on the company's ability to expand its operations at these existing locations were identified during the alternative analysis. These limitations included:

- Lack of other suitable WestRock facilities within the right geographic area
- No space available to expand operations at existing locations
- Aging equipment/dated technology at existing plants that would limit the company's ability to meet rapidly evolving customer demands
- High cost labor base at various locations
- Freight costs and transportation time, including challenges of border crossing and customs issues with imports from Canada into the U.S.

The Lithia Springs facility will be centrally located in metro Atlanta primarily to serve customers across the southeastern and central United States. Locating the facility outside of metro Atlanta would have resulted in job losses for local employees, loss of state and local tax revenue, disruption to local vendors and service providers, and diminished ability for WestRock to serve its existing customers. Additionally, WestRock's home office is located in Norcross, Georgia.

The Lithia Springs location was ultimately selected based on an objective analysis and competitive state and local economic development site selection process. By retaining and expanding operations within the metro Atlanta area, WestRock is best positioned to serve existing clients and customers with minimal interruption. WestRock will retain the leadership talent and experienced local employees and avoid a lengthy startup from having to train a new workforce. This location also offers cost-competitive inbound and outbound freight lanes for efficient transportation from regional suppliers. The Lithia Springs location provides the most economical building costs, including ample room for future growth. In order for WestRock to maintain and grow its customer base, retain its existing talent, create new jobs with wages that exceed the county average, contribute new tax revenues, and enhance the economy of metro Atlanta, it must locate at the Lithia Springs site, proposed in this application.

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Federal Rules

New Source Performance Standards

NSPS standards are developed for particular industrial source categories and the applicability of a particular NSPS to a facility can be readily ascertained based on the industrial source category covered. There are no New Source Performance Standards that are applicable to flexographic printing on paper.

National Emissions Standards for Hazardous Air Pollutants

The WestRock facility will not be a major source of Hazardous Air Pollutants (HAPs) and therefore will not be subject to any National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations.

As a minor source of HAP emissions, the facility is classified as an Area Source and would be applicable to any NESHAPs for Area Sources for the appropriate operational category. However, there are no Area Source NESHAPs that are applicable to flexographic printing operations or printing plate processors.

40 CFR 63 Subpart JJJJJJ, commonly referred to as the Area Source Boiler GACT, applies to affected boilers at area sources of HAP. While the Lithia Springs facility is an area source, the facility will operate direct-fired dryers as part of the preprint press. Dryer burners such as this do not meet the affected source definition for a boiler. Furthermore, the burners will only combust natural gas, which would make them exempt from the regulation. WestRock Lithia Springs is not subject to the requirements of Subpart JJJJJJ.

40 CFR 64 – Compliance Assurance Monitoring

Under 40 CFR 64, the *Compliance Assurance Monitoring* Regulations (CAM), facilities are required to prepare and submit monitoring plans for certain emission units with the Title V application. The CAM Plans provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation applies to units that use a control device to achieve compliance with an emission limit and whose pre-controlled emissions levels exceed the major source thresholds under the Title V permitting program.

The WestRock facility will not employ any air pollution control devices; therefore, the CAM requirements are not triggered by the proposed project.

NAA - NSR – 40 CFR 51.165

The provisions of Statutory Restrictions on New Sources (NSR) in 40 CFR 51.165 are implemented as Georgia Rule 391-3-1-.03(8)(c). For a discussion of these provisions, see the discussion on the previous page regarding Georgia Rule for Air Quality Control 391-3-1-.03(8)(c).

Definition of BACT and LAER

NAA-NSR requires a control technology assessment for a project undergoing said review to be congruent with the Lowest Achievable Emission Rate (LAER) or Best Achievable Control Technology (BACT) for VOC sources with emissions of less than 100 tons per year. [391-3-1-.03(8)(c)13(iii).] Westrock will be subject to the requirement to install BACT instead of LAER because the permitting emissions will be less than 100 tons per year.

Section 169 of the Clean Air Act defines BACT as an emission limitation reflecting the maximum degree of reduction that the permitting authority (in this case, EPD), on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such a facility through application of production processes and available methods, systems, and techniques. In all cases BACT must establish emission limitations or specific design characteristics at least as stringent as applicable New Source Performance Standards (NSPS). In addition, if EPD determines that there is no economically reasonable or technologically feasible way to measure the emissions, and hence to impose and enforceable emissions standard, it may require the source to use a design, equipment, work practice or operations standard or combination thereof, to reduce emissions of the pollutant to the maximum extent practicable.

EPA's NSR Workshop Manual includes guidance on the 5-step top-down process for determining BACT. In general, Georgia EPD requires NAA-NSR/PSD permit applicants to use the top-down process in the BACT analysis, which EPA reviews. The five steps of a top-down BACT review procedure identified by EPA per BACT guidelines are listed below:

Step 1: Identification of all control technologies;
Step 2: Elimination of technically infeasible options;
Step 3: Ranking of remaining control technologies by control effectiveness;
Step 4: Evaluation of the most effective controls and documentation of results; and
Step 5: Selection of BACT.

