

**Statement of Basis
Rex Lumber, Troy, LLC
Troy, Pike County, Alabama
Facility/Permit No. 210-S006**

This proposed Title V Major Source Operating Permit (MSOP) renewal has been developed in accordance with the provisions of ADEM Admin. Code chap. 335-3-16. The above-named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

An Air Permit for original construction of the site was issued on May 30, 2018. The initial application for this renewal was received March 12, 2025, October 27, 2025, October 30, 2025, and the application was deemed complete on February 25, 2026. The initial MSOP was issued on September 23, 2020, and this is the 1st renewal. The current MSOP, which became effective on September 23, 2020, expired on September 22, 2025.

The following modifications have been made to the current MSOP since its issuance:

June 1, 2022: significant modification to incorporate CDK-3 (Air Permit X002) into the Title V MSOP.

The facility is located in Pike County, which is currently listed as attainment/unclassifiable with all National Ambient Air Quality Standards (NAAQS). There are no current or ongoing enforcement actions against Rex Lumber necessitating additional requirements to achieve compliance with the proposed permit conditions. The enforcement and compliance history for the facility can be found at <https://echo.epa.gov> (Search using Facility ID AL000000011090S006).

Permit History

| Issuance No./ Permit No. | Issuance Date | Limit(s) Established | Limit(s) Basis/ Reasoning |
|--------------------------|---------------|--|---------------------------|
| Air Permit X002 | May 30, 2018 | Three (3) 120,000 MBF/yr Continuous Lumber Dry Kilns (CDK-1,CDK-2 & CDK-3), each with a 40 MMBtu/hr Wood-Fired Burner: PM 0.14 lb/MBF and 1.92 lb/hr PM ₁₀ 0.103 lb/MBF and 1.41 lb/hr PM _{2.5} 0.099 lb/MBF and 1.36 lb/hr VOC 4.41 lb/MBF and 60.46 lb/hr NO _x 0.276 lb/MBF and 3.78 lb/hr CO _{2e} 234 lb/MMBtu and 9,360 lb/hr Lumber moisture content ≥ 12% | PSD BACT |
| Air Permit X003 | June 5, 2019 | Planer Mill and Shavings Storage Bin w/Cyclofilter: PM 0.248 lb/hr and 4x10 ⁻⁴ gr/dscf PM ₁₀ 0.246 lb/hr and 4x10 ⁻⁴ gr/dscf PM _{2.5} 0.246 lb/hr and 4x10 ⁻⁴ gr/dscf VE: ≤ 10% Opacity | PSD BACT |

| | | | |
|-----------------|------------------|--|---------------|
| Air Permit X005 | February 5, 2025 | Planer Mill Hog Pneumatic System w/Cyclone (PMC-2): PM 4.0 lb/hr | PSD SMS Limit |
| Air Permit X006 | February 5, 2025 | Three (3) Sawdust Storage Silos w/ Target Boxes (SDS-1, SDS-2 and SDS-3): PM 1.7 lb/hr | PSD SMS Limit |

Facility Operations

Rex Lumber (RL) produces southern pine dimensional lumber. The significant sources of air pollutants at this facility are a debarker, sawmill, sawdust storage system with three storage silos with target boxes, three 120 MMBF/yr continuous dry kilns with 40 MMBtu/hr burners, planer mill and shavings bin with cyclofilter, planer hog with cyclone to truck loadout, and a 247 BHP emergency fire pump engine. Other insignificant sources of emissions are log bucking, green woodchippers, bark conveyors, diesel fuel storage tanks and ash hauling and disposal.

Incoming logs are stored on-site prior to processing. Logs are debarked and then cut to length. Scrap wood generated in the sawmill is sent to a chipper/screen and then to a chip storage bin. The cut logs are conveyed to three different decks where they are scanned and processed by chipping heads and band saws. The side boards are then edged to proper size, and the center portion of the log is cut into boards. The sawdust generated by the sawmill is transferred to one of three silos with target boxes via a pneumatic line. The transfer system is equipped with a switch which allows the sawdust to be sent to only one silo at any given time. Next, the lumber is sent to the Trimmer/Sorter/Stacker line where the boards are cut to length, sorted, and stacked.

After being sorted and stacked, the lumber is dried in the continuous dry kilns. As the green lumber enters the continuous kilns, it is slowly heated until it reaches the center of the kilns, where most of the drying takes place. The kilns are direct-fired by wood-fired burners. All air emissions exhaust through the open doorways at each end of the kilns and through powered vent exhaust stacks located just inside and above the doorway openings.

