



## Oil and Gas Production: Clouding Western Skies

Oil and gas drilling is fueling rising air pollution in the once clear blue skies of the Rocky Mountain region, putting communities, wildlands, and the Western quality of life at risk. In urban and rural areas alike, air pollution levels are skyrocketing—sometimes even violating health limits. Approaches to limit harmful air pollution from oil and gas operations are easy to implement and can even reduce costs for companies. The federal government must require protections that control air emissions and keep our Western skies clean.

In the 15 years from 1991 and 2006, the number of natural gas wells in five Rocky Mountain states more than tripled. If this trend continues, there will be 200,000 new wells over the next 15 years. This region is home to some of the nation's most pristine landscapes, vital wildlife habitat, and treasured communities centered around outdoor living. Yet oil and gas operations are polluting clean air and threatening public health thanks to loopholes in our laws and weak regulations.

### Air Pollution Causes Growing Health and Environmental Impacts in the West

**Hazardous air pollutants:** Oil and gas drilling operations can release a number of hazardous pollutants, including hydrogen sulfide, benzene, toluene, formaldehyde, and diesel exhaust. Exposure is known to lead to short-term illnesses, cancer, or even death. For example, benzene and formaldehyde are both known to cause cancer, and diesel exhaust contains a number of compounds known to cause cancer. Emissions can come from oil and gas itself, chemical additives used in drilling, or fuel combustion. Despite the health risks, oil and gas exploration and production operations are exempt from two key provisions of the Clean Air Act's National Emissions Standards for Hazardous Air Pollutants, designed to protect public health.

**Ozone:** Ozone is the key ingredient of smog and forms when two pollutants—volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>)—react with sunlight. When smog is breathed in, the effects are akin to getting a sunburn on the inside of your lungs. Ozone can trigger asthma attacks, reduce lung function, and even cause premature death. Increased oil and gas drilling has pushed ozone pollution levels to unprecedented highs in rural and urban areas alike in the Rocky Mountain region. In rural western Wyoming, where drilling has increased by more than 200 percent since 2000, ozone pollution has hit levels comparable to Los Angeles and Houston, in violation of federal health standards. The Denver metro area has also violated health limits on ozone pollution. Other areas in the region may violate U.S. Environmental Protection Agency (EPA) ozone standards in the near future.

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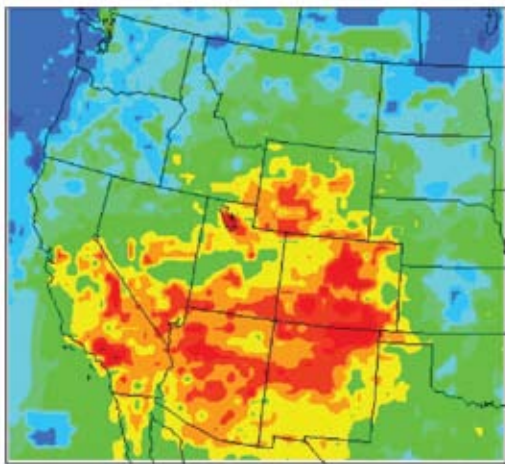
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**Greenhouse gas emissions:** Carbon dioxide and methane are two key greenhouse gases that are fueling global warming. Methane is of particular concern because its global warming potential is 21 times more potent than carbon dioxide. Oil and gas drilling can be a major source of these two gasses through accidental leaks, known as fugitive emissions, and intentional venting. In New Mexico and Wyoming, oil and gas drilling operations are the second largest source of statewide carbon dioxide and methane emissions. In Colorado, preliminary inventories show the industry is also a very large source.

### Predicted Ozone Levels in 2018

Ozone is created by many sources, both urban and rural, and can be transported great distances. Orange, red, and yellow symbolize potential future ozone levels at or above federal health limits recently adopted by the EPA.

*Source:* Ozone data from haze analyses by the Western Regional Air Partnership.



**Haze in wilderness areas:** Haze, which impairs visibility, is caused by soot particles, NO<sub>x</sub> pollution, dust, and dirt. Oil and gas drilling operations are a key contributor to haze pollution; drill rigs and other engines release large amounts of NO<sub>x</sub> and soot, while increased development is kicking up more and more dust. Clean Air Act regulations are intended to protect the air at most national parks and wilderness areas, yet many of the West's most pristine places have excessive haze. In Colorado, places including Mesa Verde National Park, the mountains of the Maroon Bells, and many wilderness areas have degraded visibility and are impaired by haze.

*“We’re dealing with unhealthy air pollution that can permanently damage the lungs of children, young athletes, those with respiratory problems, and others who seek to enjoy outdoor recreation. This isn’t Denver or Los Angeles, but we need the same protection.”*

DR. MICHAEL KRAMER, BOARD CERTIFIED EMERGENCY PHYSICIAN IN RURAL PINEDALE, WYOMING

**Particulates:** Particulates are tiny bits of grit made of dust, soot, and various chemicals that come from fuel combustion. About 30 particles equal the thickness of a human hair. Particulates this small can reach deep into the lungs, spurring inflammation that promotes heart attacks and strokes, and contributing to lung and heart disease and even premature death. Increased oil and gas drilling is leading to more particulate pollution from drilling rigs, heavy truck traffic, and compressor engines. Since 2004, more than 3,000 oil and gas wells have been drilled in northeastern Utah. In nearby rural Vernal, Utah, a monitor recorded particulate pollution levels 75 percent higher than current EPA health limits.

### Industry Solutions and Government Protections Can Keep Western Air Clean

Approaches to limit harmful air pollution from oil and gas operations are widely available and can yield a payback for industry, sometimes in less than a year. A recent report in the *Journal of Petroleum Technology* discusses 25 cost-effective ways to reduce emissions. In addition, the EPA's Natural Gas STAR program has identified more than 89 different control options to capture emissions, ranging from increased maintenance to new equipment to monitoring. Williams Production Company reports making \$9.00 for every \$1.00 spent on reducing air pollution.

State and federal policies should require greater control of harmful air emissions from oil and gas activities. Most drilling operations now completely escape air permitting because regulators have treated them as single, small sources rather than looking at a company's plan of development as a whole.

The many win-win solutions that exist need to become standard practice to protect the health and prosperity of the Rocky Mountain region.

For more information about the effects of oil and gas on the West, see the NRDC report *Drilling Down: Protecting Western Communities from the Health and Environmental Effects of Oil and Gas Production* available online at [www.nrdc.org/land/use/down/contents.asp](http://www.nrdc.org/land/use/down/contents.asp).