Shower of toxic particles threatens Valley air

Microscopic chemicals could corrode lungs.

By Mark Grossi/ The Fresno Bee

Also published in The Sacramento Bee and other papers, Wed., July 15, 2010

A mysterious shower of microscopic chemicals near a Fresno shopping center could be the first evidence of a broad, undetected assault on the lungs of San Joaquin Valley residents.

If confirmed in other Valley cities, it means many thousands of people are daily breathing these cocktails of chemicals -- known as ultra-fine particles -- that corrode and damage lungs.

The plume in Fresno probably spreads over many square miles, not just the Fashion Fair area where they were discovered, said UC Davis atmospheric scientist Anthony Wexler, who detected the pollution.

Sensitive, expensive equipment is needed to detect and study ultrafine pollution. Science is only now defining the possible problem.

Wexler revealed Fresno's midday rise in microscopic pollution last month at an air-quality conference, saying he and others will continue studying them to determine the source and extent of the plume.

Researchers also must figure out what's in the particles and more clearly define the possible health threat. It may be years before local, state and federal officials can develop a cleanup strategy.

The particles are so small that 1,000 of them would fit across the width of a human hair. For years, science has known that such particles exist, but they are thousands of times smaller than previously studied particles in dust, soot and diesel smoke.

Health problems from such pollution were detailed last month in a study on allergic asthmatics, whose lungs are inflamed to the point that only a small amount of pollen, animal hair or other allergens can trigger a crippling attack.

The findings from Dr. Andre Nel, a UCLA medical researcher, were published by the American Journal of Physiology-Lung Cellular and Molecular Physiology.

"If there is a surge in ultra-fine pollution particles, it makes twitchy airways even more twitchy," he said. "It results in a much lower threshold of allergens to create an asthmatic response or an attack."

These specks can come from volcanoes or ocean spray, but they also come from printer toner, vehicle exhaust and chemical reactions in the air. Fresno's particles may come from traffic and other pollution vapors.

The site near Fashion Fair is not far from Highway 41, Shaw Avenue and many businesses and restaurants, so there could be many different contributors to the pollution.

Wexler said he suspects the particles form after pollution gases accumulate in the air each day, though there could be a particular source spewing the particles.

But he said it's a good bet that the problem is not just isolated in the Fashion Fair area. Thousands of Fresno residents may be exposed to the particles.

Is this midday rise in pollution occurring in other Valley cities? It's possible, said Wexler. This kind of pollution also has been detected in other places, such as Pittsburgh, which has problems with particle pollution.

The Valley is known nationally for particle pollution. In the American Lung Association's latest rankings, Bakersfield and Fresno-Madera were the country's two worst places for short-term bouts of particle pollution.

The ranking applied to fine-particle pollution, which includes the smallest specks that Wexler discovered near Fashion Fair.

Researchers in Southern California say the tiny particles contain 1,000 or more different substances. The particles tend to grow larger, accumulating many toxic chemicals from the air.

In the UCLA study, Nel showed the chemical debris corrodes and injures the lungs, and the body responds with inflammation. He said it could possibly cause problems for even those with healthy lungs, but he has only studied asthmatics.

For asthmatics, Nel said conventional treatment does not address the problems created by pollution. He said science would have to alter medications, using the kind of antioxidant chemicals found in broccoli and other natural sources to combat the lung injuries.

Nel said such a treatment needs to be developed soon because there is evidence that ultra-fine pollution is becoming a problem in many places, and asthma is on the rise worldwide.

"The particles are increasing in the industrialized Northern Hemisphere," he said. "They are being spread on the wind from city to city, country to country and even continent to continent."

Air activists sue EPA

Fresno Bee, Wed., July 14, 2010

Air activists on Tuesday sued the U.S. Environmental Protection Agency, seeking either approval or rejection of the San Joaquin Valley's plan to clean up tiny particles of soot and chemical debris.

The EPA is supposed to make a decision within 18 months of receiving the plan, but has failed to do so, said the lawsuit filed by the Valley-based Association of Irritated Residents.

The specks of particle pollution, called PM-2.5, are considered more dangerous than summertime ozone. The American Lung Association ranks Kern, Tulare, Fresno and Kings counties among the country's 10 most-polluted places for PM-2.5.

Activists opposed the cleanup plan by the San Joaquin Valley Air Pollution Control District in 2008, saying it was not aggressive enough. The plan was put into action, but activists cannot challenge it in federal court until EPA makes a decision.

EPA OKs more hazardous waste for Calif toxic dump

The Associated Press
In the Business Journal, Merced Sun-Star, and other papers, Thursday, 15 July 2010

(AP) — The Environmental Protection Agency says a central California landfill that local residents blame for birth defects can continue accepting hazardous waste.

The landfill next to Kettleman City is run by Waste Management. In a letter released by the company on Wednesday, the EPA says it decided to allow more hazardous waste at the site after an area where cancer-causing PCBs were found was cleaned up.

But the letter says Waste Management must find the source of other PCBs, or polychlorinated biphenyls, the company found at the landfill and clean them up as well.

