# RATIONALE / FACT SHEET
# FOR MULTIMEDIA READY-MIX CONCRETE FACILITY GENERAL PERMIT

August 18, 2025

## INTRODUCTION

On December 8, 2020, the Mississippi Department of Environmental Quality (MDEQ), Office of Pollution Control (OPC), Environmental Permits Division (EPD) issued the Multimedia Ready-Mix Concrete General Permit. This permit expires November 30, 2025. MDEQ has drafted a new Multimedia Ready-Mix Concrete Facility General Permit to replace the expiring general permit. General permits, as required by state and federal regulation, are issued for a 5-year period. This permit covers discharges of process wastewater and industrial storm water and the construction and operation of air emissions equipment from ready-mix concrete facilities that fall under the Standard Industrial Classification (SIC) code(s) of 3271, 3272, and/or 3273. Typically, all state environmental approvals for facility construction and operation can be secured by receiving coverage under this single multi-media general permit, with exception of land-disturbing activities requiring coverage under the construction storm water general permit.

We believe this has been a highly successful general permit that has reduced the administrative burden on the ready-mix industry, as well as MDEQ. Therefore, MDEQ proposes to continue offering coverage under a multimedia general permit for this industry sector.

MDEQ has been authorized by the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) Program in the State of Mississippi, including the issuance of general permits for categories of discharges under the provisions of 40 CFR 122.28, as adopted by reference in the "Mississippi Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits, Underground Injection Control (UIC) Permits, State Permits, Water Quality Based Effluent Limitations and Water Quality Certification", (11 Miss. Admin. Code Pt. 6, Ch. 1.). Under this authority, MDEQ may issue a single general permit to a category of point sources located within the same geographic area whose discharges warrant similar pollution control measures. Specifically, MDEQ is authorized to issue a general NPDES permit if there are a number of point sources operating in a geographic area that:

1. involve the same or substantially similar types of operations;

2. discharge the same type of wastes;

3. require the same effluent limitations or operating conditions;

4. require the same or similar monitoring requirements; and

5. in the opinion of the Permit Board, are more appropriately controlled under a general permit than under individual permits.

The U.S. EPA has also authorized MDEQ to implement air regulations for the construction and operation of synthetic minor and minor sources of air pollution under the approved State Implementation Plan (SIP). Specifically, Rule 2.12 of 11 Miss. Admin. Code Pt. 2, Ch. 2 for "Permit Regulations for the Construction and/or Operation of Air Emissions Equipment" addresses the issuance of multi-media general permits by the Permit Board. This rule references the requirements for a permit to construct air emissions equipment and a State permit to operate such equipment as those regulations that a multi-media permit must address.

As in the case of individual permits, violation of any condition of a general permit constitutes a violation of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et seq., Mississippi Code of 1972) and subjects the coverage recipient to the penalties specified therein. Upon promulgation of the final general permit and complete request for recoverage, owners/operators qualified for recoverage are authorized to discharge wastewater and storm water and construct/operate air emissions equipment under this general permit.

Ready-mix concrete facilities which are granted a Certificate of Permit Coverage under this proposed multimedia general permit will have permission to:

- Construct/operate air emissions equipment as a true minor or synthetic minor source, complying with the emission limitations, monitoring requirements and other conditions set forth in the general permit.

- Discharge wastewater including central mixer washout, mixer truck washout, mixer truck washoff, chute rinse-off and equipment clean-up water in accordance with effluent limitations, monitoring requirements and other conditions set forth in the general permit.

- Discharge storm water associated with industrial activities in accordance with limitations, monitoring requirements and other conditions set forth in the general permit.

Changes to Permit MSG11 from the previous general permit are minimal and include an up-dating of "boiler plate" language found in the permit in order for the permit to be more consistent with other general permits issued by MDEQ. The proposed general permit contains also the following minor change:

- The Annual Comprehensive Site Inspection and SWPPP Evaluation Form shall be completed by January 28th for the previous calendar year.

