



COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

Thomas L. Henderson
Regional Director

December 19, 2005

Mr. Henry Mitchell
PO Box 429
Chatham, VA 24531-0429

Dear Mr. Mitchell:

The staff of the Department of Environmental Quality has evaluated the three documents provided during our meeting of July 19, 2005 (copies enclosed). The DEQ understands that the intent of the documents is to provide a demonstration of why the Columbia Forest Products (CFP) facility in Chatham should be considered a major source of hazardous air pollutants. In order to better the community's understanding, further explanation of the permitting approach used at CFP, as it relates to issues raised, is provided.

Operations at the CFP facility are currently restricted by a State Operating Permit (SOP) that was issued by DEQ on August 28, 2003. This permit serves two primary functions. First, it limits the amount of air pollutants that can be released to levels that allow CFP to avoid classification as a "major source." So long as CFP operates within these limits, the facility is not subject to certain federal Maximum Achievable Control Technology (MACT) standards and is not required to obtain a federal operating permit per the requirements of Title V of the Clean Air Act. Use of a SOP for this purpose is voluntary and the pollutants or equipment covered in the permit is limited to what is proposed by the facility and necessary to avoid major source classification. Permit conditions are therefore typically subject to a negotiation process that results in requirements that meet regulatory obligations while minimizing the regulatory burden. This process is evident in the DEQ file record for the CFP permit with DEQ establishing requirements that are subsequently changed based on the submittal of additional information by CFP. An example of this process is found in the method used to substantiate the pollutant content of resin used by CFP. Initially concentration information from the product's Material Safety Data Sheet (MSDS) was used. When CFP proposed using a concentration lower than the MSDS value, DEQ advised that CFP would need to obtain certification of concentration with each resin shipment. As a counterproposal, CFP obtained a Certified Product Data Sheet from the resin manufacturer that provided maximum pollutant concentration information. Use of Certified Product Data Sheets for the purpose of compliance with air pollution standards is a practice that has been endorsed through the development of the MACT program and was therefore deemed acceptable by DEQ for the purpose of MACT avoidance.

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Second, the document includes requirements that came from the State's air permit program for minor new source review (MNSR). Under MNSR, for existing facilities such as CFP, certain changes that affect air pollution are evaluated to see if pollutants from the change meet the State's air pollution control regulations and to put limits on these pollutants if required. Review under this program is a requirement of the regulations for certain types of equipment and when pollution rates are greater than the thresholds listed in the MNSR regulation. The current review for the replacement boiler at CFP is an example of the type of action processed under the MNSR regulations. For CFP, MNSR evaluations for hazardous air pollutants use the state's air toxic pollutant program since the facility is not subject to a federal MACT standard.

The MNSR permit regulation is separate from the SOP regulations and a single permit document is issued that contains the requirements from both permit regulations. Because the CFP permit is a combined SOP and MNSR, the records of past permit evaluations include hazardous pollutant evaluations that were conducted to support both functions. While evaluations under each program may involve the exact same chemicals, the results of an evaluation for one program may not apply to the other program.

An example of how these two programs affect the CFP file can be taken from your document titled "Numbers from DEQ Files." The first item on this list, "9.8 tons of methanol", is a limit on potential emissions to avoid major source classification. In this case, the permit restricts the total methanol emission, from the use of resin, to 9.8 tons in any 12-month period. In contrast, the seventh item from the top of the list, "0.237 tons of methanol (replacement of older resin spreader with new spreader)," is an example of a calculation that was done to determine applicability of the state toxic pollutant program. Here, the amount of methanol from the use of resin released from operation of the new spreader, was estimated to determine if the state toxic pollutant regulation would be met for this specific change. In this case, the 0.237 tons calculated from the spreader is a portion of the 9.8 tons per year total that can be emitted from the use of resin, not an addition to the 9.8 ton per year limit.

In both "Numbers from DEQ Files" and the comparison of "Table 4" and the "Engineering Analysis", emission rate calculations done for the purpose of the state toxic program are added to potential emissions calculation. This is not an accurate method for the calculation of potential to emit.

