COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Blue Ridge Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Georgia-Pacific Wood Products LLC
11795 Brookneal Highway (Hwy 501S) Gladys, Virginia
Permit No. BRRO30903

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Georgia-Pacific Wood Products LLC has applied for a Title V Operating Permit for its "Brookneal" facility. The Department has reviewed the application and has prepared a draft Significant Modification of the facility's Title V Operating Permit.

Engineer/Permit Contact:_____ Date:
Thomas H. Berkeley, P.E.
(434) 582-6205

Air Permit Manager:_____ Date:
David J. Brown

Regional Director:_____ Date:
Robert J. Weld

1. FACILITY INFORMATION

Permittee
Georgia-Pacific Wood Products LLC
P.O. Box 340
Brookneal, VA 24528

Facility
Georgia-Pacific Wood Products LLC
11795 Brookneal Highway (Hwy 501S)
Gladys, Virginia 24554

County-Plant Identification Number: 51-031-00163

2. SOURCE DESCRIPTION

NAICS Code: 321219 - The facility manufactures a reconstituted wood product known as oriented strandboard (OSB).

After this permit modification the facility will remain a Title V major source of PM10, NOx, CO, VOC, HCl, methanol, and total HAP. This source is located in an attainment area for all pollutants. The facility was previously permitted under a Minor NSR Permit issued on September 30, 2010. That NSR permit has been superseded by a NSR Permit for the modification of the facility (June 14, 2012) which in turn was replaced by a Significant Amendment to that permit (June 26, 2012).The facility is a PSD synthetic minor source.

This significant permit modification to GP's Title V (T5) permit is to incorporate the changes made in both the modification to GP's NSR Permit, and its subsequent amendment. The NSR modification addressed modification of the mat forming equipment; as well as two upgrades to the system's process controls. These changes increased the hourly production rate of the facility. (i.e., 66.4 to 69.4 ft^2 per hour, 3/8 inch basis. See Engineering review for the NSR permit action for additional details (i.e., Attachment B to this Statement of Basis). The significant amendment to the NSR permit resulted in replacement of a design retention time for exhaust gases in a section of the energy system with a specified maximum flow rate in the same section. That flow rate was based on actual test data. (See Engineering review for the NSR amendment action for additional details (i.e., Attachment C to this Statement of Basis). Neither of these two permit actions increased the facility's annual allowable production of OSB (i.e., 481.8 x 10^6 ft^2 per year, 3/8 inch basis).

3. COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at

this time.

4. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Except as described in section 2 above, generally, the emission units and the control devices at Brookneal remain as described in the Statement of Basis dated 1/4/08, as amended 3/31/08 and 2/17/11. However, this significant Title V permit modification does additionally alter applicable requirements at the site as follows:

- At the facility's request, the short term sander capacity is reduced from 36,000 to 32,000 ft^2/hr (See conditions related to System 9500 (Sander baghouse) and System 9600 (Sanderdust cyclone))
- NSPS Subpart Db required fuel consumption recordkeeping is changed from daily to monthly in accordance with changes in the Subpart
- Recordkeeping of the Energy System controlling temperature was added to correct an oversight.

5. EMISSIONS INVENTORY

A copy of the 2011 annual emission update is attached (Attachment A to this Statement of Basis). Emissions are summarized in the following tables.

2011 Actual Emissions

	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO_2	PM_{10}	NO_x
Total	106.6	165.1	15.1	124.1	154.5

6. CHANGES TO EMISSION UNIT APPLICABLE REQUIREMENTS

6.1 General

References to the current NSR permit date are updated to 6/26/12.

6.2 Emission unit 1200, (2) Log Debarkers

Except for coordination of NSR permit condition citations, the applicable requirements for the debarkers are not being revised.

6.3 Emission unit 3500, Wellons/dryer system

6.3.1 Statement of the maximum exhaust flow rate in the energy conservation section of the system is replicated from the NSR permit in the T5 permit.

6.3.2 The increases in allowable SO2 emissions from the NSR permit are replicated in the T5 permit. (These increases result from increase in the AP42 emission factor.)

6.3.3 Monthly, rather than daily, records of natural gas consumption gas in the auxiliary thermal oil heater are replicated from the NSR permit.
6.3.4 Recordkeeping of the Energy System controlling temperature and exhaust gas flow rate as added in the NSR permit are replicated in the T5 permit.

6.4 Emission unit 6000, Dry Flake Storage & Blending system
The increase in short term allowable VOC emissions from the NSR permit are replicated in the T5 permit.

6.5 Emission unit 7000, forming/pressing system
The increases in short term allowable emissions of PM, PM10, NOx, CO, and VOC from the press in the NSR permit are replicated in the T5 permit.

