ROY COOPER
*Governor*
JOHN NICHOLSON
*Interim Secretary*
MICHAEL ABRACZINSKAS
*Director*

NORTH CAROLINA
***Environmental Quality***

June 9, 2021

Mr. Ken McBride
Plant Manager
Enviva Pellets Sampson, LLC
5 Connector Road, US 117
Faison, NC 28341

SUBJECT: Air Quality Permit No. 10386R05
Facility ID: 8200152
Enviva Pellets Sampson, LLC
Faison, North Carolina
Sampson County
Fee Class: Title V
PSD Status: Major

Dear Mr. McBride:

In accordance with your completed Air Quality Permit Application received June 11, 2020, we are forwarding herewith Air Quality Permit No. 10386R05 to Enviva Pellets Sampson, LLC, 5 Connector Road, US 117, Faison, North Carolina, authorizing the construction and operation, of the emission source(s) and associated air pollution control device(s) specified herein. Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 02Q .0503(8) have been listed for informational purposes as an "ATTACHMENT."

As the designated responsible official, it is your responsibility to review, understand, and abide by all of the terms and conditions of the attached permit. It is also your responsibility to ensure that any person who operates any emission source and associated air pollution control device subject to any term or condition of the attached permit reviews, understands, and abides by the condition(s) of the attached permit that are applicable to that particular emission source.

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to request a formal adjudicatory hearing within 30 days following receipt of this permit, identifying the specific issues to be contested. This hearing request must be in the form of a written petition, conforming to NCGS (North Carolina General Statutes) 150B-23, and filed with both the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27699-6714 and the Division of Air Quality, Permitting Section, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641. The form for requesting a formal adjudicatory hearing may be obtained upon request from the Office of Administrative Hearings. Please note that this permit will be stayed in its entirety upon receipt of the request for a hearing. Unless a request for a hearing is made pursuant to NCGS 150B-23, this Air Quality Permit shall be final and binding 30 days after issuance.

You may request modification of your Air Quality Permit through informal means pursuant to NCGS 150B-22. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which the modification is sought. Please note that this Air Quality Permit will become final and binding regardless of a request for informal modification unless a request for a hearing is also made under NCGS 150B-23.

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to the emission source(s) and air pollution control device(s) described in this permit must be covered under an Air Quality Permit issued by the Division of Air Quality prior to construction unless the Permittee has fulfilled the requirements of NCGS 143-215.108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of NCGS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in NCGS 143-215.114A and 143-215.114B.

Sampson County has triggered increment tracking under PSD for PM10, PM2.5, and NOx. This modification will result in a decrease of 1.53 pounds per hour of PM10, an increase of 1.76 pounds per hour of PM2.5, and a decrease of 25.0 pounds per hour of NOx.

This Air Quality Permit shall be effective from June 9, 2021 until September 30, 2027, is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein. Should you have any questions concerning this matter, please contact Betty Gatano, P.E., at (919) 707-8736 or Betty.Gatano@ncdenr.gov.

Sincerely yours,

*Booker T. Pullen (for)*

Mark J. Cuilla, EIT, CPM, Chief, Permitting Section
Division of Air Quality, NCDEQ

c: Michael Sparks, EPA Region 4
Fayetteville Regional Office
Central Files
Connie Horne (cover letter only)

ATTACHMENT

Insignificant Activities per 15A NCAC 02Q .0503(8)

| Emission Source ID No. | Emission Source Description |
|---|---|
| IES-GWH[a]<br>**PSD** | Green wood handling and sizing operations |
| IES-BARKHOG[a]<br>**PSD** | Bark Hog |
| IES-TK-1[a]<br>**PSD** | Diesel fuel storage tank (up to 2,500 gallons capacity) |
| IES-TK-2[a]<br>**PSD** | Diesel fuel storage tank (up to 1,000 gallons capacity) |
| IES-TK-3[a]<br>**PSD** | Diesel fuel storage tank (up to 2,500 gallons capacity) |
| IES-GWSP-1 through IES-GWSP-4[a]<br>**PSD** | Four (4) green wood storage piles |
| IES-BFSP-1 and IES-BFSP-2[a]<br>**PSD** | Two (2) bark fuel storage piles |
| IES-DEBARK-1[a]<br>**PSD** | Debarker, partially enclosed |
| IES-CHIP-1[a]<br>**PSD** | Log chipping |
| IES-DRYSHAVE[a]<br>**PSD** | Dry shaving material handling |
| IES-BFB[a]<br>**PSD** | Bark fuel bin |
| IES-PAVEDROADS[a]<br>**PSD** | Paved roads |
| IES-EG[a, b]<br>**NSPS Subpart IIII**<br>**MACT Subpart ZZZZ** | 689 HP diesel-fired emergency generator |
| IES-FWP[a,b]<br>**NSPS Subpart IIII**<br>**MACT Subpart ZZZZ** | 131 HP diesel-fired fire water pump |
| IES-DDB-1 and IES-DDB-2 | Two (2) natural gas/propane-fired duct burners, 2.5 million Btu per hour, each |
| IES—EB01 and IES-EB02 | Two (2) electric boilers |

1. Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.
2. When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" or 02Q .0711 "Emission Rates Requiring a Permit".
3. For additional information regarding the applicability of MACT or GACT see the DAQ page titled "Specific Permit Conditions Regulatory Guide." The link to this site is as follows: http://deq.nc.gov/about/divisions/air-quality/air-quality-permits/specific-permit-conditions-regulatory-guide.

a. Upon installation and operation of all control devices specified in Section 1.0 of this permit, the Permittee will no longer be subject to 15A NCAC 02D .0530, Prevention of Significant Deterioration.

b. Upon installation and operation of all control devices specified in Section 1.0 of this permit, the Permittee will no longer be subject to 15A NCAC 02D .1112, 112(g) Case-by-Case Maximum Achievable Control Technology.

# Summary of Changes to Permit

The following changes were made to Enviva Pellets Sampson, LLC, Sampson, NC., Air Permit No. 10386R04.

| Pages | Section | Description of Changes |
|---|---|---|
| Cover and throughout | -- | Updated all dates and permit revision numbers. |
| -- | Insignificant Activities | • Added two duct burners (ID Nos. IES-DDB-1 and IES-DDB-2).<br>• Added two electric boilers (ID Nos. TBD).<br>• Added description noting that the debarker (ID No. IES-DEBARK-1) is partially enclosed.<br>• Added footnotes stating the Permittee will not be subject to 15A NCAC 02D .0530 or 15A NCAC 02D .1112 upon operation of all control devices in Section 1.0. |
| 3 – 4 | Section 1 – Equipment Table | • Modified the description of the regenerative thermal oxidizer (ID No. CD-RTO).<br>• Modified the description of the dryer (ID No. ES-DRYER) and the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8).<br>• Combined the furnace and dryer bypasses (ID No. ES-F/DBYPASS) into one emission source.<br>• Added the existing dryer furnace (ID No. ES-DRYER) in series with the wet electrostatic precipitator (WESP) in series with the RTO (ID No. CD-RTO) AND the WESP (ID No. CD-WESP) in series with the RTO (ID No. CD-RTO) as control options for the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8).<br>• Added regenerative catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) as control for the pellet presses and coolers (ID No. ES-CLR-1 through ES-CLR-6).<br>• Added footnotes stating the Permittee will not be subject to 15A NCAC 02D .0530 or 15A NCAC 02D .1112 upon operation of all control devices in Section 1.0.<br>• Added footnote stating that diesel fuel as a startup accelerant for the furnace (ID No. ES-F/DBYPASS) is limited to 30 gallons per startup and 200 gallons per year.<br>• Added footnote explaining the routing of the exhaust from the dry hammermills through the baghouses (ID Nos. CD-HM-BH1 through CD-HM-BH8), the dryer furnace (ID No. ES-DRYER), the WESP (ID No. CD-WESP), and the RTO (ID No. CD- RTO). |
| 5 | 2.1 A – Emission Sources | • Combined the furnace and dryer bypasses (ID No. ES-F/DBYPASS) into one emission source.<br>• Added control device options for the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8).<br>• Added regenerative catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) as control for the pellet presses and coolers (ID No. ES-CLR-1 through ES-CLR-6). |
| 6 | 2.1 A – Regulations Table | • Added the regenerative thermal oxidizer (ID No. CD-RTO) and the catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) as subject to 15A NCAC 02D .0516.<br>• Added references to avoidance conditions for 15A NCAC 02D .0530 and 15A NCAC 02D .1112.<br>• Added references to 15A NCAC 02D .1100 and 15A NCAC 02Q .0711. |

| Pages | Section | Description of Changes |
|---|---|---|
| 6 – 8 | 2.1 A.1 | • Added reference to the control options on the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8) throughout permit condition.<br>• Added reference to the regenerative catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) as control for the pellet presses and coolers (ID No. ES-CLR-1 through ES-CLR-6) throughout permit condition. |
| 6 | 2.1 A.1.c | Added requirement for Permittee to submit documentation for the minimum number of grids operating during testing and the minimum average secondary voltage and minimum average current for the wet electrostatic precipitator **(ID No. CD-WESP)** to the DAQ as part of the initial compliance test report. These parameters will be added to the permit once established. |
| 8 | 2.1 A.1.h | Added monitoring and recordkeeping requirements for the regenerative catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) to ensure compliance with 15A NCAC 02D .0515. |
| 9 | 2.1 A.2 | Added the regenerative thermal oxidizer (ID No. CD-RTO) and the catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) as subject to 15A NCAC 02D .0516. |
| 9 | 2.1 A.3.c | Added requirement to reestablish "normal" visible emission in the first 30 days following the commencement of operation for the control options on the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8) and for the regenerative catalytic oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) on the pellet presses and coolers (ID No. ES-CLR-1 through ES-CLR-6). |
| 9 | 2.1 A.3.d | Added requirement for Permittee to make a visible observation of the furnace/dryer bypass (ID No. ES-F/DBYPASS) while operating in idle mode. |
| 10 | 2.1 A.4.a | • Added condition indicating requirements under 15A NCAC 02D .1112, 112(g) Case-by-Case Maximum Achievable Control Technology, will no longer be enforceable when the Permittee becomes minor for HAPs.<br>• Renumbered the permit accordingly. |
| 10 | 2.1 A.4.b | Revised schedule for installing controls on the dry hammermills and pellet presses and coolers. |
| 12 | 2.2 A – Regulations Table | Added references to 15A NCAC 02D .1100 and 15A NCAC 02Q .0711. |
| 12 | 2.2 A.1.a | • Added condition indicating the Permittee would no longer be subject to 15A NCAC 02D .0530 after all controls have been constructed and are operational to reduce facility-wide emissions to below PSD major source thresholds.<br>• Renumbered the permit accordingly. |
| 15 | 2.2 A.1.e.v.(D) | Added statement indicating initial testing was completed with the exception of particulate matter emission testing from the dry hammermills (ID Nos. ES-HM-1 through ES-HM-8). |
| 16 | 2.2 A.1.f(xii) | Modified permit condition to require submittal of test report no later than 30 days after sample collection unless an alternative date is approved in advance by DAQ in accordance with 15A NCAC 02D .2602(f). |
| 17 | 2.2 A.1.g.iii | Added statement indicating permit application was submitted as required by permit condition. |
| -- | 2.2 A.1.k (old numbering) | • Removed condition limiting throughput of the dry hammermills (ID Nos .ES-HM-1 through ES-HM-8) to 85% of the permitted capacity.<br>• Renumbered permit accordingly. |
| 17 | 2.2 A.1.k and l (new numbering) | Added monitoring and recordkeeping requirements for the furnace and dryer bypass scenarios. |

| Pages | Section | Description of Changes |
|---|---|---|
| 18 | 2.2 A.1.q<br>(new numbering) | Clarified monitoring and recordkeeping requirements for the RTO (ID No. CD-RTO). |
| 18 - 23 | 2.2 A.2 | • Added permit condition for avoidance of 15A NCAC 02D .0530, Prevention of Significant Deterioration.<br>• Renumbered permit accordingly. |
| 23 – 25 | 2.2 A.3 | • Added permit condition for avoidance of 15A NCAC 02D .1112, 112(g) Case-by-Case MACT.<br>• Renumbered permit accordingly. |
| 25 – 26 | 2.2 A.4 | • Added permit condition for 15A NCAC 02D .1100, Control of Toxic Air Pollutants.<br>• Renumbered permit accordingly. |
| 26 – 27 | 2.2 A.5 | • Added permit condition for 15A NCAC 02Q .0711, Emission Rates Requiring a Permit.<br>• Renumbered permit accordingly. |
| -- | 2.2 A.7<br>(old numbering) | Removed the permit condition for 15A NCAC, 02Q .0504, Option for Obtaining Construction and Operation Permit, requiring submittal of a revised initial Title V permit application. The revised application was submitted on October 1, 2020, fulfilling this permit requirement. |
| 30 | 2.3 A | Added a Schedule of Compliance allowing the Permittee to operate until the facility is a minor source under PSD and BACT emission limits are no longer applicable. |

