

Columbia Forest Products

Public Notice

Documents

for

State Operating Permit

Public Notice

Public Notice – Environmental Permit

PUPROSE OF NOTICE: To seek public comment and announce a public hearing and an information briefing on a draft permit from the Department of Environmental Quality to limit air pollution emitted by a facility in Pittsylvania County, Virginia.

PUBLIC COMMENT PERIOD: January 30, 2006 to March 1, 2006

PUBLIC HEARING: General District Courtroom, Second Floor, Edwin R. Shields Courthouse Addition in Chatham, Virginia, on March 8, 2006 from 7:00 p.m. to 9:00 p.m.

INFORMATION BRIEFING: General District Courtroom, Second Floor, Edwin R. Shields Courthouse Addition in Chatham, Virginia, on February 15, 2006 from 7:00 p.m. to 8:00 p.m.

PERMIT NAME: State Operating Permit issued by the DEQ, under the authority of the Air Pollution Control Board

NAME, ADDRESS AND REGISTRATION NUMBER OF PROPOSED PERMIT HOLDER: Columbia Forest Products; P.O. Drawer F, Chatham, VA 24531; 30120

PROJECT DESCRIPTION: Columbia Forest Products has applied for an amendment to a permit for installation of a replacement boiler and wood grinder at its facility in Chatham, Virginia. The amendment to the permit incorporates requirements for the operation of the replacement equipment. The permit would allow the source to operate its hardwood panel consolidation facility.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax or postal mail. All comments must include the name, address and telephone number of the person commenting and be received by DEQ within the comment period. DEQ also accepts written and oral comments at public hearings. The public may review the draft permit and application at the DEQ office named below and at the Chatham Branch of the Pittsylvania County Public Library. The draft permit is also available on the DEQ web site at www.deq.virginia.gov.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:

Allen Armistead; South Central Regional Office, Department of Environmental Quality; 7705 Timberlake Road; Lynchburg, VA 24502; Phone: 434-582-5120; E-mail: eaarmistead@deq.virignia.gov; Fax: 434-582-5125

Draft Permit

STATIONARY SOURCE PERMIT TO OPERATE
This permit includes designated equipment subject to
New Source Performance Standards (NSPS).

This permit supersedes your permit dated August 28, 2003.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia
Regulations for the Control and Abatement of Air Pollution:

Columbia Forest Products
P.O. Drawer 1
Chatham, VA 24531
Registration No.: 30120
AIRS ID No.: 51-143-00017

is authorized to operate

a hardwood panel consolidation facility

located at

100 Paul Road SW
Chatham, Virginia

in accordance with the Conditions of this permit.

Approved on DRAFT

Robert G. Burnley
Director, Department of Environmental Quality

Permit consists of 11 pages.
Permit Conditions 1 to 36.
Source Testing Report Format

PERMIT CONDITIONS - the regulatory reference or authority for each condition is listed in parentheses () after each condition.

APPLICATION

1. Except as specified in this permit, the permitted facility is to be constructed and operated as represented in the permit application dated May 25, 2005, including amendment information dated July 15, 2005, the permit application dated February 9, 2000, including amendment information dated March 10, 2000, February 29, 2000, February 28, 2000, and February 21, 2003; the permit application dated November 25, 1996, including amendment information dated November 4, 1997; the permit application dated May 11, 1999; the permit application dated September 13, 1999; the permanent shutdown letter executed April 22, 2003; and exemption request dated July 23, 2003 and August 25, 2003. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.
(9 VAC 5-80-830)

PROCESS REQUIREMENTS

2. **Equipment List** - Equipment to be constructed and operated at this facility consists of:

- a Hurst wood-fired boiler rated at 12.6 MMBtu/hr (NSPS)
- a wood grinder with electric motor drive

Other equipment to be operated at this facility consists of:

- UV finishing line consisting of:
 - UV-cured stain coating operation (1 roll coater)
 - UV-cured sealant/topcoat coating operation (3 roll coaters)
- three glue spreaders (2 that are 104" wide and 1 that is 120" wide)
- a Baldwin 24-opening hot press
- a Williams White hot press
- a three zone dust collection system containing four fabric filters:
 - Zone 1 - (Ref. HB) rated at 13,000 cfm
 - Zone 2 - (Ref. DB(N)) rated at 40,000 cfm and (Ref. UVB) rated at 9,000 cfm
 - Zone 3 - (Ref. CB) rated at 27,000 cfm

The woodworking equipment consists of assorted pieces of woodworking equipment, including but not limited to:

- Progressive saw
- sanders (back, face, and 1/4")

3. **Emission Controls** - Particulate emissions from the wood-fired boiler shall be controlled by a multicyclone. The multicyclone shall be provided with adequate access for inspection and shall be in operation when the wood-fired boiler is operating.
(9 VAC 5-50-260 and 9 VAC 5-80-850)
4. **Monitoring Devices** - The wood-fired boiler multicyclone shall be equipped with devices to continuously measure the differential pressure drop.

Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the multicyclone is operating.
(9 VAC 5-80-1180, 9 VAC 5-50-20C, 9 VAC 5-50-260 and 9 VAC 5-80-850)

5. **Emission Controls** - Particulate emissions from all wood dust collection systems shall be controlled by a fabric filter and/or a closed-loop system. The fabric filters shall be provided with adequate access for inspection.
(9 VAC 5-80-1180, 9 VAC 5-50-260, and 9 VAC 5-80-850)
6. **Emission Controls** - All subsequent transfer of the collected material from the wood dust collections systems, including truck loading, shall be controlled by a fabric filter, a closed-loop system, and/or a completely enclosed transfer system. Fugitive particulate emissions from the collection and transferring of collected wood dust shall be controlled by complete enclosure.
(9 VAC 5-80-850)
7. **Emission Unit Replacement** - The existing 7 MMBtu/hr wood-fired boiler shall be replaced with the 12.6 MMBtu/hr wood-fired boiler. Reactivation of the replaced unit may require a permit.
(9 VAC 5-20-220)
8. **Emission Unit Replacement** - The existing wood hog shall be replaced with the wood grinder. Reactivation of the replaced unit may require a permit.
(9 VAC 5-20-220)

OPERATING/EMISSION LIMITATIONS

9. **Processing** - The UV finishing line shall process no more than 84,096,000 square feet of plywood surface per year, calculated as the sum of each consecutive 12-month period.
(9 VAC 5-80-850)
10. **Fuel** - The approved fuel for the wood-fired boiler is wood and production residue generated from the hardwood panel consolidation facility operations, as collected by the facility's dust collection systems, excluding any wood products that contain wood preservative chemical

treatments or paper laminates or plastic laminates. A change in the fuel may require a permit to modify and operate.
(9 VAC 5-80-1180 and 9 VAC 5-80-850)

11. **Fuel Throughput** - The wood-fired boiler shall consume no more than 6898 tons of approved fuel per year, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1180 and 9 VAC 5-80-850)

12. **Emission Limits** - Emissions from the dust system controlled by UVB (including the roll coater sanders) shall not exceed the limits specified below:

Particulate Matter	0.01 gr/dscf	3.4 tons/yr
PM-10	0.01 gr/dscf	3.4 tons/yr

The tons/yr emissions limits are derived from the estimated overall emission contribution and are included for emission inventory purposes. Compliance with these limits shall be determined as stated in Condition numbers 9 and 18.
(9 VAC 5-50-260)

13. **Emission Limits** - Emissions from the woodworking operations, excluding the UVB dust system, shall not exceed the limits specified below:

Particulate Matter	4.0 lbs/hr	6.3 tons/yr
PM-10	4.0 lbs/hr	6.3 tons/yr

Compliance with these emission limits may be determined as stated in Condition number 25.
(9 VAC 5-80-850)

14. **Emission Limits** - Emissions from the operation of the wood-fired boiler shall not exceed the limits specified below:

Particulate Matter	0.3 lbs/MMBtu	16.6 tons/yr
PM-10	0.3 lbs/MMBtu	16.6 tons/yr
Sulfur Dioxide	0.3 lbs/hr	1.4 tons/yr
Nitrogen Oxides (as NO ₂)	6.2 lbs/hr	27.0 tons/yr
Carbon Monoxide	7.6 lbs/hr	33.1 tons/yr

Volatile Organic Compounds	0.2 lbs/hr	1.0 tons/yr
Acrolein	0.050 lbs/hr	0.22 tons/yr
Formaldehyde	0.189 lbs/hr	0.83 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 11 and 25.
 (9 VAC 5-50-260 and 9 VAC 5-60-320)

15. **Emission Limits** - Emissions from the operation of the three sealer/topcoat roll coaters of the UV finishing line shall not exceed the limits specified below:

Volatile Organic Compounds	3.5 lbs/hr	9.0 tons/yr
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Compliance with these emission limits may be determined as stated in Condition number 25.
 (9 VAC 5-50-260)

16. **Emission Limits** - Emissions from the use of resins by the presses shall not exceed the limits specified below:

Volatile Organic Compounds	9.2 lbs/hr	19.6 tons/yr
Formaldehyde	4.9 lbs/hr	8.97 tons/yr
Methanol	4.9 lbs/hr	9.8 tons/yr

Compliance with these emission limits may be determined as stated in Condition number 25.
 (9 VAC 5-80-850)

17. **Emission Limits** - Hazardous air pollutant (HAP) emissions, as defined by §112(b) of the Clean Air Act, from the hardwood panel consolidation facility shall not exceed 10 tons per year of any individual HAP or 25 tons per year of any combination, calculated monthly as the sum of each consecutive 12-month period. Compliance with these emission limits may be determined as stated in Condition number 25.
 (9 VAC 5-80-850)

