

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
NONRULE POLICY DOCUMENT

Title: **Guidance to predicting a high ozone level day for sources subject to 326 IAC 8-13.**

Identification Number: **Air-020-NPD.**

Date Originally Adopted: **November 12, 1998.**

Dates Revised:

Other Policies Repealed or Amended:

Brief Description of Subject Matter: **Guidance to owners and operators of sinter plants at integrated steel mills in Lake and Porter Counties to predict high ozone days that may be included in their high ozone day plans.**

Citations Affected: **326 IAC 8-13.**

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This nonrule policy document provides guidance to predict a high ozone level day for sinter plants subject to 326 IAC 8-13.

Background

Volatile organic compounds (VOC) and nitrogen oxides chemically react in the presence of sunlight at high temperatures and high humidity to form ground level ozone. On hot sunny days ground level ozone concentrations can reach unhealthy levels. For susceptible populations such as the very young, elderly, and those with asthma or other respiratory ailments breathing problems may become acute. Sources of VOC include both stationary sources and mobile sources. Sinter plants, which are facilities at Indiana's four integrated steel mills, are stationary sources that emit significant amounts of VOC. All of Indiana's sinter plants are located in Lake or Porter County.

On March 4, 1998, the Indiana Air Pollution Control Board adopted rule 326 IAC 8-13 to regulate the emissions of VOC from sinter plants. The rule established three types of VOC emissions limits for the ozone season (May 1 - September 30): a VOC emissions cap in pounds for the ozone season, a maximum VOC emissions limit in pounds/day, and a VOC emissions limit in pounds/day on a predicted high ozone level day. The rule requires that the affected sources develop a high ozone day action plan including procedures to limit VOC emissions and to predict high ozone days. A high ozone day is any day between May 1 and September 30 when ozone levels in Lake, Porter or LaPorte Counties are expected to exceed the national ambient air quality standard for ozone (either one (1) hour or eight (8) hour). Sources are required to submit the

high ozone day action plan before November 1, 1998. After public review and comment and approval by the department the high ozone action plan will become part of each source's operating permit.

The purpose of this policy is to provide guidance to the affected sources on approaches to forecasting high ozone days that they may include in their high ozone day plans.

Indiana's Ozone Forecasting Program. The Indiana Department of Environmental Management works with Michigan, Illinois and Wisconsin to forecast ozone conditions for the Lake Michigan region (this region includes Chicago, Northwest Indiana, Milwaukee and Southeastern Wisconsin and Southwestern Michigan). Meteorologists from the four states hold ozone forecasting calls at 10:30 a.m. central daylight time (CDT) every Monday, Wednesday and Friday (or more or less frequently depending on weather conditions) from early May through September. They evaluate weather conditions and determine whether there are likely to be high ozone levels the following day. If so, the states call an "Ozone Action Day." If conditions appear to be conducive in one part of the region but not another or if the states do not have consensus on the forecast each state retains the option to call or not to call an Ozone Action Day.

An Ozone Action Day is called when the states expect 1-hour ozone concentrations to be 100 parts per billion (ppb) or above at any of the region's ozone monitors. A 1-hour concentration of 100 ppb is a reasonable surrogate for an 8-hour average concentration of 85 ppb. The new 8-hour ozone standard is 85 ppb. Both the 1-hour and the 8-hour standards apply in Lake and Porter Counties.

The general conditions used to predict an Ozone Action Day in the Lake Michigan region include:

- Air Temperatures: 82° F (28°) and above
- Surface Winds: 20 miles per hour (9 meters per second) or less
- Wind Direction: Varying from east-southeast to west-southwest (110° to 250°)
- Cloud Cover: Three-tenths or less of sky
- Precipitation: 0.01 inches or less for previous 24 hour period.

If the general conditions are present then the following additional factors are examined:

- Surface high pressure area is located east or southeast of the region
- Persistence (a minimum of 2 days of the same weather conditions)
- High pressure in the upper atmosphere which traps pollutants near the ground
- Lake breezes develop along the coastline in the late morning and continue through the afternoon
- Previous day's ozone concentrations throughout the region
- Upwind ozone levels to indicate whether an incoming air mass contains existing pollution

The IDEM-OAM web site provides real-time monitoring data for select monitoring sites around the state. It also provides daily state and regional ozone forecasts and a health advisory

based on the pollution standard index (PSI). The forecast indicates if the following day will be a “high ozone day” in the Northwest Indiana Region including Lake and Porter Counties.

Policy

Sources required by 326 IAC 8-13-4(b)(8)(B) to develop procedures to predict high ozone days may use either of the following procedures:

1. Rely on the IDEM forecast. IDEM’s forecast would say if the following day will be a “high ozone day” in Lake and Porter Counties. IDEM makes its forecast available in several ways:

(i) Access the IDEM-Office of Air Management web site at:

www.state.in.us/idem/oam/smog/index.html.

The IDEM-OAM web site provides real-time ozone concentrations at all state ozone monitors, state and regional ozone forecasts and health information.

(ii) Receive the ozone day notification from IDEM. If an Ozone Action Day is called, IDEM-OAM notifies by fax all Partners for Clean Air and receives electronic confirmation from each fax recipient. Ozone Action Day fax notices are generally sent out by 11:30 a.m. CDT when an Ozone Action Day has been called for the following day. When a Partner is notified that an Ozone Action Day has been called, appropriate actions can be scheduled for the following day.

2. Develop their own forecasts for high ozone days based on the same general and additional conditions used by IDEM-OAM to call an Ozone Action Day.

Additional Information

If you have any questions concerning this policy, please contact Shri Harsha, Air Programs Branch at 317-232-8228 or dial 1- 800-451-6027, press 0 and ask for 2-8228 (in Indiana) or Mark Derf, Air Programs Branch at 317-232-8449 or dial 1-800-451-6027, press 0 and ask for 2-8449 (in Indiana).

Copies of this policy are available at the Office of Air Management, Indiana Department of Environmental Management, Indiana Government Center-North, Room N1001, 100 North Senate Avenue, Indianapolis, Indiana 46204.