State of North Carolina
Department of Environmental Quality
Division of Air Quality

# AIR QUALITY PERMIT

| Permit No. | Replaces Permit No.(s) | Effective Date | Expiration Date |
|---|---|---|---|
| 10386R05 | 10386R04 | June 9, 2021 | September 30, 2027 |

Until such time as this permit expires or is modified or revoked, the below named Permittee is permitted to construct and operate the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations within this permit. This permit is issued under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and Title 15A North Carolina Administrative Codes (15A NCAC), Subchapters 02D and 02Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 02Q, the Permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete Air Quality Permit Application to the permitting authority and received an Air Quality Permit, except as provided in this permit.

| | |
|---|---|
| **Permittee:** | **Enviva Pellets Sampson, LLC** |
| **Facility ID:** | **8200152** |
| **Facility Site Location:** | **5 Connector Road, US 117** |
| **City, County, State, Zip:** | **Faison, Sampson County, North Carolina, 28341** |
| **Mailing Address:** | **5 Connector Road, US 117** |
| **City, State, Zip:** | **Faison, North Carolina, 28341** |
| **Application Number:** | **8200152.20B** |
| **Complete Application Date:** | **June 11, 2020** |
| **Primary SIC Code:** | **2499** |
| **Division of Air Quality, Regional Office Address:** | **Fayetteville Regional Office<br>Systel Building<br>225 Green Street, Suite 714<br>Fayetteville, North Carolina, 28301** |

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# SECTION 1- PERMITTED EMISSION SOURCE (S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE (S) AND APPURTENANCES

The following table contains a summary of all permitted emission sources and associated air pollution control devices and appurtenances:

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|---|---|---|---|
| ES-GHM-1, ES-GHM-2, ES-GHM-3<br>**PSD**[1]<br>**Case-by-Case MACT**[2] | Three (3) green wood hammermills | CD-WESP<br><br><br><br><br>CD-RTO | One wet electrostatic precipitator (29,904 square feet of collector plate area) in series with<br><br>One natural gas/propane-fired regenerative thermal oxidizer (45.2 million Btu per hour heat input) |
| ES-DRYER<br>**PSD**[1]<br>**Case-by-Case MACT**[2] | Wood-fired direct heat drying system (250.4 million Btu per hour heat input) with integral transfer cyclones | CD-WESP<br><br><br><br>CD-RTO | One wet electrostatic precipitator (29,904 square feet of collector plate area) in series with<br><br>One natural gas/propane-fired regenerative thermal oxidizer (45.2 million Btu per hour heat input) |
| ES-F/DBYPASS<br>**PSD**[1] | Furnace/dryer bypass, diesel startup[3] | N/A | N/A |
| ES-DWH<br>**PSD**[1]<br>**Case-by-Case MACT**[2] | Dried wood handling operations | CD-DWH-BH-1 and CD-DWH-BH-2 | Two (2) baghouses (377 square feet of filter area, each) |
| ES-HM-1 through ES-HM-8<br>**PSD**[1]<br>**Case-by-Case MACT**[2] | Eight (8) dry hammermills with integral transfer cyclones | CD-HM-BH1 through CD-HM-BH8[4]<br><br>ES-DRYER furnace<br><br><br>CD-WESP<br><br><br><br>CD-RTO<br><br><br><br>OR | Eight (8) baghouses (2,168 square feet of filter area each), in series with<br><br>Direct heat, wood-fired dryer (250.4 million Btu per hour maximum heat input) in series with<br><br>One wet electrostatic precipitator (29,904 square feet of collector plate area) in series with<br><br>One natural gas/propane-fired regenerative thermal oxidizer (45.2 million Btu per hour heat input)<br><br>OR |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|---|---|---|---|
| (continued)<br>ES-HM-1 through ES-HM-8<br>**PSD[1]**<br>**Case-by-Case MACT[2]** | (continued)<br>Eight (8) dry hammermills with integral transfer cyclones | (continued)<br>CD-HM-BH1 through CD-HM-BH8[4]<br><br>CD-WESP<br><br><br><br>CD-RTO | (continued)<br>Eight (8) baghouses (2,168 square feet of filter area each), in series with<br><br>One wet electrostatic precipitator (29,904 square feet of collector plate area) in series with<br><br>One natural gas/propane-fired regenerative thermal oxidizer (45.2 million Btu per hour heat input) |
| ES-HMC<br>**PSD[1]** | Hammermill conveying system | CD-HMC-BH | One baghouse (377 square feet of filter area) |
| ES-PMFS<br>**PSD[1]** | Pellet mill feed silo | CD-PMFS-BH | One baghouse (377 square feet of filter area) |
| ES-ADD<br>**PSD[1]** | Additive Handling and Storage | CD-ADD-BH | One baghouse (942 square feet of filter area) |
| ES-HMA and ES-PCLP<br>**PSD[1]**<br>**Case-by-Case MACT[2]** | Hammermill area and pellet cooler LP fines relay system | CD-PCLP-BH | One baghouse (1,520 square feet of filter area) |
| ES-CLR-1 through ES-CLR-6<br>**PSD[1]**<br>**Case-by-case MACT[2]** | Six (6) pellet coolers and twelve (12) pellet presses (two (2) pellet presses are associated with each pellet cooler) | CD-CLR-1 through CD-CLR-6<br><br><br>CD-RCO | Six (6) simple cyclones (54 inches in diameter) installed one each on the coolers, in series with<br><br>One natural gas/propane-fired regenerative catalytic oxidizer/ regenerative thermal oxidizer (19.8 million Btu per hour heat input) |
| ES-PCHP<br>**PSD[1]** | Pellet cooler HP fines relay system | CD-PCHP-BH | One baghouse (942 square feet of filter area) |
| ES-PSTB<br>**PSD[1]** | Pellet sampling transfer bin | CD-PSTB-BH | One baghouse (377 square feet of filter area) |
| ES-FPH, ES-PB-1 through ES-PB-4, ES-PL-1 and ES-PL-2<br>**PSD[1]** | Finished product handling, four (4) pellet load-out bins, and two (2) pellet mill loadouts | CD-FPH-BH | One baghouse (4,842 square feet of filter area) |

1. Upon installation and operation of all control devices specified in this table, the Permittee will no longer be subject to 15A NCAC 02D .0530, Prevention of Significant Deterioration.
2. Upon installation and operation of all control devices specified in this table, the Permittee will no longer be subject to 15A NCAC 02D .1112, 112(g) Case-by-Case Maximum Achievable Control Technology.
3. Diesel fuel used as a startup accelerant for the furnace **(ID No. ES-F/DBYPASS)** is limited to 30 gallons per startup and 200 gallons per year per Permit Sections 2.2 A.1.k and 2.2 A.4.c.
4. All air flow from the dry hammermills is controlled by baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH8)**, in series with the WESP **(ID No. CD-WESP)**, in series with the RTO **(ID No. CD- RTO)**. Under normal operations, all air flow from the baghouses on the dry hammermills is ducted to the dryer furnace prior to treatment by the WESP and the RTO. In the event of reduced furnace/dryer operation, a portion of the air flow from the baghouses on the dry hammermills is ducted directly to the WESP for treatment by the WESP in series with the RTO. In the event of the shutdown of the furnace/dryer system, all air flow from the baghouses on the dry hammermills and dry shavings hammermills is ducted directly to the WESP and RTO.

# SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

## 2.1- Emission Source(s) and Control Devices(s) Specific Limitations and Conditions

The emission source(s) and associated air pollution control device(s) and appurtenances listed below are subject to the following specific terms, conditions, and limitations, including the testing, monitoring, recordkeeping, and reporting requirements as specified herein:

**A. Three (3) green wood hammermills (ID Nos. ES-GHM-1, ES-GHM-2 and ES-GHM-3) controlled by a wet electrostatic precipitator (ID No. CD-WESP) and a regenerative thermal oxidizer (ID No. CD-RTO)**

**Wood-fired direct heat drying system (ID No. ES-DRYER) controlled by a wet electrostatic precipitator (ID No. CD-WESP) and a regenerative thermal oxidizer (ID No. CD-RTO)**

**Furnace/dryer bypass (ID No. ES-F/DBYPASS)**

**Dried wood handling operations (ID No. ES-DWH) controlled by baghouses (ID Nos. CD-DWH-BH-1 and 2)**

**Eight (8) dry hammermills (ID Nos. ES-HM-1 through ES-HM-8) controlled by baghouses (ID Nos. CD-HM-BH1 through CD-HM-BH8), in series with the dryer furnace (ID No. ES-DRYER), a wet electrostatic precipitator (ID No. CD-WESP) and a regenerative thermal oxidizer (ID No. CD-RTO) OR controlled by baghouses (ID Nos. CD-HM-BH1 through CD-HM-BH8), in series with a wet electrostatic precipitator (ID No. CD-WESP), and a regenerative thermal oxidizer (ID No. CD-RTO)**

**Hammermill conveying system (ID No. ES-HMC) controlled by baghouse (ID No. CD-HMC-BH)**

**Hammermill area (ID No. ES-HMA) and pellet cooler LP fines relay system (ID No. ES-PCLP) controlled by a baghouse (ID No. CD-PCLP-BH)**

**Pellet mill feed silo (ID No. ES-PMFS) controlled by a baghouse (ID No. CD-PMFS-BH)**

**Pellet presses and pellet coolers (ID Nos. ES-CLR-1 through ES-CLR-6) controlled by cyclones (ID Nos. CD-CLR-1 through CD-CLR-6) in series with a regenerative catalytic oxidizer/regenerative thermal oxidizer (ID No. CD-RCO)**

**Pellet cooler HP fines relay system (ID No. ES-PCHP) controlled by a baghouse (ID No. CD-PCHP-BH)**

**Pellet sampling transfer bin (ID No. ES-PSTB) controlled by a baghouse (ID No. CD-PSTB-BH)**

**Finished product handling (ID No. ES-FPH), pellet load-out bins (ID Nos. ES-PB-1 through ES-PB-4), and pellet mill load-out (ID No. ES-PL-1 and ES-PL-2) controlled by a baghouse (ID No. CD-FPH-BH)**

The following table provides a summary of limits and standards for the emission source(s) described above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|---|---|---|
| Particulate matter | $E = 4.10 \times P^{0.67}$ for $P < 30$ tph<br>$E = 55 \times P^{0.11} - 40$ for $P \geq 30$ tph<br><br>where, E = allowable emission rate (lb/hr)<br>P = process weight rate (tph) | 15A NCAC 02D .0515 |

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|---|---|---|
| Sulfur dioxide | *ID Nos. ES-DRYER, CD-RTO, and CD-RCO only:*<br><br>2.3 pounds per million Btu | 15A NCAC 02D .0516 |
| Visible emissions | 20 percent opacity | 15A NCAC 02D .0521 |
| Hazardous Air Pollutants | Enforceable until all of the requirements from Section 2.3 A.1 have been met.<br><br>See Section 2.1 A.4. | 15A NCAC 02D .1112 [112(g) Case-by-Case MACT] |
| PM/PM10/PM2.5<br>Nitrogen oxides<br>Volatile organic carbon<br>Carbon monoxide<br>Greenhouse gases | Enforceable until all of the requirements from Section 2.3 A.1 have been met.<br><br>See Section 2.2 A.1. | 15A NCAC 02D .0530 |
| PM/PM10/PM2.5<br>Nitrogen oxides<br>Volatile organic carbon<br>Carbon monoxide | Enforceable after all of the requirements from Section 2.3 A.1 have been met.<br><br>See Section 2.2 A.2. | 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .0530 |
| Hazardous Air Pollutants | See Section 2.2 A.3 | 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .1112 |
| Toxic Air Pollutants | **State Enforceable Only**<br>Enforceable after all of the requirements from Section 2.3 A.1 have been met.<br><br>See Section 2.2 A.4 | 15A NCAC 02D .1100 |
| Toxic Air Pollutants | **State Enforceable Only**<br>Enforceable after all of the requirements from Section 2.3 A.1 have been met.<br><br>See Section 2.2 A.5 | 15A NCAC 02Q .0711 |

**1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES**

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equation:

$E = 4.10 \times P^{0.67}$ for $P < 30$ tph
$E = 55 \times P^{0.11} - 40$ for $P \geq 30$ tph

Where E = allowable emission rate in pounds per hour
P = process weight in tons per hour

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

**Testing** [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

c. Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall demonstrate compliance with emission limits in Section 2.1 A.1.a for the wood-fired direct heat drying system **(ID No. ES-DRYER),** green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8),** and pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Testing shall be conducted as specified in Section 2.2 A.2.e. Documentation for the minimum number of grids operating during testing and the minimum average secondary voltage and minimum

average current for the wet electrostatic precipitator **(ID No. CD-WESP)** shall be submitted to the DAQ as part of the initial compliance test report.