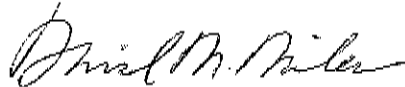
The document titled "Formulation of the Present Air Permit" voices a number of concerns with the development of the permit, compliance with record keeping required by the permit, and the adequacy or appropriateness of emission factors used in calculations to demonstrate non-major status. The permit relies on a number of conditions which either limit emissions directly or indirectly (e.g. production limits). Record keeping is required by the permit and this information is used to assess compliance with conditions that limit potential emissions. As indicated in the "Formulation of the Present Air Permit" document, DEQ has found deficiencies with this record keeping requirement in the past. In the process of addressing these deficiencies, CFP was able to provide information sufficient to show compliance with permit conditions that limit potential emissions and non-major status was maintained.

As you are aware, the staff is currently reviewing a permit application for a new boiler at this facility. As part of this permit action, CFP has proposed to reduce the permitted amount of formaldehyde from resin use to offset the increase from the larger boiler and has stated that a new resin (CR 605) is being used. As a result, emissions from resin use are being reevaluated as

part of review of the permit application. Information obtained in this process reveals that the certified data sheet used for resin CR 595 LF is not applicable to the new resin and also is no longer endorsed by the manufacturer for resin CR 595 LF. This information has resulted in a reassessment of the compliance assurance requirements of the permit, including consideration of the issues you have raised in the "Formulation of the Present Air Permit" document. The current draft of the permit includes a requirement that CFP obtain either a manufacturer's certification or an analysis that provides the maximum or actual hazardous air pollutant (HAP) concentration of each resin shipment received. This information will be used as part of a mass balance calculation to demonstrate compliance status with respect to the individual and total HAP limitations.

Attachment 1 is a copy of DEQ's internal evaluation of specific issues raised in the three documents. If you would like to schedule a meeting to discuss these issues further, please contact me at 434-582-5120 ext. 6028.

Sincerely,



David M. Miles
Deputy Regional Director



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Robert G. Burnley
Director

Thomas L. Henderson
Regional Director

To: T.L. Henderson, Regional Director
From: David J. Brown, Air Permit Manager *DJB*
Subject: Comments on documents provided by citizens during the 7/19/05 meeting concerning Columbia Forest Products
Date: December 14, 2005

Citizen documents or statements are shown in bold face followed by the staff comment.

“Numbers from DEQ Files”

Comment: This is a list of HAP emissions that appears to be taken predominantly from various permit reviews (past or present) that have been summed. Based on our discussion with the citizen’s group on 7/19/05, it is understood that the intent was to show that CFP is major for HAPs (total is above 25 tons). This approach is not however consistent with the regulatory approach used by DEQ to limit CFP below major status for HAPs. The current State Operating Permit (SOP) includes a source-wide limitation on HAPs (Condition 15 of the 8/23/03 SOP) that restricts HAP emissions to less than 10 TPY of any individual HAP and less than 25 TPY of combined HAPS. This limitation is enforced through recordkeeping and associated calculation of annual emissions that are to be calculated monthly for each 12 month period. (Condition 23b of the 8/23/03 permit). In contrast the list includes information that was calculated to show compliance with the state toxic program and this causes some emissions to be double counted.

“Table 4” and attached 4/2/03 engineering analysis

Comment: Based on a handwritten note included on these documents, it is understood that the issue being raised is that HAPs from the UV finishing line have not been properly

summed to establish the annual potential emissions. The information presented in the engineering analysis at the location of the handwritten note is an assessment of whether the UV line has the potential to exceed a state toxic pollutant exemption level (The analysis did not sum these numbers and it is not appropriate to sum these numbers). At the time of this evaluation, the UV line used two different products (sealer or sealer/topcoat) based on information provided by the source. The HAP formulation of each product was different and the source can switch between the products at their will. The evaluation therefore was done stepwise, first calculating emissions from each product, as if it were used exclusively, and then selecting the worst case emission of each HAP for comparison to the state toxic pollutant exemption rate. This method is appropriate for making such an assessment for state toxic exemption on an individual pollutant basis but these individual pollutants can not be summed because it is not possible to use both products simultaneously at the full capacity of the UV line. The total HAP potential to emit for the UV line would be calculated by assuming that the product with the highest combined HAP content is used for the entire permitted annual production. However, as explained in the previous item, overall plant synthetic minor status is achieved through the plant-wide limitation stipulating that annual HAP emissions must be less than 10 tons of any individual HAP and less than 25 tons of all HAPS combined. Therefore the sum of the individual process potential emissions that contribute to overall HAP potential-to-emit could exceed the 10/25 limit so long as actual emissions do not exceed these levels.

