

What's in that smoke?

Burning trash releases a wide variety of pollutants, including:

- Dioxins
- Particle pollution
- Polycyclic aromatic hydrocarbons
- Volatile organic compounds
- Carbon monoxide
- Hexachlorobenzene
- Heavy metals such as mercury and lead
- Ash

These pollutants are hazardous to human health, but none more so than dioxins, which are part of a group of highly toxic chlorinated organic chemicals. Study after study has linked dioxins to a range of serious health problems.

According to the U.S. Environmental Protection Agency, backyard burning of household trash is now the largest quantified source of airborne dioxin emissions in the U.S. Only small amounts of chlorine-containing material are required for dioxins to form during burning. Even food scraps (which contain salt, or sodium chloride) can contribute to dioxin formation when burned.

Dioxins are heavy compounds, often settling onto plants. When meat and dairy animals eat those plants, they also consume the dioxins. Dioxins are passed through the food chain, so animals at the top of the food chain—such as humans—are more likely to have higher levels of dioxins in their bodies.



LEFT: Roberta Burnes helps the public understand the air quality and health dangers associated with open burning of household trash.

BELOW: Burning trash, tires and other items releases hazardous pollutants that can cause serious health problems and cancer. Photos by DAQ



The Open Burning Road Show

By Division for Air Quality

Every year as winter draws to a close, plumes of smoke start appearing on the horizon throughout rural Kentucky. Some call it spring cleaning—even though it lasts well into the fall. The Division for Air Quality (DAQ) calls it open burning, and not all of it is legal.

Roberta Burnes understands the challenges associated with open burning. As DAQ's environmental education specialist, Burnes' job includes educating the public about air quality, especially open burning. "Many people in Kentucky live in rural areas where trash pickup may not be available," says Burnes. "Traditionally, burning was just the way you got rid of things."

But times, and trash, have changed. And what goes up in smoke eventually comes down.

Today's trash contains plastics, polystyrene and other petroleum-based products that emit toxic pollutants when burned. Many of these pollutants are linked to heart and lung disease, suppression of the immune system, hormone disruption, interference with cell growth and development, and cancer (see inset *What's in that smoke?*).

That's why, when the weather warms, Burnes often takes the message about open burning on the road, frequently to fire departments. Why fire departments?

"Creating effective partnerships with the public is part of our mission," says Burnes, "and when it comes to open burning, firefighters are on the front lines. Partnering with our first responders just makes sense."

Campaigning for Cleaner Air

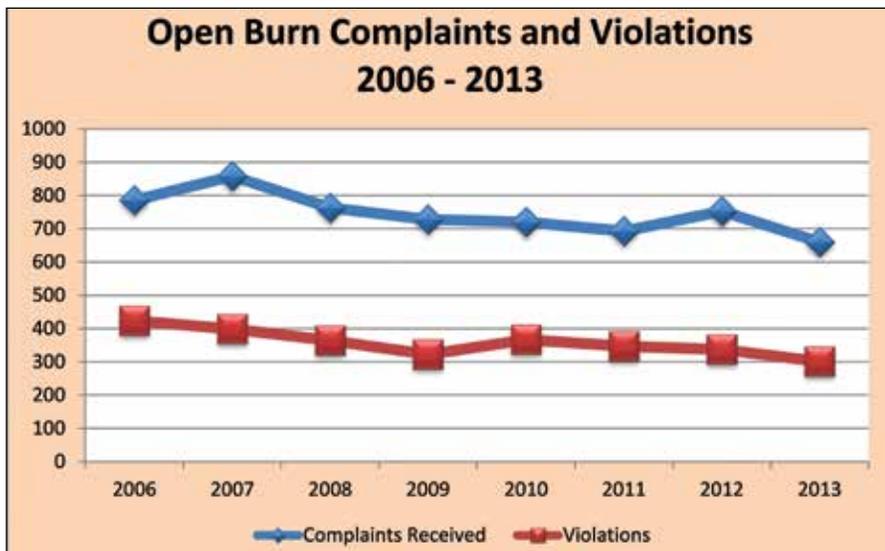
In recent years, DAQ used media campaigns to raise awareness about Kentucky's open burning regulation. Staff produced radio spots, posters, brochures and even billboards to spread the word.