**Monitoring** [15A NCAC 02Q .0308(a)]

d. The Permittee shall maintain production records such that the process rates "P" in tons per hour, as specified by the formulas contained above (or the formulas contained in 15A NCAC 02D .0515), can be derived, and shall make these records available to a DAQ authorized representative upon request.
e. Particulate matter emissions shall be controlled as follows:
   i. Particulate matter emissions from the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2 and ES-GHM-3)** shall be controlled by a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO**);
   ii. Particulate matter emissions from the wood-fired direct heat drying system **(ID No. ES-DRYER)** shall be controlled by a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO);**
   iii. Particulate matter emissions from the dried wood handling operations **(ID No. ES-DWH)** shall be controlled by baghouses **(ID Nos. CD-DWH-BH-1 and CD-DWH-2)**;
   iv. Particulate matter emissions from the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)** shall be controlled by baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH8)** in series with a wet electrostatic precipitator **(ID No. CD-WESP)**, in series with a regenerative thermal oxidizer **(ID No. CD-RTO)** OR baghouses **(ID Nos. CD-HM-BH-1 through 8)**, in series with a dryer furnace **(ID No. ES-DRYER)**, a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO)**;
   v. Particulate matter emissions from the hammermill conveying system **(ID No. ES-HMC)** shall be controlled by baghouse **(ID No. CD-HMC-BH);**
   vi. Particulate matter emissions from the hammermill area **(ID No. ES-HMA)** and pellet cooler HP fines relay system **(ID No. ES-PCLP)** shall be controlled by baghouse **(ID No. CD-PCLP-BH)**;
   vii. Particulate matter emissions from the pellet mill feed silo **(ID No. ES-PMFS)** shall be controlled by baghouse **(ID No. CD-PMFS-BH)**;
   viii. Particulate matter emissions from the pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** shall be controlled by cyclones **(ID Nos. CD-CLR-1 through CD-CLR-6)** in series with a regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO);**
   ix. Particulate matter emissions from pellet cooler LP fines relay system **(ID No. ES-PCHP)** shall be controlled by baghouse **(ID No. CD-PCHP-BH)**;
   x. Particulate matter emissions from the pellet sampling transfer bin **(ID No. ES-PSTB)** shall be controlled by baghouse **(ID No. CD-PSTB-BH)**; and
   xi. Particulate matter emissions from finished product handling **(ID No. ES-FPH)**, pellet load-out bins **(ID Nos. ES-PB-1 through ES-PB-4)**, and pellet mill load-out **(ID No. ES-PL-1 and ES-PL-2)** shall be controlled by baghouse **(ID No. CD-FPH-BH)**.

*For baghouses and cyclones:*

f. To ensure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and material collection units for leaks; and
   ii. an annual (for each 12-month period following the initial inspection) internal inspection of the baghouses' structural integrity.

*For wet electrostatic precipitator, regenerative thermal oxidizer, and regenerative catalytic oxidizer/regenerative thermal oxidizer:*

g. To ensure compliance and effective operation of the wet electrostatic precipitator **(ID No. CD-WESP)**, the Permittee shall:

i. operate the wet electrostatic precipitator with at least the minimum number of grids operating during compliance testing specified in Section 2.1 A.1.c above;
ii. maintain the minimum daily average secondary voltage and the minimum daily average current at the level established during compliance testing specified in Section 2.1 A.1.c above.
iii. monitor and record the secondary voltage and current for each grid of the precipitator daily. The daily observation must be made for each day of the calendar year period. The Permittee shall be allowed three (3) days of absent observations per semiannual period.
iv. The Permittee may re-establish any parametric operating value during periodic testing. Compliance with previously approved parametric operating values is not required during periodic required testing or other tests undertaken to re-establish parametric operating values by the Permittee. If the new parametric operating values re-established during periodic testing are more stringent, the Permittee shall submit a request to revise the value(s) in the permit at the same time the test report required pursuant to General Condition 17 is submitted. The permit revision will be processed pursuant to 15A NCAC 02Q .0514. If, during performance testing, the new parametric operating values are less stringent, the Permittee may request to revise the value(s) in the permit pursuant to 15A NCAC 02Q .0515.

h. To ensure compliance, the Permittee shall perform inspections and maintenance on the wet electrostatic precipitator **(ID No. CD-WESP),** the regenerative thermal oxidizer **(ID No. CD-RTO)**, and the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)** as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and material collection units for leaks;
   ii. an annual (for each 12-month period following the initial inspection) internal inspection of the heat transfer medium and associated inlet/outlet valves on the regenerative thermal oxidizer **(ID No. CD-RTO)**;
   iii. an annual inspection (for each 12-month period following the initial inspection) of the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO).** This inspection must include (but is not limited to) the following:
      (A) an internal inspection of the heat transfer medium and associated inlet/outlet valves
      (B) an internal inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, the Permittee must take corrective action consistent with the manufacturer's recommendations and conduct a catalyst activity check within 30 days of completing corrective actions
      (C) inspections and analysis of catalyst activity in accordance with a written plan. The plan shall be submitted to the DAQ regional office for approval, maintained on site, and specify the testing procedures used to determine the catalyst activity using a micro gas chromatograph or other manufacturer recommendation; and
   iv. an annual (for each 12-month period following the initial inspection) internal inspection of the wet electrostatic precipitator **(ID No. CD-WESP)**. This inspection must include (but is not limited to) the following:
      (A) visual checks of critical components,
      (B) checks for any equipment that does not alarm when de-energized, to ensure it is operational,
      (C) checks for signs of plugging in the hopper and gas distribution equipment, and
      (D) replacement of broken equipment as required.

**Recordkeeping** [15A NCAC 02Q .0308(a)]

i. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on the control devices; and

iv. any variance from manufacturer's recommendations, if any, and corrections made.

**Reporting** [15A NCAC 02Q .0308(a), 15A NCAC 02D .0605(b)(3)]

j. The Permittee shall submit the results of any maintenance performed on any control device within 30 days of a written request by the DAQ.

k. The Permittee shall submit a summary report of the monitoring and recordkeeping activities given in Sections 2.1 A.1.d through i above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

**2. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**

a. Emissions of sulfur dioxide from these sources **(ID Nos. ES-DRYER, CD-RTO, and CD-RCO)** shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

b. The maximum sulfur content of any diesel fuel received and burned in the wood-fired direct heat drying system **(ID No. ES-DRYER)** shall not exceed 0.5 percent by weight.

**Testing** [15A NCAC 02Q .0308(a)]

c. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

**Monitoring/Recordkeeping/Reporting** [15A NCAC 02Q .0308(a)]

d. No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from firing biomass in the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the natural gas/propane in the regenerative thermal oxidizer **(ID No. CD-RTO)**, or the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)**.

**3. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS**

a. Visible emissions from these sources shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

**Testing** [15A NCAC 02Q .0308(a)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

**Monitoring** [15A NCAC 02Q .0308(a)]

c. To ensure compliance, once a month the Permittee shall observe the emission points of these sources in Section 2.1 A, except for the furnace/dryer bypass **(ID No. ES-F/DBYPASS)**, for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. For the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2 and ES-GHM-3)**, and wood-fired direct heat drying system **(ID No. ES-DRYER)**, the Permittee shall establish "normal" in the first 30 days following the commencement of operation after exhaust from the dry hammermills has been rerouted to the wet electrostatic precipitator **(ID No. CD-WESP)**, in series with a regenerative thermal oxidizer **(ID No. CD-RTO)** OR to the dryer furnace **(ID No. ES-DRYER)**, in series with the wet electrostatic precipitator **(ID No. CD-WESP),** in series with the regenerative thermal oxidizer **(ID No. CD-RTO)**. For the pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** the Permittee shall establish "normal" in the first 30 days following the commencement of operation of the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)**. If visible emissions from the sources in Section 2.1 A are observed to be above normal, the Permittee shall either:

i. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or

ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1 A.3.a. above.

d. To ensure compliance, the Permittee shall observe the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** while the wood-fired direct heat drying system **(ID No. ES-DRYER)** is operating in idle mode for any visible emissions above normal. The Permittee shall establish "normal" during the first operation in idle mode after permit issuance. If visible emissions from the furnace/dryer bypass are observed to be above normal, the Permittee shall either:
   i. take appropriate action to correct the above-normal emissions as soon as practicable and within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
   ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1 A.3.a. above.

**Recordkeeping** [15A NCAC 02Q .0308(a)]

e. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. the results of any corrective actions performed.

**Reporting** [15A NCAC 02Q .0308(a), 15A NCAC 02D .0605(b)(3)]

f. The Permittee shall submit a summary report of the monitoring and recordkeeping activities given in Sections 2.1 A.3.c through and d above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

**4. 15A NCAC 02D .1112: 112(g) CASE BY CASE MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY**

a. The following conditions in this section are enforceable until all controls have been constructed and are operational to reduce facility-wide HAP emissions to below the major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of Section 2.2 A.3, the facility will be classified as a HAP minor source and will no longer be subject to 15A NCAC 02D .1112, "112(g) Case-By-Case Maximum Achievable Control Technology."

b. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 02D .1112, "112(g) Case-By-Case Maximum Achievable Control Technology," and as promulgated in 40 CFR 63, including Subpart A "General Provisions." The Permittee shall comply with the following:
   i. For the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the Permittee shall use a low HAP emitting dryer design not requiring add-on control.
   ii. Within twelve (12) months of issuance of this permit (10386R05), the Permittee shall install and commence operation of a regenerative catalytic oxidizer / regenerative thermal oxidizer **(ID No. RCO)** to control HAP emissions from the pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**.
   iii. Within twelve (12) months of issuance of this permit (10386R05), the Permittee shall route exhaust from the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, controlled by baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH8),** to either the existing dryer furnace **(ID No. ES-DRYER)** in series with the wet electrostatic precipitator **(ID No. WESP)** in series with the regenerative thermal

oxidizer **(ID No. RTO)** OR directly to the wet electrostatic precipitator **(ID No. WESP)** in series with the regenerative thermal oxidizer **(ID No. RTO)**.

**Testing** [15A NCAC 02Q .0308(a)]

c. Initial Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall establish emission factors for HAPs by conducting an initial performance test on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, the dried wood handling operations **(ID Nos. ES-DWH),** and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Initial testing shall be conducted in accordance with the following:

i. The pollutants and emission sources to be tested during the initial performance test are listed in the following table:

| Emission Source | Pollutant |
|---|---|
| Dryer system/green wood hammermills controlled via WESP and RTO | Acetaldehyde<br>Acrolein<br>Formaldehyde<br>Methanol<br>Phenol<br>Propionaldehyde |
| One pellet cooler cyclone | |
| One dry hammermill baghouse | |
| Dried wood handling operations | |

ii. The Permittee completed initial performance tests on December 16 through 20, 2019.

d. Periodic Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall establish emission factors for HAPs by conducting periodic performance tests on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Periodic testing shall be conducted in accordance with the following:

i. The pollutants and emission sources to be tested during the periodic performance tests are listed in the following table:

| Emission Sources | Pollutant |
|---|---|
| Dryer system/green wood hammermills controlled via WESP and RTO | Acetaldehyde<br>Acrolein<br>Formaldehyde<br>Methanol<br>Phenol<br>Propionaldehyde |
| One pellet cooler cyclone | |
| One dry hammermill baghouse | |

ii. Periodic testing shall be conducted in accordance with Section 2.2 A.1.f.ii through xiv below.

