

SAWMILL AIR QUALITY STANDARD PERMIT SUMMARY

I. EXECUTIVE SUMMARY

The Texas Commission on Environmental Quality (TCEQ or commission) adopts a new air quality standard permit for sawmills. This new standard permit will replace the current permit by rule (PBR), Title 30 Texas Administrative Code (30 TAC) §106.223, Saw Mills. The new standard permit is an available authorization mechanism for sawmills that are existing, constructed, or modified after the effective date.

II. EXPLANATION AND BACKGROUND OF AIR QUALITY STANDARD PERMIT

This standard permit provides an expedited preconstruction authorization process that may be used for any sawmill complying with the standard permit requirements and that is not prohibited by some other state or federal permitting statute or regulation. The sawmill PBR, 30 TAC §106.223, has not proven to be a widely useful authorization, primarily because of the omission of any lumber drying provisions.

In order to ensure there are no adverse off-site health effects resulting from sawmill emissions, the commission performed air quality modeling to determine an appropriate setback distance and operating restrictions of sawmill equipment and operations. There is a large amount of sawdust generated from mill operations, but sawdust does not generally present a major air pollution control problem. Sawdust particles are relatively large and not respirable. Because of their large size, sawdust particles also tend to settle out of the air quickly and only affect a relatively small area. The principal factor affecting the length of time a sawdust particle remains in the air is the height at which it is generated. In determining a setback distance of sawmill activities from the site property line, the commission considered the operation of saws and other equipment used in processing logs. The loading of sawdust and other scrap wood into a container or vehicle for removal from the site most affected the modeling results. The scrap loading point was either a conveyer system or a front-end loader that picked up the sawdust and deposited it into a truck. In either case, the scrap loading operation was the sawmill activity that was highest above the ground and determined the setback distance. After all operations were considered, the scrap loading point was the operation that required a varying setback based on the processed lumber production of the mill. Hardwood production determined the required property line setback for the scrap loading point because hardwood particles are generally smaller and remain suspended in the air longer than softwood. A general setback of 150 feet and operational restrictions are required of all operations, including the scrap loading point, to reduce the potential for nuisance dust emissions.

Based on information received from studies of sawmills in Oregon, North Carolina, and Texas, the commission determined that a reasonable but conservative estimate of hardwood sawdust that remains suspended in the air long enough for transport across a site property line is five percent of the total dust suspended in the air as a result of scrap loading activities. Based on this, the commission compiled Figure 1, which is used to determine the setback required for hardwood lumber production.

The commission also considered other sources of emissions from sawmills. This standard permit will authorize lumber drying in kilns that are directly heated or indirectly heated by heat exchange from boilers. The commission modeled expected emissions from these devices and has determined that the emissions will not have significant off-site effects if they meet the conditions of 30 TAC §106.183, Boilers, Heaters, and Other Combustion Devices. Additionally, the commission modeled for emission effects if boilers and kilns

otherwise met the requirements of 30 TAC §106.183 and were fired by clean, untreated wood waste and adjusted the operating hours of these heaters accordingly. This standard permit authorizes the use of scrap wood as an additional fuel provided best available control technology is applied.

The commission's research into the mills eligible for this standard permit indicates that they generally obtain the power for their equipment from the electric power grid. Due to their relative isolation, some mills may have primary or back-up generators as power sources. This standard permit authorizes the use of internal combustion engines for electric power generation, provided they are authorized under the Air Quality Standard Permit for Electric Generating Units or 30 TAC §116.111, General Application. An operator who cannot connect a sawmill to the electric power grid can also authorize the engines under 30 TAC §106.512, Stationary Engines and Turbines. The use of any supplemental authorization for power generation cannot require federal New Source Review.

III. OVERVIEW OF AIR QUALITY STANDARD PERMIT

This standard permit authorizes sawmills with lumber drying under authority of the Texas Clean Air Act (TCAA), Texas Health and Safety Code (THSC), §382.05195, Standard Permit, and 30 TAC Chapter 116, Subchapter F, Standard Permits. The commission currently authorizes sawmills under the conditions of 30 TAC §106.223 or under 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification. The commission intends to repeal 30 TAC §106.223. Upon issuance of this standard permit, 30 TAC §106.223 will no longer be available for new authorizations. Existing sawmills authorized by 30 TAC §106.223 and meeting its requirements will remain authorized unless the sawmill has been modified after the original authorization and all facilities are authorized.

IV. PERMIT CONDITION ANALYSIS AND JUSTIFICATION

The opening paragraph of the standard permit is corrected for a capitalization error and to add the phrase “of this standard permit.”

Section (1) establishes the applicability of the standard permit and contains general requirements.

Subsection (A) establishes the processed lumber production limit of 25 million board-feet per any consecutive 12-month period for mills authorized under this standard permit. Air quality modeling used in the drafting of this permit indicates no adverse effects to human health. Emissions associated with production rates in excess of this figure would require a case-by-case analysis to ensure protection of human health. In response to public comment the commission has added a list of the pollutants authorized including particulate matter, volatile organic compounds, nitrogen oxides, sulfur dioxide, and other products of combustion.

Subsection (B) defines sawmills as facilities that process logs into lumber. Operations associated with sawmills can include debarking, sawing, planing, drying, trimming, production of wood chips, and loading of lumber and wood residue. In response to public comment, the commission added the production of wood chips to the authorized operations. Additionally, the production of wood chips should be incidental to another approved process, or a dedicated wood chipping machine should be vented to a control device. This permit does not authorize the manufacture of other wood products or the chemical treatment of lumber.

Subsection (C) defines drying as the removal of moisture from raw lumber in dry kilns through direct or indirect firing heating using natural gas, liquefied petroleum gas (LPG), electricity, infrared radiation, or clean, untreated wood residue, and naturally by air.