18. **Visible Emission Limit** – Visible emissions from the UVB fabric filter shall not exceed five (5) percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction. VEE shall be performed on the UVB fabric filter exhaust in accordance with 40 CFR, Part 60, Appendix A, Method 9. The details of the tests are to be arranged with the South Central Regional Office.
(9 VAC 5-50-260 and 9 VAC 5-50-20)
19. **Visible Emission Limit** - Visible emissions from the wood-fired boiler shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 27 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown and malfunction.
(9 VAC 5-50-260)
20. **Visible Emission Limit** - Visible emissions from the presses shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A), except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity.
(9 VAC 5-40-20 and 9 VAC 5-40-80)
21. **Visible Emission Limit** - Visible emissions from any fugitive emission points shall not exceed ten (10) percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-80-850 and 9 VAC 5-50-20)
22. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, the NSPS wood-fired boiler as described in Condition 2 shall be operated in compliance with the requirements of 40 CFR 60, Subpart Dc.
(9 VAC 5-50-400 and 9 VAC 5-50-410)

INITIAL COMPLIANCE DETERMINATION

23. **Stack Test** - Initial performance tests shall be conducted for particulate matter, PM-10, carbon monoxide, formaldehyde, and acrolein from the wood-fired boiler to determine compliance with the emission limits contained in Condition 14. The tests shall be performed, within 60 days after achieving the maximum rate at which the wood-fired boiler will be operated but in no event later than 180 days after start-up of the wood-fired boiler. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and 9 VAC 5-60-30, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410 and 9 VAC 5-60-70. The details of the tests are to be arranged with the South Central Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the South Central Regional Office within 45 days after test completion.
(9 VAC 5-50-30, 9 VAC 5-60-30, and 9 VAC 5-80-1200)

24. **Visible Emissions Evaluation** - Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the wood-fired boiler. Each test shall consist of ten sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the South Central Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed, within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the wood-fired boiler. Should conditions prevent concurrent opacity observations, the South Central Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the South Central Regional Office within 45 days after test completion. (9 VAC 5-50-30 and 9 VAC 5-80-1200)

RECORDS

25. **On Site Records** - The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the South Central Regional Office. These records shall include, but are not limited to:
- The daily, monthly, and annual consumption of approved fuel by the wood-fired boiler;
 - The monthly and annual production of number of square feet of plywood surface processed by the roll coater of the UV finishing line;
 - The monthly and annual consumption of each resin by the presses;
 - The monthly and annual consumption of coatings by the UV finishing line;
 - The monthly and annual actual emissions material balance from all sources of emissions at the hardwood panel consolidation facility, including but not limited to the wood-fired boiler, the presses, the UV finishing line, and all woodworking operations, in tons per year, calculated using methods approved by the South Central Regional Office sufficient to maintain synthetic minor status for criteria and HAPs emissions for the Title V and Prevention of Significant Deterioration (PSD) programs;
 - A vendor supplied certification or test data of the HAP and VOC content representative of each shipment of resin received, using a DEQ approved test method;
 - Scheduled and unscheduled maintenance and operator training as required by Condition 32.

Annual, consumption, emissions, and production shall be calculated monthly as the sum of each consecutive 12-month period. These records shall be available for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-80-900 and 9 VAC 5-50-50)

26. **Testing/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Test ports shall be provided when requested at the appropriate locations.
(9 VAC 5-50-30 F)

NOTIFICATIONS

27. **Initial Notifications** - The permittee shall furnish written notification to the South Central Regional Office:

- a. The actual date on which construction of the 12.6 MMBtu/hr wood-fired boiler commenced within 30 days after such date.
- b. The anticipated start-up date of the 12.6 MMBtu/hr wood-fired boiler postmarked not more than 60 days nor less than 30 days prior to such date.
- c. The actual start-up date of the 12.6 MMBtu/hr wood-fired boiler within 15 days after such date.
- d. The anticipated date of performance tests of the 12.6 MMBtu/hr wood-fired boiler postmarked at least 30 days prior to such date.

Copies of the written notification referenced in items a., c., and d. above are to be sent to:

Associate Director
Office of Air Enforcement (3AP10)
U.S. Environmental Protection Agency
Region III
1600 Arch Street
Philadelphia, PA 19103-2029]

(9 VAC 5-50-50)

GENERAL CONDITIONS

28. **Permit Invalidation** - The portions of this permit to construct the wood-fired boiler shall become invalid, unless an extension is granted by the DEQ, if:
- a. A program of continuous construction is not commenced before the latest of the following:

- i. 18 months from the date of this permit;
 - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental agency;
 - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
- b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

29. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
 - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
 - c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
 - d. To sample or test at reasonable times.

For purposes of this condition the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

(9 VAC 5-170-130)

30. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the South Central Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify South Central Regional Office in writing.

(9 VAC 5-20-180 C)

31. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.

(9 VAC 5-20-180 I)

32. **Maintenance/Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

(9 VAC 5-40-20 E and 9 VAC 5-50-20 E)

33. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the application for this permit or any amendments to it;
- b. Fails to comply with the terms or conditions of this permit;
- c. Fails to comply with any emission standards applicable to the equipment listed in Condition 2;
- d. Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
- e. Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;

- f. Fails to comply with the applicable provisions of Articles 6, 8 and 9 of 9 VAC 5 Chapter 80.

(9 VAC 5-80-1010)

34. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the South Central Regional Office of the change of ownership within 30 days of the transfer.

(9 VAC 5-80-940)

35. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate, process and production data; changes in control equipment and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

(9 VAC 5-80-900)

36. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.

(9 VAC 5-80-860 D)

SOURCE TESTING REPORT FORMAT

Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Tester; name, address and report date

Certification

1. Signed by team leader / certified observer (include certification date)
- * 2. Signed by reviewer

Introduction

1. Test purpose
2. Test location, type of process
3. Test dates
- * 4. Pollutants tested
5. Test methods used
6. Observers' names (industry and agency)
7. Any other important background information

Summary of Results

1. Pollutant emission results / visible emissions summary
2. Input during test vs. rated capacity
3. Allowable emissions
- * 4. Description of collected samples, to include audits when applicable
5. Discussion of errors, both real and apparent

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Process and control equipment data

* Sampling and Analysis Procedures

1. Sampling port location and dimensioned cross section
2. Sampling point description
3. Sampling train description
4. Brief description of sampling procedures with discussion of deviations from standard methods
5. Brief description of analytical procedures with discussion of deviation from standard methods

Appendix

- * 1. Process data and emission results example calculations
2. Raw field data
- * 3. Laboratory reports
4. Raw production data
- * 5. Calibration procedures and results
6. Project participants and titles
7. Related correspondence
8. Standard procedures

* Not applicable to visible emission evaluations.

Engineering Analysis for Draft Permit

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office

INTRA-AGENCY MEMORANDUM

Permit Writer	Allen Armistead			
Memo To	Air Permit File	Date	January 26, 2006	
Facility Name	Columbia Forest Products			
Registration Number	30120			
County-Plant I.D.	143-00017			
UTM Coordinates (Zone 17)	642.19	Easting (km)	4076.29	Northing (km)
Elevation (feet)	650			
Distance to Nearest Class I Area (select one)		SNP (km)	81.4	IRF (km)
FLM Notification (Y/N)	n/a	Required if less than 10K (minor), 100K (state major)		
NET Classification (A, SM, B)	SM	Before permit action	SM	After permit action
Title V Major Pollutants	n/a	Before permit action	n/a	After permit action
PSD Major Source (Y/N)	No	Before permit action	No	After permit action
PSD Major Pollutants	n/a	Before permit action	n/a	After permit action

I. Introduction

Columbia Forest Products (CFP) owns and operates a hardwood plywood manufacturing facility located at 100 Paul Road SW in Chatham, Virginia in Pittsylvania County. The Chatham facility is currently covered by a State Operating Permit (SOP) issued August 28, 2003, which limits the criteria and hazardous air pollutant emissions to less than Title V and PSD thresholds.

An application was received on May 31, 2005 (dated May 25, 2005) for the replacement of the existing 7 million Btu per hour (MMBtu/hr) wood-fired boiler with a new 12.6 MMBtu/hr wood-fired boiler. The facility also intends to replace the existing wood hog with a low speed wood grinder. In addition, the source proposes to install a steam driven turbine/generator unit.

The full compliance evaluation of September 2, 2004 found the facility to be in compliance. A February 20, 2005 complaint investigation showed the boiler to be out of compliance for opacity. A Notice of Violation (NOV) was issued on February 25, 2005. The source submitted a signed Consent Order (CO) on July 15, 2005. On July 27, the source submitted a completion report that detailed all its corrective actions concerning the compliance schedule of the CO along with a check for the civil penalty required by the CO. An inspection report dated July 29, 2005 stated the requirements of the NOV and CO had been met, and the source is shown to be in compliance. An on-site inspection was conducted on August 24, 2005. During the inspection fugitive emissions from the truck load-out appeared to be in excess of the permit opacity limit of 10%. A Warning Letter (WL) was issued on September 1, 2005 to the source requesting a letter describing corrective actions taken be submitted with 30 days. A response was received from the source on September 28, 2005 with an action plan to correct the fugitive emissions problem.

The installation of the new equipment is subject to minor NSR permitting under Article 6 of the Regulations. Because the facility has a SOP issued under Article 5, and wishes to remain a Synthetic Minor under Title V and PSD, the NSR and SOP amendment is being conducting concurrently.