## COVERED EMISSIONS AND DISCHARGES

This proposed general permit may cover all new and existing ready-mix concrete producing facilities in the State of Mississippi which fall under the SIC code(s) 3273, (SIC) 3272 and/or (SIC) 3271 and have the following emissions or discharges:

1. Air emissions associated with the construction and operation of ready-mix concrete facilities that are equipped with a baghouse (or other MDEQ approved devices) for control of air emissions from the cement silo and any cement supplement silo, if applicable.

2. Process wastewater

3. Storm water associated with industrial activity

4. Allowable non-storm water discharges

## POTENTIAL AIR EMISSION CALCULATIONS

EPA's AP-42 emission factors for Ready Mix Concrete facilities found in Chapter 11.12 (Concrete Batching) were updated in February and August 2011, and most recently in January 2012. Using the slightly revised emission factors, potential emissions of PM and $PM_{10}$ increased by approximately 10%. Therefore, a concrete plant would have to produce over 1,439,000 cubic yards of concrete per year ($yd^3$/yr) in order to exceed 250 tons per year of PM emissions (i.e., the Prevention of Significant Deterioration major source threshold) and produce over 1,943,000 $yd^3$/yr in order to exceed 100 tons per year of $PM_{10}$ emissions (i.e., the Title V major source threshold). (See Appendix A for supporting calculations.) A concrete plant with a maximum design capacity exceeding 164 cubic yards of concrete per hour ($yd^3$/hr), not including emissions from any ancillary equipment such as a rock crusher or fuel combustion equipment, could potentially exceed the PSD threshold for PM of 250 tons per year. To allow such plants to obtain coverage under the general permit, the permit limits annual production from plants with a design capacity exceeding 150 $yd^3$/hr to 1,000,000 $yd^3$/yr. This allows for a sufficient margin of compliance with both the PSD and Title V major source thresholds, while allowing for a rock crusher of up to 150 tons per hour to be operated on-site. Also, the Mississippi Concrete Industries Association (MCIA) reports that the larger concrete plants produce between 75,000 and 100,000 cubic yards of concrete per year, well below the proposed production limit. (See Appendix B for a complete listing of permitted facilities in Mississippi.) Therefore, a maximum annual limit of 1,000,000 $yd^3$/yr is not expected to impact or limit production at any current plant.

Since the general permit may cover both minor and moderate stationary sources for purposes of obtaining a permit to construct, as well as true minor and synthetic minor sources for purposes of obtaining a permit to operate, additional requirements have been added to the general permit to delineate when a 30-day public notice is required prior to issuing coverage to an individual plant. Public notice will be required for those plants with

a maximum design capacity exceeding 150 $yd^3$/hr to ensure the annual production limit of 1,000,000 $yd^3$/yr is federally enforceable.

The permit also allows for use of emergency stationary internal combustion engines, which include generators used to provide power to equipment during an electrical outage. Because the federal regulations consistently define an emergency stationary internal combustion engine and limit non-emergency operation to 100 hours per year, no additional requirements apart from those contained in the federal regulations are addressed in the general permit. Considering the 100 hour-per-year cap on non-emergency operation and federal requirements for fuel specifications, the potential emissions from emergency engines contribute very minimal amounts of particulate matter and other pollutants; therefore, no specific operating restrictions are included in the general permit.