6.6 Emission unit 8000, trim system
The increases in short term allowable emissions of PM, PM10, and VOC from the low pressure material handling system 8900 (Finishing Area Baghouse) in the NSR permit are replicated in the T5 permit.

6.7 Emission unit 9000, finishing system
The decreases in allowable emissions of VOC from the material handling systems 9500 (Sander baghouse) and 9600 (Sanderdust cyclone) in the NSR permit are replicated in the T5 permit.

6.8 Emission unit 9900, general plant
6.8.1 The increase in the hourly production rate of the facility (i.e., 66.4 to 69.4 ft^2 per hour, 3/8 inch basis) in the NSR permit is replicated in the T5 permit.

6.8.2 The increase in short term allowable emissions of VOC from the material handling system 8950 (Dry Fuel cyclone) in the NSR permit is replicated in the T5 permit.

6.9 Plywood and Composite Wood Products (PCWP) MACT Requirements
No changes from the previous T5 permit requirements.

6.10 General CAM Provisions
No changes from the previous T5 permit requirements.

6.11 Facility Wide Conditions
No changes from the previous T5 permit requirements.

7. GENERAL CONDITIONS
No changes from the previous T5 permit requirements.

8. STATE ONLY APPLICABLE REQUIREMENTS

None

9. FUTURE APPLICABLE REQUIREMENTS

No changes from the previous T5 permit requirements.

10. INAPPLICABLE REQUIREMENTS

No changes from the previous T5 permit requirements.

11. COMPLIANCE PLAN

None at this time.

12. INSIGNIFICANT EMISSION UNITS

No changes from the previous T5 permit requirements.

13. CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

14. PUBLIC PARTICIPATION

The public notice for the draft/proposed permit was placed in the Lynchburg News and Advance on 8/12/12 and the public comment period ran until 9/13/12. EPA's concurrent 45 day review period ended on 9/26/12. No comments were received.

15. ATTACHMENTS

A: 2011 Emission Inventory
B. 30903-Etb-R3-2CLEAN.docx
C. 30903-Etb-R2.2.docx

Registration Number: 30903

County - Plant ID: 031-00163

Plant Name: Georgia-Pacific Wood Products LLC

POLLUTANT EMISSIONS REPORT (PLANT) (Tons/Year)

Parameter List

Pollutant Type: All Pollutants

Years: 2011-2011

	ACETA	ACREN	BZ	CO	FORM	ISPBZ	MTBTN	MTETN
2011	2.236	1.153	0.107	165.112	4.804	0.881	0.125	0.143

Registration Number: 30903

County - Plant ID: 031-00163

Plant Name: Georgia-Pacific Wood Products LLC

POLLUTANT EMISSIONS REPORT (PLANT) (Tons/Year)

Pollutant Type: All Pollutants

Years: 2011-2011

Parameter List

	MTHOL	NH3	NO2	PHNL	PM	PM 10	PM 2.5	PRPYD
2011	22.264	19.542	154.525	4.663	93.910	124.161	112.977	0.176

Registration Number: 30903

County - Plant ID: 031-00163

Plant Name: Georgia-Pacific Wood Products LLC

POLLUTANT EMISSIONS REPORT (PLANT) (Tons/Year)

Parameter List

Pollutant Type: All Pollutants

Years: 2011-2011

	SO2	TOLU	VOC	XYLS
2011	15.092	0.240	106.617	0.160

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office

INTRA-AGENCY MEMORANDUM

Permit Writer	Berkeley			
Memo To	Air Permit File	Date	6/13/12	
Facility Name	Georgia-Pacific Wood Products, LLC			
Registration Number	30903	CEDS I.D.		17
County-Plant I.D.	031-00163			
UTM Coordinates (Zone 17)	674.7	Easting (km)	4110.4	Northing (km)
Elevation (feet)	~600			
Distance to Nearest Class I Area (select one)	103.1	SNP (km)	59.2	JRF (km)
FLM Notification (Y/N)	No	Required if less than 10K (minor), 100K (state major)		
NET Classification (A, SM, B)	A	Before permit action	A	After permit action
Title V Major Pollutants	PM10, NOx, CO	Before permit action	No change	After permit action
PSD Major Source (Y/N)	No	Before permit action	No	After permit action
PSD Major Pollutants	NA	Before permit action	No change	After permit action

I. Introduction

Georgia-Pacific (GP) owns and operates an Oriented Strandboard (OSB) manufacturing facility located in Brookneal, VA (Campbell Co.).