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

The proposed 12.6 MMBtu/hr boiler is intended to replace the existing boiler. Steam from the new boiler will be used to heat the presses, for building space heat, and to drive a new turbine/generator unit. Emissions from the new boiler will consist of criteria pollutants and hazardous air pollutants (HAPs). The criteria pollutants include particulate matter (PM), particulate matter less than 10 microns in diameter (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs). EPA's list of HAPs, as defined in Section 112(b) of the Clean Air Act, EPA's emission factors from Chapter 1.6 of AP-42 "Wood Residue Combustion in Boilers", and EPA's "Development of Average Emission Factors and Baseline Emission Estimates for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants" were used to identify the HAPs emitted from the boiler (see Attachment A for a listing of the HAPs).

The new wood grinder will be used to grind wood scrap and trimming for use as boiler fuel. The grinder will replace the wood hog currently used at the facility. Power for the grinder will be supplied by an electric motor. Emissions from the wood grinder will be PM and PM₁₀, which will be controlled by a closed-loop dust collection system.

Because the new turbine/generator unit will be powered by steam from the boiler, it will not have any direct emissions to the atmosphere.

The source requested that the current formaldehyde limit from the resin usage be lowered from 9.8 tons per year (tons/yr) to 8.97 tons/yr. This is to account for the increased potential of formaldehyde emissions from the new boiler.

III. Regulatory Review

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

Installation of the new boiler is considered a modification since the past actual (PA) emissions are zero and therefore any future actual (FA) emissions would be a net emissions increase (NEI). The following table (Table III.A) shows the results of calculations from Attachment A. These calculations show that potential emissions for PM, PM₁₀, and NO_x are all above the respective exemption levels for a modification under 9 VAC 5-80-1320 D. Therefore, the new boiler requires a permit for installation.

Table III.A

Pollutant	Potential		Exemption	
	lb/hr	tons/yr	lb/hr	tons/yr
PM	5.25	23.01	-	15
PM ₁₀	4.75	20.81	-	10
SO ₂	0.32	1.38	-	10
NO _x	6.17	27.04	-	10
CO	7.56	33.11	-	100
VOC Total	0.21	0.94	-	10
Acrolein	0.0504	0.221	0.02277	0.03335
Formaldehyde	0.189	0.828	0.0825	0.174

The above table shows that annual potential emissions of the HAPs acrolein and formaldehyde are both above their respective annual exemption levels under 9 VAC 5-60-300. In addition,

hourly potential emissions of acrolein are above its respective hourly exemption level. Therefore, these HAPs are not exempt under 9 VAC 5-80-1320 E and a permit is required for the boiler.

Installation of the new low speed wood grinder is also considered a modification since the PA emissions are zero and therefore there would be a NEI from its installation. While the application did not give a specific size rating for the proposed wood grinder, the source did not request an increase in emissions. From the November 6, 1997 application, the estimated maximum annual scrap for grinding would be 5,799 tons per year. Without controls this would exceed the exemption levels for PM and PM₁₀ for a modification under 9 VAC 5-80-1320 D. Therefore, a permit is required.

The proposed new turbine/generator unit will be powered by steam from the boiler. Because it will not have any direct emissions to the atmosphere, a permit will not be required for its installation.

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

The facility is classified as a synthetic minor source and is therefore not subject to Article 8. Because the location of the facility is in attainment for all criteria pollutants, the facility is not subject to Article 9.

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

At a rated capacity of 12.6 MMBtu/hr the proposed boiler is larger than Subpart Dc applicability level of 10 MMBtu/hr. Therefore, the boiler will be subject to this subpart. Because the proposed boiler's capacity is less than 30 MMBtu/hr, it is subject only to the reporting and recordkeeping requirements of the subpart.

D. 9 VAC 5 Chapter 60, Part II, Article 1 - NESHAPS
None applicable

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

The State Operating Permit limits the source's HAPs emissions to less than the major source threshold of 10 tons per year of any single HAP or 25 tons of any combination of HAPs. Therefore, the source is a synthetic minor for HAPs and not subject to any MACT requirements.

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

PM, PM₁₀, and NO_x emissions from the proposed boiler are all above their respective exemption levels for a modification under 9 VAC 5-80-1320 D. Therefore, these pollutants are subject to BACT. BACT for PM and PM₁₀ for small wood-fired boilers is considered to be control by a multicyclone as well as limiting emissions to 0.30 lbs/MMBtu and limiting opacity from the boiler stack to 20%, except for one 6-minute period per hour of not more than 27%. BACT for NO_x for small wood-fired boilers is considered no controls.

PM and PM₁₀ emissions from the proposed wood grinder are above their respective exemption levels for a modification under 9 VAC 5-80-1320 D. BACT for the wood grinder dust collection system for this facility is the use of a fabric filter and/or a closed-loop system. The source is proposing to use a closed-loop system.

V. Summary of Actual Emissions Increase

Emissions from the proposed boiler as calculated in Attachment B are as follows:

Pollutant	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Acrolein	Formaldehyde
(tons/yr)	16.56	16.56	1.38	27.04	33.11	0.94	0.22	0.83

These emissions take into account permitted throughput limits and required controls. They also take into account the permit requirement that the old 7 MMBtu/hr boiler will be permanently taken out of operation, with reactivation of the unit needing a permit evaluation.

Woodworking emissions from the current SOP, not including those from the UV Baghouse, are not being increased per source request from the current 6.3 tons/yr for both PM and PM₁₀. Because the wood grinder uses a closed-loop dust system there should be no emissions, therefore not throughput or emissions limits are included in the permit. This also takes into account the permit requirement that the old wood hog will be permanently taken out of operation, with reactivation of the unit needing a permit evaluation.

Other emission limits in the current permit are remaining unchanged.

VI. Dispersion Modeling

A. Regulated Pollutants

All controlled criteria pollutant emissions are below their respective significant levels from 9 VAC 5-80-1710. Therefore, modeling of criteria pollutants is not required. Because modeling was required for toxic pollutants (see below) and because the modeling results can be prorated for various emission rates, the criteria pollutant emissions were compared to their respective National Ambient Air Quality Standards (NAAQS). Attachment C shows this comparison for the boiler emissions. Because Virginia does criteria pollutant monitoring at various locations around Virginia, the highest monitored level from the 2004 annual report of each pollutant was used to assume a background concentration. Attachment C also shows the comparison of the model concentration plus the background concentration to the respective NAAQS levels. All of the criteria pollutants are shown to be below their respective NAAQS levels.

B. Toxic Pollutants

As seen in Attachment B and C, the emissions of Acrolein and Formaldehyde from the proposed boiler are above their respective exemption levels under 9 VAC 5-60-300. In order to compare these emissions with the respective Significant Ambient Air Concentration (SAAC) for each of these pollutants a Screen3 model was run on the emissions from the proposed boiler. The base elevation of the proposed boiler stack will be 640 feet above sea level. Stack height for the boiler is to be 40 feet, therefore, the top of the stack would be at an elevation of 680 feet. Terrain near the facility is higher than 680 feet, so complex terrain modeling was done in conjunction with simple terrain modeling to determine the worst case. Attachment D shows the result of the model run assuming an emission rate of 1 pound per hour (lb/hr). These results show the highest 1-hour concentration to be 30.37 $\mu\text{g}/\text{m}^3$ at a distance of 100 meters from the stack and an elevation of 20 feet above the base of the stack. Attachment C shows the calculations for the individual HAPs in question by prorating the 30.37 $\mu\text{g}/\text{m}^3$ per lb/hr of emissions to the calculated hourly emissions of these HAPs. These calculations show that the Predicted Ambient Air Concentration (PAAC) for the HAPs of concern from the proposed boiler

will be less than their respective hourly and annual SAAC, as seen in the following table.

Pollutant	CAS #	SAAC		PAAC		PAAC as percent of SAAC	
		hour ($\mu\text{g}/\text{m}^3$)	annual ($\mu\text{g}/\text{m}^3$)	hour ($\mu\text{g}/\text{m}^3$)	annual ($\mu\text{g}/\text{m}^3$)	hour	annual
Acrolein	107-02-8	17.25	0.46	1.53	0.12	8.9%	26.1%
Formaldehyde	50-00-0	62.50	2.40	5.74	0.46	9.2%	19.2%

VII. Boilerplate Deviations

Conditions from the boilerplates for a wood-fired boiler and testing were merged into the SOP boilerplate, along with conditions from the current SOP. From the boilerplate for a wood-fired boiler the "Fuel" and "Fuel Specification" conditions were merged and some of the language changed to more accurately address the operations of this facility.

VIII. Compliance Demonstration

In order to determine that the boiler can meet the permit limits, an initial stack test is being required. Testing will be required for PM and PM₁₀ to determine that the multicyclone control device is operating properly. Emissions of CO will be tested to determine if the boiler is operating efficiently. Testing for acrolein and formaldehyde will be required as verification of the emission factors used in preparing the permit.

Concurrent with the boiler stack testing, a visible emissions evaluation (VEE) is required to demonstrate that the opacity limit can be met.

The permit requires that the results of the stack testing and VEE be reported to the regional office. Also, the permit requires the source to maintain a copy of the results on file at the facility.

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

Because the SOP makes the source a synthetic minor for criteria pollutants and HAPs, the source is not a major source under the regulations and is therefore not subject to Title V.

X. Other Considerations

The minor NSR permitting and SOP amendment are being done concurrently. Because the change to the SOP permit is a significant amendment, a public notice and 30-day comment period are required.

XI. Recommendations

It is recommended that the permit be approved.

