AIR

Throughout South Dakota, the air quality is relatively good, but there is room for improvement. Our air quality in various areas of the state could be, on any given day, affected by blowing dust, road dust, unpleasant odors, industrial output or natural events occurring halfway across the world.
Airborne pollutants are measurable solids, liquids, or gases that can negatively impact our environment. Odor is a subjective consideration; what is offensive to one can be of no consequence to another.

Our dependence on carbon-based fuels affects our economy and our environment. Our increased use of alternative energy sources could not only improve our local economies, but also our global air quality.

Air Quality Emissions

Emissions of Particulate Matter (PM) & PM Precursors

Direct emissions of particulate matter – dust and smoke – as well as the formation of particulate matter in the atmosphere from other agricultural emissions – ammonia, nitrogen oxide (NOx), and volatile organic compounds (VOCs) – cause multiple environmental impacts such as:

- The unintended movement of particulate matter – typically dust or smoke – results in safety or nuisance visibility restriction.
- The unintended movement of particulate matter and/or chemical droplets results in unwanted deposits on surfaces.
- Increased atmospheric concentrations of particulate matter can impact human and animal health and degrade regional visibility.

Emissions of Greenhouse Gases - GHGs

Greenhouse gases are gases that trap and hold heat in the atmosphere, thus making the Earth warmer. Emissions from livestock and crop production can increase atmospheric concentrations of greenhouse gases.

Emissions of Ozone Precursors

Emissions of ozone precursors—oxides of nitrogen (NOx) and volatile organic compounds (VOCs)—result in formation of ground-level ozone, which can have negative impacts to human, plant, and animal health.

Objectionable Odor

Agricultural odors are mainly a community or individual perception issue; although some odorous compounds can cause health problems when encountered in high concentrations. Greater emphasis on addressing odors is likely to occur in areas that have negative community and individual perceptions of odors, especially in areas with a strong rural/urban interface. The three primary sources of odor are manure storage facilities, animal housing, and land application of manure. Other sources can include burning, silage storage, and fertilizer and pesticide applications.

Emissions of Airborne Reactive Nitrogen

Emissions of airborne reactive nitrogen—ammonia and oxides of nitrogen—can negatively impact atmospheric chemistry, cause unwanted fertilization via deposition in sensitive ecosystems, and degrade regional visibility.

South Dakota's Conservation Districts

USDA United States Department of Agriculture
Natural Resources Conservation Service