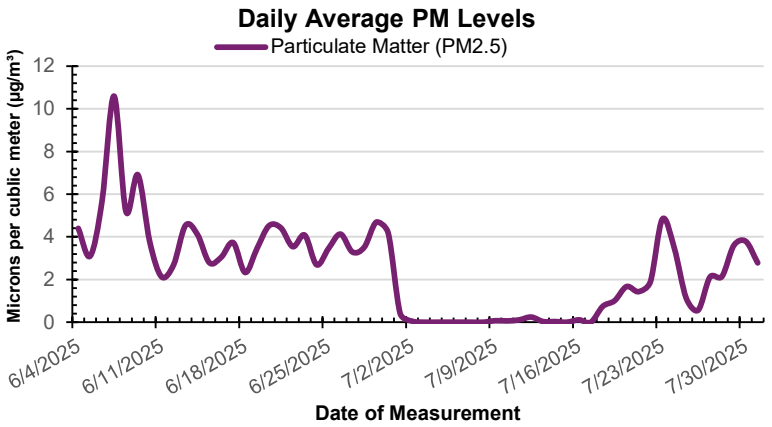
Air Quality Report: Amory, Mississippi

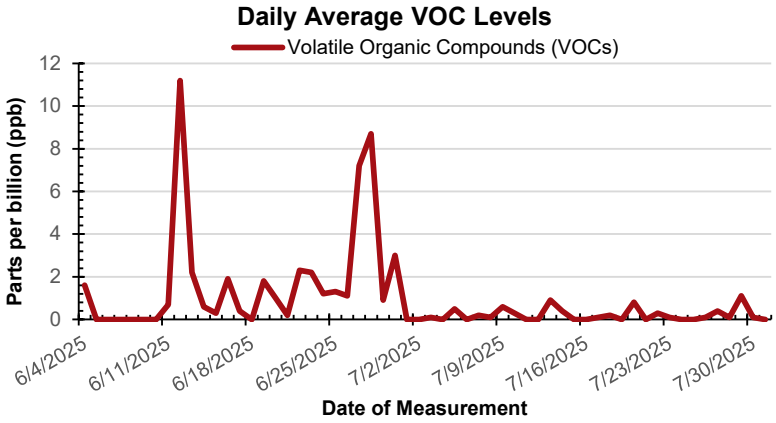
June 4-July 31, 2025

Particulate matter ($PM_{2.5}$)

In general, particulate matter are microscopic solid or liquid particles that are suspended in the air. PM includes a wide range of substances, such as: dust, smoke, pollen, ash, bacteria, and viruses. We measure PM size 2.5 micrograms per cubic meter of air. We are interested in particles of this size because they can travel deep into the lungs, enter the bloodstream, and be distributed to various parts of our body.

"Good" $PM_{2.5}$ levels are 0.0-9.0 µg/m³, but 0-35.4 µg/m³ is acceptable by EPA standards.





Total volatile organic compounds (VOCs)

VOCs are organic chemical compounds that easily evaporate at room temperature, meaning they turn into a gas. VOCs can be found in both indoor and outdoor environments. They can be released from furniture, everyday cleaning products, vehicles, and industrial processes.

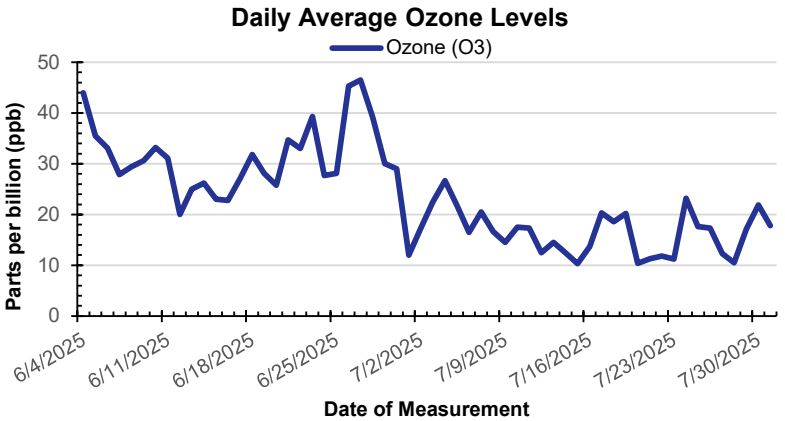
Nitrogen Dioxide (NO_2)

NO_2 is part of a group of pollutants called nitrogen oxides (NOx). It's formed when fuel is burned at high temperatures, such as in vehicles, power plants, and industrial facilities.

Ozone (O_3)

Ozone is a highly reactive gas composed of three oxygen atoms. It is both a natural and a man-made product that occurs in the Earth's upper atmosphere. Man-made ozone (Tropospheric or ground-level ozone) is what we breathe. It is formed primarily from photochemical reactions between VOCS and nitrogen oxides (NOx), depending upon the presence of heat and sunlight.

Acceptable ozone levels are 0-70 ppb, and the EPA defines "Good" levels as 0-54 ppb.