Attachments

- Attachment A - Emission Estimate (Uncontrolled)
- Attachment B - Emission Estimate (Proposed for permit)
- Attachment C - HAPs evaluation
- Attachment D - Screen3 modeling results

EMISSION ESTIMATE (Uncontrolled)

Company Name:
Source Location:
Registration No.:

Columbia Forest Products
Chatham
30120

Boiler
Wood (Dry) SCC 10200908

Boiler Rating 12.0 MMBtu/hr
Fuel Rating 8,000 Btu/lb
Process Throughput 1,575.0 lb/hr
Maximum Throughput 6,898.5 tons/yr
Request Hours 8,760.0 hours/yr
Requested Throughput 6,898.5 tons/yr

Pollutant	Emission Factor lb/MMBtu	Reference	UNCONTROLLED EMISSIONS			Control Technology	Control Eff. %	PERMIT EMISSION LIMITS		Exception Levels (lb/hr) (ton/yr)	Exempt?	
			Hourly (lb/hr)	8760 hrs (ton/yr)	Throughput (ton/yr)			(lb/hr)	(ton/yr)		(lb/hr)	(ton/yr)
*** Criteria Pollutants ***												
PM	1.46	MACT	18.40	80.57	80.57	None	0	18.40	80.57		15	NO
PM10	1.32	MACT	16.64	72.90	72.90	None	0	16.64	72.90		10	NO
SO ₂	0.025	(5)	0.32	1.38	1.38	None		0.32	1.38		10	Yes
NO _x	0.49	(5)	6.17	27.04	27.04	None		6.17	27.04		100	Yes
CO	0.6	(5)	7.56	33.11	33.11	None		7.56	33.11		10	Yes
VOC Total	0.017	(5)	0.21	0.94	0.94	None		0.21	0.94			
*** HAPs ***												
Acenaphthene (POM/PAH)	9.1E-07	(5)	1.15E-03	5.02E-03	5.02E-03	None		1.15E-03	5.02E-03	2.61	7.54	Yes Yes
Acenaphthylene (POM/PAH)	5.0E-06	(5)	6.30E-03	2.76E-04	2.76E-04	None		6.30E-03	2.76E-04	2.61	7.54	Yes Yes
Acetaldehyde	1.9E-02	MACT	2.39E-01	1.05E+00	1.05E+00	None		2.39E-01	1.05E+00	8.91	26.10	Yes Yes
Acetophenone	3.2E-09	(5)	4.03E-08	1.77E-07	1.77E-07	None		4.03E-08	1.77E-07	3.24	7.13	Yes Yes
Acrolein	3.0E-06	(5)	5.04E-02	2.21E-01	2.21E-01	None		5.04E-02	2.21E-01	0.02277	0.03335	NO NO
Anthracene (POM/PAH)	3.0E-03	(5)	3.78E-05	1.66E-04	1.66E-04	None		3.78E-05	1.66E-04	2.61	7.54	Yes Yes
Benzo(a)anthracene (POM/PAH)	3.0E-06	(5)	6.31E-02	2.76E-01	2.76E-01	None		6.31E-02	2.76E-01	2.112	4.64	Yes Yes
Benzo(b)fluoranthene (POM/PAH)	3.0E-03	MACT	6.21E-02	2.76E-01	2.76E-01	None		6.21E-02	2.76E-01	2.61	7.54	Yes Yes
Benzo(k)fluoranthene (POM/PAH)	6.5E-08	(5)	8.19E-07	3.59E-06	3.59E-06	None		8.19E-07	3.59E-06	2.61	7.54	Yes Yes
Benzo(a)pyrene (POM/PAH)	2.6E-06	(5)	3.28E-03	1.43E-04	1.43E-04	None		3.28E-03	1.43E-04	2.61	7.54	Yes Yes
Benzo(a)pyrene (PAH)	1.0E-07	(5)	1.26E-06	5.52E-06	5.52E-06	None		1.26E-06	5.52E-06	2.61	7.54	Yes Yes
Benzo(g,h,i)perylene (POM/PAH)	2.6E-09	(5)	3.28E-08	1.43E-07	1.43E-07	None		3.28E-08	1.43E-07	2.61	7.54	Yes Yes
Benzo(g,h,i)perylene (PAH)	9.5E-08	(5)	1.17E-06	5.13E-06	5.13E-06	None		1.17E-06	5.13E-06	2.61	7.54	Yes Yes
Benzo(i)perylene (POM/PAH)	1.7E-07	(5)	2.02E-06	8.83E-06	8.83E-06	None		2.02E-06	8.83E-06	2.61	7.54	Yes Yes
Benzo(i)perylene (PAH)	1.7E-07	(5)	2.02E-06	8.83E-06	8.83E-06	None		2.02E-06	8.83E-06	2.61	7.54	Yes Yes
Benzo(j,k)fluoranthene (POM/PAH)	3.6E-08	(5)	4.54E-07	1.99E-06	1.99E-06	None		4.54E-07	1.99E-06	2.61	7.54	Yes Yes
Benzo(j,k)fluoranthene (PAH)	3.6E-08	(5)	4.54E-07	1.99E-06	1.99E-06	None		4.54E-07	1.99E-06	2.61	7.54	Yes Yes
bis(2-Ethylhexyl)phthalate	4.7E-08	(5)	5.93E-07	2.59E-06	2.59E-06	None		5.93E-07	2.59E-06			
Bromobenzene	1.5E-09	(5)	1.89E-04	8.28E-04	8.28E-04	None		1.89E-04	8.28E-04	23.8	85.55	Yes Yes
2-Butanone (MEK)	5.4E-06	(5)	6.80E-05	2.96E-04	2.96E-04	None		6.80E-05	2.96E-04	2.61	7.54	Yes Yes
Carbazole	1.8E-06	(5)	2.27E-05	9.93E-05	9.93E-05	None		2.27E-05	9.93E-05	2.046	4.495	Yes Yes
Carbon tetrachloride	4.5E-03	(5)	5.67E-04	2.48E-03	2.48E-03	None		5.67E-04	2.48E-03	0.0957	0.2175	Yes Yes
Chlorine	7.9E-04	(5)	9.95E-03	4.36E-02	4.36E-02	None		9.95E-03	4.36E-02	3.036	6.67	Yes Yes
Chlorobenzene	3.3E-03	(5)	4.16E-04	1.82E-03	1.82E-03	None		4.16E-04	1.82E-03	3.234	7.105	Yes Yes
Chloroform	2.8E-05	(5)	3.53E-04	1.55E-03	1.55E-03	None		3.53E-04	1.55E-03	6.831	14.935	Yes Yes
Chloroethane	2.3E-05	(5)	2.90E-04	1.27E-03	1.27E-03	None		2.90E-04	1.27E-03	2.61	7.54	Yes Yes
3-Chloronaphthalene	2.9E-09	(5)	3.02E-08	1.32E-07	1.32E-07	None		3.02E-08	1.32E-07	2.61	7.54	Yes Yes
Chrysene (POM/PAH)	3.5E-08	(5)	4.79E-07	2.10E-06	2.10E-06	None		4.79E-07	2.10E-06	0.033	0.0725	Yes Yes
Dibenzofuran	2.7E-10	(5)	3.40E-09	1.49E-08	1.49E-08	None		3.40E-09	1.49E-08	0.033	0.0725	Yes Yes
Dibenz(a,h)anthracene (POM/PAH)	9.1E-09	(5)	1.15E-07	5.02E-07	5.02E-07	None		1.15E-07	5.02E-07	2.61	7.54	Yes Yes
Dibenz(a,h)anthracene (PAH)	7.4E-10	(5)	9.32E-09	4.08E-08	4.08E-08	None		9.32E-09	4.08E-08	0.033	0.0725	Yes Yes
Dichlorodiphenyl ether	2.9E-05	(5)	3.65E-04	1.60E-03	1.60E-03	None		3.65E-04	1.60E-03	2.64	5.8	Yes Yes
1,2-Dichloroethane	2.9E-04	(5)	3.65E-03	1.60E-02	1.60E-02	None		3.65E-03	1.60E-02	11.484	25.23	Yes Yes
Dichloromethane	3.7E-03	(5)	4.16E-04	1.82E-03	1.82E-03	None		4.16E-04	1.82E-03	16.764	50.315	Yes Yes
1,2-Dichloropropane	1.8E-07	(5)	2.27E-06	9.93E-06	9.93E-06	None		2.27E-06	9.93E-06	0.0066	0.0145	Yes Yes
2,4-Dinitrophenol	3.1E-05	(5)	3.91E-04	1.71E-03	1.71E-03	None		3.91E-04	1.71E-03	17.919	62.93	Yes Yes
Ethylbenzene	1.0E-06	(5)	2.02E-05	8.83E-05	8.83E-05	None		2.02E-05	8.83E-05	2.61	7.54	Yes Yes
Fluoranthene (POM/PAH)	4.0E-06	(5)	4.28E-03	1.88E-04	1.88E-04	None		4.28E-03	1.88E-04	2.61	7.54	Yes Yes
Fluorene (POM/PAH)	3.4E-06	(5)	4.28E-03	1.88E-04	1.88E-04	None		4.28E-03	1.88E-04	0.0825	0.174	NO NO
Formaldehyde	1.5E-02	MACT	1.89E-01	8.28E-01	8.28E-01	None		1.89E-01	8.28E-01	0.033	0.0725	Yes Yes
Heptachlorobiphenyl	6.6E-11	(5)	8.32E-10	3.64E-09	3.64E-09	None		8.32E-10	3.64E-09	0.033	0.0725	Yes Yes
Hexachlorobiphenyl	5.3E-10	(5)	6.93E-09	3.04E-08	3.04E-08	None		6.93E-09	3.04E-08	0.033	0.0725	Yes Yes
Heptachlorodibenzo-p-dioxin	2.0E-09	(5)	2.52E-08	1.10E-07	1.10E-07	None		2.52E-08	1.10E-07			
Heptachlorodibenzo-p-furan	2.4E-10	(5)	3.02E-09	1.32E-08	1.32E-08	None		3.02E-09	1.32E-08	9.90E-05	2.18E-04	Yes Yes
Hexachlorodibenzo-p-dioxin	1.6E-08	(5)	2.02E-05	8.83E-05	8.83E-05	None		2.02E-05	8.83E-05	9.90E-05	2.18E-04	Yes Yes
Hexachlorodibenzo-p-furan	2.3E-10	(5)	3.53E-09	1.55E-08	1.55E-08	None		3.53E-09	1.55E-08	0.2475		Yes Yes
Hydrogen chloride	1.9E-02	(5)	2.39E-01	1.05E+00	1.05E+00	None		2.39E-01	1.05E+00	2.61	7.54	Yes Yes
Indeno(1,2,3-c,d)pyrene (POM/PAH)	8.7E-08	(5)	1.10E-06	4.80E-06	4.80E-06	None		1.10E-06	4.80E-06	2.61	7.54	Yes Yes
2-Methylnaphthalene	1.0E-07	(5)	2.02E-06	8.83E-06	8.83E-06	None		2.02E-06	8.83E-06	2.61	7.54	Yes Yes
Monochlorobiphenyl	2.2E-10	(5)	2.77E-09	1.21E-08	1.21E-08	None		2.77E-09	1.21E-08	0.033	0.0725	Yes Yes
Naphthalene (POM/PAH)	9.7E-05	(5)	1.22E-03	5.35E-03	5.35E-03	None		1.22E-03	5.35E-03	2.61	7.54	Yes Yes
Naphthalene (PAH)	1.1E-07	(5)	1.39E-06	6.07E-06	6.07E-06	None		1.39E-06	6.07E-06	0.0660	0.1450	Yes Yes
4-Nitrophenol	5.6E-08	(5)	1.39E-06	6.07E-06	6.07E-06	None		1.39E-06	6.07E-06			
Octachlorodibenzo-p-dioxin	8.8E-11	(5)	8.32E-07	3.64E-06	3.64E-06	None		8.32E-07	3.64E-06			
Octachlorodibenzo-p-furan	1.5E-09	(5)	1.11E-09	4.86E-09	4.86E-09	None		1.11E-09	4.86E-09	9.90E-08	2.18E-04	Yes Yes
Pentachlorodibenzo-p-dioxin	4.2E-10	(5)	1.89E-08	8.28E-08	8.28E-08	None		1.89E-08	8.28E-08			
Pentachlorodibenzo-p-furan	1.2E-09	(5)	1.59E-09	2.32E-08	2.32E-08	None		1.59E-09	2.32E-08	9.90E-05	2.18E-04	Yes Yes
Pentachlorobiphenyl	5.1E-08	(5)	1.51E-08	6.63E-08	6.62E-08	None		1.51E-08	6.62E-08	0.033	0.0725	Yes Yes
Perylene	5.2E-10	(5)	6.43E-07	2.81E-06	2.81E-06	None		6.43E-07	2.81E-06	0.033	0.0725	Yes Yes
Phenol	7.0E-06	(5)	6.55E-09	2.87E-08	2.87E-08	None		6.55E-09	2.87E-08	2.61	7.54	Yes Yes
Propene	3.2E-06	(5)	4.03E-05	3.86E-04	3.86E-04	None		4.03E-05	3.86E-04	2.61	7.54	Yes Yes
Propionaldehyde	6.1E-07	(5)	7.69E-04	3.37E-03	3.37E-03	None		7.69E-04	3.37E-03			
Pyrene (POM/PAH)	3.7E-06	(5)	4.66E-03	2.04E-04	2.04E-04	None		4.66E-03	2.04E-04	2.61	7.54	Yes Yes
Styrene	1.8E-03	(5)	2.39E-02	1.05E-01	1.05E-01	None		2.39E-02	1.05E-01	14.058	30.885	Yes Yes
2,3,7,8-Tetrachlorodibenzo-p-dioxin	8.6E-12	(5)	1.08E-10	4.75E-10	4.75E-10	None		1.08E-10	4.75E-10			
Tetrachlorodibenzo-p-dioxin	4.7E-10	(5)	5.92E-09	2.59E-08	2.59E-08	None		5.92E-09	2.59E-08			