After being dried, the lumber is transported to the planer mill. Packs of lumber are set on an infeed chain going to a tilt hoist at the planer mill. The tilt hoist unstacks the lumber onto a chain that feeds the planer mill. The lumber is cut to finished size in the planer. The lumber then travels to the planer mill's Trimmer/Sorter/Stacking line to be graded, trimmed, sorted, and stacked. Shavings and trimmings from the planer mill are pneumatically conveyed to a cyclofilter and storage bin.

In October of 2021, the facility submitted an off-permit change to add the ability to meter dry planer shavings into the existing pneumatic transfer system which discharges sawdust into one of the three fuel silos. The mixing of the dry planer shaving with the existing sawdust fuel allows the facility to maintain the fuel moisture content at the manufacturer's recommendation of less than 50%. To meter the planer shavings into the fuel feed system, a diverter was added at the planer mill baghouse to divert a portion of the planer mill shavings to a mechanical conveyor which feeds to the existing sawdust pneumatic transfer system.

In November of 2024, an air permit application was submitted to modify the pneumatic transfer systems for the planer mill and the green sawdust transfer. A separate pneumatic system and pneumatic transfer cyclone was installed to handle the planer hog residuals. After the change, the original pneumatic system only manages the planer shavings and trim sawdust. Air Permit X005 for the Planer Mill Hog Pneumatic System w/Cyclone (PMC-2) was issued on February 5, 2025. Additionally, Air Permit X006 was issued on the same day for the installation of target boxes that replaced the existing silo cyclones. This modification included replacement of the existing green sawdust pneumatic system.

Once the lumber has been planed it is forklifted to a warehouse to be shipped out. Waste products such as bark, green chips and sawdust, and dried chips are either shipped off site or used as fuel for the dry kilns. The facility also utilizes a 247 BHP diesel-fired fire pump engine to provide water in case of an emergency.

Proposed Changes

Changes from the existing Title V MSOP would include inclusion of the planer mill hog pneumatic system (X005), replacement of the existing sawdust pneumatic system, and replacement of the three sawdust storage silo cyclones with target boxes (X006).

Applicability: Federal Regulations

Title V

Based on the Title V permit application, this facility is a major source as the potential emissions of volatile organic compounds (794 TPY of VOC) exceed the 100 ton per year (TPY) major source threshold. It is also a major source of hazardous air pollutants (HAP) as the potential emissions of two individual HAPs are greater than 10 TPY (32.4 TPY of Methanol and 11.7 TPY of Formaldehyde) and the potential emissions for combined HAP exceed 25 TPY (56.3 TPY of total HAP). The facility’s potential emissions of CO_{2e} are 123,070 TPY.

PSD

The facility is located in Pike County, which is currently classified as an attainment area for all criteria pollutants. Rex Lumber is not one of the 28 Major Source categories listed in ADEM Admin. Code r. 335-3-14-.04(2)(a)(1); therefore, the major source threshold of concern is 250 TPY for criteria pollutants. This facility is considered a major stationary source under PSD regulations because the potential emissions of VOC (794 TPY) from the facility exceed 250 TPY, and the potential emissions of PM (72.43 TPY), PM₁₀ (30.85 TPY), PM_{2.5} (22.96 TPY), NO_x (50.1 TPY) and CO_{2e} (123,070 TPY) exceed the applicable significance levels.

The following BACT limitations are currently applicable at the facility.

| Emission Unit/ Pollutant | BACT Determination | BACT Emission Limit (Each Unit) | Equivalent Emissions |
|---------------------------------|---------------------------|--|-----------------------------|
| Continuous Kilns | | | |
| PM | Proper Design/Operation | 0.14 lb/MBF | 1.92 lb/hr |
| PM ₁₀ | Proper Design/Operation | 0.103 lb/MBF | 1.41 lb/hr |

| | | | |
|--------------------------------|----------------------------|--------------|----------------------------|
| PM _{2.5} | Proper Design/Operation | 0.099 lb/MBF | 1.36 lb/hr |
| NO _x | Low NO _x Burner | 0.276 lb/MBF | 3.78 lb/hr |
| VOC (WPP1) | Proper Design/Operation | 4.41 lb/MBF | 60.46 lb/hr |
| CO _{2e} | Proper Design/Operation | 234 lb/MMBtu | 9,360 lb/hr |
| Planer Mill | | | |
| PM | Cyclofilter | 0.248 lb/hr | 4x10 ⁻⁴ gr/dscf |
| PM ₁₀ | Cyclofilter | 0.246 lb/hr | 4x10 ⁻⁴ gr/dscf |
| PM _{2.5} | Cyclofilter | 0.246 lb/hr | 4x10 ⁻⁴ gr/dscf |
| Opacity | Cyclofilter | 10% Opacity | N/A |
| Debarker/Sawmill/Planer | | | |
| PM | Building Containment | N/A | N/A |