On 3/19/12, BRRO received GP's permit application dated 3/15/12 requesting a modification to the mat forming equipment, and two upgrades to process controls at the facility. As requested, these changes will increase the permitted short term throughput and emissions for the OSB facility. However, the application explicitly requests that neither the allowable annual OSB production rate nor the annual emission limits, except for SO2, be increased above those currently shown in both their NSR permit and their Title V permit.[1]

GP Brookneal received the original NSR permit for the facility in 1994 and is currently permitted under the following permits:

- an NSR permit dated 9/30/10, and
- a Title V permit with effective date 1/6/08; most recently amended 2/17/11.

[1] The permit application requests that both the short and long term SO2 emissions increase due to a change in the relevant general reference emission factor (i.e., AP42)

II. Emission Unit(s) / Process Description(s)

The OSB process begins by sending logs through a debarking machine. The logs are then waferized into flakes which are fed to one of three rotary-drum dryers. The dried flakes are screened, classified and then conveyed to a blending operation where resins and wax are added. A "mat" of flakes is formed by orienting two layers of "face" flakes around multiple layers of oriented "core" flakes. The mat is then placed in a 14 opening press which compresses it while adding heat. After the material is pressed, the cured mats are trimmed and cut to panel size. Sanding and tongue-and-groove operations may be performed as required. The edges of the finished panels are sprayed with a sealant. All criteria pollutants as well as a number of state toxic pollutants[2] are emitted from the OSB process.

The current application describes changes to three parts of the process:

1. Mat forming: A new design for the surface and core flake orienting rollers will be installed to allow more efficient orientation of the flakes. Also, a laser "profiler" will allow more precise control of the mat height. Together the goal of these changes is the production of a board of equivalent strength with less material (i.e., a "lower density" board);
2. Press output: Downstream of the press, a new automated actual-density measurement and defect detection/segregation system is expected to increase process efficiency also; and
3. Facility-wide: The aging (and no longer manufacturer supported) DOS-based PLC process control system that was installed as part of the greenfield installation in ~ 1994 will be replaced with Windows-based process controls.

Taken together, GP estimates that these process improvements will allow the OSB production to increase from the permit limited 66.4 to the 69.4 Mft^2/hr.

III. Regulatory Review

A. <u>9 VAC 5 Chapter 80, Part II, Article 6 – Minor New Source Review</u>

As stated in 9 VAC 5-80-1100 C, Article 6 regulations do not apply to stationary sources that are exempt under 9 VAC 5-80-1320. To be exempt under 9 VAC 5-80-1320, a project must be exempt from subsections B through D as a group <u>and</u> subsection E or subsection F. If a project meets these criteria, it is exempt from permitting under Article 6.

Subsection B of 9 VAC 5-80-1320 (size exemption criteria) and C (new sources) are not applicable to the currently requested changes. Subsection D does apply to this modified source. Per that subsection, sources with net emission increases (NEI) less than all the specified emissions rates are exempt. By definition, the NEI is the sum of two parts: (1) any increase in the uncontrolled emission rate from the particular change, and (2) other increases and decreases that are directly resultant from the particular change. The second part of the NEI total does not apply to the current project since the scope of the requested

[2] Principle state toxics include acetaldehyde, acrolein, cumene, formaldehyde, HCl, methanol, and phenol.

change is the entire facility. As shown in Attachment A[3] to this analysis, there is a NEI for all criteria pollutants so the current project is considered a modification. Furthermore, the NEIs for PM10 and VOC exceed their respective exemption thresholds contained in 9 VAC 5-80-1320 D[4]. Therefore PM10 and VOC from the current project are subject to the permitting requirements of Article 6.

GP-Brookneal is a major source as defined in 9 VAC 5-80-1110 C. However, again as shown in Attachment A[5], the change in allowable emissions (i.e., Potential to Emit) for all criteria pollutants from this project are less than their respective significant emission rate as shown in 9 VAC 5-80-1615 C. Therefore, the current permit action is not a major modification under Article 6.

B. 9 VAC 5 Chapter 80, Part II, Article 8 - PSD Major New Source Review and Article 9 – Nonattainment Area Major New Source Review

Not applicable. Campbell County is a PSD area, as designated in 9 VAC 5-20-205.

Regulated NSR pollutants other than GHG: GP-Brookneal was a synthetic minor for PSD prior to the current permit action.[6] While the current project increases the hourly capacity of the facility from 66.4 to 69.4 Mft^2/hr, there is no requested increase in the facility's allowable annual throughput of 481,800 $MMft^2$/yr and so the facility remains a synthetic minor.[7] Since PSD review applies to major sources, the current project is not subject to PSD review for regulated NSR pollutants other than GHG.

