



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-1361F
Plant ID No.: 067-00023
Applicant: Columbia West Virginia Corporation (Columbia)
Facility Name: Craigsville
Location: Craigsville
SIC Code: 2435
Application Type: Class II Administrative Update
Received Date: November 9, 2015
Engineer Assigned: John Legg
Fee Amount: \$300
Date Received: November 17, 2015
Completeness Date: December 7, 2015
(Date DAQ received Affidavit of Publication from newspaper)
Due Date: February 7, 2016
Newspaper: *The Nicholas Chronicle*
Applicant Ad Date: November 26, 2015
UTMs: Easting: 529.9 km Northing: 4,243.6 km Zone: 17
Description: This update applies to the finishing and associated veneer cores operation. It allows Columbia to use a limited amount (200 gallon) of wood patching or filling compounds having a higher VOC content by weight (ranging from >0.2% through ≤ 14.4%) than what was previously permitted (≤ 0.2%).

Note that the VOC hourly (0.31 lb/hr) and annual (1.35 TPY) emission limits from using patching or filling compounds did not change because of this update.

Summary

Summarized below in **RED** are the changes made to R13-1361E in going to R13-1361F:

4.1.5. The finishing operation and associated activities of the veneer cores shall be operated and maintained in accordance with the following limitations:

d. VOC emissions from the use of patching or filling compounds shall not exceed 1.35 TPY. ~~Compliance with this emission limit shall be met by limiting the annual usage of such compounds to 1,500,000 pounds per year; and~~

e. ~~The permittee shall not use or consume any patching or filling compounds with a VOC content of greater than 0.2% by weight.~~ Compliance with the annual VOC emission limit in 4.1.5.d shall be met by limiting the use of wood patching or filling compounds to the following amounts:

1) 200 gallons per year (gal/yr) for filling compounds having manufacturers' VOC contents greater than 0.2% by weight, but less than or equal to 14.4% by weight. For these 200 gallons:

a) The hourly VOC emission rate of 0.31 lb/hr shall not be exceeded;

b) So as not to exceed the 0.31 lb/hr VOC emission rate, a maximum filling compound application rate can be calculated:

- The application time T (in hours) for a gallon of filling compound can be calculated by the following equation:

$$T = W \times \% / 31$$

Where: T = Application time (hrs)
W = Weight (lbs) of a gallon of wood filler compound
% = VOC percent by weight in wood filler compound
(% ranging > 0.2 and ≤ 14.4)

- The maximum application rates (gal/hr and lb/hr) can be calculated by the following equations:

$$\text{By Filling Compound Volume (gal/hr)} = 1 / T$$

$$\text{By Filling Compound Weight (lb /hr)} = W / T$$

c) Records of the following information shall be kept for each time a wood patching compound (VOC content > 0.2% but ≤ 14.4% by weight) is used: filling compound name; total amount of filling compound used; total time over which filling compound was applied; calculated hourly VOC emission rate; and total amount of VOC emitted.

2) 1,164,000 pounds per year of any patching or filling compounds with a VOC content of 0.2% by weight or less.

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- 4.2.2 For the purpose of ensuring compliance with Conditions 4.1.4.b.; 4.1.5.d. and 4.1.5.e.; and 4.1.7.; the permittee shall monitor and record the amount of adhesive, filling compounds and waste oil consumed at the facility on a 36.5 day cycle basis. Such records shall be maintained in accordance with Condition 3.4.1 of this permit.

Discussion of Update

From Columbia's application, section entitled, "Project Description":

Columbia is proposing the use of Famowood Wood Filler, a liquid material used in the patching of wood products. The maximum usage of the wood filler is estimated at 100 gallons per year at a maximum rate of 2 quarts over a 3-hour period (0.31 pounds per hour). Table 1 below summarizes the emissions that are associated with the use of this wood filler material.