EMISSION ESTIMATE (Uncontrolled)

Company Name:
Source Location:
Registration No.:

Columbia Forest Products
Chatham
30120

Boiler
Wood (Dry) SCC 10200908

Boiler rating: 12.6 MMBtu/hr
Fuel Rating: 8,000 lbs/hr
Process Throughput: 1,575.0 lb/hr
Maximum Throughput: 6,898.5 tons/yr
Request Hours: 8,760.0 hours/yr
Requested Throughput: 6,898.3 tons/yr

Pollutant	Emission Factor lb/MMBtu	Reference	UNCONTROLLED EMISSIONS			Control Technology	Control Eff. %	PERMIT EMISSION LIMITS		Exemption Levels		Exempt?	
			Hourly (lb/hr)	8760 hrs (ton/yr)	Throughput (ton/yr)			(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
2,3,7,8-Tetrachlorodibenzo-p-dioxin	9.0E-11	(5e)	1.13E-09	4.97E-09	4.97E-09	None		1.13E-09	4.97E-09	9.90E-05	2.18E-04	Yes	Yes
Tetrachlorodibenzo-p-dioxin	7.5E-10	(5e)	9.45E-09	4.14E-08	4.14E-08	None		9.45E-09	4.14E-08	9.90E-05	2.18E-04	Yes	Yes
Tetrachlorobiphenyl	2.5E-09	(5e)	3.15E-08	1.38E-07	1.38E-07	None		3.15E-08	1.38E-07	0.033	0.0725	Yes	Yes
Tetrachloroethene	3.0E-05	(5e)	4.79E-04	2.10E-03	2.10E-03	None		4.79E-04	2.10E-03	22.8	49.155	Yes	Yes
Toluene	9.2E-04	(5e)	1.16E-02	5.08E-02	5.08E-02	None		1.16E-02	5.08E-02	18.645	34.665	Yes	Yes
Trichlorobiphenyl	2.6E-09	(5e)	3.28E-08	1.43E-07	1.43E-07	None		3.28E-08	1.43E-07	0.033	0.0725	Yes	Yes
1,1,1-Trichloroethane	1.1E-05	(5e)	3.91E-04	1.71E-03	1.71E-03	None		3.91E-04	1.71E-03	22.8	100	Yes	Yes
Trichloroethene	3.0E-05	(5e)	3.78E-04	1.66E-03	1.66E-03	None		3.78E-04	1.66E-03	22.8	39.003	Yes	Yes
2,4,6-Trichlorophenol	2.7E-08	(5e)	2.77E-07	1.21E-06	1.21E-06	None		2.77E-07	1.21E-06	0.0203	0.0450	Yes	Yes
Vinyl Chloride	1.8E-05	(5e)	2.27E-04	9.93E-04	9.93E-04	None		2.27E-04	9.93E-04	0.858	1.885	Yes	Yes
o-Xylene	2.5E-05	(5e)	3.15E-04	1.38E-03	1.38E-03	None		3.15E-04	1.38E-03	21.483	62.93	Yes	Yes
Antimony	2.79E-06	(5d)	9.95E-05	4.36E-04	4.36E-04	None		9.95E-05	4.36E-04	0.033	0.0725	Yes	Yes
Arsenic	3.8E-05	MACT	4.47E-04	1.96E-03	1.96E-03	None		4.47E-04	1.96E-03	0.0132	0.039	Yes	Yes
Beryllium	4.0E-06	MACT	5.78E-05	2.53E-04	2.53E-04	None		5.78E-05	2.53E-04	0.000132	0.00029	Yes	Yes
Cadmium	2.01E-06	MACT	1.15E-04	5.04E-04	5.04E-04	None		1.15E-04	5.04E-04	0.0033	0.00725	Yes	Yes
Chromium, total	3.6E-05	MACT	4.55E-04	1.99E-03	1.99E-03	None		4.55E-04	1.99E-03	0.033	0.0725	Yes	Yes
Chromium, hexavalent	3.5E-06	(5d)	4.41E-05	1.93E-04	1.93E-04	None		4.41E-05	1.93E-04	0.0033	0.00725	Yes	Yes
Cobalt	6.3E-06	(5d)	8.19E-05	3.59E-04	3.59E-04	None		8.19E-05	3.59E-04	0.0033	0.00725	Yes	Yes
Lead	2.0E-04	MACT	2.51E-03	1.10E-02	1.10E-02	None		2.51E-03	1.10E-02	0.0099	0.02175	Yes	Yes
Manganese	5.6E-03	MACT	7.09E-02	3.11E-01	3.11E-01	None		7.09E-02	3.11E-01	0.33	0.725	Yes	Yes
Mercury	3.5E-06	(5d)	4.41E-05	1.93E-04	1.93E-04	None		4.41E-05	1.93E-04	0.0033	0.00725	Yes	Yes
Nickel	3.3E-05	(5d)	4.16E-04	1.82E-03	1.82E-03	None		4.16E-04	1.82E-03	0.0066	0.0145	Yes	Yes
Phosphorus	2.7E-05	(5d)	3.40E-04	1.49E-03	1.49E-03	None		3.40E-04	1.49E-03	0.0066	0.0145	Yes	Yes
Selenium	2.2E-04	MACT	2.76E-03	1.21E-02	1.21E-02	None		2.76E-03	1.21E-02	0.0132	0.029	Yes	Yes
TOTAL HAPs			0.92	4.02	4.02								