EPA Guidelines:

The Environmental Protection Agency (EPA) tracks and shares air quality using the Air Quality Index (AQI). This index summarizes measurements of common air pollutants– like Particulate Matter (PM), Sulfur Dioxide (SO_2), Ozone (O_3), Carbon Monoxide (CO), and Nitrogen Dioxide (NO_2) – that shows how clean or polluted the air is.

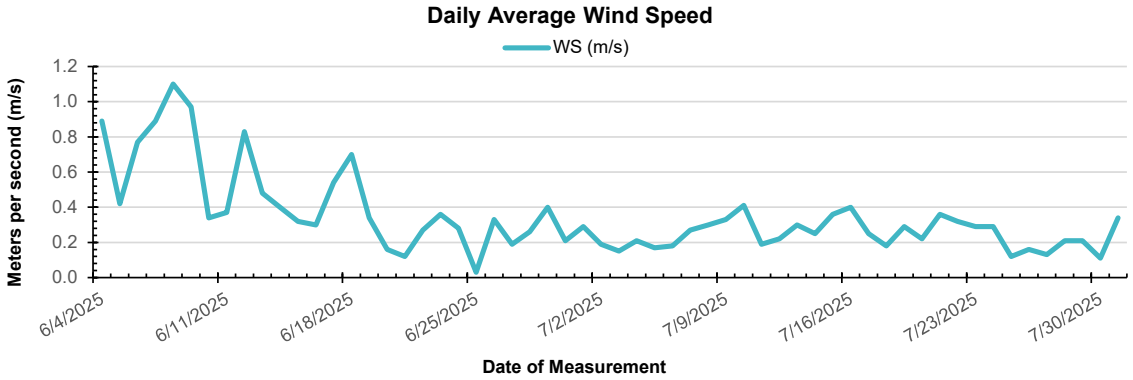
Each day, an AQI value is calculated for every pollutant, and the highest value becomes the reported daily AQI. The pollutant driving that number is called the "dominant pollutant."

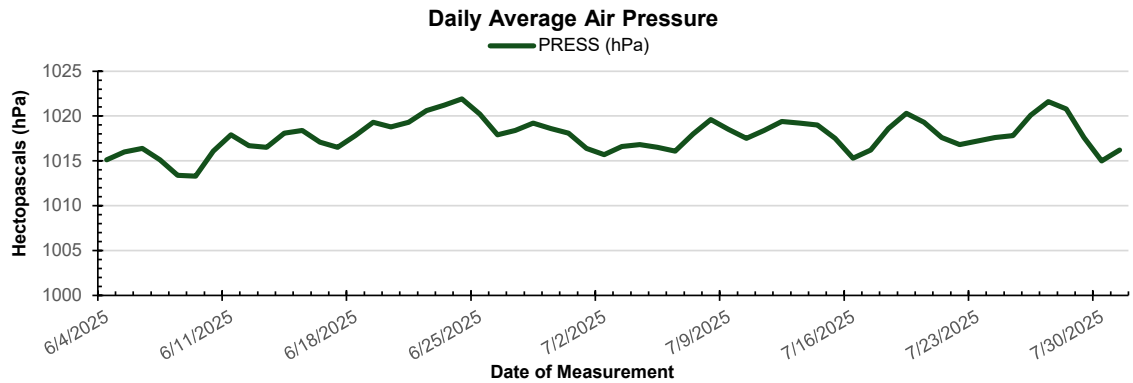
In Mississippi, the EPA operates monitoring sites in **10 counties** (*Bolivar, Desoto, Forrest, Hancock, Harrison, Hinds, Jackson, Lauderdale, Lee, & Yalobusha*). These monitors are less common in rural areas. Not every monitor measures every pollutant, and sometimes not all pollutants are measured each day. For counties without monitoring sites, the EPA estimates AQI levels using nearby monitors and other data sources.

