



# DESERT BREEZE

VOLUME IX ISSUE III

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## Pollutant of the Quarter: **Xylene**

**X**ylenes, also known as mixed isomers, refers to the mixture of xylenes and ethylbenzene. The three possible xylene isomers are o-xylene, m-xylene, and p-xylene. All xylene compounds have empirical formulas  $C_8H_{10}$ . Mixed xylenes are colorless, flammable liquids that are practically insoluble in water and have a sweet odor. Mixed xylenes are mainly found in paint and coatings formulations. Xylenes are also a common component of gasoline, ink, rubber, adhesives, and cigarette smoke. Isomers of xylene are also used as a substitute for toluene where slower drying is desired and as a cleaning agent for integrated circuits. Above all, what makes xylene so unique is its dewaxing capabilities which make it very useful, especially for dentists. Your dentist may use xylenes to dissolve waxy materials often used for root canal treatments. For similar reasons, it is often the active ingredient in products used for ear wax removal. Despite its useful properties, Xylene exposure can be harmful to human health.

### Why does the District care?

Xylenes are emitted into the atmosphere as fugitive emissions from regulated industrial sources, engine exhaust, and through the evaporation of commercially used solvents. Mixed xylenes are also sometimes detected indoors due to their widespread use in home products including synthetic fragrances and paints. The EPA has not classified xylene as a human carcinogen, however, the acute or short-term inhalation of mixed xylenes by humans results in irritation of the eyes, nose, throat, and neurological effects. On the other hand, the chronic or long-term inhalation of xylenes may result in headache, dizziness, fatigue, and incoordination. Some studies also show respiratory, cardiovascular, and kidney effects resulting in labored breathing, increased heart palpitation, and chest pain. Due to the associated acute and chronic risk of xylenes, the Environmental Protection Agency (EPA) has listed xylene as a Hazardous Air Contaminant (HAP). Similarly, the California Air Resources Board (CARB) has listed xylene as a substance for which emissions must be quantified and reported through the AB 2588 Air Toxics "Hot spots" program. The Eastern Kern Air Pollution Control District (District) has been mandated to assess HAP emissions including xylenes from regulated

industrial sources within our jurisdiction through the AB 2588 program. For more information on AB 2588, see the December 2018 Desert Breeze article on cancer and air pollution.

### Exposure Levels

The current Occupational Safety and Health Administration (OSHA) permissible exposure limit for xylene is 100 ppm for an eight-hour workday. The National Institute for Occupational Safety and Health (NIOSH) also recommends exposure limits for xylene at 200 ppm for 10 min as a short-term exposure limit.

### Preventative Measures

It is imperative that proper exhaust ventilation is used when working with materials releasing xylenes. Local exhaust ventilation can be further improved by routing the exhaust gases through a carbon media filter. Additionally, the proper personal protective equipment should be used when engaging in operations releasing xylenes including spray painting. Protective equipment along with personal hygiene practices reduce the amount of a substance that is absorbed by the worker's body after he or she has been exposed to it and also prevents hazardous toxic chemicals from being carried home. These measures include proper hand washing, wearing disposable gloves, wearing an organic respirator, and safety glasses for eye protection.

*By: Miguel Sandoval, Air Quality Engineer*



## Grant Sessions

**T**he Eastern Kern Air Pollution Control District (District) administers several grant programs. These programs are designed to reduce air pollution within the District's jurisdiction and are operated through Federal (Environmental Protection Agency), State (California) and District funds. This is a rundown of the funds available:

**DMV-Grants** are our most popular programs utilizing approximately \$500,000 per year. This program is broken into two programs: DMV Grant Program and Vehicle Voucher Program.

The DMV Grant Program projects includes: Paving Dirt Roads to reduce fugitive dust emissions caused by vehicle travel, Installation of Electric Vehicle (EV) Charging Stations, Installation of a CNG Refilling Stations, Alternative Fuel Mechanics Training, Public Education Courses, and Innovative Vehicle-Related Emission Reduction Proposals. Eligible projects can qualify for funding up to \$50,000. This Program's application period begins October first and ends in late February. Awards are chosen by the District's Board of Directors in May; with funding to begin the following July.