Table 1. Potential Emissions

Pollutant	Lb/Hr	Ton/yr
VOC	0.31	0.09

From Columbia's application, the section entitled, "Requested Changes to Permit":

Columbia is requesting that Condition 4.1.5.e of Permit R13-1361E, which limits the VOC content of patch filling to less than or equal to 0.2% by weight, be removed from the permit. Because Condition 3.1.7.e already restricts the facility's VOC emissions to 98.6 tons per year, Columbia is requesting that the permit be administratively updated to allow for the limited use of the Famowood Wood Filler or similar products, which contains a VOC content of 14.4% by weight.

Comments on Update

Combining what Columbia stated in the two bolded passages given above, the company plans to feed the Famowood Wood Filler at a maximum rate of 2 quarts over a 3-hour period for a VOC emission rate of 0.31 lb/hr.

Two quarts ($\frac{1}{2}$ gallon) of Famowood Wood Filler will emit over a 3-hour period 0.93 lbs of VOC ($0.31 \text{ lb/hr} \times 3 \text{ hr}$). Therefore, 1 gallon of Famowood Wood Filler would contain 1.86 lbs of VOC (0.93 lbs per $\frac{1}{2}$ gallon).

The VOC content of the Famowood Wood Filler (1.86 lbs VOC/gallon of filler) is equal to (and as stated above) 14.4% of the weight of one gallon.

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The weight per gallon of Famowood Wood Filler (W) would equal:

$$\begin{aligned} 14.4\% \times W &= 1.86 \text{ lb/gal} \\ 0.144 \times W &= 1.86 \text{ lb/gal} \\ W &= (1.86/0.144) \text{ lb/gal} \\ W &= 12.9 \text{ lb/gal} \end{aligned}$$

From the above discussion of the update, Columbia wants to use 100 gal/yr of Famowood Wood Filler. One hundred gallons of Famowood Wood Filler would contain:

$$\begin{aligned} 186 \text{ lbs of VOC} & (1.86 \text{ lb/gal} \times 100 \text{ gal}) \\ 0.093 \text{ tons of VOC} & (1.86 \text{ lb/gal} \times 100 \text{ gal} \times 1 \text{ ton}/2,000 \text{ lb}) \end{aligned}$$

Each gallon of Famowood Wood Filler would be fed at a maximum rate of 6 hours per gallon.

One hundred gallons of Famowood Wood Filler would take 600 hours per year to feed.

Discussion of R13-1361E, Section 4.1.5

Section 4.1.5 of R13-1361E needs to be revised:

- 4.1.5. The finishing operation and associated activities of the veneer cores shall be operated and maintained in accordance with the following limitations:
- d. VOC emissions from the use of patching or filling compounds shall not exceed 1.35 TPY. Compliance with this emission limit shall be met by limiting the annual usage of such compounds to 1,500,000 pounds per year; and
 - e. The permittee shall not use or consume any patching/filling compounds with a VOC content of greater than 0.2% by weight.

VOC emissions are limited to 1.35 ton/yr or 2,700 lb/yr.

The maximum hourly VOC emission rate (0.31 lb/yr) can be calculated by dividing 2,700 lb/yr of VOC by 8,760 hr/yr, the maximum number of hours in one year. The 0.31 lb/hr VOC emission rate is the same hourly VOC emission rate Columbia proposed for feeding the Famowood Wood Filler (see above section entitled, "**Discussion of Update**").

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Note that the annual limit on the amount of patching compound (1,500,000 lb/yr) is too large. Re-calculating the maximum amount of patching compound that can be used based on a VOC emission limit of 2,700 lb/yr and a maximum VOC content of 0.2% by weight equals:

$$\begin{aligned} \text{Patching Compound Limit} & \\ (\text{lb/yr; 0.2\% VOC content}) & = 2,700 \text{ lb/yr VOC} / 0.002 \\ & = 1,350,000 \text{ lb/yr} \end{aligned}$$

The maximum amount of patching compound that can be used in one hour equals:

$$\begin{aligned} \text{Patching Compound Limit} & = 1,350,000 \text{ lb/yr} / (8,760 \text{ hrs/yr}) \\ (\text{lb/hr}) & = 154.1 \text{ lb/hr} \end{aligned}$$

Discussion of Proposed Changes (Jan. 12 & 15, 2016)

On January 12, 2016, the writer, via email, proposed to Columbia’s Chris Groves the permit changes listed below as 4.1.5.d. and 4.1.5.e.