GHG:

Beginning on July 1, 2011, greenhouse gases (GHG) is a pollutant that must be considered for regulation as a "regulated NSR pollutant" for projects that occur at any stationary source. GHG is subject to regulation under the PSD program if the project occurs at a stationary source with a potential to emit (PTE) 100,000 tons of CO_2 equivalents[8] (CO_2e) per year and the project causes an increase in CO_2e of at least 75,000 tons per year. As shown in Attachment A[9], the facility has a PTE for CO_2e from other-

[3] See "Total Emissions" worksheet tab in Attachment A

[4] In accordance with DEQ Memo 01-1002 dated 11/2/01 (as amended 9/14/09) *Guidance on Permit Applicability – PM and PM-10 Sources*, "where PM-10 can be quantified, that (PM-10) will be the basis for making (Minor NSR) permit exemption decisions."

[5] See "Permitting Applicability" worksheet tab in Attachment A

[6] At the prior maximum capacity of the press, the annual capacity of the plant would have been (66.4 Mft^2/hr)(8760 hr/yr) = 581,664 $MMft^2$/yr. This was approximately a 21% increase over the requested permit limit (481,800 $MMft^2$/yr). A 21% increase over either the CO or NOx prior annual limits (CO = 245.2, NOx = 233.7 tons/yr) would have been greater than the relevant PSD major threshold of 250 tons/yr.

[7] At the requested maximum capacity of the press, the annual capacity of the plant would be (69.4 Mft^2/hr)(8760 hr/yr) = 607,944 $MMft^2$/yr. This is approximately a 26% increase over the requested permit limit (481,800 $MMft^2$/yr)

[8] CO_2e is the emission rate of each GHG species multiplied by its respective global warming potential (GWP) from 40CFR Part 98.

[9] See "Total Emissions" worksheet tab in Attachment A

than-biogenic sources of less than 100,000 TPY CO_2e[10]. (PTE, from other-than-biogenic ~ 34,000 TPY CO_2e.)

C. 9 VAC 5 Chapter 50, Part II, Article 5 - NSPS
There are no new applicable requirements due to this project.

The Energy System is subject to NSPS Subpart Db, and the relevant Subpart Db applicable requirements (e.g., opacity monitor) have been included in previous versions of the NSR permit.

The firewater pump engine (0600D) is not subject to NSPS IIII (CI RICE). The earliest applicability date for owners and operators in this subpart is in 2005. This firewater pump was installed in 2001 and is not being modified as part of the current project.

The backup thermal oil pump engine (3780) is not subject to NSPS JJJJ (SI RICE). The earliest applicability date for owners and operators in this subpart is in 2006. Pump 3780 was installed in 1995 and is not being modified as part of the current project.

D. 9 VAC 5 Chapter 60, Part II, Article 1 - NESHAPS
Not applicable. GP's Brookneal facility does not include any emissions units subject to one of the source types covered by 40 CFR 61.

E. 9 VAC 5 Chapter 60, Part II, Article 2 - MACT
The GP-Brookneal facility is subject to 40 CFR Part 63 Subpart DDDD, Plywood and Composite Wood Products (PCWP).[11] The Subpart DDDD applicable requirements have been included in GP-Brookneal's Title V permit.

The legal status of 40 CFR 63 Subpart DDDDD (Boiler MACT) is currently under reconsideration by EPA. Prior to the 6/8/07 vacatur of the boiler MACT by the District of Columbia Circuit Court of Appeals, the Wellons Energy System and the backup thermal oil system at Brookneal were subject to the boiler MACT. The applicable requirements after reconsideration/vacatur resolution will be incorporated into the Title V permit.

[10] On 7/20/11 the "Deferral for CO2 Emissions from Bioenergy and Other Biogenic Sources under the PSD and Title V Programs" was published by EPA at 76 FR 43490. That action deferred, for a period of 3 years (i.e., until 7/21/14), the application of PSD and Title V permitting requirements to biogenic CO2 emissions. Effective 9/9/11, Virginia's definition "Subject to regulation" at 9 VAC 5-85-30 was rewritten to incorporate EPA's deferral saying "…prior to 7/21/14, the mass of GHG CO2 shall not include CO2 emissions resulting from the combustion …of nonfossilzed and biodegradable organic material…"

[11] 40CFR63.2232 defines the PCWP affected source very broadly as "the collection of…process units associated with the manufacturing of plywood and composite wood products." The CFR goes on to say that "the affected source also includes onsite storage of raw materials used in the manufacture of PCWP…" In their comments dated 9/27/10 on the draft of the prior NSR permit (CEDS ID#15) GP argued that the site's seven miscellaneous, general service storage tanks do not store materials specifically "used in the manufacture of PCWP" (i.e., hydraulic oil, diesel fuel, gasoline, kerosene, urea, and used oil). Therefore these seven tanks are not designated as subject to the PCWP MACT in the equipment list.

