

Southeast Michigan Exceptional Event Demonstrations Fact Sheet

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has developed two ozone Exceptional Event (EE) Demonstrations for southeast Michigan related to ozone data collected at monitoring sites in the counties of Oakland, St. Clair, and Wayne in southeast Michigan. The first EE covered two monitors in Wayne County for four separate days in June and July 2023. The second EE covered one monitor in each county of Oakland and St. Clair for two days in June 2023 and one day in July 2025.

An Exceptional Event Demonstration is a tool air quality regulatory agencies use to ensure efforts are focused on actions that will improve air quality. These demonstrations are a request to the United States Environmental Protection Agency (USEPA) to confirm that natural events, which couldn't be controlled or prevented, affected air quality data in a regulatorily significant way. If the USEPA agrees with these demonstrations, the data affected by the exceptional events is excluded from regulatory determinations.

Throughout the summers of 2023 and 2025 much of the Upper Midwest was impacted by smoke from numerous large Canadian wildfires causing a reduction in air quality regionally. At times during these periods, some areas were worse than others. The EE demonstrations identify the worst days in southeast Michigan and demonstrate that smoke from Canadian wildfires caused the levels of ozone recorded at the forementioned monitors in southeast Michigan.

What is Ozone?

Ozone in the upper atmosphere helps to protect humans from the harmful radiation from the sun. However, at the ground level where humans can breathe it in, ozone is considered an air pollutant. At high concentrations, ozone can cause breathing difficulty, especially for those that have respiratory conditions. Ozone is not often emitted directly but instead is formed in the atmosphere through chemical reactions of other common air pollutants called volatile organic compounds and nitrogen oxides. These air pollutants are also present in the smoke plumes from wildfires. The chemical reaction between these pollutants is most effective in creating ozone during sunny and warm conditions.

What causes an Exceptional Event?

The USEPA's Exceptional Event Rule states that an exceptional event can be caused by fireworks, prescribed fires, wildfires, high wind dust events, and stratospheric intrusions.

Why is EGLE submitting an Exceptional Event Demonstration?

The exceptional events process is important to effectively managing Michigan's air quality. It allows resources to be devoted to regulatory actions that will help reduce air pollution. The Canadian wildfires in this demonstration were natural events that were not controllable or preventable by actions taken by EGLE.

The summers of 2023 and 2025 were unusually active wildfire seasons for Canada. Since 2012, 2023 ranks the highest as far as the hectares burned in Canada by wildfires with 2025 ranking second. Weather conditions caused the southeast Michigan area to experience significant wildfire smoke throughout the summers of 2023 and 2025. The area experienced haze and air pollution at ground level, which was well documented in news articles, weather forecasts, and by the public.



Figure 1: Wildfire smoke over the Detroit skyline

Contact:

Questions about this exceptional event demonstration should be directed to Stephanie Hengesbach at HengesbachS1@Michigan.gov or 517-648-7015.

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