The Vehicle Voucher Program offers financial incentive in the form of a voucher for the purchase of a new, eligible, lower-emitting vehicle. The District's DMV Grant Vehicle Voucher Program is ongoing, with no application deadline, and utilizes approximately \$100,000 per year. Applications will be processed first-come first-served and vouchers will be issued accordingly until all funds are depleted. Voucher awards and associated new vehicle emission classification requirements are as follows:



- ◇ **\$4,000** for purchase of a **Zero Emission Vehicle (ZEV)** with EPA Smog Score of 10.
- ◇ **\$2,000** for purchase of a **Partial Zero Emission Vehicle (PZEV)** with EPA Smog Score of 8 or 9

**School Bus** or the Lower-Emission School Bus Program (LESBP) program provides incentive funds for the replacement and retrofit of older high-emitting school buses. Applicants must obtain approval and have a signed, executed contract from the District prior to purchase of a retrofit/new bus. You can apply anytime; approximately \$330,000 is available. Any retrofit/school bus purchased prior to contract execution is ineligible. Please note: the Lower-Emission School Bus Program is not a rebate program.

### FARMER (Funding Agricultural Reduction Measures for Emission Reductions)

provides grant funds for the replacement of diesel-fueled agricultural vehicles, equipment, and engines located and operating within Eastern Kern. Eligible projects can receive up to 80% of the total costs associated with scrapping and replacing an older high-emitting piece of farming equipment with a new low emitting or zero-emissions vehicle/equipment/engine. Carl Moyer Program (CMP) guidelines will be used to determine FARMER program eligibility and grant award amount. You are eligible for the FARMER program if you own or operate an agricultural facility (farm) located within the District's jurisdiction (see the boundary map on our website: [www.kernair.org](http://www.kernair.org)) and have an older diesel-fueled vehicle/equipment/engine you are willing to retire and replace. Approximately \$679,000 is available. Equipment being replaced must have been operated in the District for the two (2) previous years, be in working condition, diesel-fueled, Tier 0 or Tier 1, and greater than or equal to 25 horsepower. Eligible replacement equipment includes:



- \* **Harvesting Equipment**
- \* **Agricultural Pump Engines**
- \* **Tractors**
- \* **Other Equipment Used Specifically in Agricultural Operations**

**Wood Smoke** program offers rebate vouchers to replace a Non-EPA certified wood/pellet stove with a new EPA certified wood/pellet stove, or to install an EPA certified gas, electric, or catalytic fireplace insert into a home that uses the heating device as its primary source of heat. The application process opens on the first of October and approximately \$130,000 is available for this program. Applications are accepted until grant funds are depleted and vouchers are awarded on a first-come, first-served basis. No retroactive rebates are allowed.

- ◆ A **Standard Voucher** award of **\$2,000** is available District-wide.
- ◆ An **Enhanced Voucher** award of **\$4,000** is available for applicants with a project located in a designated Low-Income or Disadvantaged Community, or with documentation to prove low-income status.

Please visit our website ([www.kernair.org](http://www.kernair.org)) for more information.