The firewater pump engine (0600D) is subject to MACT ZZZZ (CI RICE provisions) as promulgated 3/3/10. The MACT compliance date for this CI RICE is 5/3/13. Similarly, the backup thermal oil pump engine (3780) is subject to MACT ZZZZ (SI RICE provisions) as promulgated 8/20/10. The MACT compliance date for this SI RICE is 10/19/13. The applicable RICE requirements will be incorporated into the Title V permit.

F. State-Only Enforceable Under 9 VAC 5-80-1120 F

Not applicable. The GP Brookneal facility is subject to the PCWP and RICE MACTs. A facility subject to a MACT is exempted from review under the State Toxics regulations (9 VAC 5-80-1320 E and 9 VAC 5-60-300 C).[12] Also, no conditions in the current draft are derived uniquely from the Chapter 40 or Chapter 50 odor regulations.

IV. Best Available Control Technology Review (BACT) (9 VAC 5-50-260)

For modifications to a stationary source, the calculation method used to determine permit applicability[13] is also used to determine BACT applicability. For a previously permitted source, current uncontrolled emission (CUE) calculations for previously permitted emissions units are based on the permitted throughputs rather than 8760 hr/yr because the definition of uncontrolled emissions includes enforceable permit conditions.[14] Once BACT is triggered for the facility for a given pollutant, the uncontrolled emissions increase for each new or modified emissions unit is compared to the corresponding threshold for that pollutant to establish which emissions units are subject to BACT evaluation.

As shown in Attachment A to this analysis[15] the increase in uncontrolled emissions from the facility of PM10 and VOC are greater than the thresholds in 9 VAC 50-80-1320D and therefore, changes in these pollutants are subject to BACT review for the facility. As shown also in Attachment A[16] the following pollutant/emissions unit combinations are subject to BACT review:

PM10: the Press
VOC: the Blenders and the Press

PM10; Press: The emissions from the press are currently controlled by an RTO/TCO[17]. Review of the RBLC indicates that the RTO/TCO may still be considered BACT from this type emissions unit. Therefore the current determination is that no change in the currently

[12] The emissions of state toxic pollutants from the site's seven miscellaneous, general service storage tanks are expected to be less than the relevant permitting exemption thresholds.
[13] i.e., the increase in uncontrolled emissions (NEI) = New Uncontrolled Emissions (NUE) – Current Uncontrolled Emissions (CUE)
[14] i.e., annual emissions are based on an enforceable throughput limit permit condition but without air pollution controls.
[15] See the "Total Emissions" tab in Attachment A
[16] See the tab for each emissions unit at the facility in Attachment A
[17] TCO = Thermal Catalytic Oxidizer (i.e., an operation mode of the RTO that employees a layer of catalytic material to reduce the APCD energy input requirements.)

installed air pollution control device is considered BACT.

VOC

Blenders: As shown in Attachment A[18], the change in uncontrolled emissions is 10.1 tons/yr and is therefore subject to BACT review.[19] VOCs from blenders are not typically controlled as verified by a search of the current RBLC entries for the particleboard and strand board process types.[20] Therefore, because add-on control equipment is not typically applied to blender VOC emissions, and because such controls would not be expected to be cost effective, the current determination is that BACT for VOC emissions from the blenders at GP-Brookneal is no additional control required.

Press: The emissions from the press are currently controlled by an RTO/TCO. Review of the RBLC indicates that the RTO/TCO may still be considered BACT from this type emissions unit. Therefore the current determination is that no change in the currently installed APCD is considered BACT. (See also Section **Error! Reference source not found.** of the engineering analysis for the prior NSR permit (CEDS ID#15) for a discussion related to control device operating temperatures.)

V. Summary of Actual Emissions Increase

Except for SO2, the post-modification PTEs for all criteria pollutants equal their pre-modification PTE. The SO2 PTE increases approximately 3 tons/yr due to an AP42 emission factor change for wood combustion.[21]

VI. Dispersion Modeling

A. Regulated Pollutants

Not applicable. Per Chapter 9 of the current draft NSR manual[22], "Each pollutant emission rate increase (potential to emit) for a modification of an existing facility (potential to emit) that exceeds the applicable PSD significant emission rate should be modeled…" As implied by Section V above, the change in allowable emissions for all criteria pollutants from this project are less than their respective significant emission rate as shown in 9 VAC 5-80-1615 C. Therefore, no modeling of any criteria pollutant is required.

B. Toxic Pollutants

Not applicable. As mentioned above, the GP Brookneal facility is subject to a MACT. A facility subject to a MACT is exempted from review under the State Toxics regulations (9 VAC 5-60-300 C), including any modeling requirements.