4.0 CONTROL TECHNOLOGY REVIEW

The proposed project will result in emissions that are significant enough to trigger NAA-NSR review for VOC.

BACT shall be applied based on the type of source proposed by the applicant; requiring a different process be used is considered "redefining the source" and is not appropriate in a BACT determination.

Primary emissions from the printing press and plate processor are VOC from the use of water based inks and overprint varnish at the press and raw material use at the processor. A small amount of NOx, CO, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC and greenhouse gases are expected from the natural gas combustion in the preprint press dryers, which have a combined heat input capacity of 12.7 MMBtu/hr. Miscellaneous sources, which include overprint varnish and other material storage tanks, contribute only a minor amount of VOC emissions. As such, emissions from the project are predominantly driven by the press and the plate maker.

<u>Flexographic Printing Press- Background</u>

For the press operations, flexographic technology is currently the only viable option for creating the products required by WestRock's customer base. A flexographic preprint press was selected as it is the most effective means of producing the type of product that is planned for this location. The proposed preprint press is a state-of-the-art unit with in-line systems that have several automated features. The press uses natural gas as fuel for the dryers and is designed to operate at high speeds and to produce high-quality graphics using water-based inks.

VOC released from the preprint press is largely due to the application of low-VOC, water based inks in up to nine separate printing decks configured on a wide-web (up to 110-inch width) central impression flexographic printing press. The inks are preliminarily heatset in between deck dryers coupled to each printing deck, followed by final ink curing in a tunnel dryer that completes the curing process. The vast majority of the VOC that evaporates in this process occurs within the various dryers that cure the inks. The partial pressures of ink VOC constituents within the waterborne ink formulations are extremely low, and minimal fugitive emission loss outside of the dryers is expected. The decorated web exits the tunnel dryer, passes through chill rollers for required cooling, and then proceeds into a stack coater that applies a water-based overprint varnish. This overprint varnish has even less VOC than the inks, contains over 70% water, and is also expected to create negligible fugitive VOC emissions outside of the stack coater dryers. The coated web exiting the stack coater then sequentially passes through two tunnel dryers located on the bridge between the stack coater to the final set of chill rollers. The decorated and coated web is cooled and then rewound at the exit of the printing press.

Low-VOC, waterborne inks formulated for this flexographic press can be generally characterized as containing about 30%-to-35% solids (resin / pigment / other additives), 3%-4% VOC, and the balance of the volatile portion as water (>60%). The web is partially cured when exiting the printing decks and is exposed to plant air for less time compared to time in the dryers so VOC fugitive losses occurring outside of the press dryers are expected to be negligible. The potential surface evaporative losses for overprint varnish outside of the dryers (fugitive emissions) are also expected to be negligible. Accordingly, the BACT analysis for the flexographic printing press does not consider additional VOC capture devices (total enclosures or close capture hoods) beyond the substantial capture achieved by the press dryers.

Flexographic Printing Press – VOC Emissions

Applicant's Proposal

WestRock supplied a BACT analysis and discussion in Section 5.4 and Appendix D of the application.

WestRock identified applicable control technologies by researching the US EPA's RACT/BACT/LAER Clearinghouse (RBLC), and through evaluating technical literature, vendor information, permitting files and using process knowledge and engineering experience. The RBLC searches were performed in June 2016 for various printing and surface coating categories. WestRock identifies and evaluates the following control technology options: thermal oxidation; catalytic oxidation; carbon adsorption; biofiltration, condensation, wet scrubbing and good operating practices with low VOC materials.

WestRock evaluated each control technology to determine whether or not it would be technically feasible for the facility to implement. The facility first assessed whether or not the technology has been demonstrated and then assessed would it be feasible for WestRock to implement. Available control technology is presumed to be applicable if it has been permitted or actually implemented by a similar source.

WestRock identified the control technologies and then evaluated them to eliminate technically infeasible controls.

- Thermal or Catalytic Oxidation (including Regenerative Thermal Oxidizers, Recuperative Thermal Oxidizers, and Catalytic Oxidizers), due to WestRock's use of low VOC inks which are not conducive to a high destruction / removal efficiency (DRE), and would require more fuel for complete combustion creating higher NOx emissions. EPA guidance indicates that target outlet VOC concentrations should be in the range of 20 ppmv. WestRock's inlet concentration would be approximately 18 ppmv. Catalytic Oxidation operates optimally at higher VOC inlet concentrations than those WestRock will have from the low VOC inks. Given the low inlet concentrations, this technology is probably technically infeasible but a cost analysis is performed as a precaution;

- Carbon Adsorption, due to WestRock's use of low VOC inks creating an inlet stream of less than 18 ppmv, higher temperature and moisture content in the exhaust gas, and the size required for the necessary air flow from the press would size the carbon bed to be approximately 900 square feet, all of which are not conducive to optimum use of the adsorption process. Carbon adsorption is not demonstrated in practice at waterborne flexographic presses of this nature and WestRock eliminated it as technically infeasible for the press dryer;