Kettleman City residents have blamed the toxic waste dump for at least 11 birth defects since 2007. But state waste management officials have said there is no evidence linking the landfill to the deformities.

The state is investigating the defects.

Fresno Bee Earth Blog, Wed., July 14, 2010:

EPA's comment on PM-2.5 lawsuit in Valley

By Mark Grossi

I wrote a short piece today about activists suing the U.S. Environmental Protection Agency over the Valley's PM-2.5 cleanup plan.

EPA hasn't decided yet whether it will accept or reject the plan. By law, the agency should have decided on the 2008 plan by now.

Activists are suing to force a decision. Without the decision, activists cannot legally challenge the plan, which they say is flawed.

EPA's comment came in too late to make the story. EPA generally does not comment on lawsuits, but it did make a general statement that should be included now.

"San Joaquin Valley Air Quality continues to be one of EPA's top priorities. We are actively reviewing the PM-2.5 plan and are working closely with the state and the Air District to ensure that the plan meets all requirements under the Clean Air Act."

Turlock Journal, Commentary, Thursday, July 14, 2010:

University researchers lend expertise to the Valley

By Robin Maria Delugan

It takes everyone's help to strengthen Central Valley communities.

The focus on the high number of birth defects in Kettleman City was the result of community groups working with residents and nonprofits. The ensuing media coverage led Gov. Arnold Schwarzenegger to ask the state Department of Public Health and the Environmental Protection Agency to open an investigation into a nearby hazardous waste facility. While California health and environmental officials further investigate the claims, the residents succeeded in raising local, state and national awareness about the conditions experienced in this Central Valley community. Similar to many rural unincorporated areas in the Central Valley, Kettleman City also faces extreme poverty. Census 2000 indicates the community's per capita income was $7,839, which is a third of California's average per capita income. We know poverty makes certain communities more vulnerable to environmental health risks.

The important strides made by Kettleman City residents were accomplished with the support of the nonprofit organization Greenaction and through networking with Central Valley environmental and social justice organizations. This is one example of the many collaborations taking place to improve the lives of Central Valley residents.

At the University of California, Merced, some of us serve the region by creating or joining collaborative efforts and by demonstrating how research can benefit efforts to solve problems in our region. Community University Research and Action for Justice, or CURAJ, is one such initiative. CURAJ was formed four years ago at UC Merced to connect faculty and students at UC Berkeley, UC Davis, UC Merced and CSU campuses, with local and regional organizations. In the past few years we have built a network that includes organizations such as California Rural Legal Assistance; Center for Race, Poverty, and the Environment; Central Valley Air Quality Coalition; Youth in Focus; Latino Issues Forum; Central Valley Partnership for Citizenship; and many others.

Together we envision how research can aid in grassroots efforts to address local concerns. This led to the 2008 CURAJ Exchange, which brought more than 150 people together to discuss common concerns and approaches to problem solving. There have also been smaller town-hall type forums. To find solutions, specific information is required about local populations and their needs. We emphasize that any research should be conducted with foremost attention to the goals and interests of local communities. My colleagues and I contend that local research can advance academic knowledge, and that we must find ways for research to also benefit local communities.

One impressive ongoing effort is the Community Equity Initiative (CEI). This project, of California Rural Legal Assistance and Policy Link with funding from The California Endowment, is focused on the hundreds of small, unincorporated communities in the Central Valley. Arguably, and almost by definition, unincorporated communities are among the most poverty-stricken and marginalized in the region. The initiative is creating an inventory of unincorporated communities. Beyond understanding their scale and scope, the initiative is partnering with Kettleman City, South Dos Palos, Fairmead, Matheny Tract, Pixley, Tooleville, Lanare, Laton, Drummond,

Jensen, Parklawn, Lamont and the Weedpatch area to assist them in addressing their problems. CURAJ is a collaborator in the Community Equity Initiative. Our research efforts have included historical research and interviews to help community residents tell their story, and to also illuminate the factors that contribute to present-day difficulties. Legal research examines the policies that are associated with particular problems or solutions. Social science and humanities research will provide information on the individual and shared contemporary experience.

While the goal of our collaboration is solving problems, we also acknowledge the vitality of the communities we work with. In our process of recording histories and gathering individual, household, and community-level knowledge, we are privileged to meet and build relationships with families who aspire for a healthy environment for their children, caring neighbors who want to see the town succeed and tireless community leaders who see the area's potential.

An event in December at UC Merced will focus attention on a basic but complicated problem in underserved rural communities — access to safe quality drinking water. We hope to advance ongoing efforts in the Central Valley to increase access to safe drinking water by bringing together research engineers and scientists working on the latest technologies of water sanitation, community organizations trying to improve access to clean water, policy makers and organizations that fund community development. Through these collaborative efforts we can work with residents, ask them to identify priorities, and support their decisions and actions. Together we can strengthen vulnerable communities.

Robin Maria Delugan is an Anthropology professor at the University of California, Merced.