[18] See the "Blenders" tab in Attachment A, Note 1
[19] The change in blender PTE for VOC = 0; PTE = 38.5 tons/yr.
[20] Also, the BACT review for Huber determined that BACT for the 58 tons of VOC / yr from the blenders was no additional controls. See Section IV.F of the engineering analysis dated 6/12/07 for Huber's permit dated 10/16/07.
[21] The legacy SO2 emission factor from AP42 was 0.2 lb/ton (~ 0.022 lb/MMBTU). The current (2003) AP42 value is 0.025 lb/MMBTU.
[22] April 2002

VII. Boilerplate Deviations

The current draft permit was compared to the current versions of the Skeleton and Generic boilerplates. For (1) the regulatory citations, (2) the format, and (3) the language of the general conditions, the draft permit was updated as necessary to match the current boilerplate sections.

VIII. Compliance Demonstration

The current permit action is the modification of former permits and as such, the compliance demonstration approaches have been described in the engineering reviews for the previous versions of these permits.

IX. Title V Review - 9 VAC 5 Chapter 80, Part II, Article 1

Before the provisions of this proposed NSR permit action may commence operation at GP-Brookneal a significant permit modification of the Title V permit, effective date 1/6/08 (most recent modification date: 3/31/08), will need to be processed.

X. Other Considerations

It may be noted that the emissions from the facility roads are reduced substantially from the values in the previous NSR permit (e.g., FPM10 was 3.8, and is now 0.6 tons/yr.) This is due principally to changes in the emission factor calculation as shown in AP42 Table 13.2.1-1 (e.g., k_{PM10} was 0.082, and is now 0.011. "k" is the dimensionless particle size multiplier used in the AP42 equation.)

XI. Recommendations

It is recommended that the draft permit for the modification at GP's Brookneal facility be approved.

Attachments

Attachment A: GP Brook Inventory- LDI Appl_02_14_12 R4.xlsx

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office

INTRA-AGENCY MEMORANDUM

Permit Writer	Berkeley			
Memo To	Air Permit File	Date	6/26/12	
Facility Name	Georgia-Pacific Wood Products, LLC			
Registration Number	30903	Case I.D.		18
County-Plant I.D.	031-00163			
UTM Coordinates (Zone 17)	674.7	Easting (km)	4110.4	Northing (km)
Elevation (feet)	~600			
Distance to Nearest Class I Area (select one)	103.1	SNP (km)	59.2	JRF (km)
FLM Notification (Y/N)	No	Required if less than 10K (minor), 100K (state major)		
NET Classification (A, SM, B)	A	Before permit action	A	After permit action
Title V Major Pollutants	PM10, NOx, CO	Before permit action	No change	After permit action
PSD Major Source (Y/N)	No	Before permit action	No	After permit action
PSD Major Pollutants	NA	Before permit action	No change	After permit action

I. Introduction

Georgia-Pacific (GP) owns and operates an Oriented Strandboard (OSB) manufacturing facility located in Brookneal, VA (Campbell Co.).

On 5/29/12, BRRO received GP's letter dated 5/23/12 requesting that the minimum retention time requirement for exhaust gas in the energy conservation section of the Wellons Energy system as specified in Condition 5 for the current NSR permit (Case ID# 17) be removed.

GP Brookneal received the original NSR permit for the facility in 1994 and is currently permitted under the following permits:

- an NSR permit dated 6/14/10, (Case ID# 17) and
- a Title V permit with effective date 1/6/08; most recently amended 2/17/11.

II. Emission Unit(s) / Process Description(s)

The air conveying system associated with the Wellons Energy System/drying process at Brookneal facility is unique. (See Attachment A attached to this analysis, Flow Diagram) The air used to dry the flakes comes from an air-to-air heat exchanger where hot exhaust gas from the Energy System (hot side) heats in-coming ambient air (cold side). This heated ambient air is then used to dry the flakes. The dryer exhaust is then fed back to the Energy System as combustion air. If the blend damper is open, a portion of the returning exhaust gas

flows through the "energy conservation section" (i.e., the blend chamber and downstream ductwork); otherwise, all of the returning exhaust gas flows through the "heat producing section" (i.e., the fuel cells and upper combustion zone) of the Energy System. The pollutant laden exhaust from the dryers is oxidized in the Energy System. Finally, the exhaust gas passes through the hot side of the heat exchanger, one of three multicylones (connected in parallel), an ESP, and exits to atmosphere. The energy conservation section represents the lower temperature, and shorter flow path in the Energy System.

Ever since the Greenfield permit, there has been a minimum temperature ($1400^{O}F$)/retention time (one second) applicable requirement for the energy conservation section for the control of VOC in the dryer exhaust. Furthermore, since the blend damper allows for a variable flow rate in the energy conservation section, that permit also included an explicit statement of the maximum exhaust gas flow rate in that section reasoning that as long as the cross sectional area the flow path did not change, the retention time was ensured. At GP's request, as part of the 2010 NSR permit action (Case ID#15) the exhaust gas flow rate was deleted as redundant.