**Monitoring/Recordkeeping/Reporting** [15A NCAC 02Q .0308(a)]

e. No monitoring recordkeeping, or reporting is required for any emission source subject to 112(g) Case-by-Case MACT.

# 2.2- Multiple Emission Source(s) Limitations and Conditions

## A. Facility-wide Emission Sources

The following table provides a summary of limits and standards for the emission source(s) describe above:

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|---|---|---|
| PM/PM10/PM2.5<br>Nitrogen oxides<br>Volatile organic compounds<br>Carbon monoxide<br>Greenhouse gases | BACT Limits | 15A NCAC 02D .0530 |
| PM/PM10/PM2.5<br>Nitrogen oxides<br>Volatile organic compounds<br>Carbon monoxide | Less than 250 tons per 12-month period, each<br>Less than 250 tons per 12-month period,<br>Less than 250 tons per 12-month period<br><br>Less than 250 tons per 12-month period | 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .0530 |
| Hazardous Air Pollutants | Less than 25 tons for combined HAPs per 12-month period<br>Less than 10 tons for single a HAP per 12-month period. | 15A NCAC 02Q .0317 for avoidance of 15A NCAC 02D .1112 |
| Toxic air pollutants | **State Enforceable Only**<br>Source-specific emissions limitations for acrolein, arsenic, benzene, cadmium, chlorine, formaldehyde, hexachlorodibenzo-p-dioxin, hydrogen chloride, manganese, and phenol | 15A NCAC 02D .1100 |
| Toxic air pollutants | **State Enforceable Only**<br>Facility-Wide Toxics Permitting Emission Rates | 15A NCAC 02Q .0711 |
| N/A | Excess emissions reporting and malfunctions | 15A NCAC 02D .0535 |
| Fugitive dust | Minimize fugitive dust beyond property boundary | 15A NCAC 02D .0540 |
| Odorous emissions | **State Enforceable Only**<br>Odor control requirements | 15A NCAC 02D .1806 |
| N/A | Annual Emission Reporting due June 30 | 15A NCAC 02Q .0207 |
| N/A | Permit renewal application due 90 days prior to permit expiration | 15A NCAC 02Q .0304 |
| N/A | Option for obtaining construction and operation permit | 15A NCAC 02Q .0504 |

### 1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The following conditions in this section are enforceable until all controls have been constructed and are operational to reduce facility-wide emissions to below PSD major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of Section 2.2 A.2, the facility will be classified as a PSD minor source and will no longer be subject to 15A NCAC 02D .0530, "Prevention of Significant Deterioration."

b. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements in accordance with 15A NCAC 02D .0530, "Prevention of Significant Deterioration of Air Quality" (PSD) as promulgated in 40 CFR 51.166.

c. For PSD purposes, the following "Best Available Control Technology" (BACT) emissions limits shall not be exceeded:

| Emission Source | Pollutant | Control Technology or Work Practice | BACT Emission Limit | Averaging Period |
|---|---|---|---|---|
| Wood-fired Direct Heat Drying System **(ID No. ES-DRYER)** | NOx | Good Combustion Practices | 0.20 lb/million Btu | 3-hour |
| | CO | Process Design | 0.21 lb/ million Btu | 3-hour |
| | GHG | Good Operating Practices | 230,000 tpy ($CO_2e$) | Annual |
| Wood-fired Direct Heat Drying System **(ID No. ES-DRYER)** Green Wood Hammermills **(ID Nos. ES-GHM-1 to ES-GHM-3)** | VOC** | RTO | 0.15 lb/ODT | 3-hour |
| | PM/PM10/2.5 | WESP | 0.105 lb/ODT (filterable only) | 3-hour |
| Dry Hammermills **(ID Nos. ES-HM-1 to ES-HM-8)** | VOC** | Good Operating Procedures | 0.60 lb/ODT | 3-hour |
| | PM | Baghouse | 0.004 gr/scf | 3-hour |
| | PM10 | | 0.004 gr/scf (filterable only) | 3-hour |
| | PM2.5 | | 0.000014 gr/scf (filterable only) | 3-hour |
| Hammermill Conveying System **(ID No. ES-HMC)** | PM | Baghouse | 0.004 gr/scf | 3-hour |
| Dried Wood Handling **(ID No. ES-DWH)** | VOC** | Good Operating Procedures | 0.12 lb/ODT | 3-hour |
| | PM | Baghouses | 0.004 gr/scf | 3-hour |
| Pellet Presses and Coolers **(ID No. ES-CLR-1 to ES-CLR-6)** | VOC** | Good Operating Procedures | 1.74 lb/ODT | 3-hour |
| | PM | Cyclones - Proper Design and Good Operating Procedures | 0.04 gr/scf | 3-hour |
| | PM10 | | 0.0057 gr/scf (filterable only) | 3-hour |
| | PM2.5 | | 0.0007 gr/scf (filterable only) | 3-hour |
| Pellet cooler HP Fines Relay System **(ID No. ES-PCHP)** | PM2.5/PM10/PM | Baghouse | 0.004 gr/scf | 3-hour |
| Pellet Sampling Transfer Bin **(ID No. ES-PSTB)** | PM2.5/PM10/PM | Baghouse | 0.004 gr/scf | 3-hour |
| Hammermill Area/Pellet cooler LP Fines Relay System **(ID Nos. ES-HMA and ES-PCLP)** | PM2.5/PM10/PM | Baghouse | 0.004 gr/scf | 3-hour |
| Pellet Mill Feed Silo **(ID No. ES-PMFS)** | PM2.5/PM10/PM | Baghouse | 0.004 gr/scf | 3-hour |
| Finished Product Handling/Pellet Loadout Bins/Pellet Mill Loadouts **(ID Nos. ES-FPH, ES-PB-1 to 4/ ES-PL-1 and 2)** | PM | Baghouse | 0.004 gr/scf | 3-hour |
| | PM10 | Baghouse | 0.004 gr/scf | 3-hour |
| | PM2.5 | Baghouse | 0.000014 gr/scf | 3-hour |
| Paved Roads **(ID No. IES-PAVEDROADS)** | PM/PM10/PM2.5 | Combination of watering of paved roads, vehicle speed control, and good housekeeping | Not Applicable | |

| Emission Source | Pollutant | Control Technology or Work Practice | BACT Emission Limit | Averaging Period |
|---|---|---|---|---|
| Green Wood Handling **(ID No. IES-GWH)** | PM/PM10/PM2.5 | None | Not Applicable | |
| Green Wood Storage Piles **(ID Nos. IES-GWSP-1 to IES-GWPS-4)** | VOC | | | |
| | PM/PM10/PM2.5 | | | |
| Bark Fuel Storage Piles **(ID Nos. IES-BFSP-1 and IES-BFSP-2)** | VOC | | | |
| | PM/PM10/PM2.5 | | | |
| Bark Fuel Bin **(ID No. IES-BFB)** | PM/PM10/PM2.5 | | | |
| Dry Shavings Material Handling **(ID No. IES-DRYSHAVE)** | PM | | | |
| Debarker **(ID No. IES-DEBARK-1)** | PM/PM10/PM2.5 | | | |
| Log Chipping **(ID No. IES-CHIP-1)** | VOC | | | |
| Bark Hog **(ID No. IES-BARKHOG)** | VOC | | | |
| | PM | | | |
| Diesel storage tanks **(ID Nos. IES-TK1, IES-TK2, and IES-TK3)** | VOC | Good operation practices | Not Applicable | |

***** The VOC limit is expressed as alpha pinene basis per the procedures in EPA OTM 26.

**Notifications** [15A NCAC 02Q .0308(a)]

d. The completion of the Softwood Expansion Project (SWEP) is defined as the replacement of pellet presses that allow throughput of up to 657,000 ODT/year on an annual basis and the rerouting of the exhaust from the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)** to the wet electrostatic precipitator **(ID No. CD-WESP)** and the regenerative thermal oxidizer **(ID No. CD-RTO)**. The Permittee shall notify the DAQ of the actual completion date of the SWEP postmarked within 15 days after such date.

**Testing** [15A NCAC 02Q .0308(a)]

e. Initial Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall demonstrate compliance with the BACT emission limits in Section 2.2 A.1.c above by conducting an initial performance test on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, the dried wood handling operations **(ID Nos. ES-DWH)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Initial testing shall be conducted in accordance with the following:

i. The pollutants and emission sources to be tested during the initial performance test are listed in the following table:

| Emission Sources | Pollutant |
|---|---|
| Dryer system/green wood hammermills controlled via WESP and RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |
| One pellet cooler cyclone | VOC |
| | PM/PM10/PM2.5 |
| One dry hammermill baghouse | VOC |
| | PM/PM10/PM2.5 |
| Dried wood handling operations | VOC |

ii. The Permittee shall conduct initial compliance testing in accordance with a testing protocol approved by the DAQ.
iii. The Permittee shall submit a protocol to DAQ at least 45 days prior to initial compliance testing and shall submit a notification of initial compliance testing at least 15 days in advance of the testing.
iv. The RTO **(ID No. CD-RTO)** is comprised of two fireboxes, with each containing two temperature probes. During the initial compliance test and upon completion of the SWEP, the Permittee shall establish the minimum average firebox temperature for each of the two fireboxes comprising the regenerative thermal oxidizer **(ID No. CD-RTO)**, for a total of two average temperatures per regenerative thermal oxidizer. "Average firebox temperature" means the average temperature of the two temperature probes in each firebox. The minimum average firebox temperature for each firebox shall be based upon the average temperature of the two temperature probes over the span of the test runs. Documentation for the minimum average firebox temperature for each firebox shall be submitted to the DAQ as part of the initial compliance test report and as part of the compliance testing upon completion of the SWEP.
v. Initial compliance testing shall be completed as follows:
(A) The Permittee shall be responsible for ensuring, within practicable limits, that the equipment or processes being tested are operated at or near the maximum normal production rate but at a rate not to exceed 71.71 ODT per hour (not to exceed 537,625 ODT per year on an annual basis).
(B) Testing shall be conducted at the maximum normal operating softwood percentage, not to exceed 80% softwood.
(C) Testing shall be completed and results submitted to the DAQ within 90 days of permit issuance, unless an alternate date is approved in advance by DAQ.
(D) The Permittee completed initial performance testing on December 16 through 20, 2019, with the exception of particulate matter emission testing from the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**.
vi. Compliance testing upon completion of the SWEP shall be completed as follows:
(A) The Permittee shall be responsible for ensuring, within practicable limits, that the equipment or processes being tested are operated at or near the maximum normal production rate but at a rate not to exceed 120 ODT per hour (not to exceed 657,000 ODT per year on an annual basis).
(B) Testing shall be conducted at the maximum normal operating softwood percentage, not to exceed 80% softwood.
(C) Testing shall be completed and results submitted to the DAQ within 120 days of completion of the construction of the SWEP, unless an alternate date is approved in advance by DAQ,

f. Periodic Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall demonstrate compliance with the BACT emission limits in Section 2.2 A.1.c above by conducting periodic performance tests on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Periodic testing shall be conducted in accordance with the following:
i. The pollutants and emission sources to be tested during the periodic performance tests are listed in the following table:

| Emission Sources | Pollutant |
|---|---|
| Dryer system/green wood hammermills controlled via WESP and RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |
| One pellet cooler cyclone | VOC |
| | PM/PM10/PM2.5 |
| One dry hammermill baghouse | VOC |
| | PM/PM10/PM2.5 |