4.1.5.d. VOC emissions from the use of patching or filling compounds shall not exceed 1.35 TPY.

4.1.5.e. Compliance with the VOC emission limit in 4.1.5.d shall be met by limiting annual usage of patching or filling compounds to the following:

- a) 100 gallons of Famowood Wood filler with a VOC content of 14.4% by weight and using a maximum application rate of 2 quarts over a 3 hour period (which is equal to a VOC emission rate of 0.31 pounds per hour) and
- b) 1,257,000 pounds per year of any patching/filling compounds with a VOC content of 0.2% by weight or less.

The 1,257,000 lb/yr (see above 4.1.5.e.b) amount of patching or filling compounds with a VOC content of 0.2% by weight or less was calculated as shown below:

$$\begin{aligned} \text{Amount of Filler Compound having a 0.2\% VOC content} & = \\ \frac{(\text{Original VOC limit} - \text{VOC in 100 gals.})}{0.2\% \text{ VOC normal Patch Compound}} & = \\ (2,700 - 186) \text{ lb/yr} * / (0.002) & = 1,257,000 \text{ lb/yr} \end{aligned}$$

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On January 15, 2016, Chris Groves, via email, replied:

“Columbia is proposing to have Condition 4.1.5.e removed from the permit; however, if this is not acceptable, please see our proposed edits in redline below.”

Columbia’s proposed edit/change is shown below and was to be inserted above between a) and b) in condition 4.1.5.e.:

- ab) 100 gallons of other wood patching products with a VOC content greater than 0.2% by weight, but less than 14.4% by weight;

In response to Columbia’s email edit/change (above), the writer is proposing the permit change given at the start of this evaluation under the section entitled “Summary.”

The 1,164,000 lb/yr of any patching or filling compounds with a VOC content of 0.2% by weight or less (see above section entitled, “Summary,” proposed item number 4.1.5.e.b) takes into account the VOC of patching products having a VOC content greater than 0.2% by weight.

$$\begin{aligned} &\text{Patching Compounds with a VOC content of 0.2\% by weight or less} &&= \\ &\frac{(\text{Original VOC limit} - \text{VOC in 200 gals.}^*)}{0.2\% \text{ VOC normal Patch Compound}} &&= \\ &(2,700 - 372) \text{ lb/yr} \div (0.002) &&= 1,164,000 \text{ lb/yr} \end{aligned}$$

*Note that under the writer’s proposal, each gallon of the 200 gallons of patching compound is assumed to have a VOC content of 14.4% by weight, even if the VOC content maybe less than 14.4% by weight.

SITE INSPECTION

The facility is an existing facility. The writer did not conduct a site inspection for this review.

The last DAQ inspection of the facility was on December 17, 2015 by Enforcement Inspector Eric Ray. At that time the facility was found to be in compliance and was given an inspection code of 30.

Directions to the facility as given in the application:

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From Craigsville, take Highway 150 West approximately one mile. Turn right onto Callahan Road into the facility.

REGULATORY APPLICABILITY

The facility is a synthetic minor source, subject to 45CSR22. The changes proposed under R13-1361F will not affect the facility's applicability status with regards of any the state rules or federal regulations. Hourly and annual VOC rates will not increase as a result of raising the VOC content of the filling compound (from 0.2% to 14.4% by weight).

As required under 45CSR13, Columbia submitted a permit application (Class II Administrative Update) on November 9, 2015; paid a \$300.00 application fee on November 17, 2015 and published a Class I legal advertisement on November 24, 2015.

The original newspaper affidavit of publication was received at the DAQ on December 7, 2015, at which time the application was deemed complete. The public comment period ended on December 24, 2015. No comments were received at the DAQ within the 30-day public comment period allowed for the action.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Columbia's Craigsville, WV veneer manufacturing facility will continue to meet all applicable requirements of the law when operated according to the permit application. For that reason, the writer recommends the granting of R13-1361F.