Subsection (D) exempts sawmills from the requirements of 30 TAC §116.610(a)(1), Applicability, §116.611(a) and (b), Registration to Use a Standard Permit, and §116.614, Standard Permit Fees. These sections contain registration and fee requirements that may be applicable to facilities authorized under standard permit. These facilities do not have a history of significant contributions of air contaminants that affect general air quality. The commission is required to ensure that its authorization methods are protective of human health, which is the basis of the conditions of this standard permit. The commission has determined that registration for sawmills is unnecessary and adherence to the conditions and work practices of this standard permit are sufficient to ensure protection of human health and the environment. The commission will require records be retained on site to determine compliance with the standard permit and will require the sawmill owner or operator to supply the name and location of the facility to the commission, the appropriate regional office, and local air pollution control agency. In response to public comment, the commission changed the proposal to retain the requirement for sawmill operators to comply with 30 TAC §116.611(c). If a site's potential to emit is at or above a major source threshold for the Federal Operating Permits Program, a certification must be submitted to the commission to avoid the requirement to obtain a federal operating permit. The commission expects most sawmills authorized by this standard permit will not be subject to the requirements of the Federal Operating Permits Program.

Owners or operators of sawmills will be required to indicate whether there is a drying kiln on site. Such an indication will serve as acknowledgement from the owner or operator that there is a relevant maximum achievable control technology standard that applies to emissions from lumber drying kilns under Title 40 Code of Federal Regulations (40 CFR) Part 63, Subpart DDDD, National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. This will meet the notification requirements for non-major hazardous air pollutants (HAPs) emitters under 40 CFR §63.9, Notification Requirements. The pollutants of concern are methanol and formaldehyde. Staff studies at TCEQ and at the Oregon Department of Environmental Quality demonstrate that emissions of these compounds will be well below any major source threshold for HAPs at the lumber production rates authorized by this standard permit. There are no control requirements or further notification required of the sawmill owner or operator.

Subsection (E) includes emissions from maintenance, startup, and shutdown (MSS) under the authorization of the standard permit. These emissions are generally indistinguishable from production emissions or they are insignificant. The exception is emissions from lumber drying equipment. The commission changed this section from the proposal to use the more appropriate term “authorized” when referring to MSS emissions. During MSS of drying equipment, emissions may be greater than those during sustained operation of the dryer. These emissions were also analyzed and included in the evaluation, and are also authorized by this standard permit in subsection (2)(J). The commission corrected a typographical error and added a comma.

Facilities that are ineligible to use the standard permit are addressed in subsection (F) and include those that cannot meet setback requirements, major sources or major modifications that require federal New Source Review permitting, or those that are located at a site that constitutes a major source as defined by 30 TAC Chapter 116. In response to public comment, the commission modified this section to clarify the language prohibiting the authorization of major sources and added further clarification that the standard permit cannot be used to avoid federal New Source Review. The standard permit cannot be used to authorize sawmills manufacturing wood products, except for wood chips, or chemically treating lumber. The manufacture of wood products and chemical treatment involve the use of substances that were not analyzed for this standard permit. Authorization for these activities can be obtained by PBR, another standard permit, or case-by-case permitting. The commission added language in paragraph (F)(iii) to indicate that the manufacture of wood chips is authorized.

The commission has deleted the proposed subsection (G) concerning electric power generation because it is redundant to the requirements of subsection (2)(L).

Section (2) contains the specific operational requirements of the standard permit, which represent best available control technology (BACT) as established through the case-by-case permits issued by the commission for similar facilities. These requirements are structured so that compliance is detectable either through visual inspection or examination of records and that any violation of these requirements can be documented.

Subsection (A) restricts most operations of the mill to one hour before sunrise to one hour after sunset except for certain techniques of lumber drying. Drying naturally by air, infrared radiation or by a heating device powered by natural gas, LPG, or electricity may be conducted 24 hours per day. Operation of a wood-fired heater will be restricted to one hour before sunrise to one hour after sunset. Operations are restricted to daylight hours because meteorological conditions during those hours provide the best air contaminant dispersal. The restriction on wood-fired drying is needed because of the poor dispersion of smoke and fine particulate matter during the evening hours. The commission modified this section from the proposal to use the word “shall” in place of “will,” and added air drying as an approved 24-hour per day operation.

Subsection (B) prohibits open burning from any source.

Subsection (C) requires sawmill operators to take measures to prevent and extinguish accidental fires. These measures include compliance with all local and international fire codes and restricting sawdust and other scrap piles to 25 feet in height by 150 feet in width and 250 feet in length as recommended in the international fire code. Larger piles, or piles that are not regularly removed, are prone to accumulated heat from oxidation and potential combustion. Also, the application of water for dust control should be limited so that water does not accumulate within the pile, also promoting oxidation and decomposition. A buffer space of at least 15 feet between piles will allow access by firefighting equipment. Vehicles working with the scrap pile will be equipped with fire extinguishers, and the operator will maintain a written plan for fire control on site. The commission will consider adherence to reasonable precautions in the case of a fire in the decision to issue a citation for open burning. The commission changed this section from the proposal to replace “will” with “shall” and to correct a typographical error.

Subsection (D) requires sawmill owners or operators to locate production equipment and stockpiles a minimum of 150 feet from the sawmill property line to reduce the potential for nuisance. The standard permit has a separate setback for the scrap loading point based on hardwood production because sawdust from hardwood tends to be finer and remain suspended in the air longer than dust from softwood. The scrap loading point is where sawdust and other mill scrap is loaded into bins or trucks for removal from the site and can be done by a conveyer system or front-end loaders. The additional setback is based on the elevation of the scrap loading point and the tendency for particles to remain airborne when originating from a higher elevation. Figure 1 displays the required setback in graph format. As with production equipment, the minimum setback for the scrap loading point is 150 feet. The commission changed this section from proposal to add the phrase “of this standard permit.”

Subsection (E) requires all in-plant roads and vehicle work areas to be watered, treated with effective dust suppressants, covered, or paved and cleaned as necessary to achieve maximum, reasonable control of dust emissions.

Subsection (F) requires all sawmill residues (sawdust, shavings, or bark) to be regularly removed, controlled

as necessary, or stored to minimize fugitive particulate emissions.

Subsection (G) requires the outside movement and disposal of collected sawmill residues be accomplished in a manner that will minimize the possibility of the material from becoming airborne. If a pneumatic collection system is used, the air may exhaust to a fabric or cartridge filter or a system with no visible emissions or to a cyclone. Disposal by means of burning is prohibited unless it is conducted in wood-fired drying equipment meeting the control requirements of subsection (2)(J). The commission corrected a capitalization error in the word “subsection.”