ii. The Permittee shall conduct periodic compliance testing in accordance with a testing protocol approved by the DAQ.
iii. The Permittee shall submit a protocol to DAQ at least 45 days prior to periodic compliance testing and shall submit a notification of periodic compliance testing at least 15 days in advance of the testing.
iv. The Permittee shall be responsible for ensuring, within practicable limits, that the equipment or processes being tested are operated at or near the maximum normal production rate.
v. To the extent possible, testing shall be conducted at the maximum normal operating softwood percentage.
vi. The Permittee shall conduct periodic performance tests when the following conditions are met:
(A) The monthly average softwood content exceeds the average softwood percentage documented during prior performance testing by more than 10 percentage points, or
(B) The monthly production rate exceeds the average production rate documented during prior performance testing by more than 10 percentage points, or
(C) At a minimum testing shall be conducted annually, unless a longer duration is otherwise approved pursuant to Section 2.2.A.1.e.x. Annual performance tests shall be completed no later than 13 months after the previous performance test.
vii. The Permittee shall notify the DAQ within 15 days when the conditions specified in Section 2.2 A.1.f.vi (A) or (B) are met.
viii. The Permittee shall conduct the periodic performance test and submit a written report of the test results to the DAQ within 90 days from the date the monthly softwood content or overall production rate increased as described in Section 2.2 A.1.f.vi (A) and (B) above, unless an alternate date is approved in advance by DAQ,
ix. When periodic performance testing has occurred at 90 percent softwood AND at 90 percent of the maximum permitted throughput, subsequent periodic performance testing shall occur on an annual basis and shall be completed no later than 13 months after the previous performance test, unless a longer duration is otherwise approved pursuant to Section 2.2 A.1.f.x.
x. The Permittee may request that the performance tests be conducted less often for a given pollutant if the performance tests for at least 3 consecutive years show compliance with the emission limit. If the request is granted, the Permittee shall conduct a performance test no more than 36 months after the previous performance test for the given pollutant.
xi. If a performance test shows noncompliance with an emission limit for a given pollutant, the Permittee shall return to conducting annual performance tests (no later than 13 months after the previous performance test) for that pollutant.
xii. Except as specified in Section 2.2 A.1.f.viii above, the Permittee shall submit a written report of the performance test results to the Regional Supervisor, DAQ, no later than 30 days following sample collection test in accordance with 15A NCAC 02D .2602(f), unless an alternative date is approved in advance by DAQ.
xiii. The Permittee may re-establish any parametric operating value during periodic testing. Compliance with previously approved parametric operating values is not required during periodic testing or other tests undertaken to re-establish parametric operating values by the Permittee. If the new parametric operating values re-established during periodic testing are more stringent, the Permittee shall submit a request to revise the value(s) in the permit at the same time the test report required pursuant to General Condition 17 is submitted. The permit revision will be processed pursuant to 15A NCAC 02Q .0514. If, during performance testing, the new parametric operating values are less stringent, the Permittee may request to revise the value(s) in the permit pursuant to 15A NCAC 02Q .0515.
xiv. The Permittee shall comply with applicable emission standards at all times, including during periods of testing.

**Monitoring/Recordkeeping** [15ANCAC 02Q .0308(a)]

g. Within six months of issuance of Air Permit No. 10386R04, the Permittee shall submit to the DAQ a permit application that includes one of the following:

i. A revised BACT analysis for VOC emissions from the dry hammermills **(ID Nos. ES-HM-1 to ES-HM-8)** and the pellet presses and pellet coolers **(ID No. ES-CLR-1 to ES-CLR-6)**, OR
ii. A request for an avoidance condition for 15A NCAC 02D .0530, Prevention of Significant Deterioration, for VOC emissions.
iii. The Permittee fulfilled this requirement with the submittal of a complete permit application (No. 8200152.20B) on June 11, 2020.

h. Regardless of the actual completion date of the SWEP, the Permittee shall complete the rerouting of the exhaust from green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)** to the wet electrostatic precipitator **(ID No. CD-WESP)** and the regenerative thermal oxidizer **(ID No. CD-RTO)** within twelve (12) months of issuance of this permit (10368R04).
i. The Permittee shall not increase production beyond 537,625 oven-dried tons (ODT) of pellets per consecutive 12-month period (the permitted maximum production rate in Air Permit No. 10386R03) until exhaust from the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)** has been rerouted to the wet electrostatic precipitator **(ID No. CD-WESP)** and the regenerative thermal oxidizer **(ID No. CD-RTO)**.
j. After the exhaust from the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)** has been rerouted to the wet electrostatic precipitator **(ID No. CD-WESP)** and the regenerative thermal oxidizer **(ID No. CD-RTO)**, the Permittee shall not process more than 657,000 ODT of pellets per consecutive 12-month period. The process rate shall be recorded monthly in a logbook (written or electronic format) kept on-site and made available to an authorized representative upon request.
k. The furnace/dryer bypass **(ID No. ES-F/DBYPASS)** shall be limited to less than 50 hours per year for startups (for temperature control) and shutdowns. The furnace bypass shall be limited to a cold startup of 15% maximum heat input (or 37.6 million Btu per hour). The cold startup period begins when the wood-fired furnace is started up and lasts until the wood-fired furnace's refractory is heated to a temperature sufficient to sustain combustion operations at a minimal level or 8 hours, whichever is less. The use of diesel fuel as a startup accelerant shall be limited to 30 gallons per startup and 200 gallons per year. The Permittee shall keep the following:
i. To ensure compliance with the diesel fuel usage as an accelerant for cold startups, the Permittee shall record the gallons used for each cold startup and the gallons used per year in a logbook (written or electronic format) kept on-site and made available to an authorized representative upon request.
ii. The Permittee shall monitor and record the date, time, and duration that the furnace bypass is operated during startup and shutdown.
l. The furnace/dryer bypass **(ID No. ES-F/DBYPASS)** in idle mode, defined as maximum heat input of 10 million Btu per hour, shall be limited to less than 500 hours per year. The Permittee shall monitor and record the date, time, and duration that the furnace bypass is operated during idle mode.
m. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate all emission sources including associated control devices in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
n. The Permittee shall record the hardwood/softwood mix monthly in a logbook (written or electronic format) kept on-site and made available to an authorized representative upon request.
o. The Permittee shall calculate the total emissions of NOx, filterable PM, CO, and VOC monthly and shall record the emissions monthly in a logbook (written or electronic format) kept on-site and made available to DAQ personnel upon request.
p. For the wood-fired direct heat drying system **(ID No. ES-DRYER)**, GHG ($CO_2e$) emissions shall be calculated monthly and compliance demonstrated using the applicable Part 98 emission factors. Compliance shall be documented on a 12-month rolling basis.
q. To ensure compliance and effective operation of the RTO **(ID No. CD-RTO)**, the Permittee shall:
i. maintain a 3-hour rolling average firebox temperature for each of the two fireboxes comprising the RTO at or above the minimum average temperatures established during the most recent performance testing. The minimum 3-hour average firebox temperature for Chambers A/B is 1,601°F and the

minimum 3-hour average firebox temperature for Chambers C/D is 1,601°F, as measured during the initial performance tests on December 16 through 20, 2019.

ii. maintain records of the 3-hour rolling average temperatures for each firebox.

iii. perform inspections and maintenance on the RTO as specified above in Section 2.1 A.1.h.

r. To ensure compliance and effective operation of the wet electrostatic precipitator (**ID No. CD-WESP**), the Permittee shall perform inspections and maintenance as specified above in Section 2.1 A.1.h. The Permittee shall also maintain the minimum secondary voltage and minimum current of the wet electrostatic precipitator as specified above in Section 2.1 A.1.g.

s. To ensure compliance and effective operation of the baghouses and cyclones, the Permittee shall perform inspections and maintenance as specified above in Section 2.1 A.1.f.

t. Monitoring and recordkeeping are not required for the following emission sources:

i. Paved roads;

ii. VOC emissions from storage tanks; and

iii. Emission sources with no BACT emission limits or work practice standards.

**Reporting** [15A NCAC 02Q .0308(a), 15A NCAC 02D .0605(b)(3)]

u. The Permittee shall submit the results of any maintenance performed on any control device within 30 days of a written request by the DAQ.

v. The Permittee shall submit a summary report of the monitoring and recordkeeping activities given in Sections 2.2 A.1.g through s above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

## 2. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The following conditions in this section are enforceable after all controls have been constructed and are operational to reduce facility-wide emissions to below PSD major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of this condition (Section 2.2 A.2), the facility will be classified as a PSD minor source.

b. In order to avoid applicability of 15A NCAC 2D .0530(g), the above emission sources shall discharge into the atmosphere less than 250 tons of PM, PM10, PM2.5, volatile organic compounds (VOC), nitrogen oxides (NOx), and carbon monoxide (CO) per consecutive 12-month period.

c. To ensure compliance with limits established in Section 2.2 A.2.b above after the construction and operation of the proposed control devices, the Permittee shall meet the following:

i. The green hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)** and the dryer **(ID No. ES-DRYER)** shall be controlled by a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO)**;

ii. The dry hammermills **(ID Nos. ES-HM1 through ES-HM-8)** shall be controlled by baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH8)** in series with either a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO)** or to the dryer furnace **(ID No. ES-DRYER)** in series with a wet electrostatic precipitator **(ID No. CD-WESP)** in series with a regenerative thermal oxidizer **(ID No. CD-RTO)**;

(A) In the event of reduced furnace/dryer operation, a portion of the air flow from the baghouses on the dry hammermills is ducted directly to the WESP **(ID No. CD-WESP)** in series with the RTO (ID No. CD-RTO).

(B) In the event of the shutdown of the furnace/dryer system, all air flow from the baghouse on the dry hammermills is ducted directly to the WESP **(ID No. CD-WESP)** and the RTO **(ID No. CD-RTO)**.

iii. The pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** shall be controlled by cyclones **(ID Nos. CD-CLR-1 through CD-CLR-6)** in series with a regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)**;
iv. Other particulate matter emission sources shall be controlled with baghouses as specified the Equipment List in Section 1.0; and
v. The Permittee shall not process more than 657,000 oven dried tons per year (ODT/year) on a rolling 12-month average basis.

**Notifications** [15A NCAC 02Q .0308(a)]

d. The completion of the modification to become a PSD minor source is defined as the following:
i. the rerouting of the exhaust from the dry hammermills **(ID Nos. ES-HM-1 to ES-HM-8),** associated integral cyclones and baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH8)**, to the wood-fired direct heat drying system furnace **(ID No. ES-DRYER)**, wet electrostatic precipitator **(ID No. CD-WESP-1),** and regenerative thermal oxidizer **(ID No. CD-RTO)**.
ii. the rerouting of the exhaust from the dry hammermills **(ID Nos. ES-HM-1 to ES-HM-8),** associated integral cyclones and baghouses **(ID Nos. CD-HM-BH1 through CD-HM-BH3)** to the wet electrostatic precipitator **(ID No. CD-WESP)** and regenerative thermal oxidizer **(ID No. CD-RTO)**.
iii. the installation of the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)** on the exhaust of the pellet presses and pellet coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** after control by cyclones **(ID Nos. CD-CLR-1 through CD-CLR-6).**

The Permittee shall notify the DAQ of the actual completion date of the modification postmarked within 15 days after such date.