During repeated stack tests (i.e., 5 tests spanning July 1996 through March 2008) and with a wide range of blend damper settings (i.e., ~ 19 to 46% open) the facility has demonstrated compliance with the VOC permit limit with a comfortable margin of compliance (i.e., mean for 5 tests = 3.1; maximum for any single test = 6.4 versus the permit limit of 9.54 lb/hr).[1] These test results along with GP's recent realization that "…the airflows calculated from the original design information are not achievable in the as-built system…" leads them to request the removal of the retention limit requirement.

Because of the variable nature of the flow in the air pollution control device (i.e., energy system), and in recognition of the test results, rather than simply removing the retention time applicable requirement, the current draft replaces the retention time requirement with a maximum flow rate requirement based on the actual test data recorded during the 1996 through 2008 series of tests.[2]

In an unrelated matter, with their e-mail dated 6/13/12, GP requested that in accordance with the current NSPS Dc recordkeeping requirements[3] for fuel usage for the natural gas fired auxiliary thermal oil heater that the short term records of fuel combusted be changed from daily to monthly while the permit was being amended. This change has been made in Condition 45h.

Finally, during the current review it was noted that the permit has inadvertently never

[1] Also, as noted in the BACT section of the analysis for the Greenfield permit, "…the majority of the hydrocarbons volatilized in the drying process are…terpenes (which) have a typical ignition temperature well below $1000^{O}F$…"
[2] As shown in Attachment B to this analysis, the value of the flow rate is calculated as the mean of 15 runs that make up the 5 stack tests plus 3 standard deviations. (For a standard distribution, approximately 99% for the actual data in a set lies within 3 standard deviations of the mean.) For the GP, Brookneal data the results are 601,481 acfm at $1400^{O}F$ and 8.5 lb $_{VOC}$/hr (versus the permit limit of 9.54 lb $_{VOC}$/hr).
[3] 40CFR60.48c(g)(2)

required that GP keep records of the Energy System controlling temperature as defined in Condition 5. This oversight is corrected by adding Condition 45i.

III. Regulatory Review

A. 9 VAC 5 Chapter 80, Part II, Article 6 – Minor New Source Review

As stated in 9 VAC 5-80-1100 C, Article 6 regulations do not apply to stationary sources that are exempt under 9 VAC 5-80-1320. To be exempt under 9 VAC 5-80-1320, a project must be exempt from subsections B through D as a group and subsection E or subsection F. If a project meets these criteria, it is exempt from permitting under Article 6.

Subsection B of 9 VAC 5-80-1320 (size exemption criteria) and C (new sources) are not applicable to the currently requested change. Subsection D applies to modified sources. Per that subsection, sources with net emission increases (NEI) less than all the specified emissions rates are exempt. Since the allowable production rates and air pollution control equipment after the requested change are the same as those before the change there is no NEI. Therefore, criteria pollutants are exempt from not subject to Article 6.

As discussed in Section III.E below, HAP emissions from the facility are currently subject to 40 CRF 63, Subpart DDDD, Plywood and Composite Wood Products (PCWP), and Subpart ZZZZ. Reciprocating Internal Combustion Engines (RICE), and are expected to be subject to Subpart DDDDD (Boiler MACT) when its legal status is resolved. A facility subject to a MACT is exempted from review under the State Toxics regulations (9 VAC 5-60-300 C) and as such is exempt pursuant to 9 VAC 5-80-1320 F.

Therefore, the current requested changes are exempt from the permitting requirements of Article 6. However, these changes do involve significant changes to existing Article 6 monitoring and recordkeeping requirements and therefore fit the criteria for use of significant amendment procedures per 9 VAC 5-80-1290.

B. 9 VAC 5 Chapter 80, Part II, Article 8 - PSD Major New Source Review and Article 9 – Nonattainment Area Major New Source Review

Not applicable. Campbell County is a PSD area, as designated in 9 VAC 5-20-205.

Regulated NSR pollutants other than greenhouse gases (GHG): GP-Brookneal was a synthetic minor for PSD prior to the current requested change and incorporating these requests does not alter that status. Since PSD review applies to major sources, the current requests are not subject to PSD review for regulated NSR pollutants other than GHG.

GHG:

The current request does not involve any changes to GHG emissions, and therefore is not subject to PSD review for GHG

C. 9 VAC 5 Chapter 50, Part II, Article 5 - NSPS

Beyond updating the auxiliary thermal oil heater short term fuel recordkeeping requirement to match the current wording of NSPS Dc (Condition 45h), there are no new applicable requirements due to this request.