Subsection (H) allows the use of a front-end loader or similar equipment to transport and load on-site sawmill residues provided steps are taken to minimize fugitive dust emissions as necessary.

Subsection (I) prohibits visible emissions at or beyond the property line of the sawmill in excess of 30 seconds in any six-minute period, as determined by U. S. Environmental Protection Agency (EPA), Test Method 22.

Subsection (J) contains opacity restrictions for boilers and other heating devices used to dry wood and lumber. The opacity limit is 20 percent averaged over a six-minute period as determined by EPA Test Method 9. The standard permit allows exceptions to this opacity limit during periods of MSS and during periods of firebox cleaning, soot blowing, or equipment removal as described in 30 TAC §111.111(a)(1)(E), Requirements for Specified Sources. Heaters using natural gas or LPG should have little trouble meeting this opacity limit. Wood-fired heaters will require more attention due to their greater tendency to smoke.

Subsection (K) contains the best available control technology requirements for boilers and other heating devices. The permit specifies that the only emissions shall be from the combustion of fuel, volatile organic compounds from the wood, and fugitive components associated with the heating device. Maximum heat input authorized under this standard permit is 40 million British thermal units (Btu) per hour. Gas-fired ovens or boilers with a heat input of more than ten million Btu per hour are limited to nitrogen oxides emissions of 0.1 pounds per million Btu heat input. This represents best available control technology for this application that should easily be met by ovens or boilers in good condition. The commission changed this section from the proposal to use the acronym “LPG” in place of “liquid petroleum gas,” to replace a hyphen with the word “through,” and to spell out “percent.”

In addition to sweet natural gas, fuel gas, and LPG, the standard permit allows burning of scrap wood with a maximum particulate concentration of 0.1 grains per dry standard cubic foot. Wood-fired boilers and heaters with a heat input of 30 million Btu or more are also subject to federal New Source Performance Standards, 40 CFR Part 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Distillate fuel oil may be used as a back-up fuel, limited to 720 hours per year with a maximum sulfur content of 0.3 percent by weight. No blending with waste oil or solvents is allowed.

Subsection (L) restricts the operation of standby internal combustion engines and generators for electric power generation to 10 percent of the normal annual operating schedule of all mill equipment. Engines and generators used in excess of this amount must be authorized by the Air Quality Standard Permit for Electric Generating Units, or by case-by-case new source review permit under 30 TAC §116.111. If the sawmill cannot be connected to an electric power grid, the operator can also authorize the engines using 30 TAC §106.512. In response to public comment, the commission emphasized the condition that any use of on-site power generation must be included in the potential to emit calculations for any federal permitting program applicability and must not require prevention of significant deterioration (PSD) or nonattainment review.

Subsection (M) requires records of monthly and annual throughput of hardwood lumber converted to board-feet. In response to public comment, the commission added fuel use records to ensure compliance with the conditions of the standard permit. All records are based on a rolling 24-month period, shall be maintained at the site, and shall be made available upon request of personnel from the TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with annual throughput limitations. The commission also changed this section to delete the term “local” to eliminate any confusion over the EPA authority to request records.

V. PROTECTIVENESS REVIEW

In order to ensure there are no adverse health effects, the commission performed air quality modeling to determine an appropriate setback distance from the site property line and operating restrictions for sawmill equipment. Particulate matter is the principal criteria pollutant emitted at a sawmill site and the respirable portion, particulate matter 10 microns or less in diameter (PM₁₀), was evaluated for health effects. The PM₁₀ National Ambient Air Quality Standards (NAAQS) for the 24-hour average and the annual average was evaluated as part of the protectiveness review. In addition, the TCEQ effects screening levels (ESLs) for the one-hour average and the annual average for pollutants listed in Table 1 of this technical summary were evaluated. For sawmill operations with kilns or drying boxes, the products of combustion of wood or bark and natural gas were modeled and compared to the applicable primary and secondary NAAQS for PM₁₀, sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), and the state standard for SO₂. Modeling is typically conservative. Coupled with conservative emission rate estimates, the modeling tends to predict higher concentrations of contaminants as compared to actual monitored concentrations.

The primary NAAQS defines a level of air quality that the EPA determines is necessary, with an adequate margin of safety, to protect the public health. The secondary NAAQS defines a level of air quality that the EPA determines necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Effects screening levels are pollutant-specific guideline concentrations used in TCEQ effects evaluations of pollutant concentrations in ambient air. These guidelines are developed by the Toxicology Section of the TCEQ Chief Engineer’s Office and are based on a pollutant’s potential to cause adverse health effects or odor nuisances, or damage vegetation. This conservative evaluation is used to protect the general public, including sensitive groups, such as children, the elderly, or people with existing respiratory conditions. Adverse health effects are not expected to occur if the air concentration of a pollutant is below its ESL. If a concentration of a pollutant is above the ESL, it is not necessarily indicative that an adverse effect will occur, but rather that further evaluation is warranted.

A sawmill is required to have a minimum setback distance of 150 feet for all drying equipment and all production equipment, including debarkers, saws, planers, conveyors, stockpiles, dryers, and boilers. This setback is to reduce the chances for nuisance. A sawmill must also meet the setback distances for the mill scrap loading point as shown in Figure 1, based on the annual hardwood production rate of the mill to be protective of the NAAQS and state standards.