“Formulation of the Present Air Permit”

“Columbia Forest Avoids Major-Source Status by Agreeing to Limits”

Comment: It is not clear if this statement is foundation or whether the writer takes issue with a facility's ability to accept limits to avoid major source classification. It is questionable whether the referenced 1996 permit is relevant to the adequacy of the current permit. There have been a number of changes at the facility since that time and the permit has been adjusted in conjunction with many of these changes. The 1996 permit has been superseded and is no longer enforceable.

“Columbia Seeks to Get as Close to the Limit as Possible” & “DEQ Acquiesces to Columbia Forest Products”

Comment: Regulations do not prevent a source from getting as close to a limit or threshold as possible. The initial position of DEQ, that emission limitations greater than 9.4 TPY would be rounded up to 10 TPY and make the source major, was based on our understanding of guidance at that time. Upon further evaluation it was determined that a limit less than 10 TPY was sufficient to keep the source from major classification and DEQ could not arbitrarily establish a limit of 9.4 for the purpose of making a source synthetic minor.

“Once Permit Issued, Limits Immediately in Contention”, “Columbia Immediately Deficient on Compliance – Proving Recordkeeping”, “Second Noncompliance Notice Involves Wider Recordkeeping Failure”, & “Submission of Data Stops”

Comment: The record keeping deficiencies do not indicate that the Columbia Forest Products was contesting the limits (no apparent basis for the statement “Limits Immediately in Contention”). As documented in DEQ files and stated in the “Formulation of the Present Air Permit”, document, there were two informal enforcement actions initiated in 1997 and 1998 for record keeping deficiencies. In both cases the DEQ files show that records required by the permit were not available at the time of the inspection but that Columbia Forest Products was able to provide records sufficient to demonstrate compliance with limits of the permit. It should also be noted that a permit was issued in the time between these two actions. This permit included significant new record keeping requirements that were not applicable at the time of the first enforcement action. These new requirements were the source of the “Wider Recordkeeping Failure” rather than a further deterioration in record keeping practices that might be assumed from the language of the “Formulation of the Present Air Permit” document. Because of these two record keeping deficiencies, the DEQ did request frequent submittal of records to better ensure that Columbia Forest Products developed a routine for tracking permit required information. These submittals were not intended to continue indefinitely and did cease as represented in the “Formulation of the Present Air Permit” document. Information is now reviewed during site inspection activities and can be requested if the need arises.

“Methanol Numbers Exceeded: Formaldehyde Numbers Mysteriously Minimized”, “DEQ Catches Methanol Excesses; Misses Identical Formaldehyde Numbers”, & “Columbia Forest Products Gets a Unique Test from Supplier: Changes Reporting Technique”

Comment: As indicated in “Formulation of the Present Air Permit” document, the DEQ’s evaluation of information submitted by CFP on 3/25/99 did result in a “Letter of Noncompliance” dated 5/10/99. This letter was sent because, based on the 3/25/99 information, it was not clear whether the revised HAP content information for Casco resin CR 595 LF was due to a recent formulation change (that could not be applied to past usage of the resin) or whether this was a refinement of the previously provided information on the historical formulation (could possibly be accepted as representing the actual emissions from the past use). The response stated that there had been no change in resin formulation associated with this change and ultimately the information was accepted as sufficient to indicate that the source’s emissions had remained below permit levels.