Permit Writer:

John Legg

Date:

February 2, 2016

John Legg
2/2/16

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Columbia West Virginia Corporation
Craigsville

1/15/16

Legg, John C

From: Chris Groves <CGroves@cfpwood.com> ←
Sent: Friday, January 15, 2016 9:47 AM
To: Legg, John C; Richard Ray
Cc: McKeone, Beverly D
Subject: RE: WV DAQ NSR Permit Application Complete for Company Name and Location

Hi John.

Thank you for reaching out to us. The following information is in response to your questions:

- Question 1a – At this time, Columbia is proposing to apply Famowood Wood Filler for the patching of wood products and still maintain the ability to use other products that have historically been used. However, different fillers may need to be used in the future as a result of customer specifications manufacturer product changes, and/or manufacturer acquisitions and divestitures that impact product mixtures and identification. As such, Columbia would like the flexibility of applying other filler materials as needed.
- Question 1b – Columbia is proposing to use a maximum of 100 gallons of the Famowood Wood Filler (or a combination of fillers), provided that the VOC emissions from the usage is within the permit limit of 1.35 tons/year.
- Question 2 – Similar to Question 1a above, Columbia would like the flexibility of using other filler materials in the future. It is possible that future fillers may have a VOC content of greater than 0.2% by weight. By removing Condition 4.1.5.e. and retaining Condition 4.1.5.d., Columbia will have this flexibility while at the same continuing to meet the existing VOC emissions limit of 1.35 tons/year. CFP continues to keep records of the quantity of material used and VOC content of each material to comply with VOC emissions limit.
- Proposed permit change – Columbia is proposing to have Condition 4.1.5.e removed from the permit; however, if this is not acceptable, please see our proposed edits in redline below.

4.1.5.e. NEW: Compliance with the VOC emission limit in 4.1.5.d shall be met by limiting annual usage of patching or filling compounds to the following:

- 100 gallons of Famowood Wood Filler with a VOC content of 14.4% by weight and using a maximum application rate of 2 quarts over a 3 hour period (which is equal to a VOC emission rate of 0.31 pounds per hour);
- 100 gallons of other wood patching products with a VOC greater than 0.2% by weight or less, but less than 14.4% by weight;
- 1,257,000 pounds per year of any patching filling compounds with a VOC content of 0.2% by weight or less.

Thanks,

Chris Groves
Continuous Improvement Manager
Columbia Forest Products
242 Columbia Forest Products Rd.
PO Box 160
Craigsville, WV 26205

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columbia
FOREST PRODUCTS

1/12/16

Legg, John C

From: Legg, John C ←
Sent: Tuesday, January 12, 2016 5:59 PM
To: 'rray@cfpwood.com'; 'cgroves@cfpwood.com'
Subject: Questions about Class II Administrative Update R13-1361F for Columbia Forest Products (067-00023)

I am the engineer working on your permit update.

If possible can you help me by answering the following Questions:

1. Will Columbia:
 - a. ONLY be using Famowood Wood Filler to patch wood product from now on?
 - b. be using 100 gallons of Famowood Filler and other fillers?

2. If the answer to question 1 is b, then will the other filler's VOC content continue to be 0.2% or less by weight?

Below is a Proposed permit change. Is this acceptable? If not, if possible: please explain why not.

4.1.5.d. VOC emissions from the use of patching or filling compounds shall not exceed 1.35 TPY.

4.1.5.e. NEW: Compliance with the VOC emission limit in 4.1.5.d shall be met by limiting annual usage of patching or filling compounds to the following:

- a. 100 gallons of Famowood Wood filler with a VOC content of 14.4% by weight and using a maximum application rate of 2 quarts over a 3 hour period (which is equal to a VOC emission rate of 0.31 pounds per hour) and
- b. 1,257,000 pounds per year of any patching filling compounds with a VOC content of 0.2% by weight or less.

Please call me at (304) 926-0499 ext. 1257, if the above does make sense.

Sincerely,

John Legg
Permit Writer
Division of Air Quality (DAQ)
601 57th Street SE
Charleston, WV 25304