The commission used the following modeling assumptions, selections, and techniques: (1) sawmill production equipment emissions, scrap loading source emissions, the other equipment emissions at the site, and the direct heating method for wood drying were modeled as an area source; (2) the indirect heating scenario assumed the heater source would be vented through a stack; (3) all sources were co-located at the center of the property in the modeling. By doing so, there is no bias based on source configuration or wind directions. This

technique will also provide conservative results (higher predicted concentrations) since the cumulative impact of all sources is maximized; (4) all facilities at either a small sawmill or a large sawmill were modeled assuming daytime-only (one hour prior to sunrise to one hour after sunset) operations except for a wood dryer facility using fuel other than wood or bark which may operate 24 hours per day; (5) predicted concentrations were compared to the NAAQS for PM₁₀, SO₂, NO₂, CO, the state property line standard for SO₂, and the TCEQ ESLs for the pollutants listed in Table 1; (6) the ESL for hardwood dust is the limiting factor for a hardwood production operation. The NAAQS for PM₁₀ is the limiting factor for a softwood production operation. The following scenarios were modeled for an annual production rate of 10 million board-feet of wood: Scenario 1: Wood/Bark Fired Boiler/Heater (Indirect Heating of Kiln), Scenario 2: Wood/Bark Fired Boiler/Heater (Direct Heating of Kiln), Scenario 3: Natural Gas/LPG Fired Boiler/Heater (Indirect Heating of Kiln), and Scenario 4: Natural Gas/LPG Fired Boiler/Heater (Direct Heating of Kiln). The model results for 10 million board-feet were scaled to other production rates to determine the maximum production rate that is protective of the public's health. **HARDWOOD OPERATION:** The production rate is limited by the hardwood dusts ESL, and the set-back distance requirements from the load-out operation as shown in Figure 1 of the standard permit. A hardwood production rate of 12 million board-feet per year or less requires no set-back distance. **SOFTWOOD OPERATION:** The production rate is limited by the NAAQS for PM₁₀. A softwood production rate of 25 million board-feet or less requires no set-back distance. **COMBINED OPERATION:** The production is limited to a combined effective production limit of 25 million board-feet per year to be protective of the NAAQS for PM₁₀; (7) air dispersion modeling was performed using the Industrial Source Complex Short Term (ISCST3) model (version 02035); (8) rural dispersion coefficients and flat terrain were used for the modeling, as sawmill facilities are primarily operated in rural areas and flat terrain is appropriate for modeling low-level fugitive emissions using ISCST3; (9) the model results for 10 million board-feet were scaled to other production rates to determine the maximum production rate that is protective of the public's health, and the emission rates modeled for 10 million board-feet are presented in Table 1 and are based on maximum hourly emissions. These rates were adjusted in the model to represent 24-hour average emissions. A fugitive adjustment factor of 0.6 was applied to the emissions rates of area sources in the modeling analysis to account for plume meander at low wind speeds and high atmospheric stability; (10) there were no downwash structures present for the analyses for Scenarios 2 and 4 since these scenarios only had area sources and downwash is not applicable for area sources. For Scenarios 1 and 3, the boiler/heater stack was downwashed using a representative structure for a sawmill operation. The Building Profile Input Program (version 04112) was used when downwash was applicable; (11) the analysis used surface meteorology from Austin and upper air data from Victoria for the years 1983, 1984, 1986, 1987, and 1988. Since this analysis is primarily for short-term concentrations, this five-year set would include worst-case short-term meteorological conditions that could occur anywhere in the state. The wind directions were used at 10 degree intervals, so the wind direction would be coincident with the receptor radials. This would provide predictions along the plume centerline which is a conservative result; and (12) a polar receptor grid extending from the center of the property to 1800 feet with 50 foot spacing along each 10 degree radial was used in the modeling demonstration. This was done to determine the plume centerline concentration.

Table 1. On-Property Source Emission Rates				
Scenario	ID	Averaging Time	Pollutant	Emission Rate (lb/hr)
1	AREA1	1-hr	Methyl ethyl ketone	0.02
			Phenol	0.03
			Acetone	0.04
			Methanol	0.09
			Limonene	0.15
1	AREA1	1-hr	3-Carene	0.08
			Softwood dust	0.018
			Hardwood dust	0.018
			Acetaldehyde	0.09
			Alpha-pinene	1.83
			Beta-pinene	0.54
1	LOAD-OUT	1-hr	Softwood dust	0.108
			Hardwood dust	0.108
			PM ₁₀	0.108
1	BOILER	1-hr	Methyl ethyl ketone	0.01
			Phenol	0.01
			Acetone	0.01
			Acetaldehyde	0.02
			PM	8.75
			PM ₁₀	7.84
			NO _x	3.34
			CO	9.09
			SO ₂	0.38
2	LOAD-OUT	1-hr	Softwood dust	0.108
			Hardwood dust	0.108
			PM ₁₀	0.108

Table 1. On-Property Source Emission Rates				
Scenario	ID	Averaging Time	Pollutant	Emission Rate (lb/hr)
2	AREA1	1-hr	Methyl ethyl ketone	0.02
			Phenol	0.03
			Acetone	0.04
2	AREA1	1-hr	Methanol	0.09
			Limonene	0.15
			3-Carene	0.08
			Softwood dust	0.018
			Hardwood dust	0.018
			Acetaldehyde	0.09
			Alpha-pinene	1.83
			Beta-pinene	0.54
3	LOAD-OUT	1-hr	Softwood dust	0.108
			Hardwood dust	0.108
			PM ₁₀	0.108
3	BOILER	1-hr	PM	0.11
			PM ₁₀	0.11
			PM _{2.5}	0.11
			NO _x	3.07
			CO	1.22
			SO ₂	0.01
4	AREA1	1-hr	Methyl ethyl ketone	0.02
			Phenol	0.03
			Acetone	0.04
			Methanol	0.09
			Limonene	0.15
			3-Carene	0.08
			Softwood dust	0.018
			Hardwood dust	0.018

Table 1. On-Property Source Emission Rates				
Scenario	ID	Averaging Time	Pollutant	Emission Rate (lb/hr)
4	AREA1	1-hr	Acetaldehyde	0.09
			Alpha-pinene	1.83
			Beta-pinene	0.54
			PM	0.06
			PM ₁₀	0.06
			PM _{2.5}	0.06
			NO _x	3.07
			CO	1.22
			SO ₂	0.01
4	LOAD-OUT	1-hr	Softwood dust	0.108
			Hardwood dust	0.108
			PM ₁₀	0.108

VI. PUBLIC NOTICE AND COMMENT PERIOD

As required by 30 TAC §116.603, Public Participation in Issuance of Standard Permits, the TCEQ published notice of the proposed standard permit in the *Texas Register* and newspapers of the largest general circulation in the following metropolitan areas: Austin, Dallas, Houston, and Lufkin. The notice was published on September 14, 2007, and the public comment period ended on October 19, 2007.