Concerning formaldehyde emissions, the 0.34% concentration of formaldehyde in the resin, as identified in the “Formulation of the Present Air Permit” document, was suggested by CFP (SECOR) as an upper limit to be used in conjunction with a resin throughput limit (see SECOR to DEQ letter dated 11/24/97). Using this approach the actual resin limit would be adjusted by the actual HAP content. This concentration did

not represent the actual concentration based on formulation or analysis data but instead represented the maximum free formaldehyde concentration where a 100% emissions assumption would correlate to the suggested resin throughput limit. Ultimately this approach to limiting PTE was not used in favor of the mass balance approach.

Using the highest reported actual free formaldehyde for Borden's MSDS dated 2/18/95 and the throughput shown in the 3/25/99 SECOR report, the formaldehyde was not greater than the permit limit of 9.8 TPY and it was not appropriate to include this issue in the "Letter of Noncompliance." An internal memo (4/19/99 Doan) does document that DEQ was aware of the discrepancy between formaldehyde content used in reporting prior to the 3/25/99 submittal and the numbers of that submittal.

The "Unique Test" referenced in the "Formulation of the Present Air Permit" document was documentation from the resin suppliers (Borden) that the information included in the 3/25/99 SECOR submittal was not based on a reformulation. Staff's review of information submitted indicated that revisions to the record keeping used for compliance determination were appropriate.

"Unique Test and Resulting Factor: Questionable in Seven Ways"

Feedback on specific points of this section are follows:

"1. The test batch was custom made, rather than a production sample and the type of analysis was not described;"

Comment: The information submitted (4/27/99 Certified Product Data Sheet) states that the percentage of formaldehyde and methanol in Casco resin CR 595 LF is based upon analysis of "retained QA samples." The March 5, 1999 letter from Borden Chemical indicates that these were "ten QA samples retained from different lots produced at the Borden Chemical Fayetteville plant." The April 9, 1999 letter from Borden Chemical indicates that two laboratory batches were prepared based on the production recipe using different formaldehyde solutions. These two lab batches resulted in formaldehyde and methanol contents that were also below the 4/27/99 Certified Product Data Sheet levels.

As indicated by the "Formulation of the Present Air Permit" document, the method of analysis was not described.

"2. The test results came from Borden's Hazard Communication department . . . rather than the Regulatory Compliance and Product Stewardship department . . . from which previous determination had been received . . . Additionally the method of calculating the formaldehyde emission factor from formaldehyde content, as specified in the 1995 letter, was subsequently ignored by both DEQ and Columbia Forest Products, resulting in a decrease by two-thirds;"

Comment: The relevance of documents being produced by two different offices within Borden is not clear.

The method of calculating formaldehyde "specified in the 1995 letter" (understood to be the 11/17/95 letter from Borden to SECOR) was evaluated by DEQ and currently forms part of the basis for the accepted emission factor for resin CR 595 LF. This letter gives information of release rates of free formaldehyde as boards are pressed under elevated temperature. Emission estimates at CFP are currently based on the 100 % release rate and not the 300% rate (staff understands this to be the source of the claim – "resulting in a decrease by two-thirds") provided by this letter. As explained in the letter the 300% emission rate is from lab studies that simulate leaving the board in the press for 60 minutes. DEQ accepted the 100 % release rate (5 minutes in the press) because this figure is more representative of the press cycle used at CFP.

"3. Borden's Bishop qualified the results by suggesting that methanol analysis be performed once per quarter on actual production samples sent to Columbia Forest;"

"4. DEQ's Elizabeth Doan recommended on April 19, 1999 that Columbia Forest Products obtain a certification of methanol content with every shipment of resin received, in order to continue to use the lower emission factors (no record of such certifications has been found in DEQ records);"

"5. DEQ's Larry Leonard formally advised Columbia Forest Products on April 20, 1999 that methanol certification would be required with every shipment of resin received, since values being used are lower than stated in the material safety data sheet;"

Comment: The April 9, 1999 letter from Borden (David Bishop) to CFP states: "The Borden Chemical Sales Department and the Fayetteville QA laboratory has suggested that a methanol analysis be performed by Borden Chemical once per quarter on a specific lot produced for your facility to ensure the methanol content of the product being supplied to your facility is below the maximum methanol content specified above." This is a statement from a supplier suggesting a means of quality assurance for the product they are supplying to a customer. While not explicitly required by DEQ, quality assurance measures such as these are not uncommon when a supplied product must meet certain customer expectations. Characterization of this offer to conduct QA analysis as a "qualifier" from Borden for CFP's continued use of the test results is not apparent.