*By: Glen Stephens, Air Pollution Control Officer*

# ATTAINMENT STATUS

## Eastern Kern Ozone Attainment Status

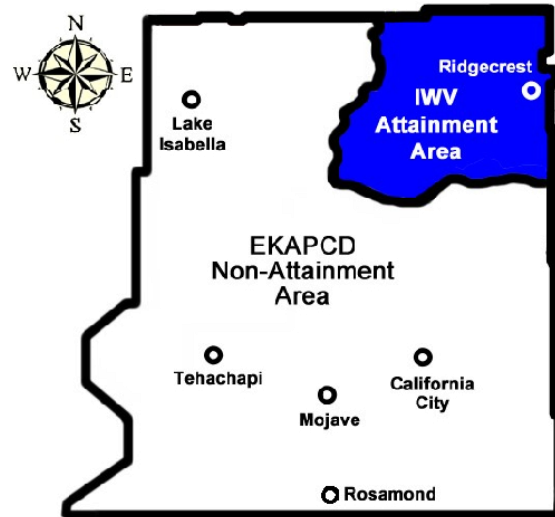
The Federal Clean Air Act (FCAA) of 1970 required the United States Environmental Protection Agency (EPA) to develop health-based National Ambient Air Quality Standards (NAAQS) for several categories of air pollutants, including Ozone (O<sub>3</sub>). The EPA periodically reviews the NAAQS and associated scientific data in determining when appropriate revisions are needed. Accordingly, EPA will establish new standards following advances in technology and scientific understanding of the pollutant and its potential health effects.

## 8-hour Ozone NAAQS

An 8-hour O<sub>3</sub> NAAQS was established in 1997 at a level of 80 parts per billion (ppb). EPA selected the 8-hour averaging time to address the impacts of longer periods of O<sub>3</sub> exposure. The standard is attained when each monitor in the region shows a three-year average (of the annual fourth-highest daily maximum 8-hour average O<sub>3</sub> concentration) that is not higher than the standard, based on the rounding convention dictated in the federal regulation. Three years of O<sub>3</sub> concentrations are averaged due to the impacts of year-to-year variations in meteorology on O<sub>3</sub> formation.

## District Planning Areas

In 2004, at request of the California Air Resources Board (CARB), EPA divided the District into two O<sub>3</sub> planning areas: The Indian Wells Valley (IWV) planning area and the remainder of Eastern Kern County (non-attainment area). The IWV attained the 80-ppb O<sub>3</sub> NAAQS in 2004 and the non-attainment area attained the 80-ppb standard in 2013.



In 2008, the EPA adopted a more stringent 8-hour O<sub>3</sub> NAAQS of 75-ppb. The IWV planning area's design value was already well below the 75-ppb standard so it was designated attainment. However, the District's nonattainment area was designated "Serious Nonattainment" with an estimated attainment date of 2020. The District did not attain the 75-ppb O<sub>3</sub> NAAQS by 2020 and was recently reclassified as "Severe Non-Attainment" with a new attainment date of 2027.

On October 1, 2015, EPA lowered the 8-Hour O<sub>3</sub> NAAQS from 75-ppb to 70-ppb. Once again the IWV planning area's design value was below the 70-ppb standard and found in attainment. Conversely, the nonattainment area was designated "Serious Nonattainment" and also has an attainment date of 2027.

*By: Jeremiah Cravens, Senior Air Quality Specialist*

## HAZARD REDUCTION ONLINE PORTAL

Continuing from the previous open burning season, the Eastern Kern Air Pollution Control District (District) and Kern County Fire Department (KCFD) will be using the Community Connect online system for the public to obtain permits for fire hazard reduction burning during the upcoming 2021-22 open burn season.

Through Community Connect, residents can access, manage, and seek approval for hazard reduction pile burning from the District and KCFD right from the comfort of their home; no need to drive to the fire station for a permit.

Residents can access Community Connect from both the District and KCFD websites, or at <https://www.communityconnect.io/info/ca-kerncounty>.

*By: Sam Johnson, Air Quality Engineer*

### **Board of Directors**

Michael Davies, Chairman (Councilman, Tehachapi)  
Zack Scrivner, Vice-Chair (KC 2nd District Supervisor)  
Phillip Peters (KC 1st District Supervisor)  
Kyle Blades (Councilman, Ridgecrest)  
Jim Creighton (Councilman, California City)

Board of Directors usually meet once every two months starting in January. The location, along with the Meeting Agenda, can be located on the District website [www.kernair.org](http://www.kernair.org), under the “Board” tab.

### **Air Pollution Control Officer**

Glen E. Stephens, P.E.

### **Hearing Board Members**

Doris Lora  
Chris Ellis  
Benjamin Dewell  
Brett Moseley  
One Vacancy



For news updates and other information, please visit the Eastern Kern APCD website at [www.kernair.org](http://www.kernair.org)

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