VII. PUBLIC MEETING

The TCEQ held public meetings on the proposed standard permit for sawmills on September 10, 2007, and October 17, 2007, in Austin. A representative from the Texas Forestry Association (TFA) attended and discussed the proposal with the commission's staff but did not submit oral testimony.

VIII. ANALYSIS OF COMMENTS

During the public comment period that closed on October 19, 2007, the commission received comments from the EPA and the TFA.

The EPA noted that the standard permit allows on-site electric power generation for those facilities that cannot connect to the electric power grid and that the permit conditions in paragraph (1)(F)(ii) make it clear that modified sawmills cannot have emission increases in excess of a PSD or nonattainment threshold. It must be clear that a source cannot use the standard permit to avoid major new source review. The EPA commented that all equipment associated with on-site power generation, as regulated under subsection (2)(L), should be considered in potential to emit (PTE) determination.

The commission has changed the standard permit in response to this comment to emphasize that the standard permit cannot be used to authorize sources requiring PSD or nonattainment review or to avoid these reviews. The restriction in paragraph (1)(F)(ii) that prevents the use of the standard permit for the authorization of major sources applies to existing, modified, and new facilities.

The production limit in the standard permit of 25 million board-feet of lumber, restriction on operating hours, and control requirements establish limits on PTE and ensure that no federal New Source Review is triggered. The commission also considered on-site power generation when setting the production limits and operating hours of this standard permit. The commission's research indicates that the large majority of sawmills get their electric power from the grid and on-site power generation is the exception. Should a facility authorized under this standard permit require on-site power generation in excess of 10 percent of their operating hours, the power generation will require additional authorization through another standard permit or case-by-case minor New Source Review permit. The commission agrees with the EPA's comment on potential to emit and has changed subsection (2)(L) to clarify that the use of on-site power generation must be included when determining federal program applicability.

The EPA commented that the commission must demonstrate that the initial issuance, and any subsequent revisions, of the standard permit will not interfere with attainment and maintenance of any ambient air quality standard and that the standard permit fails to identify pollutants authorized under the permit. The demonstration should include modeling assumptions and the number of affected facilities and their geographic concentration. The EPA commented that the commission should demonstrate how the production limit of 25 million board-feet of lumber ensures that an authorized facility will remain a minor source and that the permit should contain annual emission limits. The EPA also commented that the permit should contain hourly limits to prevent short-term emission peaks.

The commission has changed the standard permit in response to this comment and has included a list of those pollutants authorized by this standard permit. The commission used the following modeling assumptions: (1) sawmill production equipment emissions, scrap loading source emissions, other equipment emissions at the site, and the direct heating method for wood drying were modeled as an area source and were evaluated for simultaneous emissions; (2) the indirect heating scenario assumed the heater source would be vented through a stack; and (3) all facilities were modeled assuming daytime (one hour prior to sunrise to one hour after sunset) only operations except for a wood dryer facility using fuel other than wood or bark, which may operate 24 hours per day. The predicted effects were compared to the NAAQS for PM₁₀, SO₂, NO₂, CO, the state property line standard for SO₂, and the TCEQ ESLs for hardwood dust, softwood dust, and alpha-pinene up to the allowed production limit of 25 million board-feet per year. The results showed no interference with any NAAQS and demonstrated that adhering to the conditions of the standard permit protected human health without the need for annual or hourly limits. Additional modeling details can be found in the PROTECTIVENESS REVIEW section of this technical summary.

The analysis performed by the commission demonstrates that all sawmills authorized by this standard permit will not have emissions requiring federal New Source Review when considering all emission points involved in production, scrap loading, drying, and electric power generation if the production limit is observed. The standard permit contains recordkeeping requirements to verify production rates.

To remain consistent with commission procedures and state law, any subsequent revisions of the standard permit will go through the same evaluations to ensure protection of the NAAQS and local health effects. Sawmills operate primarily in the wooded areas of East Texas, and are spread from the northeastern to southeastern regions. The modeling performed was conservative as it can apply to any geographical location in Texas. The commission estimates this standard permit will apply to 90 – 110 sites.

The EPA commented that the commission should discuss all factors considered in the modeling exercise that resulted in property line setback distances based on sawmill production rates. The EPA commented that the standard permit eliminates the setback requirements of the PBR applicable to sawmills. The EPA requested an explanation of how the new internal setback requirements are protective of human health.

The commission has not changed the standard permit in response to this comment. The commission's modeling demonstrated that there was no setback required for production equipment to protect human health except for the scrap loading point. The scrap loading point is generally at a higher elevation, using either a conveyer system or a front-end loader raising sawdust into the bed of a dump truck. With either method, the increased elevation causes sawdust particles to remain airborne longer with greater concentrations, and subsequently, additional setback distance may be required of the scrap loading point beyond the 150-foot minimum. To further reduce the chance for nuisance, the standard permit contains a minimum setback of sawmill production equipment and stockpiles from the site property line of 150 feet as an additional restriction.

The EPA commented that the standard permit does not explain the commission's enforcement authority for violations of the permit. The EPA recommended that the commission include a provision explaining that any noncompliance with the permit is a violation of the state implementation plan (SIP) and state law and is grounds for permit suspension or revocation. The EPA also commented that the permit should contain reporting requirements for violations.

The commission has not changed the standard permit in response to this comment. The commission's authority for the use of permits for similar sources and the prohibition against unauthorized emissions exists in THSC, §382.05195, Standard Permit, and §382.085, Unauthorized Emissions Prohibited, respectively. Under THSC, §382.0513, Permit Conditions, the commission may establish and enforce permit conditions. It is not necessary that this authority be repeated in individual permits. Sawmill operators authorized under this standard permit are subject to all the rules of the commission and must report noncompliance with the standard permit under 30 TAC Chapter 101, Subchapter F, Emissions Events and Scheduled Maintenance, Startup, and Shutdown Activities.

The EPA requested that the commission identify the provisions of the standard permit that will meet 40 CFR §51.160(a) and the SIP approved sections of 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification, to allow for an exemption from registration. The EPA commented that the proposed standard permit appears to eliminate the need for preconstruction approval.