(5e) - Based on AP-42 Table 1.6-1 dated 7/01 Emission Factors for Wood Residue Combustion [Includes Condensibles]
 (5b) - Based on AP-42 Table 1.6-2 dated 7/01 Emission Factors for Wood Residue Combustion
 (5c) - Based on AP-42 Table 1.6-3 dated 7/01 Emission Factors for Wood Residue Combustion
 (5d) - Based on AP-42 Table 1.6-4 dated 7/01 Emission Factors for Wood Residue Combustion
 MACT - Based on "Development of Average Emission Factors and Baseline Emission Estimates for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants"
 MACT* - Priorated MACT factor based on AP-42 Table 1.6-1 dated 7/01 Emission Factors for Wood Residue Combustion
 (POM/PAM)- polycyclic organic matter/polycyclic aromatic hydrocarbon compounds

EMISSION ESTIMATE (proposed for permit)

Company Name:
Source Location:
Registration No.:

Colony Forest Products
Clarkston
30120

Boiler
Wood (Dry) SCC 1020908

Boiler Rating 12.8 MMBtu/hr
Fuel Rating 5,000 Btu/lb
Process Throughput 1,575.0 lb/hr
Maximum Throughput 6,898.5 tons/yr
Request Hours 8,760 hours/yr
Requested Throughput 6,898.5 tons/yr

Pollutant	Emission Factor		UNCONTROLLED EMISSIONS			Control Technology	Control Eff. %	PERMIT EMISSION		Exemption Levels		Exempt?	
	lb/MMBtu	Reference	Hourly (lb/hr)	3760 hrs (ton/yr)	Throughput (ton/yr)			LIMITS (lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
*** Criteria Pollutants ***													
PM	0.30 (5)		3.78	16.36	16.36	None	0	3.78	16.36	15		NO	
PM10	0.30 (5)		3.78	16.36	16.36	None	0	3.78	16.36	10		NO	
SO ₂	0.025 (5)		0.32	1.38	1.38	None		0.32	1.38	10		Yes	Yes
NO _x	0.49 (5)		6.17	27.04	27.04	None		6.17	27.04	10		NO	
CO	2.0 (5)		7.56	33.11	33.11	None		7.56	33.11	100		Yes	Yes
VOC Total	0.010 (5)		0.21	0.94	0.94	None		0.21	0.94	10		Yes	Yes
*** HAPs ***													
Acenaphthene (POM/PAH)	0.017 (5)		1.15E-05	5.02E-05	5.02E-05	None		1.15E-05	5.02E-05	2.61	7.54	Yes	Yes
Acenaphthylene (POM/PAH)	0.009 (5)		6.30E-05	2.76E-04	2.76E-04	None		6.30E-05	2.76E-04	2.61	7.54	Yes	Yes
Acetaldehyde	0.01 (MACT)		2.39E-01	1.05E+00	1.05E+00	None		2.39E-01	1.05E+00	8.91	26.10	Yes	Yes
Acetophenone	0.01 (5)		4.03E-08	1.77E-07	1.77E-07	None		4.03E-08	1.77E-07	3.24	7.13	Yes	Yes
Acrolein	0.003 (5)		5.04E-02	2.21E-01	2.21E-01	None		5.04E-02	2.21E-01	0.02277	0.03335	NO	NO
Anthracene (POM/PAH)	0.005 (5)		3.78E-05	1.66E-04	1.66E-04	None		3.78E-05	1.66E-04	2.61	7.54	Yes	Yes
Benzene	0.005 (MACT)		6.31E-02	2.76E-01	2.76E-01	None		6.31E-02	2.76E-01	2.112	4.64	Yes	Yes
Benzo(a)anthracene (POM/PAH)	0.005 (5)		8.19E-07	3.59E-06	3.59E-06	None		8.19E-07	3.59E-06	2.61	7.54	Yes	Yes
Benzo(a)pyrene (POM/PAH)	0.005 (5)		3.28E-05	1.43E-04	1.43E-04	None		3.28E-05	1.43E-04	2.61	7.54	Yes	Yes
Benzo(b)fluoranthene (POM/PAH)	0.005 (5)		1.26E-06	5.52E-06	5.52E-06	None		1.26E-06	5.52E-06	2.61	7.54	Yes	Yes
Benzo(e)pyrene (PAH)	0.005 (5)		3.28E-08	1.43E-07	1.43E-07	None		3.28E-08	1.43E-07	2.61	7.54	Yes	Yes
Benzo(g,h,i)perylene (POM/PAH)	0.005 (5)		1.17E-06	5.13E-06	5.13E-06	None		1.17E-06	5.13E-06	2.61	7.54	Yes	Yes
Benzo(k)fluoranthene (PAH)	0.005 (5)		2.02E-06	8.83E-06	8.83E-06	None		2.02E-06	8.83E-06	2.61	7.54	Yes	Yes
Benzo(k)fluoranthene (POM/PAH)	0.005 (5)		4.54E-07	1.99E-06	1.99E-06	None		4.54E-07	1.99E-06	2.61	7.54	Yes	Yes
bis(2-Ethylhexyl)phthalate	0.005 (5)		5.92E-07	2.59E-06	2.59E-06	None		5.92E-07	2.59E-06	-	-	-	-
Bromonaphthalene	0.005 (5)		1.89E-04	8.28E-04	8.28E-04	None		1.89E-04	8.28E-04	1.254	2.755	Yes	Yes
2-Butanone (MEK)	0.005 (5)		6.80E-05	2.98E-04	2.98E-04	None		6.80E-05	2.98E-04	22.8	85.55	Yes	Yes
Carbazole	0.005 (5)		2.27E-05	9.93E-05	9.93E-05	None		2.27E-05	9.93E-05	2.61	7.54	Yes	Yes
Carbon tetrachloride	0.005 (5)		5.67E-04	2.48E-03	2.48E-03	None		5.67E-04	2.48E-03	2.046	4.495	Yes	Yes
Chlorine	0.005 (5)		9.95E-03	4.36E-02	4.36E-02	None		9.95E-03	4.36E-02	0.0957	0.2175	Yes	Yes
Chlorobenzene	0.005 (5)		4.16E-04	1.82E-03	1.82E-03	None		4.16E-04	1.82E-03	3.036	6.67	Yes	Yes
Chloroform	0.005 (5)		3.53E-04	1.55E-03	1.55E-03	None		3.53E-04	1.55E-03	3.234	7.105	Yes	Yes
Chloronaphthalene	0.005 (5)		2.90E-04	1.27E-03	1.27E-03	None		2.90E-04	1.27E-03	6.831	14.935	Yes	Yes
7-Chloronaphthalene	0.005 (5)		3.02E-08	1.32E-07	1.32E-07	None		3.02E-08	1.32E-07	2.61	7.54	Yes	Yes
Chrysene (POM/PAH)	0.005 (5)		4.79E-07	2.10E-06	2.10E-06	None		4.79E-07	2.10E-06	2.61	7.54	Yes	Yes
Decachlorobiphenyl	0.005 (5)		3.40E-09	1.49E-08	1.49E-08	None		3.40E-09	1.49E-08	0.033	0.0725	Yes	Yes
Dibenz(a,h)anthracene (POM/PAH)	0.005 (5)		1.15E-07	5.02E-07	5.02E-07	None		1.15E-07	5.02E-07	2.61	7.54	Yes	Yes
Dichlorobiphenyl	0.005 (5)		9.32E-09	4.08E-08	4.08E-08	None		9.32E-09	4.08E-08	0.033	0.0725	Yes	Yes
1,2-Dichlorobenzene	0.005 (5)		3.65E-04	1.60E-03	1.60E-03	None		3.65E-04	1.60E-03	2.64	5.8	Yes	Yes
Dichloromethane	0.005 (5)		3.65E-03	1.60E-02	1.60E-02	None		3.65E-03	1.60E-02	11.484	23.33	Yes	Yes
1,2-Dichloropropane	0.005 (5)		4.16E-04	1.82E-03	1.82E-03	None		4.16E-04	1.82E-03	16.764	39.315	Yes	Yes
2,4-Dinitrophenol	0.005 (5)		2.27E-06	9.93E-06	9.93E-06	None		2.27E-06	9.93E-06	0.0966	0.0145	Yes	Yes
Ethylbenzene	0.005 (5)		3.91E-04	1.71E-03	1.71E-03	None		3.91E-04	1.71E-03	17.919	62.95	Yes	Yes
Fluoranthene (POM/PAH)	0.005 (5)		2.02E-05	8.83E-05	8.83E-05	None		2.02E-05	8.83E-05	2.61	7.54	Yes	Yes
Fluorene (POM/PAH)	0.005 (5)		4.28E-05	1.88E-04	1.88E-04	None		4.28E-05	1.88E-04	2.61	7.54	Yes	Yes
Formaldehyde	0.005 (MACT)		8.28E-01	3.64E-09	3.64E-09	None		8.28E-01	3.64E-09	0.0825	0.174	NO	NO
Heptachlorobiphenyl	0.005 (5)		6.32E-10	3.64E-09	3.64E-09	None		6.32E-10	3.64E-09	0.033	0.0725	Yes	Yes
Hexachlorobiphenyl	0.005 (5)		6.93E-09	3.04E-08	3.04E-08	None		6.93E-09	3.04E-08	0.033	0.0725	Yes	Yes
Heptachlorodibenzo-p-dioxins	0.005 (5)		2.52E-08	1.10E-07	1.10E-07	None		2.52E-08	1.10E-07	-	-	-	-
Heptachlorodibenzo-p-furans	0.005 (5)		3.02E-09	1.32E-08	1.32E-08	None		3.02E-09	1.32E-08	9.90E-05	2.18E-04	Yes	Yes
Hexachlorodibenzo-p-dioxins	0.005 (5)		2.02E-05	8.83E-05	8.83E-05	None		2.02E-05	8.83E-05	2.61	7.54	Yes	Yes
Hexachlorodibenzo-p-furans	0.005 (5)		3.53E-09	1.55E-08	1.55E-08	None		3.53E-09	1.55E-08	9.90E-05	2.18E-04	Yes	Yes
Hydrogen chloride	0.005 (5)		2.39E-01	1.05E+00	1.05E+00	None		2.39E-01	1.05E+00	0.2475	-	Yes	-
Indeno(1,2,3-c,d)pyrene (POM/PAH)	0.005 (5)		1.10E-06	4.80E-06	4.80E-06	None		1.10E-06	4.80E-06	2.61	7.54	Yes	Yes
2-Methylnaphthalene	0.005 (5)		2.02E-06	8.83E-06	8.83E-06	None		2.02E-06	8.83E-06	2.61	7.54	Yes	Yes
Monochlorobiphenyl	0.005 (5)		2.77E-09	1.21E-08	1.21E-08	None		2.77E-09	1.21E-08	0.033	0.0725	Yes	Yes
Naphthalene (POM/PAH)	0.005 (5)		1.22E-03	5.35E-03	5.35E-03	None		1.22E-03	5.35E-03	2.61	7.54	Yes	Yes
4-Nitrophenol	0.005 (5)		1.39E-06	6.07E-06	6.07E-06	None		1.39E-06	6.07E-06	0.0660	0.1430	Yes	Yes
Octachlorodibenzo-p-dioxins	0.005 (5)		8.32E-07	3.64E-06	3.64E-06	None		8.32E-07	3.64E-06	-	-	-	-
Octachlorodibenzo-p-furans	0.005 (5)		1.11E-09	4.86E-09	4.86E-09	None		1.11E-09	4.86E-09	9.90E-05	2.18E-04	Yes	Yes
Pentachlorodibenzo-p-dioxins	0.005 (5)		1.89E-08	8.28E-08	8.28E-08	None		1.89E-08	8.28E-08	-	-	-	-
Pentachlorodibenzo-p-furans	0.005 (5)		5.29E-09	2.32E-08	2.32E-08	None		5.29E-09	2.32E-08	9.90E-05	2.18E-04	Yes	Yes
Pentachlorobiphenyl	0.005 (5)		1.51E-08	6.62E-08	6.62E-08	None		1.51E-08	6.62E-08	0.033	0.0725	Yes	Yes
Pentachlorophenol	0.005 (5)		6.43E-07	2.81E-06	2.81E-06	None		6.43E-07	2.81E-06	0.033	0.0725	Yes	Yes
Perylene	0.005 (5)		6.55E-09	2.87E-08	2.87E-08	None		6.55E-09	2.87E-08	2.61	7.54	Yes	Yes
Phenanthrene (POM/PAH)	0.005 (5)		8.82E-05	3.86E-04	3.86E-04	None		8.82E-05	3.86E-04	2.61	7.54	Yes	Yes
Phenol	0.005 (5)		6.43E-04	2.81E-03	2.81E-03	None		6.43E-04	2.81E-03	1.254	2.755	Yes	Yes
Propenal	0.005 (5)		4.03E-05	1.77E-04	1.77E-04	None		4.03E-05	1.77E-04	-	-	-	-
Propionaldehyde	0.005 (5)		7.89E-04	3.37E-03	3.37E-03	None		7.89E-04	3.37E-03	-	-	-	-
Pyrene (POM/PAH)	0.005 (5)		4.66E-05	2.04E-04	2.04E-04	None		4.66E-05	2.04E-04	2.61	7.54	Yes	Yes
Styrene	0.005 (5)		2.39E-02	1.05E-01	1.05E-01	None		2.39E-02	1.05E-01	14.058	30.885	Yes	Yes
2,3,7,8-Tetrachlorodibenzo-p-dioxins	0.005 (5)		1.08E-10	4.75E-10	4.75E-10	None		1.08E-10	4.75E-10	-	-	-	-
Tetrachlorodibenzo-p-dioxins	0.005 (5)		5.92E-09	2.59E-08	2.59E-08	None		5.92E-09	2.59E-08	-	-	-	-