The Energy System is subject to NSPS Subpart Db, and the relevant Subpart Db applicable requirements (e.g., opacity monitor) have been included in previous versions of the NSR permit.

The firewater pump engine (0600D) is not subject to NSPS IIII (CI RICE). The earliest applicability date for owners and operators in this subpart is in 2005. This firewater pump was installed in 2001 and is not being modified as part of the current project.

The backup thermal oil pump engine (3780) is not subject to NSPS JJJJ (SI RICE). The earliest applicability date for owners and operators in this subpart is in 2006. Pump 3780 was installed in 1995 and is not being modified as part of the current project.

D. 9 VAC 5 Chapter 60, Part II, Article 1 - NESHAPS

Not applicable. GP's Brookneal facility does not include any emissions units subject to one of the source types covered by 40 CFR 61.

E. 9 VAC 5 Chapter 60, Part II, Article 2 - MACT

The GP-Brookneal facility is subject to 40 CFR Part 63 Subpart DDDD, Plywood and Composite Wood Products (PCWP).[4] The Subpart DDDD applicable requirements have been included in GP-Brookneal's Title V permit.

The legal status of 40 CFR 63 Subpart DDDDD (Boiler MACT) is currently under reconsideration by EPA. Prior to the 6/8/07 vacatur of the boiler MACT by the District of Columbia Circuit Court of Appeals, the Wellons Energy System and the backup thermal oil system at Brookneal were subject to the boiler MACT. The applicable requirements after reconsideration/vacatur resolution will be incorporated into the Title V permit.

The firewater pump engine is subject to MACT ZZZZ (CI RICE provisions) as promulgated 3/3/10. The MACT compliance date for this CI RICE is 5/3/13. Similarly, the backup thermal oil pump engine is subject to MACT ZZZZ (SI RICE provisions) as promulgated 8/20/10. The MACT compliance date for this SI RICE is 10/19/13. The applicable RICE requirements will be incorporated into the Title V permit.

[4] 40CFR63.2232 defines the PCWP affected source defined very broadly as "the collection of…process units associated with the manufacturing of plywood and composite wood products." The CFR goes on to say that "the affected source also includes onsite storage of raw materials used in the manufacture of PCWP…" In their comments dated 9/27/10 on the draft of the prior NSR permit (CASE ID#15) GP argued that the site's seven miscellaneous, general service storage tanks do not store materials specifically "used in the manufacture of PCWP" (i.e., hydraulic oil, diesel fuel, gasoline, kerosene, urea, and used oil). Therefore these seven tanks are not designated as subject to the PCWP MACT in the equipment list.

F. State-Only Enforceable Under 9 VAC 5-80-1120 F

Not applicable. The GP Brookneal facility is subject to the PCWP and RICE MACTs. A facility subject to a MACT is exempted from review under the State Toxics regulations (9 VAC 5-80-1320 E and 9 VAC 5-60-300 C).[5] Also, no conditions in the current draft are derived uniquely from the Chapter 40 or Chapter 50 odor regulations.

IV. Best Available Control Technology Review (BACT) (9 VAC 5-50-260)

Not applicable. Significant amendments are not subject to BACT review.

V. Summary of Actual Emissions Increase

None. Emission rates are not changing as a result of the current request.

VI. Dispersion Modeling

Not applicable. Dispersion modeling is not required for significant amendments.

VII. Boilerplate Deviations

The previous draft permit (Case ID# 17) was compared to the current versions of the Skeleton and Generic boilerplates, and the regulatory citations, format, and language of the general conditions were updated as necessary to match the current boilerplate sections. No additional boilerplate deviations have been introduced with this significant amendment.

VIII. Compliance Demonstration

The current permit action is the modification of former permits and as such, the compliance demonstration approaches have been described in the engineering reviews for the previous versions of these permits.

IX. Title V Review - 9 VAC 5 Chapter 80, Part II, Article 1

Before the provisions of the current NSR significant amendment permit action may commence operation at GP-Brookneal, a significant permit modification of the Title V permit, effective date 1/6/08 (most recent modification date: 3/31/08), will need to be processed.[6]

X. Other Considerations

None.

XI. Recommendations

It is recommended that the draft significant permit amendment at GP's Brookneal facility be approved.

Attachments

Attachment A: Wellons Energy System/Dryers Flow Diagram (Dwg. No. 342-166-WES-

[5] The emissions of state toxic pollutants from the site's seven miscellaneous, general service storage tanks are expected to be less than the relevant permitting exemption thresholds.

[6] E.g., the current Title V permit includes a one second retention time requirement. As requested, based on stack test results, the retention time will be approximately 0.7 seconds

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Attachment B: Brookneal OSB – Summary of VOC Test Data