**Testing** [15A NCAC 02Q .0308(a)]

e. Initial Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall demonstrate compliance with PSD avoidance limits in Section 2.2 A.2.b above by conducting an initial performance test on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Initial testing shall be conducted in accordance with the following:
i. The pollutants and emission sources to be tested during the initial performance test are listed in the following table:

| Emission Sources | Pollutant |
|---|---|
| Dryer system, green hammermills, dry hammermills controlled via a WESP and CD-RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |
| Pellet presses and pellet coolers controlled via cyclones and CD-RCO/RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |
| Dried wood handling operations | VOC |

ii. The Permittee shall utilize EPA reference methods contained in 40 CFR 60, Appendix A, 40 CFR Part 63, and OTM 26 AND in accordance with a testing protocol (using testing protocol submittal form) approved by the DAQ.
iii. The Permittee shall submit a protocol to the DAQ at least 45 days prior to compliance testing and shall submit a notification of initial compliance testing at least 15 days in advance of the testing.
iv. The Permittee shall be responsible for ensuring, within practicable limits, that the equipment or processes being tested are operated at or near the maximum normal production rate or at a lesser rate if specified by the Director or his delegate.

v. To the extent possible, testing shall be conducted at the maximum normal operating softwood percentage.
vi. The regenerative thermal oxidizer **(ID No. CD-RTO)** and regenerative catalytic oxidizer/ regenerative thermal oxidizer **(ID No. CD-RCO)** are each comprised of fireboxes, with each firebox containing two temperature probes. During the initial compliance test, the Permittee shall establish the minimum average firebox temperature for each of the fireboxes comprising the regenerative thermal oxidizer and the minimum average firebox temperature (same as the inlet temperature of the catalyst) of the regenerative catalytic oxidizer/regenerative thermal oxidizer. "Average firebox temperature" means the average temperature of the two temperature probes in each firebox. The minimum average firebox temperature for each firebox shall be based upon the average temperature of the two temperature probes over the span of the test runs. Documentation for the minimum average firebox temperature for each firebox shall be submitted to the DAQ as part of the initial compliance test report.
vii. Initial testing shall be completed within 180 days of commencement of operation of completion of the modification to become a PSD minor source unless an alternate date is approved in advance by DAQ.
viii. The Permittee shall submit a written report of the performance test results to the Regional Supervisor, DAQ, no later than 30 days following sample collection test in accordance with 15A NCAC 02D .2602(f), unless an alternative date is approved in advance by DAQ.

f. Periodic Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall demonstrate compliance with the PSD avoidance limits in Section 2.2 A.2.b above by conducting periodic performance tests on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 to ES-HM-8)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Periodic testing shall be conducted in accordance with the following:
i. The pollutants and emission sources to be tested during the periodic performance tests are listed in the following table:

| Emission Sources | Pollutant |
|---|---|
| Dryer system, green hammermills, dry hammermills controlled via a WESP and CD-RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |
| Pellet presses and pellet coolers controlled via cyclones and CD-RCO/RTO | VOC |
| | PM/PM10/PM2.5 |
| | NOx |
| | CO |

ii. Testing shall be conducted in accordance with Section 2.2 A.2.e.ii through vi above.
iii. The Permittee shall conduct periodic performance tests when the following conditions are met:
(A) The monthly average softwood content exceeds the average softwood percentage documented during prior performance testing by more than 10 percentage points, or
(B) The monthly production rate exceeds the average production rate documented during prior performance testing by more than 10 percentage points, or
(C) At a minimum testing shall be conducted annually. Annual performance tests shall be completed no later than 13 months after the previous performance test.
iv. The Permittee shall conduct the periodic performance test and submit a written report of the test results to the Regional Supervisor, DAQ, within 90 days from the date the monthly softwood content or overall production rate increased as described in Section 2.2 A.2.f.iii (A) and (B) above unless an alternate date is approved in advance by DAQ.
v. When performance testing has occurred at 90 percent softwood AND 90 percent of the maximum permitted throughput, subsequent periodic performance testing shall occur on an annual basis and shall be completed no later than 13 months after the previous performance test. The Permittee shall submit a written report of the performance test results to the Regional Supervisor, DAQ, no later than 30 days

following sample collection test in accordance with 15A NCAC 02D .2602(f), unless an alternative date is approved in advance by DAQ.

vi. The Permittee may request that the performance tests be conducted less often for a given pollutant if the performance tests for at least 3 consecutive years show compliance with the emission limit. If the request is granted, the Permittee shall conduct a performance test no more than 36 months after the previous performance test for the given pollutant.

vii. If a performance test shows noncompliance with an emission limit for a given pollutant, the Permittee shall return to conducting annual performance tests (no later than 13 months after the previous performance test) for that pollutant.

viii. Except as specified in Section 2.2 A.2.f.iv above, the Permittee shall submit a written report of the performance test results to the Regional Supervisor, DAQ, no later than 30 days following sample collection test in accordance with 15A NCAC 02D .2602(f), unless an alternative date is approved in advance by DAQ.

ix. The Permittee may re-establish any parametric operating value during periodic testing. Compliance with previously approved parametric operating values is not required during periodic required testing or other tests undertaken to re-establish parametric operating values by the Permittee. If the new parametric operating values re-established during periodic testing are more stringent, the Permittee shall submit a request to revise the value(s) in the permit at the same time the test report required pursuant to General Condition 17 is submitted. The permit revision will be processed pursuant to 15A NCAC 02Q .0514. If, during performance testing, the new parametric operating values are less stringent, the Permittee may request to revise the value(s) in the permit pursuant to 15A NCAC 02Q .0515.

x. The Permittee shall comply with applicable emission standards at all times, including during periods of testing.

**Monitoring and Recordkeeping** [15A NCAC 02Q .0308(a)]

g. The Permittee shall calculate the facility-wide emissions of PM, PM10, PM2.5, CO, NOx, and VOC emissions monthly

i. Monthly PM, PM10, PM2.5 emissions, in tons, shall be calculated by the following equations and emission factors:

$$E_{\text{PM(total)}} = \sum E_{\text{PM(CD-RTO)}} + \sum E_{\text{PM(CD-RCO)}} + \sum E_{\text{PM(furnace bypass)}} + PM\ Constant$$

$$E_{\text{PM10(total)}} = \sum E_{\text{PM10(CD-RTO)}} + \sum E_{\text{PM10(CD-RCO)}} + \sum E_{\text{PM10(furnace bypass)}} + PM10\ Constant$$

$$E_{\text{PM2.5(total)}} = \sum E_{\text{PM2.5(CD-RTO)}} + \sum E_{\text{PM2.5(CD-RCO)}} + \sum E_{\text{PM2.5(furnace bypass)}} + PM2.5\ Constant$$

Where:

$E_{\text{PM, PM10, PM2.5(Total)}}$ = total tons of PM, PM0, and PM2.5 emissions per month from the facility

$E_{\text{PM, PM10, PM2.5(CD-RTO)}}$ = total tons of PM, PM0, and PM2.5 emissions from the outlet of the thermal regenerative oxidizer (ID No. CD-RTO) per month

$E_{\text{PM, PM10, PM2.5(CD-RCO)}}$ = total tons of PM, PM0, and PM2.5 emissions from the outlet of the catalytic regenerative oxidizer / regenerative thermal oxidizer (ID No. CD-RTO) per month

$E_{\text{PM, PM10, PM2.5(furnace bypass)}}$ = total tons of PM, PM0, and PM2.5 emissions per month from the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** per month

PM Constant = 0.30 = monthly PTE tons for the miscellaneous sources including emergency generator, fire water pump, baghouses, non-fugitive woodyard sources, and double duct burners

PM10 Constant = 0.28 = monthly PTE tons for the miscellaneous sources including emergency

generator, fire water pump, and double duct burners
PM2.5 Constant = 0.22 = monthly PTE tons for the miscellaneous sources including emergency generator, fire water pump, and double duct burners

ii. Monthly CO emissions, in tons, shall be calculated by the following equations and emission factors:

$$E_{\text{CO(total)}} = \sum E_{\text{CO(CD-RTO)}} + \sum E_{\text{CO(CD-RCO)}} + \sum E_{\text{CO(furnace bypass)}} + CO\ Constant$$

Where:

$E_{CO(Total)}$ = total tons of CO emissions per month from the facility
$E_{CO(CD\text{-}RTO)}$ = total tons of CO emissions from the outlet of the thermal regenerative oxidizer (ID No. CD-RTO) per month
$E_{CO(CD\text{-}RCO)}$ = total tons of CO emissions from the outlet of the catalytic regenerative oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) per month
$E_{CO(furnace\ bypass)}$ = total tons of CO emissions per month from the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** per month
CO Constant = 0.24 = monthly PTE tons of CO from miscellaneous sources including emergency generator, fire water pump, and double duct burners

iii. Monthly NOx emissions, in tons, shall be calculated by the following equations and emission factors:

$$E_{\text{NOx (total)}} = \sum E_{\text{NOx (CD-RTO)}} + \sum E_{\text{NOx(CD-RCO)}} + \sum E_{\text{NOx (furnace bypass)}} + NOx\ Constant$$

Where:

$E_{NOx(Total)}$ = total tons of NOx emissions per month from the facility
$E_{NOx(CD\text{-}RTO)}$ = total tons of NOx emissions from the outlet of the thermal regenerative oxidizer (ID No. CD-RTO) per month
$E_{NOx(CD\text{-}RCO)}$ = total tons of NOx emissions from the outlet of the catalytic regenerative oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) per month
$E_{NOx(furnace\ bypass)}$ = total tons of NOx emissions per month from the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** per month
NOx Constant = 0.24 = monthly PTE tons of NOx from miscellaneous sources including emergency generator, fire water pump, and double duct burners tanks

iv. Monthly VOC emissions, in tons, shall be calculated by the following equations and emission factors:

$$E_{\text{VOC (total)}} = \sum E_{\text{VOC (CD-RTO)}} + \sum E_{\text{VOC (CD-RCO)}} + \sum E_{\text{VOC (furnace bypass)}} + VOC\ Constant$$

Where:

$E_{VOC(Total)}$ = total tons of VOC emissions per month from the facility
$E_{VOC(CD\text{-}RTO)}$ = total tons of VOC emissions from the outlet of the thermal regenerative oxidizer (ID No. CD-RTO) per month
$E_{VOC(CD\text{-}RCO)}$ = total tons of VOC emissions from the outlet of the catalytic regenerative oxidizer / regenerative thermal oxidizer (ID No. CD-RCO) per month
$E_{VOC(furnace\ bypass)}$ = total tons of VOC emissions per month from the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** per month
VOC Constant = 1.25 = monthly PTE tons of VOC from miscellaneous sources including emergency generator, fire water pump, dried wood handling, bark hog, double duct burners, and storage tanks

h. The monthly emissions shall be recorded in a logbook (written or electronic format) and made available to an authorized representative upon request.

*Regenerative Thermal Oxidizer and Regenerative Catalytic Oxidizer*

i. The Permittee shall install, calibrate, operate, maintain, and inspect a continuous temperature monitoring, and recording system, in accordance with manufacturer's recommendations for the regenerative thermal oxidizer **(ID No. CD-RTO)** and the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO)** to monitor the temperature in the combustion chamber to ensure the average combustion temperature does not drop below the temperature range established during the performance test. To ensure compliance and effective operation of the RTO **(ID No. CD-RTO)** and RTO/RCO **(ID No. CD-RCO)**, the Permittee shall:
   i. maintain a 3-hour rolling average firebox temperature for each of the two fireboxes comprising the RTO and RTO/RCO at or above the minimum average temperatures established during the most recent performance testing. For the RTO **(ID No. CD-RTO),** the minimum 3-hour average firebox temperature for Chambers A/B is 1,601°F and the minimum 3-hour average firebox temperature for Chambers C/D is 1,601°F, as measured during the initial performance tests on December 16 through 20, 2019.
   iv. maintain records of the 3-hour rolling average temperatures for each firebox.
   v. perform inspections and maintenance on the regenerative thermal oxidizer **(ID No. CD-RTO)** and the regenerative catalytic oxidizer/regenerative thermal oxidizer **(ID No. CD-RCO),** as specified above in Section 2.1 A.1.h.

j. The Permittee shall develop and maintain a written malfunction plan for the temperature monitoring and recording system that describes, in detail, the operating procedures for periods of malfunction and a protocol to address malfunctions so that corrective actions can immediately be implemented. The plan shall be submitted to the DAQ regional office for approval and maintained on site. The malfunction plan shall identify malfunctions, as described by the manufacturer, and ensure the operators are prepared to correct such malfunctions as soon as practical. The Permittee shall keep any necessary parts for routine repairs of the temperature monitoring and recording system readily available.

k. The Permittee shall perform periodic inspection and maintenance for the oxidizers as recommended by the manufacturer. The Permittee shall perform periodic catalyst activity checks for the regenerative catalytic oxidizer as recommended by the manufacturer. At a minimum, the Permittee shall perform an annual (not to exceed 12-month) internal inspection of the primary heat exchanger and associated inlet/outlet valves of the control device to ensure structural integrity, as specified above in Section 2.1 A.1.h.

l. The monthly pellet production in oven dried tons (ODT), the rolling 12-month total pellet production in ODT, monthly average softwood content, and 12-month rolling average softwood content shall be recorded in a monthly logbook (written or electronic format) and made available to an authorized representative upon request.

m. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate all emission sources including associated control devices in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

**Reporting** [15A NCAC 02Q .0308(a)]

n. The Permittee shall submit a semi-annual summary report of monitoring and recordkeeping activities given in Section 2.2 A.2.g through l above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
   i. The monthly facility-wide PM, PM10, PM2.5, VOC, NOx, and CO emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.

ii. A report indicating and explaining all instances of the average minimum regenerative thermal oxidizer and regenerative catalytic oxidizer/ regenerative thermal oxidizer combustion chamber temperature falling below the temperature range established during the performance test or noting that no such instances have occurred.
iii. The monthly and 12-month facility-wide total pellet production, and
iv. The monthly and 12-month rolling hardwood/softwood mix.
v. All instances of deviations from the requirements of this permit must be clearly identified.