RL is also required to monitor and maintain the moisture content of the lumber being dried at \geq 12% (based on a 12-month rolling average) and document its compliance with the facility's preventative maintenance plan for the dry kilns.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The National Emission Standards for Hazardous Air Pollutants requires that any facility regulated under section 112 of the Clean Air Act whose potential emission of hazardous air pollutants (HAP) exceeds the major source threshold, unless the source is a specifically designated area source, must control these emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions under 40 CFR Part 63. Rex Lumber is a major source of HAP and an affected source under 40 CFR Part 63, Subpart DDDD, NESHAP: *Plywood and Composite Wood Products* (PWCP MACT), and 40 CFR Part 63, Subpart ZZZZ, NESHAP: *Stationary Reciprocating Internal Combustion Engines* (RICE MACT).

PCWP MACT

The PCWP MACT regulates HAP emissions from activities associated with the manufacture of plywood and other composite wood products, including stand-alone lumber kilns, in accordance with 40 CFR §63.2232. Processes that are not subject to the compliance options or work practice requirements specified in 40 CFR §63.2240, such as the lumber kilns, are specifically not required to comply with the compliance options, work practice requirements, performance testing, monitoring and recordkeeping or reporting requirements of the subpart, or any other requirements in 40 CFR 63 Subpart A, except the initial notification requirements in 40 CFR §63.9(b) in accordance with 40 CFR §63.2252. The PSD application for the construction of the kilns served as the initial notification of the affected sources under the PCWP MACT.

RICE MACT

The fire pump engine is an affected source under the RICE MACT. It is classified as a new source because the installation date was after June 12, 2006. According to 40 CFR §63.6590(c), a new or reconstructed stationary CI RICE located at a major source must meet the requirements of the RICE MACT by meeting the requirements of 40 CFR Part 60, Subpart III: *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. No further requirements apply to this engine under Subpart ZZZZ.

New Source Performance Standards (NSPS)

As stated above, the fire pump engine is subject to 40 CFR Part 60, Subpart III. Subpart III applies to owners/operators of stationary CI RICE that commence construction after July 11, 2005, and are manufactured after April 1, 2006 [40 CFR §60.4200(a)(2)(i)]. Since the ADEM Form 107 for the fire pump engine indicates it was manufactured in 2018, it would be subject to this NSPS. According to 40 CFR §60.4205(b), owners and operators of emergency engines with a displacement of less than 30 liters per cylinder must comply with the emission standards for new non-road CI engines in 40 CFR §60.4202 for all pollutants. 40 CFR §60.4207(b) requires RL to use fuel that has a sulfur content (≤ 15 ppm) and a Cetane index (≥ 40) or aromatic content ($\leq 35\%$ by volume), on a per gallon basis. The fire pump engine is equipped with a non-resettable hour meter as required by 40 CFR §60.4209(a). The NSPS also limits the operation of the fire pump engine to emergency situations and 100 hours per year for maintenance checks, readiness testing, and demand response as specified in 40 CFR §60.4211(f).

Emission Limitations

In accordance with 40 CFR §60.4202 to this subpart, the fire pump engine must be certified by the manufacturer to meet the emission standards for new non-road CI engines found in 40 CFR §89.112. The fire pump engine must meet a NO_x + NMHC emission standard of 4.0 g/kW-hr, a CO emission standard of 3.5 g/kW-hr, and a PM emission standard of 0.20 g/kW-hr. In addition, this fire pump engine must meet the smoke emission standards for new non-road CI engines found in 40 CFR §89.113. Exhaust opacity from the fire pump engine must not exceed 20% during the acceleration mode, 15% during the lugging mode, and 50% during the peaks in either the acceleration or lugging modes. To maintain their certification, RL must operate and maintain the fire pump engine in a manner that meets these emission standards over the entire life of the engine, as required by 40 CFR §60.4203.

Compliance Requirements

To demonstrate compliance with the emission limitations, RL purchased an engine certified to meet the emission standards. RL maintains records of the date, time, duration, and purpose of operation each time the emergency fire pump engine is operated, as required by 40 CFR §60.4214(b). To demonstrate compliance with the fuel limitations as required by 40 CFR §60.4207(b), RL maintains records of the sulfur content and either the Cetane index or aromatic content of the diesel fuel that is burned in the emergency fire pump engine. All records are maintained in a form suitable for inspection and retained for a period of two years from the date of generation, as required by 40 CFR §60.7(f).