This year, DAQ is focusing on a targeted education campaign aimed primarily at firefighters. "Firefighters see a lot of suspicious open burning," says Burnes. "They also field a lot of questions from the public about what's legal and what's not legal to burn. Getting everyone on the same page seemed like a good place to start." Thus, the Open Burning Road Show was born.

Burnes and other DAQ staff frequently meet with fire departments across the Commonwealth,

Continued on Page 13

The Open Burning Road Show *Continued from Page 6*



presenting one-hour training sessions about Kentucky’s open burning regulation. Burnes remembers one of the first trainings she conducted, when she introduced herself to the couple dozen firefighters in the room. “They started laughing when I told them my name,” she recalls. “They couldn’t believe my last name was Burnes, since I was there to talk about open burning.”

Often, Burnes begins the presentation by handing out Post-it® notes. On the wall, she tapes two signs: “Legal to Burn” and “Illegal to Burn.” Participants write an item on a note and then stick the note under one of the signs on the wall. “It’s a great way to see how much people already know, and it allows me to address misconceptions during the presentation,” says Burnes.

Burnes addresses the health problems associated with open burning, fire hazards, ozone season restrictions, fire training protocols, and burning dos and don’ts. “The presentation is really about all the things you can and can’t legally burn,” says Burnes.

Clean Air Partners

Getting the message out about open burning isn’t just good for air quality—it may also help reduce the number of nonemergency calls firefighters respond to. Firefighters are often in the perfect position to inform people when they’re burning something they shouldn’t.

DAQ’s open burning brochure (at right) can also help. Fire departments, as well as the public, may request these free brochures by calling the open burning hotline, 888-BURN-LAW. Many firefighters carry these brochures in their trucks so they can hand them out when the occasion arises.

“We have found education to be the best prevention,” says Pat Thompson, who is chief of the Sorgho Volunteer Fire Department in Daviess County. He also directs fire rescue training for the state. “Working with the Kentucky Division for Air Quality has been a great partnership,” he says.

Fire departments also conduct fire trainings for their staff, and there’s no substitute for practicing on a real house

fire. “This live fire training allows firefighters to train in a controlled environment but with the realism of interior firefighting tactics,” says Thompson. Departments wishing to conduct live fire trainings must contact the Kentucky

Fire Commission and the DAQ for permission to burn an abandoned structure. Prior to the fire training exercise, any

vinyl siding, asbestos and insulation. “Our job is to protect human health and the environment,” says DAQ inspector Ashley Adams. “Minimizing the impact of open burning improves our air quality.”

Properly preparing a site for live fire training may seem like a lot of work but it’s worth it, says Thompson. “The employees of the Division for Air Quality have been extremely helpful, inspecting our sites, participating with oversight on training days, and attending our Green River Firefighters Association meetings to support our efforts in educating the fire service.”

Spreading the Message

Open burning continues to be a serious health concern in Kentucky, but gradually things are changing for the better. Since the division began its open burning awareness campaign in 2006, complaints to the open burning hotline have trended downward. Violations of the open burning regulation have also decreased (see chart). In 2013, less than half of all open burning complaints resulted in violations.

Burnes is always looking for other audiences to share the clean air message with—especially young people. “If we can help students see the connection between open burning and their health, we have a chance to make an even greater impact on air quality for future generations,” says Burnes.

To learn more about open burning, visit <http://air.ky.gov/Pages/OpenBurning.aspx>. For more information about open burning and your health visit <http://1.usa.gov/RHLayt> and <http://1.usa.gov/1iKsDeT>



materials that could produce toxic smoke must be removed from the structure.

DAQ inspectors work with fire trainers to identify and remove these materials, which may include roofing shingles,