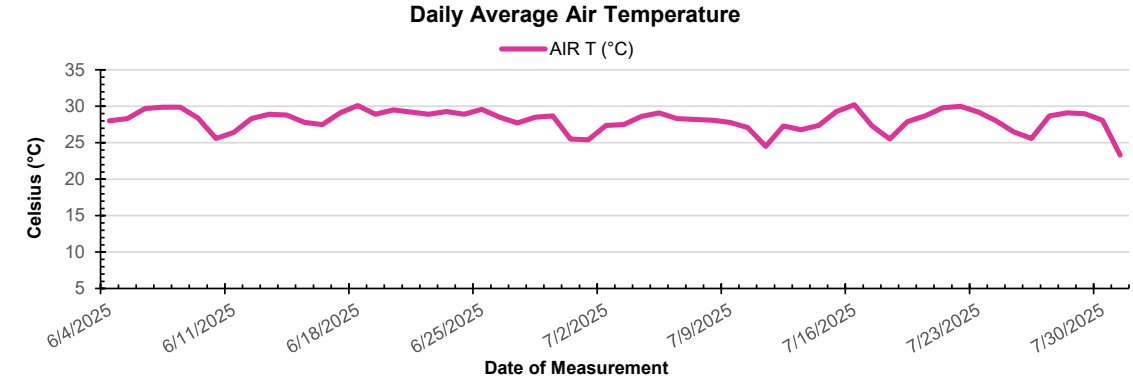
Meteorological Conditions

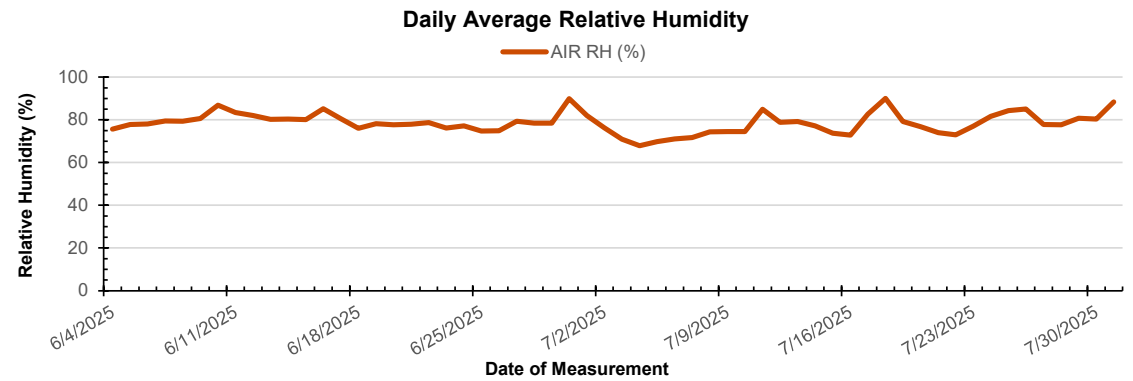
Amory, Mississippi

Meteorological conditions, such as temperature, relative humidity, air pressure, precipitation, wind speed, and wind direction, are also important to gather as they impact the distribution of pollutants into the community. For example, wind can carry pollutants further, while certain precipitation like rain can act as a natural air scrubber. Seasonal shifts can also affect changes in air quality.









Key Findings

Amory, Mississippi

Air quality during the current period:

Between June 4th and July 31, 2025, $PM_{2.5,}$ VOC and Ozone levels fluctuated.

- The average daily VOC level for this time period was about 1 ppb, with daily averages ranging from 0 to 11.2 ppb.
- Ozone levels were mostly between 17 and 30 ppb, and the average daily amount was 23.4 ppb. The highest daily average was 46.5 ppb on June 27th.
- $PM_{2.5}$ had an average daily level of 2.5 µg/m³, with most days having levels below 4 µg/m³. The highest daily average was 10.6 µg/m³ on June 7th.

Meteorological conditions:

- Air temperature ranged from 23.3 to 30.2°C (about 74-87 °F) with most days being between 81 and 84 °F.
- Relative humidity was 78.6% on average, with days ranging from 68-90%.

Coming soon: We will release our community noise reports, which will consist of A-, C-, and Z-weighting sound levels, as well as spectral analysis across the 1/3 octave band.

COMMUNITY NOISE LAB™

Are you interested in having an air monitor in your community?

Scan the QR code on the right to learn more about how you and your community can be involved with the Mississippi Air and Noise Pollution Monitoring Network.

Air & Noise Monitoring

Air Quality Reports

To view and download all air quality reports for Mississippi and Alabama, scan the QR Code on the left, or visit https://communitynoiselab.org/community-air-and-noise-monitoring-network/

Other Community Noise Lab Projects:

MAEHS Info

Mississippi Adolescent Environmental Health Study (MAEHS)

CNL is conducting a research study to better understand how your water, soil, air, and noise quality may be impacting the health of you and your children.The MAEHS is a pediatric longitudinal cohort study investigating how air, noise, water, and soil pollution—individually and jointly—impact the health and well-being of children across the state. Scan this QR code to learn more.

Environmental Education Activity Books

CNL has developed a series of activity books for children and families to learn about their environments and health through fun and interactive activity books. Scan this QR code to learn more or get a copy of your own! *Topics include:*

Activity Books

- **Protect and Preserve** Learn about sound, noise pollution, and the auditory system.
- **From the Ground to the Glass** Readers learn how water moves from its source to the tap, how water impacts health, and provides resources on managing your tap water's quality.
- **Light. Blight. Sight.** All aspects of visual pollution (including illegal dumping), blue space, green space, eyesight, & visual perception.
- **Period.** *(Designed for girls ages 8 – 12)* An introduction to reproductive anatomy, the menstrual cycle, period products, self-care tips, and environmental factors that may impact reproductive health with the needed knowledge to understand and care for their bodies as they enter into womanhood.
- **The Air Up There** *(Coming Soon)* Air quality, air pollution, and how air can impact our health.

Contact information: Data collection and analysis for this report is provided by Community Noise Lab at Brown University (communitynoiselab.org). You can contact Dr. Erica Walker at erica_walker@brown.edu if you have any questions.

Funding for this project is provided by the National Institute of Health (1R01ES036565-01) and Robert Wood Johnson Foundation.