Testing Requirements

There are no testing requirements for the emergency fire pump engine since it is certified by the manufacturer, as required by 40 CFR §60.4211(c).

Applicability: State Regulations

Particulate Standard

Fuel Burning Equipment

The continuous dry kilns are not subject to ADEM Admin. Code r. 335-3-4-.03(1), because they are direct fired, and therefore, not considered “fuel burning equipment”. The fire pump engine is not subject to this regulation because its function is to supply water in the event of a fire.

Process Industries – General

All units and processes, except for the fire pump engine, are subject to the State particulate matter emission standards for process industries as provided in ADEM Admin. Code r. 334-3-4-.04(1).

Visible Emissions

All units and processes are subject to the State visible emission standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once during any 60-minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average).

Sulfur Dioxide

The fire pump engine is subject to the State sulfur dioxide emission standard of 4.0 lb/MMBtu of heat input [ADEM Admin. Code r. 335-3-5-.01(1)(b)]. However, the potential emissions determined by AP-42 emission factors are used for applicability purposes under the Title V and PSD regulations. The dry kilns are not subject to the State sulfur dioxide emission standards as the units are direct fired.

Emission Testing and Monitoring

Dry Kilns

Testing

The US EPA recently documented the difficulty of stack testing kilns in their documentation of proposed PCWP MACT amendments. EPA stated within EPA PCWP MACT Proposed Rule Prepublication Copy for Federal Register Notice 5/5/23:

"For CDKs, direct measurement of total kiln exhaust flow is not technically feasible due to the significant volume of fugitive emissions from the kiln openings. In addition to being unable to measure total flow, many CDKs have no specific emission point (or conduit) in which to measure emissions concentration (*e.g.*, no outlet stack or hood, or in an indirect-fired kiln no kiln air return duct to a burner). This lack of a specific emission point for

measurement of total kiln air flow and concentration is also an economic limitation, because even if outlet vents suitable for testing were present for a portion of exhaust, all such vents would need to be tested to ensure uniformity of concentration or to establish vent-specific concentrations, which would greatly increase source testing costs (while total flow would continue to remain uncertain, limiting usefulness of the data for prescribing or enforcing an emission standard)."

Based upon these findings, testing would not be required for the dry kilns to demonstrate compliance with the BACT emission limits.

Periodic Monitoring

To ensure that the maximum capacities of the kilns are not exceeded, RL is required to calculate the kiln production on a monthly and 12-month rolling total basis. The facility is also required to measure and record the moisture content of the dried lumber to ensure the 12-month rolling average moisture content is $\geq 12\%$, and document that the facility is adhering to its maintenance plan for the kilns.

Pneumatic Systems

Testing

Testing would be required for the planer mill, planer hog, and sawdust pneumatic systems to determine compliance with the BACT and synthetic minor limits for PM, PM₁₀, and PM_{2.5}.

Periodic Monitoring

To ensure proper operation of the sawmill, planer mill, and planer hog, visual observations are required on a daily basis, with corrective actions to be initiated as soon as practicable but not longer than 24 hours if visible emissions are noted. Annual physical inspections of the control devices are also required. Since wood waste pneumatic systems are considered process equipment, CAM would not be required for the sawdust storage system, planer mill, or planer hog.

Recordkeeping and Reporting

Recordkeeping

RL is required to maintain records of its actions taken to comply with proper maintenance and operating practices. Records of daily visual observations of the cyclofilter, cyclone, and target boxes are also required, as well as records of average monthly and 12-month rolling lumber moisture content and production. These records are maintained onsite in a permanent form readily available for inspection.

Reporting

RL is required to submit Semiannual Monitoring Reports for the processes, which include a certification that all emission monitoring and proper maintenance and operating practices were accomplished as required during the reporting period, and if not, describe the date and reason any required action was not accomplished.

Coastal Consistency/Class 1

This facility is not located within the 10-foot contour range of Mobile and Baldwin Counties. It is also not located within 100 km of any Class 1 area.

Public Notice

The renewal of this Title V MSOP would require a 30-day public comment period and a 45-day EPA review period.

Recommendation

Based on the above analysis I recommend that Rex Lumber Company's Title V MSOP be renewed with the requirements noted above pending the resolution of any comments received during the 30-day public comment period and the EPA 45-day review.



Lester Meredith
Chemical Branch
Air Division

March 5, 2026
Date

VLM/vlm