- Biofiltration, since the dominant VOC constituent in the press dryer exhaust (monoethanolamine, which is approximately 80% of the VOC mass) has a relatively poor biorate. Biofilters are also prone to operating upsets, if any of the key parameters (i.e., temperature, moisture, nutrients, acidity, and microorganism population) needed to maintain a healthy biomass are compromised, which would be the case given the nature of the operation of the flexographic printing press. Biofiltration is not demonstrated in practice at waterborne flexographic presses of this nature and WestRock eliminated it as technically infeasible for the press dryer;

- Condensation, due to the very low concentrations of the VOC components and the significant amount of water vapor in the press dryer exhaust stream. In order to condense the dominant compound (monoethanolamine) at a removal efficiency of 50%, the exhaust gas would have to be cooled from 220°F to 16°F. An extremely large condenser that would consume a tremendous amount of energy to create this much cooling would be required for this application. Condensations is not demonstrated in practice at waterborne flexographic presses of this nature and WestRock eliminated it as technically infeasible for the press dryer;

- Rotary Concentrator (zeolite wheel rotary concentrator), due to the fact that the primary constituent in the press dryer exhaust (monoethanolamine) is an alcohol that has poor zeolite adsorption characteristics. More importantly, the temperature of the press exhaust (220°F) is too high to allow for effective adsorption efficiency on the zeolite wheel; a maximum gas temperature of 150°F is recommended for successful application of the technology. Also, its projected substantial capital cost estimated at $2.1 million. Rotary concentration is not demonstrated in practice at waterborne flexographic presses of this nature and WestRock eliminated it as technically infeasible for the press dryer;

- Wet Scrubbers due to the fact that the primary constituents in the press dryer exhaust are water soluble, the use of a packed-bed water scrubber to achieve meaningful emission reductions is problematic because of the very low VOC concentration. With the total VOC vapor concentration predicted to be less than 18 ppmv, there is little driving force to achieve good mass transfer rates between the exhaust gas and the scrubbing water. Scrubbing is not demonstrated in practice at waterborne flexographic presses of this nature and WestRock eliminated it as technically infeasible for the press dryer;

WestRock found that the use of Low VOC materials and Good Operating Practices to be a feasible option as the current operations will use inks with a VOC content of approximately 4% and an overcoat varnish with a VOC content less than 4%. The press will be washed with an automated cleaning system using an aqueous detergent with a VOC content of approximately 2.2%. The facility will properly maintain the press and associated equipment to minimize VOC emissions as well.

The remaining technically feasible emission control technology options were then ranked according to the control effectiveness of each option. With certain options, the ability to rank each technology solely on the basis of emission reduction was not a complete picture of the effectiveness of the emissions control. The facility then evaluated the economic, environmental and energy impacts of the control options. Adverse collateral impacts were considered, but did not immediately disqualify a control technology. The following were identified as technically feasible:

- Thermal Oxidation (RTO)
- Catalytic Oxidation (RCO)
- Low VOC material and good work practices

WestRock performed a "top down" analysis of the control options evaluating for technical and economic feasibility, acceptable energy demands and minimal adverse environmental impacts. Regenerative thermal oxidizers (RTO) and regenerative catalytic oxidizers (RCO) have the ability to reduce VOC emissions by 98%, given a high VOC inlet concentration and total capture of all VOC emissions from the press. The capital cost of a total enclosure, duct work, and the RTO capital to acquire, install, and operate approximate a base cost of approximately $649,982 to reduce approximately 31.1 tons of VOC (assuming a DRE of 90%) which equates to $20,933 per ton reduced. The capital cost of the RCO, $644,422, is less than the RTO and is operated at lower temperature, which is less fuel cost. Removing approximately 31.1 tons, gives a cost per ton VOC reduction of $20,754. Also, catalyst replacement is approximately $225,000 and would be approximately every 3 years for the life of the equipment. Both the RTO and the RCO would require supplementary fuel due to the low VOC inlet concentration. Emissions from combustion include NOx. NOx is a pre-cursor to ozone and the facility will be located in an ozone non-attainment area. WestRock deemed this control option as infeasible as BACT, due to these reasons.

WestRock determined BACT to be the use of low VOC materials, a VOC content of less than 5%, good operating and housekeeping practices, and complying with a ton per year VOC limit will represent a 93% reduction in VOC emissions in comparison to a traditional solvent-based flexographic printing press which uses materials with approximately 75% VOC. Aqueous cleaning solutions will also be used instead of solvent based cleaning solutions. As this is the intended design of the printing press, additional cost will not be incurred.

EPD Review – VOC Control

The Division performed an independent review of VOC control technology and feasibility, using the RBLC and performing follow-up research. In cases where water-based coatings are used, it is not common for there to be add-on control technology. In the case of American Packaging, BACT was determined to be water-based coatings with a VOC content of less than 5%. In cases where add-on technology was used, the DRE was between 95% and 98%. The Division agrees that add-on control technology will not be able to achieve that level of destruction efficiency with an inlet stream of less than 20 ppmv VOC.

