

for further emission control. Per Georgia EPD's guidance for wood pellet manufacturing facilities, a 95% DRE is applied for VOC and HAP emissions routed to an RCO.

3.3 Dryer System

The dryer system consists of the dryer operation and combustion emissions from the RTO for the dryer. Emissions from the dryer occur as a result of the material drying and combustion of biomass to provide heat to the dryer. The dryer vendor has provided emission guarantees for CO, NO_x, SO₂, VOC, PM, and total HAP after control by the RTO. Potential emissions for other pollutants from the dryer are calculated using uncontrolled emission factors from the Georgia EPD guidance for wood pellet manufacturing facilities for a rotary dryer (direct wood-fired processing green softwood at a Wood Pellet Manufacturing facility). For other individual HAP of acrolein, phenol, and propionaldehyde, uncontrolled emissions factors for wood drying from AP-42 Section 10.6.2, *Particleboard Manufacturing*, Table 10.6.2-3, for a Rotary dryer, green, direct wood-fired, softwood (06/02) are used. A removal efficiency of 70% is applied for HCl as a WESP unit is used for PM control. For the remaining organic HAP emission factors, a 95% control efficiency is applied to account for the RTO units.

Potential emissions from natural gas combustion in the RTO are calculated using AP-42 Section 1.4, *Natural Gas Combustion*, Tables 1.4-1 and 1.4-3 emission factors. Emissions of GHG from natural gas combustion in the form of CO₂e were calculated by multiplying each GHG pollutant by its respective global warming potential pursuant to 40 CFR Part 98.

3.4 Dry Chips Storage

Dry chip storage operations are non-fugitive sources of filterable PM/PM₁₀/PM_{2.5}, VOC, and organic HAP emissions. Emissions are quantified for the dry chips storage process as a whole using the annual throughput of dried chips at the Adel facility, and not at each individual bin or silo. Emission rates of these processing operations are estimated based on the drop point equation in AP-42, Section 13.2.4, *Aggregate Handling and Storage Piles* (September 2006). Dust from the drop and transfer operations that are not confined in an enclosure and are not equipped with a dust control system (i.e., baghouse) are estimated based on maximum throughput rates, and the methodology outlined in AP 42 Section 13.2.4, Equation 1:

$$PM \text{ Emissions } \left(\frac{lb}{ton} \right) = k \times 0.0032 \times \left(\frac{U}{5} \right)^{1.3} \div \left(\frac{M}{2} \right)^{1.4}$$

Where:

- k = particle size multiplier, obtained from AP-42 Section 13.2.4.4
- M = material moisture content, based on facility design basis
- U = mean wind speed, mph, based on site measurements

As these sources are not combustion sources, condensable PM is negligible. Therefore, filterable PM/PM₁₀/PM_{2.5} equals total PM/PM₁₀/PM_{2.5}.

Dry chip storage results in emissions of VOC and organic HAP. The VOC emission rate is based on information submitted as part of the Enviva Pellets Sampson (NC) permit application, pursuant to the mean emission factor from the National Council for Air and Stream Improvement (NCASI) Wood Products Database (February 2013) for dry wood handling operations at an oriented strand board (OSB) mill. The NCASI emission factor was converted from units of pounds per thousand square feet (lb/MSF) to lb/ton using the typical density and moisture content of an OSB panel, pursuant to the Enviva application. The Enviva application included an emission rate for methanol from dry wood handling operations at an OSB