

May 29, 2009

Dear Environmental Quality Council,

My name is Michael J. Kramer and I have been asked to comment at your hearing in Rock Springs, Wyoming on June 3<sup>rd</sup>, 2009 regarding the petition before you to reduce Wyoming's Ambient Air Quality Standard for ozone to 0.065 parts per million (65 parts per billion) which is below the current National Ambient Air Quality Standard for ozone of 0.075 parts per million (75 parts per billion). Due to prior commitments, I am unable to attend the meeting in person so I am submitting my comments in writing instead.

I am a Board Certified Emergency Physician with current privileges in Emergency Medicine at Memorial Hospital of Sweetwater County in Rock Springs, Wyoming. I am a Life Fellow of the American College of Emergency Physicians and in 1981 I was the founder and first President of the Wyoming Chapter of the American College of Emergency Physicians. I received a Bachelor of Arts Degree in Chemistry with honors from the University of Illinois in 1970 and a Doctor of Medicine degree from the University of Illinois in 1974. Over the last 35 years I have cared for thousands of children suffering acute asthma attacks and thousands of adults experiencing difficulty breathing from asthma, emphysema, or exacerbations of Chronic Obstructive Pulmonary Disease (COPD). I have lived in Sublette County as either a part time or full time resident since 1980. While I am not an expert in Epidemiology nor am I Pulmonologist, I personally experienced the effects of increased ozone last winter during the alerts, which included burning of my eyes and a burning sensation in my nose. It was then that I started researching the effects of ozone and felt compelled to write a letter to the editor of the Pinedale Roundup describing the health hazards of elevated ground ozone and recommended, "Young children, the elderly, and people with chronic lung conditions such as asthma or Chronic Obstructive Pulmonary Disease (COPD) should definitely avoid outdoor activities when levels reach the 100 ppb level or above and should consider restricting their outdoor activity even when the levels are 50 ppb or above."

I will not belabor all of the studies that recommend a lower standard for ozone since the petition before you already gives reference to these studies and quotes experts in the fields of Epidemiology, Pulmonology, and Public Health. What I believe are the two most compelling reasons to lower the standard in Wyoming, and Sublette County in particular, are the elevation that we live at and the damage that repeated exposure to high levels of ozone can have on the developing lung tissue of children. As you well know, as you go up in altitude, the number of oxygen molecules per liter decreases while the concentration of naturally occurring ozone actually increases. That is why passenger jets that fly above 32,000 feet not only have oxygen masks that can drop down in case of a sudden depressurization, but also have filters that can remove ozone from the cabin air. People living at higher elevations can acclimatize to the lower oxygen over time, but the body does this by increasing the depth of respiration and by producing more red blood cells in order to carry more oxygen to the tissues. For children exerting themselves during high ozone concentration days, this means they will be inhaling deeper and more

rapidly and will have a much greater exposure to the harmful effects of ozone. Their developing lung tissue is also much more susceptible to ozone's harmful effects.

In 2004, the American Academy of Pediatrics Committee on Environmental Health published a Policy Statement in Pediatrics entitled, "Ambient Air Pollution: Health Hazards to Children". I have submitted this paper with my comments for the record. In the paper, they explain that children have increased exposure to many air pollutants compared with adults because of higher minute ventilation and higher levels of physical activity. Because children spend more time outdoors than do adults, they have increased exposure to outdoor air pollution. They make reference to a study that showed that in communities with high levels of ozone, there was an increased risk of developing asthma in a small subset of children involved in heavy exercise. This increased risk with heavy exercise was not seen in low-ozone communities. Another study found associations of ozone and respiratory symptoms in children with asthma at levels below what was then the current US EPA standard. Two other studies of college freshmen suggested that increasing cumulative childhood exposure to ozone might affect lung function when exposed children reach young adulthood, particularly in measures of flow in small airways. What their conclusions back in 2004 were: "Current National Ambient Air Quality Standards may not protect the public adequately. Because the law requires that the most vulnerable groups be protected when setting or revising the air quality standards, the potential effects of air pollution on the fetus, infant, and child should be evaluated, and all standards should include a margin of safety for protection of children". This is exactly the goal of the petition that is before you today.

Many will argue that lowering the standard to 65 ppb for Sublette County alone is arrogant and that if a standard is to be lowered, it should apply to the entire country. And, honestly, I am one of those who feel the entire country should follow the lead that Canada took in order to protect the health of her citizens. But then, this just could be a chance for Wyoming to show that it is progressive enough to care about people and to stand as an example to the rest of the country. It will require sacrifice by all, including vapor recovery fittings for gasoline stations, laws against prolonged diesel idling, conversion of diesel engines in both industry and school bus fleets to cleaner burning alternative fuels, and even better forecasting of possible high ozone days. However, the result would be a healthier population and a much healthier future generation. Therefore, I strongly urge the Council to set this petition for a full public hearing.

Respectfully submitted,



Michael J. Kramer, MD, FACEP  
PO Box 682  
Pinedale, WY 82941

Attachment: **Ambient Air Pollution: Health Hazards to Children  
American Academy of Pediatrics Policy Statement**