A noted cost per ton that was deemed economically infeasible as found in the RBLC was $13,424. The Division agrees with the analysis put forth by the facility that the add-on controls would be economically infeasible as the costs range above $20,000 per ton.

The Division agrees that the use of supplementary fuel for the combustion of VOC will increase the NOx emissions from the facility. With the facility located in an ozone non-attainment area, and data indicating that Atlanta's ozone is "NOx limited", an increase in NOx emissions, as the primary pre-cursor to ozone formation, would be more detrimental to the air quality than the VOC emissions from the facility.

Conclusion – VOC Control

The BACT selection for the flexographic printing press is summarized as the use of materials with a VOC content of less than 5%, by weight, and good housekeeping and operating practices. The permit will limit the VOC emissions from the printing press to less than 34.8 tpy. It will require that the facility comply with the VOC content limit on a 24-hour averaging basis. The permit will require good housekeeping to avoid spills and evaporative losses of VOC from cleaning materials and coatings as they are mixing and transferred. The facility will keep records of inspections of these practices, which will be subject to review by the Division.

Flexographic Plate Processors- Background

For plate making, while multiple technologies exist to make plates for the flexographic printing process, the digital technology was specifically selected by WestRock for the facility. The digital plate making process proposed for the project uses a pre-formed, semi-polymerized sheet plate that undergoes digital laser imaging through a carbon ablative mask. The plate is then processed through an automated processor. Within the WestRock Graphics Solutions Business Units, there are four similar plate making systems in use. The use of this technology allows for consistency in production across the entire division, as well as the development of institutional operational expertise. Also, the press will be “characterized” or “fingerprinted” to these plates. In addition, the plate making system to be installed by WestRock, is state-of-the-art technology that uses an improved volumetric pump and sensitive pressure sensor to allow precision solid content analysis, along with an automatic monomer replenishment system. This design results in reduced monomer use as compared to other, existing plate processors.

The application of any of the other plate making technologies described below would redefine the source. WestRock’s application, in Section 5.2.1., has further discussion on three additional types of plate processors detailing how these are not viable options for the quality product WestRock supplies to its customer base.

VOC emissions from the printing plate processor are generated by evaporative losses from a low-vapor pressure solvent used in the process. Pre-formed photopolymer sheets are exposed to ultraviolet light by a digital laser to create a graphic image on the polymer. Once exposed to the UV light source, the plates are fed into the printing plate processor, where a low-vapor pressure solvent is flowed across the polymer surface and rotary brushes gently remove the dissolving polymer that was not exposed to the UV light. This process creates “relief” in the polymer layer on the plate, thus the recessed image. After the excess solvent/polymer solution is brushed away, the plate advances to a drying section to remove any residual solvent remaining on the surface or absorbed into the polymer.

The plate processor washout and drying section are totally enclosed, thus 100% capture of the VOC emission will be achieved by the planned ventilation system. No additional capture devices (hoods or enclosures) are considered in the BACT analysis.

Flexographic Plate Processors – VOC Emissions

Applicant’s Proposal

WestRock supplies a very detailed and thorough BACT analysis and discussion in Section 5.4 with supporting documentation in Appendix D of the application.

WestRock identified applicable control technologies by researching the US EPA’s RACT/BACT/LAER Clearinghouse (RBLC), and through evaluating technical literature, vendor information, permitting files and using process knowledge and engineering experience. The RBLC searches were performed in June 2016 for various printing and surface coating categories. WestRock identifies and evaluates the following control technology options: thermal oxidation; catalytic oxidation; carbon adsorption; biofiltration, condensation, wet scrubbing and good operating practices with low VOC materials.

WestRock evaluated each control technology to determine whether or not it would be technically feasible for the facility to implement. The facility first assessed whether or not the technology has been demonstrated and then assessed would it be feasible for WestRock to implement. Available control technology is presumed to be applicable if it has been permitted or actually implemented by a similar source.

All technically feasible emission control technology options were then ranked according to the control effectiveness of each option. With certain options, the ability to rank each based on emission reduction was not a complete picture of the effectiveness of the emissions control, e.g., work practice standards combined with vendor's guarantee of efficiency, which is in turn, based on good work practices. When the technology was not mutually exclusive, and the emission reduction was clearly quantifiable, the facility ranked the technologies for clarity. The facility then evaluated the economic, environmental and energy impacts of the control options. Adverse collateral impacts were considered, but did not immediately disqualify a control technology.

WestRock identified and evaluated all available VOC controls, and eliminated the following technologies as technically infeasible for the plate processor:

- Biofiltration, due to issues with the complexities in maintaining a well operating biofiltration unit and scaling a biofilter down to a very low air flow rate but mainly because the solvent used in the plate making process has very little water solubility. This condition would prevent, or at least severely impede, the vapor to liquid mass transfer that is essential for the technology to work.