As documented in the file, and recognized in the "Formulation of the Present Air Permit" document, the DEQ staff was unwilling to accept the results of the test alone for future use of the resin without further assurance from Borden that the test results were applicable to future production. This resulted in DEQ advising CFP that supplier certification of maximum methanol content would be required with each shipment of resin (4/20/99 letter DEQ to CFP). DEQ's 4/20/99 letter prompted Borden to produce the 4/27/99 Certified Product Data Sheet that was subsequently accepted by DEQ in lieu of individual certification. (The inspection report dated June 7, 1999, while not explicit,

does acknowledge receipt of the Certified Product Data Sheet, and indicates data received was acceptable.)

“6. Columbia Forest’s other resin supplier, Neste Resins, had provided formaldehyde content of .50% and .29% for their product;”

Comment: The staff’s understood implication of this statement is that the reported formaldehyde content of the CR 595 LF resin is not believable because it is well below the value reported for the Neste resin. However, these resins are from different manufactures and the formulations and raw material sources may be different.

As documented by the manufacturer’s testing and their Certified Product Data Sheet, the formaldehyde content of the CR 595 LF resin was overstated in the manufacturer’s MSDS sheet. Furthermore, DEQ file information (5/20/96 letter from Neste Resin to CFP (SECOR)) states that testing done by Neste for resins that were supplied to CFP in 1995 had a free formaldehyde content of less than 0.29%.

“7. The emission numbers are significantly lower than standard industry numbers found in EPA documents.”

Comment: Staff is unable to respond directly because the “EPA documents” referenced were not identified. Staff’s research of internet sources indicates that urea formaldehyde resins with free formaldehyde content of 0.1 % is not unreasonable.

“Formaldehyde Production Ignored; Numbers Remain Low”

Comment: The record does not support this statement. To the contrary, the submittal acknowledges that DEQ questioned CFP’s use of 0.10% free formaldehyde, resulting in use of a value of 0.12% (consistent with the value listed in the Certified Product Data Sheet). It should be noted that use of either of these factors indicates compliance with the 9.8 TPY limit on formaldehyde from use of resins.

The 0.12% represented by the Certified Product Data Sheet was accepted by DEQ over the value listed in the MSDS (stated in the “Formulation of the Present Air Permit” document as .20%) because it was developed for the specific purpose of compliance with this permit and was based on analysis of this specific resin recipe. The source of the number listed in the MSDS is not known to DEQ.

As previously discussed, estimation of formaldehyde emissions by multiplying the free formaldehyde times three (300% of free formaldehyde as explained in Borden’s 12/17/95 letter) is not consistent with the operation of the presses at CFP.

The general assertion of the first part of this section is that the emissions of formaldehyde from historical use of Casco Resin CR 595 LF cause CFP to be a major source. However, this position is based on use of formaldehyde emission factors that are in excess of those used by DEQ. Contrary to assertions made here, the information used in

the "Formulation of the Present Air Permit" document was not ignored by DEQ but was considered in assessing whether the formaldehyde emissions from use of resin are sufficient to cause the source to be classified as major.

The final paragraph of this section discusses use of another resin, Casco Resin CR 601. The MSDS for this resin was obtained from CFP during a DEQ site visit in 2004. In addition, application information submitted as part of the permit process for the proposed new boiler indicates that another resin CR 605 is now being used. These resins have not been explicitly included in past emissions reporting or record keeping. Information received for the permit process showed lower concentrations of formaldehyde but an increase of 0.001% for methanol. Staff's assessment of this issue has resulted in proposed changes to the compliance demonstration provisions of the permit that would require the source to obtain HAP data representative of each shipment of resin received.