The commission has not changed the standard permit in response to this comment. The standard permit contains limits on lumber production, restrictions on operating hours, and control requirements for production equipment and dryers. The commission modeled sawmill operations based on these restrictions and determined that these enforceable provisions of the standard permit protected the NAAQS and human health. This standard permit will serve as preconstruction authorization for new construction and modification. The commission will ensure that sawmill operators meet the conditions

of this standard permit through its inspections.

The EPA commented that the standard permit appears to exempt sources from complying with emission standards in 30 TAC §116.610(2). The EPA also commented that the exemptions seem to apply to the prevention of circumvention and compliance with federal standards for HAPs and Maximum Achievable Control Technology (MACT). The EPA requested that the permit be revised to include all of the provisions of Chapter 116, Subchapter F or include an explanation of how the proposed condition meets SIP requirements concerning interference with ambient air quality standard attainment.

The commission has not changed the standard permit in response to this comment. The exemption does not apply to 30 TAC §116.610(a)(2) through (6), which are the paragraphs concerning the applicability of federal standards. In subsection (1)(D) of the standard permit, the commission does exempt sawmill operators from the provisions of 30 TAC §116.610(a)(1). The emission limits of this paragraph are not needed due to the operational limits contained in this standard permit. The standard permit contains a production limit that meets the NAAQS and is protective of human health.

The EPA commented that the standard permit eliminates the need for a certification that the potential to emit for an authorized facility is below major source thresholds to avoid applicability of the Federal Operating Permits Program. The EPA commented that the standard permit should contain additional language ensuring that the site's potential to emit does not exceed major source thresholds.

The commission has changed subsection (1)(D) of the standard permit in response to this comment. The commission has exempted sawmill operators from the registration requirements in 30 TAC §116.611(a) and (b), but will retain the requirement in 30 TAC §116.611(c) for the certification of emission rates below Federal Operating Permits Program thresholds, if needed.

The commission's evaluation demonstrated that particulate was the pollutant emitted at the greatest rate, and at the maximum authorized production rate of 25 million board-feet per year, a sawmill would emit approximately 40 tons per year. This is below major source thresholds. Other pollutants, including SO₂, NO₂, CO, and VOC, were also evaluated and were below major source thresholds as well.

The EPA commented that the opacity limit in subsection (2)(J) should specify a representative monitoring frequency. The EPA requested confirmation that the 20 percent limit will accurately reflect compliance with standards.

The commission has not changed the standard permit in response to this comment. Because of the low level of emissions expected of these sites and the predominance of natural gas-fired dryers, the commission determined that it would not require periodic checks of opacity limits from the sawmill operators who would otherwise be required to keep a certified observer on the site. The commission will rely on its periodic inspections to enforce opacity limits and control nuisances. The inspectors will use EPA Test Method 9 to determine compliance with the opacity standard.

The EPA commented that the permit should contain recordkeeping requirements for fuel types and particulate emissions for boilers and drying ovens and that all records required by the standard permit be retained for five years.

The commission agrees with the EPA and has added additional recordkeeping requirements for fuel in

response to this comment. Paragraph (2)(K)(iii) establishes design requirements to address particulate concentration. The commission has not changed the two-year retention period for records. This period is consistent with minor New Source Review recordkeeping requirements and is sufficient for the commission to effectively enforce its standard permits.

The EPA commented that the standard permit should provide for the commission to deny its use and require a case-by-case determination as needed.

The commission has not changed the standard permit in response to this comment. Limits on the use of this standard permit are stated in section (1). Sawmill operators who cannot meet these restrictions are ineligible for the permit and must seek case-by-case permitting. If an inspection reveals violations of the standard permit conditions, the commission will pursue enforcement, which could include voidance of the standard permit claim and the requirement to apply for a case-by-case permit.

The EPA commented that the commission should review federal rules concerning regulation of particulate matter less than 2.5 microns in diameter (PM_{2.5}) to ensure that the standard permit is consistent with those rules.

Consistent with EPA policy, the commission is using PM₁₀ standards as a surrogate for PM_{2.5}. The commission has reviewed the policy document *Implementation of New source Review Requirements in PM_{2.5} Nonattainment Areas* dated April 5, 2005, and is satisfied the standard permit meets federal requirements.

The TFA requested flexibility in the operating hours in subsection (2)(A) to allow larger sawmills to operate during hours of less expensive, off-peak electricity demand.

The commission has not changed the permit in response to this comment. The off-peak electricity demand hours are late-night and early-morning hours. The off-peak operating hours would increase the possibility of nuisance. The commission could not demonstrate the protectiveness of the standard permit during these hours and consequently established operating hours. Sawmill operators unable to comply with this requirement may seek case-by-case permitting, which allows consideration of different operating hours for individual sawmills.

The TFA requested an explanation of the sharp increase in the required setback for the scrap loading point beginning at production rates greater than 12 million board-feet. The increased setback greatly increases the required property for mills at or above this production level.

The commission has not changed the permit in response to this comment. The setback distances are based on the predicted concentrations associated with the sawmill emissions. The maximum predicted concentration occurs at a distance of 375 feet for emissions above 12 million board-feet per year. As the production rates increase, the concentrations remain above the ESL for hardwood particulate until there is sufficient dispersion throughout the greater volume resulting from increased distance from the emission point.

The TFA suggested that the commission add the production of wood chips to the list of authorized activities under the standard permit. The TFA also suggested the deletion of the words “or the manufacture of wood products” from subsection (1)(B) because wood chips are sold as a wood product.

The commission agrees that the production of wood chips can be authorized under the existing restrictions of this standard permit and has changed the language in subsection (1)(B) to allow the production of wood chips but prohibit the manufacture of other wood products.

The TFA requested that the 150-foot setback in subsection (2)(D) apply only to sawdust piles and not piles of chips, bark, and scrap lumber, which are not easily dispersed by airflow.

The commission has not changed the standard permit in response to this comment. The setback distance is based on field observations and is intended to provide a buffer for particulate matter originating from piles of raw or scrap material and to reduce the chances for nuisances.

The TFA suggested that the PBR applicable to sawmills be retained as an alternate authorization method for some mills.