- Condensation, due to the condenser size and required refrigeration input from the chiller may be more reasonable, but the low concentration of the vent stream will still require condenser operation at sub-zero temperatures. Modeling condensation of benzyl alcohol, which comprises up to 40% of the solvent blend, indicates that a vapor exit temperature below negative 60°F would be required to start condensing any of this compound.

- Rotary Concentrator, would not be practical to scale down this technology (designed for large volume, dilute VOC gas streams) to less than 1,000 scfm for application on this low volume source.

- Wet Scrubbers, because the solvent used in this process is essentially insoluble in water.

WestRock found the following control technologies feasible for plate processor and evaluated each for BACT considering economic feasibility, energy demands and environmental impacts:

- Carbon Adsorption
  The higher VOC concentration in the outlet stream, approximately 75 ppmv, the lower air flow, temperature and moisture content, make this a technical feasible option. A removal efficiency of 90% is assumed for this technology, which would achieve a 7.5 ppmv outlet concentration which is below EPA's stated 20 ppmv treatability threshold.

- Thermal or Catalytic Oxidation
  With regard to oxidation control for the plate processor, the air flow rate is much lower, so heat recovery is not as important for driving feasibility. This emission stream still has a relatively low projected VOC concentration.

  An RCO was not further evaluated, as the added complexity and operating issues associated with the precious metal catalyst do not justify the small potential savings in supplemental fuel consumption.

- Low VOC materials and Good Operating Practices
  WestRock found that the use of low VOC materials and good operating practices to be a feasible option the plate processor is designed to operate with a closed loop solvent distillation recovery system. The unit will have a 3.66 tpy VOC emission limit as well. Good housekeeping practices will reduce fugitive VOC emissions as well.

Recuperative thermal oxidizers (TO), and regenerative thermal oxidizer (RTO) have the ability to reduce VOC emissions by up to 98%, given a high VOC inlet concentration. This would also require 100% capture of all VOC emissions from the plate processor. The annualized installation and operational cost of a TO with 50% heat recovery, and duct work is approximately $120,839, to reduce approximately 3.1 tons of VOC (assuming a DRE of 98%) which equates to $39,145 per ton. The RTO has superior heat recovery (95% thermal efficiency) characteristics relative to a recuperative TO, thus it reduces the supplemental fuel consumption to less than 15% of the rate projected for the recuperative TO. However, the RTO has a much higher pressure drop and consumes more electric power to operate. The annualized cost of an RTO is $142,398, to remove approximately 3.1 tons, gives a cost per ton VOC reduction of $46,128. Both the TO and the RTO would require supplementary fuel due to the low VOC inlet concentration. Emissions from combustion include NOx. NOx is a pre-cursor to ozone and the facility will be located in an ozone non-attainment area. WestRock deemed these control option as infeasible for BACT due to economic infeasibility and environmental impact.

Given that the top-level BACT option (oxidation technologies) was cost prohibitive and has negative energy and environmental impacts, the next highest level of control (carbon adsorption), was evaluated. Because of the relatively low VOC emitted from the plate processor, a regenerative carbon system was not considered, as its substantial capital cost would drive the cost effectiveness metric into a range similar to the oxidation technologies. Instead, a lower capital cost carbon canister system, which requires off-site regeneration of the carbon, was evaluated.

The concept design for the adsorption system evaluated includes a two-step process of a heat exchanger to cool the gas stream to a more favorable level (75 °F), followed by 1,800 pound activated carbon canisters situated in a lead-lag configuration. The initial cooling to 75 °F and the ability to completely saturate the carbon (provided by the lead-lag operating configuration) minimizes the amount of carbon that is consumed. The carbon consumption rate is the most significant cost element in the analysis; therefore, the modest additional capital cost to minimize carbon consumption is easily justified. A cost estimate for the carbon canister system and to regenerate saturated canisters was obtained from Calgon Carbon Corp.

The initial capital investment for the system is relatively low (approximately $109,000), but the annual operating cost (primarily driven by the carbon replacement expense) was significant compared to the amount of VOC being controlled. Even at the reduced 75 °F design temperature, the activated carbon isotherms indicated adsorption capacities ranging from about 20 to 40 lbs VOC per 100 lbs of carbon. Because this technology application covers a multiple VOC component vent stream, the design adsorption capacity was set at the low end of the range of the individual components (the less favorable component will break through even when others have sufficient remaining capacity). This analysis indicates that the plate processor VOC emissions would consume approximately 32,000 lbs of carbon per year (approximately 18 1,800-lb canisters), which translates to an annual carbon replacement expense of almost $19,000 per year. The overall results of the analysis predict a cost effectiveness value above $17,000 per ton. Accordingly, the use of activated carbon adsorption is judged to be cost prohibitive for the plate processor.

WestRock determined BACT to be spent solvent recycling through a solvent distillation system and reuse, with a total 3.66 tpy rolling 12-month emission limit for the plate processor. Additionally, proper maintenance and housekeeping measures will be considered as pollution prevention practices.

EPD Review – VOC Control

The Division performed an independent review of VOC control technology and feasibility, using the RBLC and performing follow-up research. In the cases where plate making equipment was listed, inherent washer design was found to be BACT.