For those facilities that may use a generator to power equipment on a more permanent basis (i.e., for at least 12 months), potential emissions were calculated for diesel-fired engines using the worst case emission factors found in Chapters 3.3 and 3.4 of EPA's AP-42 factors for Stationary Internal Combustion Sources. These emission factors are expected to represent higher emissions than those actually emitted from many engines in use, which are now manufactured to meet certain EPA emissions specifications. Using these emission factors and the heating value of diesel presented in AP-42, a maximum annual amount of diesel of 315,000 gallons was calculated, which would allow for up to 95 tons per year of nitrogen oxide ($NO_x$) emissions. $NO_x$ was the controlling pollutant of all the criteria pollutants emitted; therefore, limiting diesel consumption to 315,000 gallons per year also limits emissions of all other pollutants to levels well below the Title V threshold. Based on the size and manufactured date of the engine, the engine may also have additional emission limitations imposed by the federal regulations, i.e., 40 CFR Part 60, Subpart IIII or 40 CFR 63, Subpart ZZZZ. Note that using fuels other than diesel was not evaluated; therefore, nonemergency stationary combustion engines used at these facilities are limited to diesel-fired engines.

## LIMITATIONS AND REQUIREMENTS

### Total Suspended Solids (TSS)

Total suspended solids include organic and inorganic materials present in wastewater from sand, cement, and fines as a result of water used to sort and wash materials. These materials include sand, silt, and clay. Storm water may also contain significant levels of TSS. These solids may settle out rapidly or be suspended in water for a time. While in suspension, TSS increases the turbidity of the water, reduces light penetration and impairs the photosynthetic activity of aquatic plants, which contributes in depleting the oxygen. Because TSS is a known and common pollutant in discharges associated with the industries, it was selected as a parameter of concern. The TSS limitation of 45 mg/l is based on best technical judgement.

**Oil and Grease**

Oil and grease include thousands of organic compounds with varying physical and chemical properties. Oil and grease exhibit an oxygen demand. Oil may adhere to fish gills, taint the flesh of fish or destroy algae and plankton. The parameter commonly used to measure the presence of oil is "oil and grease". The maximum limitation of 15 mg/l is based upon best technical judgement of what would cause a sheen to state waters in violation of water quality criteria. In addition this is consistent with limitations set forth by MDEQ in past NPDES Permits.

**pH**

pH extremes are toxic to fish and unsuitable for ground water used as drinking water sources. pH is a potential concern in concrete batch plants (SIC Code 3273) due to the soluble cement constituents in wastewater. Therefore, all dischargers will be required to monitor pH and limitations shall be within the range of 6.0 and 9.0. Limitations are based upon the State of Mississippi water quality criteria found in 11 Miss. Admin. Code Pt. 6, Ch. 2.

**Opacity/Particulate Matter**

Ready-mix concrete facilities are subject to an opacity limitation of 40% or less, as required in 11 Miss. Admin. Code Pt. 2, R. 1.3.B. If control equipment is operated appropriately and truck loading/unloading conducted at acceptable rates, there should be no exceedances of the opacity limit. Dust control equipment is required to be inspected and visible emissions observed on a monthly basis. Stationary fossil fuel burning sources of less than 10 million BTU per hour are subject to a limitation of 0.6 pounds of particulate matter (PM) per million BTU (lb/MMBTU). Since stationary internal combustion engines must burn fuel meeting EPA's specifications on diesel and other fuels such as gasoline and natural gas result in low PM emissions, there are no additional requirements needed in the general permit to ensure fuel burning sources meet this standard.

**Baghouse/Fabric Filter Control Equipment**

The baghouse or fabric filter required to control emissions from the cement silo and any cement supplement silo must be inspected monthly for leaks and visible emissions of dust from the pollution control equipment. Visible emission of dust do not have to be performed according to any specific method or procedure but must be conducted while material is being transferred to the silo. Records of these inspections and any corrective measure taken as a result shall be maintained on the Monthly Air Records Form provided by MDEQ for at least five (5) years or for the duration of facility operations, whichever is shorter.

**Rock Crusher Requirements**

A rock crusher may be installed and operated on site by the coverage recipient as long as it is not subject to the New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants found in 40 CFR Part 60, Subpart OOO. Since applicability depends on

the nature and capacity of the crusher, rock crushers may only be installed and used on-site if the cumulative rated capacity of the crusher(s) does not exceed 25 tons per hour for fixed crushers and 150 tons per hour for portable crushers. Descriptions of what constitutes a portable and fixed crusher are included in Condition L-5(1) of ACT 3. If a third party will own and operate the rock crusher, the third party is responsible for obtaining any necessary air permit prior to operating the rock crusher at the ready-mix facility.

