TCEQ Interoffice Memorandum

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Mechanical/Coatings SectionThru:Chad Dumas, Team Leader
Air Dispersion Modeling Team (ADMT)From:Jeffrey Stevenson & Kevin Tang
ADMT

Date: March 10, 2025

Subject: Air Quality Analysis Audit - Steely Lumber Co, Inc. (RN103015566)

1. Project Identification Information

Permit Application Number: 25850 New Source Review (NSR) Project Number: 382313 ADMT Project Number: 9659 County: Walker

Air Quality Analysis: Submitted by Air & Waste Engineering Inc., February 2025, on behalf of Steely Lumber Co, Inc.

2. Report Summary

The air quality analysis is acceptable for all pollutants. The results are summarized below

A. Minor NSR Analysis

Pollutant	Averaging Time	GLCmax (µg/m ³)	De Minimis (µg/m³)
PM ₁₀	24-hr	1.46	5
PM _{2.5}	24-hr	1.197	1.2
PM _{2.5}	Annual	<0.01	0.13

Table 1. Modeling Results for Minor NSR De Minimis

The GLCmax for annual PM_{2.5} is based on the highest five-year average of the maximum predicted concentrations determined for each receptor. The GLCmax for all other pollutants and averaging times represent the maximum predicted concentrations over five years of meteorological data.

The $PM_{2.5}$ De Minimis levels are EPA recommended De Minimis levels. The use of EPA recommended De Minimis levels is sufficient to conclude that a proposed

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source will not cause or contribute to a violation of a PM_{2.5} National Ambient Air Quality Standard based on the analyses documented in EPA guidance and policy memorandums¹.

There are no precursor emissions (NO_X and SO₂) associated with the project. Therefore, secondary formation of PM_{2.5} was not evaluated.

3. Model Used and Modeling Techniques

AERMOD (Version 23132) was used in a refined screening mode.

According to the applicant, point source IDs KILN1_1 to KILN1_10, KILN2_1 and KILN2_2, and KILN3_1 and KILN3_2 are emissions released through vent stacks. For EPN KILN #1, emissions are evenly split among the 10 vent stacks. For EPNs KILN #2 and KILN #3, emissions are evenly split among two vent stacks, each.

The applicant considered two scenarios in the modeling demonstration for the controlled (model ID SAWMILL) and uncontrolled (model ID SAWAREA) emissions from the sawmill operations. Group ID SAWPNT excludes emissions from SAWAREA, and group ID SAWVOL excludes emissions from SAWMILL. Each model ID included all emissions from sawmill operations. The scenario with the worst-case impacts was reported for all pollutants and averaging periods.

A. Land Use

Medium roughness and elevated terrain were used in the modeling analysis. These selections are consistent with the AERSURFACE analysis, topographic map, digital elevation models, and aerial photography. The selection of medium roughness is reasonable.

B. Meteorological Data

Surface Station and ID: Huntsville, TX (Station #: 53903) Upper Air Station and ID: Lake Charles, LA (Station #: 3937) Meteorological Dataset: 2017-2021 Profile Base Elevation: 111.6 meters

C. Receptor Grid

The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations.

D. Building Wake Effects (Downwash)

¹ www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Input data to Building Profile Input Program Prime (Version 04274) are consistent with the aerial photography, plot plan, and modeling report.

4. Modeling Emissions Inventory

There was a discrepancy between the reported and modeled elevation for model IDs SAWMILL and SAWAREA; however, ADMT conducted test modeling and determined that the discrepancies would not affect overall modeling conclusions. Additionally, there was a discrepancy with the reported and modeled emission rates for model ID BAGHOUSE; however, higher emission rates were modeled.

Except as noted above, the modeled emission point, area, and volume source parameters and rates were consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

To account for operational limitations, the modeled emission rates for model IDs BAGHOUSE, CHIPLOAD, CYCLONE, PLR_FUG, SAWAREA, SAWMILL, and TRANSFER were multiplied by 0 during the hours of 5:30 pm to 7 am.

Maximum allowable hourly emission rates were used for the short-term averaging time analyses, and annual average emission rates were used for the annual averaging time analyses.