A noted cost per ton that was deemed economically infeasible in the RBLC was $13,424. The Division agrees with the facility that the add-on control options for the plate processor would be economically infeasible since they are in the range of $17,000 per ton and higher.

The Division agrees that the use of supplementary fuel for the combustion of VOC will increase the NOx emissions from the facility. With the facility located in an ozone non-attainment area, an increase in NOx emissions, as the primary pre-cursor to ozone formation, would be more detrimental to the air quality than the VOC emissions from the facility.

Conclusion – VOC Control

The BACT selection for the flexographic printing plate processor is summarized as the use of a closed loop solvent distillation recovery system and a 3.66 tpy VOC limit on the plate processor. The permit will require good housekeeping to avoid spills and evaporative losses of VOC from cleaning materials and coatings as they are mixing and transferred. The facility will keep records of inspections of these practices, which will be subject to review by the Division.

5.0 TESTING AND MONITORING REQUIREMENTS

Testing Requirements:

There are no applicable testing requirements as there is no add-on control equipment.

Monitoring Requirements:

There are no add-on controls, so there is no equipment monitoring.

CAM Applicability:

The facility has no add-on control equipment that will be operated in order to comply with an emission limit, therefore, CAM is not applicable. There are no CAM provisions being incorporated into the facility's permit.

6.0 AMBIENT AIR QUALITY REVIEW

Georgia Toxic Air Pollutant Modeling Analysis

There are no applicable NAAQS or specific Georgia ambient air standards for the individual toxics emitted by the facility. Georgia EPD regulates the emissions of toxic air pollutant (TAP) emissions through the provisions of the *Georgia Rules for Air Quality Control*, 391-3-1-.02(2)(a)3.(ii). A TAP is defined as any substance that may have an adverse effect on public health, excluding any specific substance that is covered by a State or Federal ambient air quality standard. Procedures governing the Georgia EPD's review of TAP emissions as part of air permit reviews are contained in the agency's "*Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Revised)*."

For projects with quantifiable increases in TAP emissions, an air dispersion modeling analysis is generally performed to demonstrate that off-property impacts are less than the established Acceptable Ambient Concentration (AAC) values. The TAP evaluated are restricted to those that may increase due to the proposed project. Thus, the TAP analysis would generally be an assessment of off-property impacts due to facility-wide emissions of any TAP emitted by a facility. The SCREEN3 or ISCST3 computer dispersion models are commonly used to conservatively predict the maximum 24-hour average or annual ground level concentration (referred to as MGLC) for each pollutant in question. The worst-case HAP and toxic emissions are used to perform the toxic guideline assessment. Each MGLC is compared to its respective acceptable ambient concentration (AAC). The basis for calculation of the AAC comes from the pollutant toxicity rating systems described in the Georgia Air Toxics Guideline.

The primary facility sources of the air toxics of concern considered as part of this project are the newly planned preprint press and printing plate processor. For the preprint press, emissions were assumed to exhaust through stacks associated with each of the dryers, with varying temperature and airflow information. The printing plate processor was modeled based on one presumed stack. All SCREEN runs were conducted using a 1 g/s modeled emission rate to estimate the maximum predicted ambient impact from each individual stack. Predicted impacts from each SCREEN3 run are then multiplied by the corresponding stack TAP emission rate to estimate the specific pollutant impact from each individual stack. Emission rates for pollutants emitted from the press were divided proportionally based on the proportion of each individual stacks airflow to the total airflow from the press. To ascertain the total predicted impact, the resulting predicted impacts from each individual stack are then summed for comparison to the applicable AAC. This presents a highly conservative estimate of ambient impacts as it presumes the maximum impact from each individual source will occur at the same location. Table 6-1 summarizes the overall results of the TAP assessment and demonstrates that all modeled pollutants have impacts less than their respective AACs.

For each TAP identified for further analysis, both the short-term and long-term AAC were calculated following the procedures given in Georgia EPD's *Guideline*. WestRock referenced Figure 8-3 of Georgia EPD's *Guide* to determine the long-term (i.e., annual average or 24-hour) and short-term AAC (i.e., 15-minute). The AACs were verified by the EPD.

Table 6-1

Pollutant	MGLC $_{1h}$ (ug/m^3)	MGLC$_{15m}$ (ug/m^3)	AAC $_{15m}$ (ug/m^3)	MGLC$_{24h}$ (ug/m^3)	AAC $_{24h}$ (ug/m^3)	MGLC$_a$ (ug/m^3)	AAC$_a$ (ug/m^3)
Ethanolamine	34.3	48.4	1,499	13.6	17.8	2.72	None
Propylene Glycol	0.186	0.245	None	0.0742	74.1	0.0148	None
Isopropanol	0.0563	0.0743	98,323	0.0225	2,341	0.0045	None
1-Propanol	0.00880	0.0116	61,447	0.00352	1,170	0.000704	None
Styrene	0.0303	0.0400	17,039	0.0121	None	0.00242	1000
Diethylene Glycol Ethyl Ether	0.692	0.0914	None	0.277	327	0.0554	None
Acrylic Acid	0.252	0.0333	None	0.101	None	0.0202	1.0
Triethylamine	0.000345	0.000455	1,242	0.000138	None	0.000028	7.0
Propionaldehyde	8.83E-06	1.17E-05	None	3.53E-06	None	7.06E-07	8.0
Diethylene Glycol	0.405	0.0535	None	0.162	103	0.0324	None
Ethyl Acrylate	0.426	0.0563	6,140	0.171	244	0.0341	None
Ethyl Benzene	0.426	0.0563	None	0.171	None	0.0341	1000
Maleic Anhydride	0.213	0.281	None	0.0853	2	0.0171	None
Benzyl Alcohol	109	143	None	43.4	105	8.96	None