**3. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .1112: 112(g) Case-by-Case Maximum Available Control Technology (MACT) Standards**

a. The following conditions in this section are enforceable after all controls have been constructed and are operational to reduce facility-wide HAP emissions to below the major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of this condition (Section 2.2 A.3), the facility will be classified as a HAP minor source.

b. In order to remain classified a minor source for hazardous air pollutants (HAP) and avoid applicability of 15A NCAC 02D .1112, "112(g) Case-by-Case Maximum Achievable Control Technology," facility-wide HAP emissions shall be less than the following limitations:
i. 25 tons per consecutive 12-month period of total, combined HAP; and,
ii. 10 tons per consecutive 12-month period of any individual HAP.

**Testing** [15A NCAC 02Q .0308(a)]

c. Initial Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall establish emission factors for HAPs by conducting an initial performance test on the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)**. Initial testing shall be conducted in accordance with the following:
i. The pollutants and emission sources to be tested during the initial performance test are listed in the following table:

| Emission Source | Pollutant |
|---|---|
| Dryer system/green wood hammermills/ dry hammermills controlled via WESP and RTO | Acetaldehyde<br>Acrolein<br>Formaldehyde<br>Methanol<br>Phenol<br>Propionaldehyde |
| Pellet presses and pellet coolers controlled via cyclones and CD-RCO/RTO | |

ii. The Permittee shall utilize EPA reference methods contained in 40 CFR 60, Appendix A, 40 CFR Part 63, and OTM 26 AND in accordance with a testing protocol (using testing protocol submittal form) approved by the DAQ.
iii. The Permittee shall submit a protocol to the DAQ at least 45 days prior to compliance testing and shall submit a notification of initial compliance testing at least 15 days in advance of testing.
iv. The Permittee shall be responsible for ensuring, within practicable limits, that the equipment or processes being tested are operated at or near the maximum normal production rate or at a lesser rate if specified by the Director or his delegate.
v. To the extent possible, testing shall be conducted at the maximum normal operating softwood percentage.
vi. The regenerative thermal oxidizer **(ID No. CD-RTO)** and the regenerative catalytic/regenerative thermal oxidizer **(ID No. CD-RCO)** are comprised of fireboxes, with each firebox containing two temperature probes. During the initial compliance test, the Permittee shall establish the minimum

average firebox temperature (same as the inlet temperature of the catalyst) for each of the fireboxes comprising the regenerative thermal oxidizer and regenerative catalytic/regenerative thermal oxidizer. "Average firebox temperature" means the average temperature of the two temperature probes in each firebox. The minimum average firebox temperature for each firebox shall be based upon the average temperature of the two temperature probes over the span of the test runs. Documentation for the minimum average firebox temperature for each firebox shall be submitted to the DAQ as part of the initial compliance test report.

vii. Initial testing shall be completed within 180 days of commencement of operation of completion of the modification to become a minor source of HAPs unless an alternate date is approved in advance by DAQ.

vi. The Permittee shall submit a written report of the performance test results to the Regional Supervisor, DAQ, no later than 30 days following sample collection test in accordance with 15A NCAC 02D .2602(f), unless an alternative date is approved in advance by DAQ.

d. Periodic Performance Tests – Under the provisions of North Carolina General Statute 143-215.108, the Permittee shall establish emission factors for HAPs by conducting periodic performance tests on the emission points consistent with Section 2.1.A.4.d.

i. The pollutants and emission sources to be tested during the initial performance test are listed in the following table:

| Emission Source | Pollutant |
|---|---|
| Dryer system/green wood hammermills/ dry hammermills controlled via WESP and RTO | Acetaldehyde<br>Acrolein<br>Formaldehyde<br>Methanol<br>Phenol<br>Propionaldehyde |
| Pellet presses and pellet coolers controlled via cyclones and CD-RCO/RTO | |

ii. Periodic testing shall be conducted in accordance with Section 2.2 A.2.f.iii through x above.

**Monitoring/Recordkeeping Requirements** [15A NCAC 02Q .0308(a)]

e. The Permittee shall calculate HAP emissions from the wood-fired direct heat drying system **(ID No. ES-DRYER)**, the green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dry hammermills **(ID Nos. ES-HM-1 through ES-HM-8)**, the dried wood handling operations **(ID Nos. ES-DWH),** and the pellet presses and coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** using emission factors developed from the most recent stack tests.

f. The Permittee shall calculate HAP emissions from the furnace/dryer bypass **(ID No. ES-F/DBYPASS)**, the diesel-fired fire pump **(ID Nos. IFWP),** the diesel-fired emergency **(ID No. IES-EG)**, the duct burners **(ID Nos. IES-DDB1 and IES-DDB-2)**, log chipping **(ID No. IES-CHIP-1)** and the bark hog **(ID No. IES-BARKHOG)** using HAP emission factors as provided in Air Permit Application No. 8200152.20B.

g. Calculations of HAP emissions as specified in Sections 2.2 A.3.f and g above shall be made at the end of each month. Calculations and the total amount of HAP emissions shall be recorded monthly in a logbook (written or electronic format) and made available to an authorized representative upon request.

h. The Permittee shall keep a record of the applicability determination on site at the source for a period of five years after the determination, or until the source becomes an affected source. The determination must include the analysis demonstrating why the Permittee believes the source is unaffected pursuant to 40 CFR Part 63.10(b)(3).

**Reporting Requirements** [15A NCAC 02Q .0308(a)]

i. The Permittee shall submit a summary report of monitoring and recordkeeping activities given in Sections 2.2 A.3.e through g above. The report shall summarize emissions of hazardous air pollutants containing the following:

i. greatest quantity in pounds of an individual hazardous air pollutant used:

(A) for each month during the semiannual period, and
(B) for each 12-month period ending on each month during the semiannual period using a 12-month rolling total.

ii. pounds of all hazardous air pollutants used:
(A) for each month during the semiannual period, and
(B) for each 12-month period ending on each month during the semiannual period using a 12-month rolling total.

iii. All instances of deviations from the requirements of this permit must be clearly identified.

**State-enforceable only**

**4. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS**

a. The following conditions in this section are enforceable after all controls have been constructed and are operational to reduce facility-wide HAP emissions to below the major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of Section 2.2 A.3, the facility will be classified as a HAP minor source.

b. Pursuant to 15A NCAC 02D .1100, "Control of Toxic Air Pollutants," and in accordance with the approved application for an air toxic compliance demonstration, the following permit limits shall not be exceeded:

| Emission Source | Toxic Air Pollutant | Emission Limits |
|---|---|---|
| Green wood hammermills **(ID Nos. ES-GHM-1, ES-GHM-2 and ES-GHM-3)** and dryer **(ID No. ES-DRYER)** controlled by a wet electrostatic precipitator **(ID No. CD-WESP)** and a regenerative thermal oxidizer **(ID No. CD-RTO)** | Acrolein | 0.69 lb/hr |
| | Arsenic | 3.58 lb/yr |
| | Benzene | 742 lb/yr |
| | Cadmium | 1.08 lb/yr |
| | Chlorine | 0.198 lb/hr |
| | | 4.75 lb/day |
| | Formaldehyde | 0.63 lb/hr |
| | Hexachlorodibenzo-p-dioxin | 0.176 lb/yr |
| | Hydrogen Chloride | 0.476 lb/hr |
| | Manganese | 0.698 lb/day |
| | Phenol | 0.490 lb/hr |

| Emission Source | Toxic Air Pollutant | Emission Limits |
|---|---|---|
| Furnace/Dryer Bypass **(ID No. ES-F/DBYPASS)** in Idle Mode | Acrolein | 0.040 lb/hr |
| | Arsenic | 1.93 lb/yr |
| | Cadmium | 0.359 lb/yr |
| | Chlorine | 0.0079 lb/hr |
| | | 0.190 lb/day |
| | Formaldehyde | 0.0440 lb/hr |
| | Hexachlorodibenzo-p-dioxin | 0.140 lb/yr |
| | Hydrogen Chloride | 0.190 lb/hr |
| | Manganese | 0.384 lb/day |
| | Phenol | 0.000510 lb/hr |
| Furnace/Dryer Bypass **(ID No. ES-F/DBYPASS)** in Startup Mode | Acrolein | 0.150 lb/hr |
| | Arsenic | 7.22 lb/yr |
| | Cadmium | 1.35 lb/yr |
| | Chlorine | 0.0297 lb/hr |
| | | 0.713 lb/day |
| | Formaldehyde | 0.165 lb/hr |
| | Hexachlorodibenzo-p-dioxin | 0.140 lb/yr |
| | Hydrogen Chloride | 0.714 lb/hr |
| | Manganese | 1.44 lb/day |
| Dry Hammermills **(ID Nos. ES-HM-1 through ES-HM-8)** | Acrolein | 1.30 lb/hr |
| | Formaldehyde | 0.96 lb/hr |
| | Phenol | 0.49 lb/hr |
| Pellet Presses and Coolers **(ID Nos. ES-CLR-1 through ES-CLR-6)** | Acrolein | 6.06 lb/hr |
| | Formaldehyde | 3.74 lb/hr |
| | Phenol | 3.02 lb/hr |
| Dried Wood Handling **(ID No. ES-DWH)** | Formaldehyde | 0.101 lb/hr |

**Monitoring and Recordkeeping** [15A NCAC 02Q .0308(a)]

c. To ensure compliance with 15A NCAC 02D .1100, the furnace/dryer bypass **(ID No. ES-F/DBYPASS)** shall be limited to no more than 50 hours per year for startups (for temperature control) and shutdowns. The furnace bypass shall be limited to a cold startup of 15% maximum heat input rate (or 37.56 million Btu per hour). The cold startup period begins when the wood-fired furnace is started up and lasts until the wood-fired furnace's refractory is heated to a temperature sufficient to sustain combustion operations at a minimal level or 8 hours, whichever is less. The use of diesel fuel as a startup accelerant shall be limited to 30 gallons per startup and 200 gallons per year. The Permittee shall keep the following:
   i. To ensure compliance with the diesel fuel usage as an accelerant for cold startups, the Permittee shall record the gallons used for each cold startup and the gallons used per year in a logbook (written or electronic format) kept on-site and made available to an authorized representative upon request.
   ii. The Permittee shall monitor and record the date, time, and duration that the furnace bypass is operated during startup and shutdown.

d. To ensure compliance with 15A NCAC 02D .1100, the furnace/dryer bypass **(ID No. ES-F/DBYPASS**) in idle mode, defined as a maximum heat input of 10 million Btu per hour, shall be limited to no more than 500 hours per year. The Permittee shall monitor and record the date, time, and duration that the furnace bypass is operated during idle mode.

**Reporting** [15A NCAC 02Q .0308(a)]

e. The Permittee shall submit a semi-annual summary report of monitoring and recordkeeping activities given in Section 2.2 A.4.b through c above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June.