EMISSION ESTIMATE (proposed for permit)

Company Name:
Source Location:
Registration No.:

Columbia Forest Products
Columbia
30120

Boiler
Wood (Dry) SCC 10200908

Boiler Rating: 12.6 MMBtu/hr
Fuel Rating: 8,000 Btu/lb
Process Throughput: 1,575.0 lb/hr
Maximum Throughput: 6,898.5 tons/yr
Request Hours: 8,760.0 hours/yr
Requested Throughput: 6,898.5 tons/yr

Pollutant	Emission Factor (lb/MMBtu)	Reference	UNCONTROLLED EMISSIONS			Control Technology	Control Eff. %	PERMIT EMISSION		Exemption Levels		Exempt?	
			Hourly (lb/hr)	8760 hrs (ton/yr)	Throughput (ton/yr)			(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)
2,3,7,8-Tetrachlorodibenzo-p-furans	9.0E-11	(5c)	1.13E-09	4.97E-09	4.97E-09	None	1.13E-09	4.97E-09	9.90E-05	2.18E-04	Yes	Yes	
Tetrachlorodibenzo-p-furans	7.4E-10	(5c)	9.45E-09	4.14E-08	4.14E-08	None	9.45E-09	4.14E-08	9.90E-05	2.18E-04	Yes	Yes	
Tetrachlorobiphenyl	2.3E-09	(5c)	3.15E-08	1.38E-07	1.38E-07	None	3.15E-08	1.38E-07	0.033	0.0725	Yes	Yes	
Tetrachloroethene	7.8E-05	(5c)	4.79E-04	2.10E-03	2.10E-03	None	4.79E-04	2.10E-03	22.8	49.157	Yes	Yes	
Toluene	9.2E-04	(5c)	1.16E-02	5.08E-02	5.08E-02	None	1.16E-02	5.08E-02	18.645	54.665	Yes	Yes	
Trichlorobiphenyl	2.6E-08	(5c)	3.28E-08	1.43E-07	1.43E-07	None	3.28E-08	1.43E-07	0.033	0.0725	Yes	Yes	
1,1,1-Trichloroethane	3.1E-05	(5c)	3.91E-04	1.71E-03	1.71E-03	None	3.91E-04	1.71E-03	22.8	100	Yes	Yes	
Trichloroethene	3.0E-05	(5c)	3.78E-04	1.66E-03	1.66E-03	None	3.78E-04	1.66E-03	32.8	39.005	Yes	Yes	
2,4,6-Trichlorophenol	2.7E-08	(5c)	2.77E-07	1.21E-06	1.21E-06	None	2.77E-07	1.21E-06	0.0205	0.0430	Yes	Yes	
Vinyl Chloride	1.8E-05	(5c)	2.27E-04	9.93E-04	9.93E-04	None	2.27E-04	9.93E-04	0.858	1.883	Yes	Yes	
m-Xylene	2.5E-05	(5c)	3.15E-04	1.38E-03	1.38E-03	None	3.15E-04	1.38E-03	21.483	62.93	Yes	Yes	
Antimony	2.9E-06	(5d)	9.95E-05	4.36E-04	4.36E-04	None	9.95E-05	4.36E-04	0.033	0.0725	Yes	Yes	
Arsenic	3.6E-05	MACT	4.47E-04	1.96E-03	1.96E-03	None	4.47E-04	1.96E-03	0.0132	0.029	Yes	Yes	
Beryllium	4.6E-06	MACT	5.78E-05	2.53E-04	2.53E-04	None	5.78E-05	2.53E-04	0.000132	0.00029	Yes	Yes	
Cadmium	2.31E-05	MACT	1.15E-04	5.04E-04	5.04E-04	None	1.15E-04	5.04E-04	0.0033	0.00725	Yes	Yes	
Chromium, total	3.6E-05	MACT	4.55E-04	1.99E-03	1.99E-03	None	4.55E-04	1.99E-03	0.033	0.0725	Yes	Yes	
Chromium, hexavalent	1.5E-06	(5d)	4.41E-05	1.93E-04	1.93E-04	None	4.41E-05	1.93E-04	0.0033	0.00725	Yes	Yes	
Cobalt	4.5E-06	(5d)	8.19E-05	3.59E-04	3.59E-04	None	8.19E-05	3.59E-04	0.0033	0.00725	Yes	Yes	
Lead	2.0E-04	MACT	2.51E-03	1.10E-02	1.10E-02	None	2.51E-03	1.10E-02	0.0099	0.02175	Yes	Yes	
Manganese	3.6E-05	MACT	7.09E-02	3.11E-01	3.11E-01	None	7.09E-02	3.11E-01	0.33	0.725	Yes	Yes	
Mercury	3.5E-06	(5d)	4.41E-05	1.93E-04	1.93E-04	None	4.41E-05	1.93E-04	0.0033	0.00725	Yes	Yes	
Nickel	5.5E-05	(5d)	4.16E-04	1.82E-03	1.82E-03	None	4.16E-04	1.82E-03	0.0066	0.0145	Yes	Yes	
Phosphorus	2.7E-05	(5d)	3.40E-04	1.49E-03	1.49E-03	None	3.40E-04	1.49E-03	0.0066	0.0145	Yes	Yes	
Selenium	2.7E-06	MACT	2.76E-03	1.21E-02	1.21E-02	None	2.76E-03	1.21E-02	0.0132	0.029	Yes	Yes	
TOTAL HAPs			0.92	4.02	4.02								

(5a) - Based on AP-42 Table 1.6-1 dated 7/01 Emission Factors for Wood Residue Combustion (Includes Condensibles)
 (5b) - Based on AP-42 Table 1.6-2 dated 7/01 Emission Factors for Wood Residue Combustion
 (5c) - Based on AP-42 Table 1.6-3 dated 7/01 Emission Factors for Wood Residue Combustion
 (5d) - Based on AP-42 Table 1.6-4 dated 7/01 Emission Factors for Wood Residue Combustion
 MACT - Based on "Development of Average Emission Factors and Baseline Emission Estimates for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants"
 MACT* - Proposed MACT factor based on AP-42 Table 1.6-1 dated 7/01 Emission Factors for Wood Residue Combustion
 (POM/PAH)- polycyclic organic matter/polycyclic aromatic hydrocarbon compounds

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

CFP Boiler (Adj Bld) w/ complex

COMPLEX TERRAIN INPUTS:
 SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.126000
 STACK HT (M) = 12.1920
 STACK DIAMETER (M) = 0.5000
 STACK VELOCITY (M/S) = 16.3372
 STACK GAS TEMP (K) = 505.2000
 AMBIENT AIR TEMP (K) = 293.1500
 RECEPTOR HEIGHT (M) = 0.0000
 URBAN/RURAL OPTION = RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 4.203 M**4/S**3; MOM. FLUX = 9.680 M**4/S**2.