A further detailed discussion, provided by the facility, may be found in Section 6.0 of the application. The toxic impact assessment and all detailed information, printouts, and supporting documents can be found in Appendix E of the application, and in the additional information dated August 10, 2016. The Division has reviewed this impact assessment as well as attached information and has concluded that the emissions from the proposed facility are acceptable, in accordance with the Georgia Toxic Guidelines.

7.0 ADDITIONAL IMPACT ANALYSES

NAA-NSR requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of a modification to the facility and an analysis of the air quality impact projected for the area as a result of the general commercial, residential, and other growth associated with the proposed project.

Class I Area - Visibility Analysis

Federal Class I areas are regions of special national or regional value from a natural, scenic, recreational, or historic perspective. Class I areas are afforded the highest degree of protection among the types of areas classified under the PSD regulations. U.S. EPA has established policies and procedures that generally restrict consideration of impacts of a PSD source on Class I Increments to facilities that are located near a federal Class I area. Historically, a distance of 100 km has been used to define "near", but more recently, a distance of 200 kilometers has been used for all facilities that do not combust coal.

While there are no Class I areas within 100 km of the proposed project in Douglas County, Georgia, there are five Class I areas located within 300 km of the proposed project. Four of the Class I areas within 300 km of the proposed facility, the Cohutta Wilderness, Joyce Kilmer, Shining Rock, and Sipsey Wilderness areas, are managed by the Forest Service (FS). The Great Smoky Mountains National Parks is managed by the National Park Service (NPS). The Class I areas within a 300 km radius of the WestRock facility, along with Q/D values, are listed in Table 7-1.

Table 7-1. Summary of Class I Areas within 300 km of the Proposed Project

Class I Area	Responsible FLM	Minimum Distance from Site (km)	Sum of Annualized VAP Emissions - Q (tpy)	FLAG 2010 Approach Q/D
Cohutta Wilderness	FS	123	5.91	0.05
Joyce Kilmer Slickrock Wilderness	FS	188		0.03
Great Smoky Mountains National Park	NPS	202		0.03
Shining Rock	FS	236		0.03
Sipsey Wilderness Area	FS	263		0.02

WestRock is submitting concurrent with this application, separate requests to the appropriate FLMs to obtain their agreement with the findings for the nearby Class I areas. Copies of the letters to the FLMs presenting the Q/D screening analysis are included in Appendix F.

Soils and Vegetation

WestRock has considered the project's potential to impact its surroundings based on the facility's emission rates and resulting ground level concentrations of ozone.

The effects of gaseous air pollutants on vegetation may be classified into three broad categories: acute, chronic, and long-term. Acute effects are those that result from relatively short (less than 1 month) exposures to high concentrations of pollutants. Chronic effects occur when organisms are exposed for months or even years to certain threshold levels of pollutants. Long-term effects include abnormal changes in ecosystems and subtle physiological alterations in organisms. Acute and chronic effects are caused by the gaseous pollutant acting directly on the organism, whereas long-term effects may be indirectly caused by secondary agents such as changes in soil pH.

VOC are regulated by the U.S. EPA as precursors to tropospheric ozone. Elevated ground-level ozone concentrations can damage plant life and reduce crop production. VOC interferes with the ability of plants to produce and store food, making them more susceptible to disease, insects, other pollutants, and harsh weather. Ozone is formed by the interaction of NO_X, VOC, and sunlight in the atmosphere.

The Lithia Springs facility will be located in Douglas County, which is currently designated as an ozone nonattainment area. Ozone formation in the metro Atlanta area is limited as it is primarily dependent upon NOx emissions and proper atmospheric conditions. Because the NOx emissions from the new facility will be negligible, WestRock does not predict any significant negative impact on soil or vegetation.

Growth

A growth analysis is intended to quantify the amount of new growth that is likely to occur in support of the facility and to estimate emissions resulting from that associated growth. Associated growth includes residential and commercial/industrial growth resulting from the new facility. Residential growth depends on the number of new employees and the availability of housing in the area, while associated commercial and industrial growth consists of new sources providing services to the new employees and the facility. WestRock anticipates that most personnel currently employed at a nearby WestRock Atlanta site will transfer employment to the new location in Lithia Springs without moving from their current residences. There will be minor impacts during the construction of this facility, as the operations will be located in an existing building within an industrial park that has already been constructed. Therefore, additional growth from this project is expected to be minimal.