**State-enforceable only**

**5. 15A NCAC 02Q .0711: PERMIT REQUIREMENTS FOR TOXIC AIR POLLUTANTS**

a. The following conditions in this section are enforceable after all controls have been constructed and are operational to reduce facility-wide HAP emissions to below the major source thresholds, in accordance with the schedule specified in Section 2.3 A.1. Following the applicability of Section 2.2 A.3, the facility will be classified as a HAP minor source.
b. The facility shall be operated and maintained in such a manner that any new, existing or increased actual emissions of any Toxic Air Pollutant (TAP) listed in 15A NCAC 02Q .0711 or in this permit from all sources at the facility (excluding those sources exempt under 15A NCAC 02Q .0702 "Exemptions"), including fugitive emissions and emission sources not otherwise required to have a permit, will not exceed its respective TAP permitting emission rates (TPER) listed in 15A NCAC 02Q .0711 without first obtaining an air permit to construct or operate.
c. PRIOR to exceeding any of the TPERs listed in 15A NCAC 02Q .0711, the Permittee shall be responsible for obtaining an air permit to emit TAPs and for demonstrating compliance with the requirements found in 15A NCAC 02D .1100 "Control of Toxic Air Pollutants."
d. The Permittee shall maintain at the facility records of operational information sufficient for demonstrating to the Division of Air Quality staff that actual TAPs are less than the rate listed in 15A NCAC 02Q .0711.
e. The TPER table listed below is provided to assist the Permittee in determining when an air permit is required pursuant to 15A NCAC 02Q .0711 and may not represent all TAPs being emitted from the facility. This table will be updated at such time as the permit is either modified or renewed.

| **TPER Limitations** | | | | |
|---|---|---|---|---|
| **Pollutant (CAS Number)** | **Carcinogens (lb/yr)** | **Chronic Toxicants (lb/day)** | **Acute systemic toxicants (lb/hr)** | **Acute irritants (lb/hr)** |
| Acetaldehyde (75-07-0) | | | | 6.80 |
| Ammonia (7664-41-7) | | | | 0.68 |
| Benzo(a)pyrene (50-32-8) | 2.2 | | | |
| Beryllium (7440-41-7) | 0.28 | | | |
| Butadiene, 1,3- (106-99-0) | 11 | | | |
| Carbon tetrachloride (56-23-5) | 460 | | | |
| Chlorobenzene (108-90-7) | | 46 | | |
| Chloroform (67-66-3) | 290 | | | |
| Soluble chromate compounds, as chromium (VI) equivalent | | 0.013 | | |
| p-Dichlorobenzene (106-46-7) | | | | 16.8 |
| di (2-ethylhexyl)phthalate (117-81-7) | | 0.63 | | |
| Ethylene dichloride (107-06-2) | 260 | | | |
| n-Hexane | | 23 | | |

| TPER Limitations | | | | |
|---|---|---|---|---|
| **Pollutant (CAS Number)** | **Carcinogens (lb/yr)** | **Chronic Toxicants (lb/day)** | **Acute systemic toxicants (lb/hr)** | **Acute irritants (lb/hr)** |
| (110-54-3) | | | | |
| Mercury, vapor (7439-97-6) | | 0.013 | | |
| Methylene chloride (75-09-2) | 1600 | | 0.39 | |
| Methyl ethyl ketone (78-93-3) | | 78.0 | | 22.4 |
| Nickel metal (7440-02-0) | | 0.13 | | |
| Pentachlorophenol (87-86-5) | | 0.063 | 0.0064 | |
| Perchloroethylene (127-18-4) | 13000 | | | |
| Polychlorinated biphenyls (1336-36-3) | 5.6 | | | |
| Styrene (100-42-5) | | | 2.7 | |
| Tetrachlorodibenzo-p-dioxin (1746-01-6) | 0.00020 | | | |
| Toluene (108-88-3) | | 98 | | 14.4 |
| Trichloroethylene (79-01-6) | 4,000 | | | |
| Vinyl Chloride (75-01-4) | 26 | | | |
| Xylene (1330-20-7) | | 57 | | 16.4 |

**6. 15A NCAC 02D .0535 EXCESS EMISSIONS REPORTING AND MALFUNCTION**

As required by 15A NCAC 2D .0535, the Permittee of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, shall:

a. Notify the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:
   i. the name and location of the facility,
   ii. the nature and cause of the malfunction or breakdown,
   iii. the time when the malfunction or breakdown is first observed,
   iv. the expected duration, and
   v. an estimated rate of emissions.

b. Notify the Director or his designee immediately when the corrective measures have been accomplished.

This reporting requirement does not allow the operation of the facility in excess of Environmental Management Commission Regulations.

**7. 15A NCAC 02D .0540: PARTICULATES FROM FUGITIVE DUST EMISSION SOURCES**

As required by 15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 02D .0540(e) and (f).

"Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

**State-enforceable only**

**8. 15A NCAC 02D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

**9. 15A NCAC 02Q .0207: ANNUAL EMISSIONS REPORTING**

The Permittee shall report by **June 30** of each year the actual emissions of each air pollutant listed in 15A NCAC 02Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by the responsible official of the facility.

**10. 15A NCAC 02Q. 0304: APPLICATIONS**

The Permittee, at least 90 days prior to the expiration date of this permit, shall request permit renewal by letter in accordance with 15A NCAC 02Q .0304(d) and (f). Pursuant to 15A NCAC 02Q .0203(i), no permit application fee is required for renewal of an existing air permit. The renewal request should be submitted to the Regional Supervisor, DAQ.

## 2.3 - Schedule of Compliance

### A. Special Order by Consent (SOC 2020-004)

Section 2.2 A.l.b of Air Permit No. 10386R04 establishes Best Available Control Technology ("BACT") emission limits in accordance with 15A NCAC 02D .0530 for numerous emission sources at the facility and specifies that these BACT emission limits shall not be exceeded. As required by Section 2.2 A.1.d of Air Permit No. 10386R04, the Permittee conducted initial source testing during the week of December 16-20, 2019 on the dryer **(ID No. ES-DRYER)**, the green hammermills **(ID Nos. ES-GHM-1, ES-GHM-2, and ES-GHM-3)**, the dried wood handling operations **(ID No. ES-DWH)**, two (2) dry hammermills **(ID Nos. ES-HM-3 and ES-HM-4)**, and one (1) pellet press and pellet cooler **(ID No. ES-CLR-5)** to demonstrate compliance with the applicable BACT emission limits. On January 30, 2020, the DAQ Fayetteville Regional Office ("FRO") received the source test report for the December 2019 testing.

DAQ issued a review memorandum dated March 11, 2020 approving the source tests and stating that the source test results demonstrated compliance with the applicable BACT emission limits, with the exception of PM emissions and PM10 emissions from the pellet presses and coolers and PM2.5 emissions from the dry hammermills. DAQ had previously granted an extension to the Permittee to delay the initial source testing for PM2.5 emissions from the dry hammermills until the BACT limit for this source and pollutant could be reevaluated. On May 5, 2020, DAQ issued a Notice of Violation (NOV) to the Permittee for exceeding the BACT emission limits for PM and PM10 from the pellet presses and coolers during the December 2019 source testing.

The Permittee and the NC Division of Air Quality have entered into a Special Order by Consent, SOC 2020-004, with an effective date of December 16, 2020, to address noncompliance with 15A NCAC 02D .0530. The SOC provides a schedule of compliance allowing the Permittee to reduce potential emissions to below PSD applicability thresholds (achieve synthetic minor status for PSD), at which point BACT emission limits in Section 2.2 A.1.c above are no longer applicable.

The SOC 2020-004 will expire upon DAQ approval of the results of emissions testing required by Paragraph II.B of the SOC, or by December 31, 2022, whichever comes first.

The schedule of compliance for the Permittee, as provided in SOC 2020-004, is as follows:

1. The Permittee shall use best commercial efforts to install new emission controls and implement new emission control strategies to achieve synthetic minor status for PSD within nine (9) months, and in no event to exceed twelve (12) months, of issuance of Air Permit No. 10386R05 by DAQ authorizing the implementation of new emission controls and control strategies for the pellet presses/coolers and the dry hammermills.

2. The Permittee shall perform emissions testing to quantify PM and $PM_{10}$ emissions rates from the pellet presses and coolers and $PM_{2.5}$ emission rates from the dry hammermills after the new control devices and control strategies are installed and operational at the facility in accordance with Section 2.2 A.2.e of Air Permit No. 10386R05, authorizing implementation of the new emission controls and control strategies and a DAQ-approved protocol.

# SECTION 3 - GENERAL CONDITIONS

1. In accordance with G.S. 143-215.108(c)(1), TWO COPIES OF ALL DOCUMENTS, REPORTS, TEST DATA, MONITORING DATA, NOTIFICATIONS, REQUESTS FOR RENEWAL, AND ANY OTHER INFORMATION REQUIRED BY THIS PERMIT shall be submitted to:

   Heather Carter
   Regional Air Quality Supervisor
   North Carolina Division of Air Quality
   Fayetteville Regional Office
   Systel Building, 225 Green Street, Suite 714
   Fayetteville, NC 28301
   (910) 433-3300

   For identification purposes, each submittal should include the facility name as listed on the permit, the facility identification number, and the permit number.

2. RECORDS RETENTION REQUIREMENT - In accordance with 15A NCAC 02D .0605, any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. These records must be kept on site for a minimum of 2 years, unless another time period is otherwise specified.

3. ANNUAL FEE PAYMENT - Pursuant to 15A NCAC 02Q .0203(a), the Permittee shall pay the annual permit fee within 30 days of being billed by the DAQ. Failure to pay the fee in a timely manner will cause the DAQ to initiate action to revoke the permit.

4. EQUIPMENT RELOCATION - In accordance with 15A NCAC 02Q .0301, a new air permit shall be obtained by the Permittee prior to establishing, building, erecting, using, or operating the emission sources or air cleaning equipment at a site or location not specified in this permit.

5. REPORTING REQUIREMENT - In accordance with 15A NCAC 02Q .0309, any of the following that would result in previously unpermitted, new, or increased emissions must be reported to the Regional Supervisor, DAQ:
   a. changes in the information submitted in the application regarding facility emissions;
   b. changes that modify equipment or processes of existing permitted facilities; or
   c. changes in the quantity or quality of materials processed.

   If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.

6. In accordance with 15A NCAC 02Q .0309, this permit is subject to revocation or modification by the DAQ upon a determination that information contained in the application or presented in the support thereof is incorrect, conditions under which this permit was granted have changed, or violations of conditions contained in this permit have occurred. In accordance with G.S. 143-215.108(c)(1), the facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air cleaning device(s) and appurtenances.

7. In accordance with G.S. 143-215.108(c)(1), this permit is nontransferable by the Permittee. Future owners and operators must obtain a new air permit from the DAQ.

8. In accordance with G.S. 143-215.108(c)(1), this issuance of this permit in no way absolves the Permittee of liability for any potential civil penalties which may be assessed for violations of State law which have occurred prior to the effective date of this permit.

9. In accordance with G.S. 143-215.108(c)(1), this permit does not relieve the Permittee of the responsibility of complying with all applicable requirements of any Federal, State, or Local water quality or land quality control authority.

10. In accordance with 15A NCAC 02D .0605, reports on the operation and maintenance of the facility shall be submitted by the Permittee to the Regional Supervisor, DAQ at such intervals and in such form and detail as may be required by the DAQ. Information required in such reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and preventive maintenance schedules.

11. A violation of any term or condition of this permit shall subject the Permittee to enforcement pursuant to G.S. 143-215.114A, 143-215.114B, and 143-215.114C, including assessment of civil and/or criminal penalties.

12. Pursuant to North Carolina General Statute 143-215.3(a)(2), no person shall refuse entry or access to any authorized representative of the DAQ who requests entry or access for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

13. In accordance with G.S. 143-215.108(c)(1), this permit does not relieve the Permittee of the responsibility of complying with any applicable Federal, State, or Local requirements governing the handling, disposal, or incineration of hazardous, solid, or medical wastes, including the Resource Conservation and Recovery Act (RCRA) administered by the Division of Waste Management.

14. PERMIT RETENTION REQUIREMENT - In accordance with 15A NCAC 02Q .0110, the Permittee shall retain a current copy of the air permit at the site. The Permittee must make available to personnel of the DAQ, upon request, the current copy of the air permit for the site.

15. CLEAN AIR ACT SECTION 112(r) REQUIREMENTS - Pursuant to 15A NCAC 02D .2100 "Risk Management Program," if the Permittee is required to develop and register a risk management plan pursuant to Section 112(r) of the Federal Clean Air Act, then the Permittee is required to register this plan with the USEPA in accordance with 40 CFR Part 68.

16. PREVENTION OF ACCIDENTAL RELEASES - GENERAL DUTY - Pursuant to Title I Part A Section 112(r)(1) of the Clean Air Act "Hazardous Air Pollutants - Prevention of Accidental Releases - Purpose and General Duty," although a risk management plan may not be required, if the Permittee produces, processes, handles, or stores any amount of a listed hazardous substance, the Permittee has a general duty to take such steps as are necessary to prevent the accidental release of such substance and to minimize the consequences of any release. **This condition is federally-enforceable only.**

17. GENERAL EMISSIONS TESTING AND REPORTING REQUIREMENTS - If emissions testing is required by this permit, or the DAQ, or if the Permittee submits emissions testing to the DAQ in support of a permit application or to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 02D .2600 and follow all DAQ procedures including protocol approval, regional notification, report submittal, and test results approval.

Permit issued this the 9th day of June, 2021.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

Booker T. Pullen (for)

Mark J. Cuilla, EIT, CPM, Chief, Permitting Section
Division of Air Quality, NCDEQ
By Authority of the Environmental Management Commission