The commission has demonstrated that the standard permit is protective of human health and authorizes a greater range of sawmill activity. The commission may not be able to make this demonstration for all applications of the PBR, and the PBR did not address all sawmill operations. Based on these factors, it is no longer appropriate to keep it as an authorization method. Sawmills that were authorized under the PBR may retain that authorization provided they have not been modified and all operations have been authorized.

IX. STATUTORY AUTHORITY

This standard permit is adopted under THSC, TCAA, §382.011, General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.051, Permitting Authority of Commission; Rules, which authorizes the commission to issue permits, including standard permits for similar facilities; THSC, §382.0513, Permit Conditions, which authorizes the commission to establish and enforce permit conditions consistent with the TCAA; and THSC, §382.05195, Standard Permit, which authorizes the commission to issue standard permits according to the procedures set out in that section.

AIR QUALITY STANDARD PERMIT FOR SAWMILLS

Effective February 6, 2008

This air quality standard permit authorizes the air emissions from the operation of sawmills that meet the conditions listed in sections (1) and (2) of this standard permit.

This standard permit does not relieve the owner or operator from complying with any other applicable provision of the Texas Health and Safety Code, Texas Water Code, or rules of the Texas Commission on Environmental Quality (TCEQ or commission), or any additional state or federal regulations.

(1) General Requirements

- (A) This standard permit authorizes sawmills up to a maximum combined processed lumber production of hardwood and softwood lumber of 25 million board-feet per 12-calendar month period, and authorizes emissions of particulate matter, volatile organic compounds, nitrogen oxides, carbon monoxide, sulfur dioxide, and other products of combustion.
- (B) A sawmill is defined as a facility that processes logs into lumber. Operations authorized under this standard permit are debarking, sawing, planing, drying, trimming, production of wood chips, and loading of lumber and wood residue. This permit does not authorize the chemical or pressure treatment of lumber or the manufacture of wood products except as noted in this subsection. The production of wood chips is authorized provided it is a result of authorized operations in this subsection or from a dedicated chipping operation provided the sawmill operator meets the requirements of subsection (2)(G) of this standard permit.
- (C) For the purposes of this standard permit, drying means removal of moisture from raw lumber in dry kilns through direct or indirect firing heating using natural gas, liquefied petroleum gas (LPG), clean, untreated wood residue, electricity, or infrared radiation; and naturally by air.
- (D) Sawmills are exempt from the requirements of Title 30 Texas Administrative Code (30 TAC), §§116.610(a)(1), Applicability, 116.611(a) and (b), Registration to Use a Standard Permit, and 116.614, Standard Permit Fees. Sawmill owners or operators that meet the requirements of this standard permit and owners or operators of new sawmills must file their name and address or location of the site with the TCEQ central office, the appropriate TCEQ regional office and any local air pollution control agency having jurisdiction and indicate whether there is a drying kiln on site.
- (E) Emissions from maintenance, startup, and shutdown (MSS) are authorized.
- (F) A sawmill does not qualify for authorization under this standard permit if any of the following conditions apply:
 - (i) it cannot meet the setback requirements;
 - (ii) it requires prevention of significant deterioration or nonattainment review for a new

major source or major modification, is located at a site that constitutes a major source as defined by 30 TAC §116.12, Nonattainment and Prevention of Significant Deterioration Review Definitions, or is used to avoid major New Source Review; or

- (iii) the sawmill also manufactures wood products or chemically treats lumber except as allowed by subsection (1)(B) of this standard permit.

(2) Operating Requirements

- (A) Operating hours shall be from one hour before sunrise to one hour after sunset. Drying operations naturally by air or using natural gas, LPG, electricity, and infrared radiation may be conducted 24 hours per day.
- (B) Open burning from any source is prohibited.
- (C) Sawmill operators shall take the following steps to prevent and to extinguish accidental fires or fires resulting from spontaneous combustion:
 - (i) comply with all applicable local and/or international fire codes;
 - (ii) restrict scrap piles to a size of 25 feet in height, 150 feet in width, and 250 feet in length with at least a 15-foot separation between piles to allow the introduction of firefighting equipment;
 - (iii) equip vehicles working with material in a scrap pile with a fire extinguisher; and
 - (iv) maintain a written plan for fire control on site.
- (D) Sawmill operators must locate production equipment, including debarkers, saws, planers, conveyors, stockpiles, dryers, and boilers, a minimum of 150 feet from the sawmill property line and meet the setback distance requirements based on hardwood production indicated in Figure 1 of this standard permit. The required setback distance is from the scrap loading point to the sawmill property line. The scrap loading point is the location of the operation where scrap lumber, bark, sawdust, and other wood waste is loaded into a receptacle or stored for removal from the site. The scrap loading point can include a conveyor system depositing waste into a receptacle or vehicle.
- (E) All in-plant roads, truck loading and unloading areas, parking areas, and other traffic areas shall be sprinkled with water, be treated with effective dust suppressants, covered, or paved with a cohesive, hard surface and cleaned as necessary to maintain compliance with all TCEQ rules and regulations.
- (F) All sawmill residues (sawdust, shavings, or bark) shall be watered, removed, or stored as necessary to minimize fugitive particulate emissions.
- (G) All sawmill residues shall be conveyed by belts or drag chains to a collection area for disposal. If a pneumatic collection system is used, the air may either exhaust to a cyclone or

to a fabric or cartridge filter with air cleaning and a filtering velocity no greater than 7.0 feet per minute with an air-to-cloth ratio of 7.0, or automatic sequenced cleaning and filtering velocity no greater than 5.0 feet per minute with an air-to-cloth ratio of 5.0. Disposal by means of burning is prohibited unless it is conducted in wood-fired drying equipment meeting the control requirements of subsection (J) of this section.