**Emergency Stationary Internal Combustion Engine Requirements**

Stationary engines may be installed and operated if they meet the definition of an emergency stationary internal combustion engine, as defined in the applicable federal regulations. Regulations pertaining to "stationary engines" (as opposed to portable "nonroad engines") include the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines and for Spark Ignition Internal Combustion Engines found in 40 CFR Part 60, Subparts IIII and JJJJ, respectively. Also, the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines, found in 40 CFR Part 63, Subpart ZZZZ, applies to both existing and new stationary engines.

These three subparts define stationary internal combustion engines as any internal combustion engines, except turbines, that convert heat energy into mechanical work and are not mobile (i.e., not a nonroad engine as defined in 40 CFR 1068.30). Each subpart contains certain requirements for emergency engines, which may depend on the type of engine (i.e., compression ignition or spark ignition), the size of the engine, and the date the engine was manufactured. The permittee shall be responsible for determining and complying with the applicable requirements of the federal regulations for each engine at the concrete plant. Because all three potentially applicable federal standards limit non-emergency operations to 100 hours per year and require a non-resettable hour meter to demonstrate compliance, these conditions were specifically included in the general permit to aid with compliance.

**Non-Emergency Stationary Internal Combustion Engines**

The general permit allows for non-emergency internal combustion engines to be operated if the engine(s) will combust diesel and use no more than 315,000 gallons of total diesel during the calendar year. A non-emergency stationary engine is considered stationary if it will remain on site for 12 months. It is considered non-emergency if it does not meet the definition of "emergency stationary internal combustion engine" found in the federal regulations at 40 CFR 60.4219 and 40 CFR 63.6675. The diesel fuel must meet EPA's specifications for nonroad diesel found in 40 CFR 80.510(b). These engines must meet the applicable requirements of EPA's regulations found in 40 CFR Part 60, Subpart IIII or 40 CFR Part 63, Subpart ZZZZ, pertaining to stationary internal combustion engines. Also, the coverage recipient shall submit a Compliance Plan outlining the engine specifications and specific applicable requirements. The Compliance Plan shall be submitted with the NOI or Recoverage Form, or in accordance with the modification procedures if a non-emergency engine is brought on site at a later time.

**Storm Water Discharges Associated with Industrial Activities**

Section 405 of the Water Quality Act of 1987 (WQA) added section 402(p) of the Clean Water Act (CWA) which required the Environmental Protection Agency (EPA) to develop a phased approach to regulate storm water discharges under the National Pollutant Discharge Elimination System (NPDES) program. EPA published a final regulation on the first phase on this program on November 16, 1990, establishing permit application requirements for storm water discharges associated with industrial activity. Facilities that have concrete products manufactured and Portland cement concrete manufactured and delivered to a purchaser are required to obtain an NPDES permit for the discharge of storm water from industrial activities, as required by 40 CFR 122.26(b)(14)(ii).

# APPENDIX A

The attached spreadsheet provides the most recent emission factors for ready-mix concrete plants using truck mix loading, as well as emission factors for rock crushers. The spreadsheet also shows the potential emissions for those scenarios permitted by the general permit, including operation of a plant limited to 1,000,000 cubic yards per year with and without a rock crusher and operation of a plant with a maximum rated capacity of 150 cubic yards per hour with and without a rock crusher. The spreadsheet also contains the maximum expected emissions associated with operating a diesel-fired engine combusting up to 315,000 gallons of diesel in a calendar year.

Air Emission Calculations 2020.pdf

$PM_{10}$ Emission Estimate Sample Calculation from 2014 Permit Renewal
(**CAUTION:** for reference only)

Air Emissions Calculation 2014.do