FINAL STABLE PLUME HEIGHT (M) = 41.5
 DISTANCE TO FINAL RISE (M) = 151.4

VALLEY 24-HR CALCS			**SIMPLE TERRAIN 24-HR CALCS**				PLUME HT			
TERR HT (M)	DIST (M)	MAX 24-HR CONC (UG/M**3)	CONC (UG/M**3)	PLUME HT ABOVE STK BASE (M)	CONC (UG/M**3)	PLUME HT ABOVE STK HGT (M)	SC	U10M USTK (M/S)		
12.	215.	8.906	0.1015	41.5	8.906	7.6	4	8.0	8.2	
15.	215.	8.906	0.2603	41.5	8.906	7.6	4	8.0	8.2	
18.	215.	8.906	0.6079	41.5	8.906	7.6	4	8.0	8.2	
14.	300.	6.757	0.1900	41.5	6.757	12.2	4	5.0	5.2	
14.	400.	5.188	0.2325	41.5	5.188	15.3	4	4.0	4.1	
18.	500.	4.212	0.6339	41.5	4.212	17.4	4	3.5	3.6	
27.	600.	3.568	1.819	41.5	3.568	20.3	4	3.0	3.1	
34.	700.	3.113	2.040	41.5	3.113	24.4	4	2.5	2.6	
37.	800.	2.732	1.733	41.5	2.732	30.5	4	2.0	2.1	
43.	1000.	1.302	1.302	41.5	0.000	0.0	0	0.0	0.0	
49.	1200.	1.025	1.025	41.5	0.000	0.0	0	0.0	0.0	

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

CFP Boiler (Adj Bld) w/ complex

SIMPLE TERRAIN INPUTS:
 SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.126000
 STACK HEIGHT (M) = 12.1920
 STK INSIDE DIAM (M) = 0.5000
 STK EXIT VELOCITY (M/S) = 16.3372
 STK GAS EXIT TEMP (K) = 505.2000

AMBIENT AIR TEMP (K) = 293.1500
 RECEPTOR HEIGHT (M) = 0.0000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 7.6200
 MIN HORIZ BLDG DIM (M) = 112.5000
 MAX HORIZ BLDG DIM (M) = 176.5000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 4.203 M**4/S**3; MOM. FLUX = 9.680 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	74.21	1.67	1.63	NO
100.	10.19	4	10.0	10.3	3200.0	17.59	8.34	10.13	HS
200.	7.768	4	8.0	8.2	2560.0	19.82	15.72	13.44	HS
300.	7.032	4	5.0	5.2	1600.0	24.40	22.88	16.75	HS
400.	6.328	4	4.0	4.1	1280.0	27.45	29.78	19.85	HS
500.	5.745	4	3.5	3.6	1120.0	29.63	36.49	22.80	HS
600.	5.255	4	3.0	3.1	960.0	32.54	43.11	25.71	HS
700.	4.833	4	2.5	2.6	800.0	36.61	49.68	28.63	HS
800.	4.478	4	2.5	2.6	800.0	36.61	56.01	31.22	HS
900.	4.061	4	2.5	2.6	800.0	36.61	62.28	31.98	HS
1000.	3.749	4	2.5	2.6	800.0	36.61	68.48	34.16	HS
1100.	3.541	4	2.0	2.1	640.0	42.72	74.82	35.22	NO
1200.	3.343	4	2.0	2.1	640.0	42.72	80.91	37.13	NO
1300.	3.151	4	2.0	2.1	640.0	42.72	86.96	38.99	NO
1400.	2.977	4	1.5	1.5	480.0	52.89	93.28	41.52	NO
1500.	2.864	4	1.5	1.5	480.0	52.89	99.23	43.26	NO
1600.	2.749	4	1.5	1.5	480.0	52.89	105.14	44.97	NO
1700.	2.742	5	1.0	1.1	10000.0	59.07	83.65	33.06	NO
1800.	2.778	5	1.0	1.1	10000.0	59.07	88.00	34.08	NO
1900.	2.799	5	1.0	1.1	10000.0	59.07	92.32	35.08	NO
2000.	2.808	5	1.0	1.1	10000.0	59.07	96.63	36.07	NO
2100.	2.796	5	1.0	1.1	10000.0	59.07	100.92	36.95	NO
2200.	2.777	5	1.0	1.1	10000.0	59.07	105.19	37.81	NO
2300.	2.787	6	1.0	1.1	10000.0	50.58	73.11	25.79	NO
2400.	2.830	6	1.0	1.1	10000.0	50.58	75.92	26.28	NO
2500.	2.865	6	1.0	1.1	10000.0	50.58	78.72	26.77	NO
2600.	2.893	6	1.0	1.1	10000.0	50.58	81.51	27.26	NO
2700.	2.916	6	1.0	1.1	10000.0	50.58	84.29	27.73	NO
2800.	2.933	6	1.0	1.1	10000.0	50.58	87.06	28.20	NO
2900.	2.944	6	1.0	1.1	10000.0	50.58	89.82	28.66	NO
3000.	2.952	6	1.0	1.1	10000.0	50.58	92.58	29.12	NO
3500.	2.883	6	1.0	1.1	10000.0	50.58	106.22	30.99	NO

4000.	2.782	6	1.0	1.1	10000.0	50.58	119.67	32.73	NO
4500.	2.665	6	1.0	1.1	10000.0	50.58	132.96	34.37	NO
5000.	2.543	6	1.0	1.1	10000.0	50.58	146.08	35.92	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
 77. 13.37 6 4.0 4.5 10000.0 22.76 4.42 9.65 HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 6. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	30.37	6	4.0	4.5	10000.0	18.57	5.41	10.10	HS

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
200.	19.17	4	5.0	5.2	1600.0	15.26	15.95	13.72	HS

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 12. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
215.	22.54	4	4.5	4.6	1440.0	13.60	17.08	14.28	HS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 * SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
 * SIMPLE ELEVATED TERRAIN PROCEDURE *

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
0.	1.	5000.
6.	100.	--
9.	200.	--
12.	215.	--

 *** NON-REGULATORY ***
 PERFORMING CAVITY CALCULATIONS
 WITH SCHULMAN-SCIRE (1993) MODEL

Stack x/L (LONGER side ALONG flow) = 0.5000000
 Stack x/L (SHORTER side ALONG flow) = 0.5000000

1) SHORTER Side ALONG flow, STACK nearer UPWIND edge of building

*** CAVITY2 -- Version: 1.0 Level: 940325 ***
 FLOW IS REATTACHED
 Stack distance from upwind face (m) = 0.0000000E+00
 Cavity Length (m) = 27.02702
 Cavity Height (m) = 7.620000

MAX Concentration = 4.2 (ug/m**3) for ws(10m) = 6.0 (m/s)

2) SHORTER Side ALONG flow, STACK nearer DOWNWIND edge of building

*** CAVITY2 -- Version: 1.0 Level: 940325 ***
 FLOW IS REATTACHED
 Stack distance from upwind face (m) = 112.5000
 Cavity Length (m) = 27.02702
 Cavity Height (m) = 7.620000

MAX Concentration = 86.1 (ug/m**3) for ws(10m) = 15.0 (m/s)

3) LONGER Side ALONG flow, STACK nearer UPWIND edge of building

*** CAVITY2 -- Version: 1.0 Level: 940325 ***
 FLOW IS REATTACHED
 Stack distance from upwind face (m) = 0.0000000E+00
 Cavity Length (m) = 27.02702
 Cavity Height (m) = 7.620000

MAX Concentration = 2.1 (ug/m**3) for ws(10m) = 6.0 (m/s)

4) LONGER Side ALONG flow, STACK nearer DOWNWIND edge of building

*** CAVITY2 -- Version: 1.0 Level: 940325 ***
 FLOW IS REATTACHED

Stack distance from upwind face (m) = 176.5000
 Cavity Length (m) = 27.02702
 Cavity Height (m) = 7.620000

MAX Concentration = 86.1 (ug/m**3) for ws(10m) = 15.0 (m/s)

 END OF CAVITY CALCULATIONS

*** INVERSION BREAK-UP FUMIGATION CALC. ***

CONC (UG/M**3) = 0.000
 DIST TO MAX (M) = 1021.83

DIST TO MAX IS < 2000. M. CONC SET = 0.0

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	30.37	100.	6.
COMPLEX TERRAIN	8.906	215.	12. (24-HR CONC)
BUILDING CAVITY -- stack nearer upwind face)	4.243	27.	-- (SHORTER side ALONG flow;
BUILDING CAVITY -- stack nearer dnwind face)	86.06	27.	-- (SHORTER side ALONG flow;
BUILDING CAVITY -- stack nearer upwind face)	2.069	27.	-- (LONGER side ALONG flow;
BUILDING CAVITY -- stack nearer dnwind face)	86.06	27.	-- (LONGER side ALONG flow;