- (H) The use of a front end loader or similar heavy equipment to transport and load on-site sawmill residues is an acceptable practice provided the work area is sprinkled with water, treated with effective dust suppressants, covered, or paved with a cohesive, hard surface and cleaned as necessary to maintain compliance with all TCEQ rules and regulations.
- (I) Visible emissions from the site, as defined in 30 TAC Chapter 122, Federal Operating Permits Program, or equipment used at the site shall not leave the property for a period exceeding 30 seconds in any six-minute period as determined using United States Environmental Protection Agency (EPA) Test Method 22.
- (J) Opacity of emissions from boilers and other heating devices used for drying shall not exceed 20 percent averaged over a six-minute period, except for those periods described in 30 TAC §111.111(a)(1)(E), Requirements for Specified Sources, or during MSS. The opacity shall be determined by EPA Test Method 9.
- (K) Boilers and drying ovens will meet the following conditions:
 - (i) The only emissions shall be products of combustion of the fuel and volatile organic compounds from wood. This standard permit also authorizes any fugitive components associated with a boiler or drying oven authorized by this standard permit.
 - (ii) The maximum heat input shall be 40 million British thermal units (Btu) per hour with the fuel being:
 - (a) sweet natural gas;
 - (b) LPG;
 - (c) fuel gas, including landfill gas, containing no more than 0.1 grain of total sulfur compounds, calculated as sulfur, per dry standard cubic foot;
 - (d) combinations of the fuels in (a) through (c).
 - (iii) Sawmill wood residue, including bark, chips, scrap lumber, shavings, and sawdust, can be used as fuel. Particulate matter emissions from any boiler or drying oven shall not exceed 0.1 grains per dry standard cubic foot, corrected to 12 percent carbon dioxide or 50 percent excess air. Boilers with heat input of 30 million Btu per hour or more shall also be subject to Title 40 Code of Federal Regulations, Part 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

- (iv) Distillate fuel oil shall be fired as a backup fuel only. Firing shall be limited to 720 hours per year. The fuel oil shall contain less than 0.3 percent sulfur by weight and shall not be blended with waste oils or solvents.
 - (v) All gas-fired drying ovens and boilers with a heat input greater than ten million Btu per hour (higher heating value) shall be designed such that the emissions of nitrogen oxides shall not exceed 0.1 pounds per million Btu heat input.
- (L) Internal combustion engines and electric generator sets used only for portable, emergency or standby services are authorized, provided that the maximum annual operating hours shall not exceed 10 percent of the normal annual operating schedule of the primary equipment. Engines and generators used in excess of this amount must be authorized by the Air Quality Standard Permit for Electric Generating Units or 30 TAC §116.111, General Application. In cases where the sawmill cannot be connected to an electric power grid, the operator can also authorize the engines under 30 TAC §106.512, Stationary Engines and Turbines. Any use of internal combustion engines for power generation must be included in the potential to emit calculations for any federal permitting program applicability and must not require prevention of significant deterioration or nonattainment review.
- (M) Records of annual throughput of hardwood and softwood lumber, converted to board-feet, and records of fuel use, including any hours firing fuel oil or fuel oil purchases, shall be maintained at the site for a rolling 24-month period. These records shall be made available upon request of personnel from the TCEQ or any other air pollution control agency having jurisdiction.

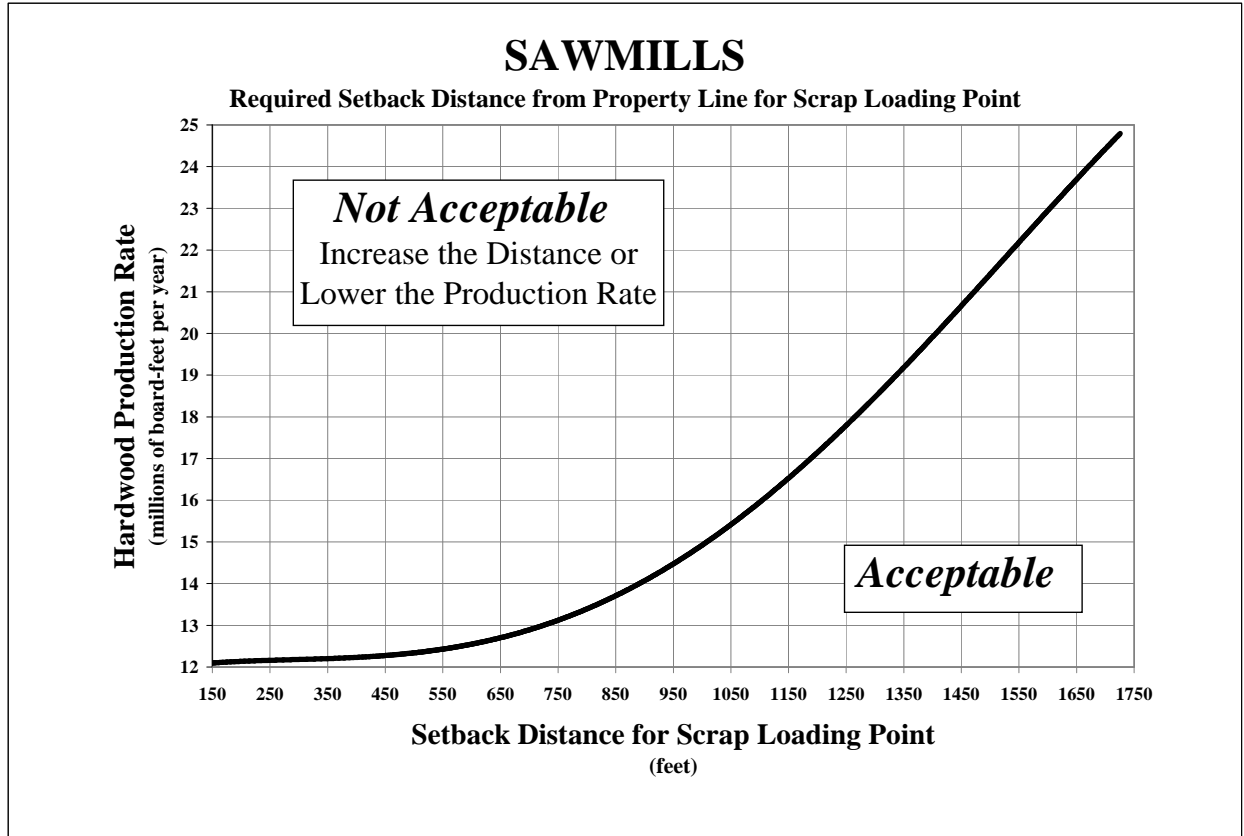


Figure 1.