8.0 EXPLANATION OF DRAFT PERMIT CONDITIONS

The permit requirements for this proposed facility are included in draft Air Quality Permit No. 2679-097-0089-P-01-0.

Section 1.0: General Requirements

This section of the permit contains standard, template language that is applicable and included in all Air Quality permits.

Section 2.0: Allowable Emissions

Condition 2.1 states the VOC emissions limit for the flexographic printing press of equal to or less than 34.8 tons during any consecutive 12-month period. This limit is part of the BACT requirements for this emission unit, and it applies at all times.

Condition 2.2 states the VOC emission limit for the flexographic printing plate processor of equal to or less than 3.66 tons during any consecutive 12-month period. This limit is part of the BACT requirements for this emission unit and it applies at all times.

Condition 2.3 requires the Permittee use inks and coatings in flexographic printing operations with VOC content, as applied, equal to or less than 5 percent by weight of the volatile content of the coating or ink, averaged on a 24-hour basis. This limit is part of the BACT requirements for this emission unit and it applies at all times. This condition also subsumes the requirements of Georgia Rule (mm) as it is more stringent and the facility will inherently comply with Rule (mm).

Condition 2.4 states the requirement that the facility will obtain and retire 50 tons of VOC emission reduction credits prior to startup of any and all equipment. This is required by NAA-NSR. All credits must be obtained and retired prior to startup of the modification, which in this case, is the facility as a whole.

Condition 2.5 states the opacity standard of less than or equal to 40 percent, as required by Georgia Rule (b).

Condition 2.6 states the calculation for the allowable rate of particulate emissions for the facility as stated in Georgia Rule (e).

Condition 2.7 states the requirements for any storage tank with a capacity greater than 4,000 gallons that contains a volatile organic liquid, be equipped with submerged fill pipes. The facility has one solvent storage tank and one wastewater (ink wash-up) tank that are 7,000 gallons that subject to this Rule and will fulfill the requirements of this Condition.

Section 3.0: Fugitive Emissions

This section contains a standard template condition, Condition 3.1, that the facility will take reasonable precautions to prevent fugitive emissions.

Section 4.0: Process and Control Equipment

Condition 4.1 states the requirement that the flexographic plate processor must be equipped with a closed loop solvent recovery system. This is a BACT requirement for this equipment.

Section 5.0: Monitoring

Condition 5.1 states the good housekeeping requirements the facility will follow in order to minimize fugitive VOC emissions. This condition and these practices are part of the BACT assessment and requirements for the printing press and the plate processors.

Section 6.0: Performance Testing

Condition 6.1 is standard, template language that is applicable and included in all Air Quality permits.

Section 7.0: Notification, Reporting and Record Keeping Requirements

Condition 7.1 requires the facility to maintain monthly VOC usage records.

Conditions 7.2 – 7.3 require the facility to calculate the monthly VOC emission and the 12-month rolling total VOC emissions for the flexographic printing press. The facility is also to report if the monthly emissions exceed 2.9 tpy (1/12th of the 34.8 tpy limit) and to report if the 12-month rolling total exceeds 34.8 tpy.

Conditions 7.4 – 7.5 require the facility to calculate the monthly VOC emission and the 12-month rolling total VOC emissions for the flexographic plate making processor. The facility is also to report if the monthly emissions exceed 0.31 tpy (1/12th of the 3.66 tpy limit) and to report if the 12-month rolling total exceeds 3.66 tpy.

Condition 7.6 states the calculation methods and record keeping requirement for complying with the VOC content limit for the inks and coatings to be used in the flexographic printing press. The facility will use a 24-hour average to show compliance with the BACT limit of using coatings with a VOC content of less than 5%, by weight.

Conditions 7.7 - 7.9 require the facility to submit written semiannual reports for excess emissions, exceedances and excursions, which are listed in Condition 7.9. This includes the work practice standards required as BACT and listed in Condition 5.1.

Condition 7.10 requires the facility to notify the Division of startup of the printing press and the plate processor within 15 days of the startup date. The facility will then have 1 calendar year from that date to submit a Title V application, as stated in Condition 8.3.

Condition 7.11 requires a monthly inspection to assess compliance with the housekeeping requirements of Condition 5.1 and record the inspection in a log suitable for inspection.

Section 8.0: Special Conditions

Condition 8.1 is a template conditions stating general use language that EPD reserves the right to amend the permit if necessary.

Condition 8.2 requires the facility to pay fees as applicable.

Condition 8.3 requires the facility to submit a Title V Operation Permit Application within one year of start-up.

APPENDIX A

Draft Air Quality Permit
WestRock CP, LLC - Lithia Springs
Lithia Springs (Douglas County), Georgia

APPENDIX B

WestRock CP, LLC - Lithia Springs
NAA-NSR Permit Application No. 23884, dated July 1, 2016
Additional Information, dated August 10, 2016