



Division of Environment
Bureau of Air

ENVIRONMENTAL BENEFIT STATEMENT
AND
ADDITIONAL ECONOMIC IMPACTS FOR ENVIRONMENTAL REGULATIONS

Pursuant to K.S.A. 77-416(d) – (e)

**PROPOSED REVOCATION OF EXISTING AIR QUALITY REGULATION:
K.A.R. 28-19-719**

June 2020

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I. Environmental Benefit Statement

1) Need for proposed amendments and environmental benefit likely to accrue.

a) Need

The purpose of this rulemaking is to revoke the summertime 7.0 pound per square inch (psi) Reid Vapor Pressure (RVP) rule in Kansas City. Kansas counties Johnson and Wyandotte currently use 7.0 psi RVP fuel from June 1 through September 15 to reduce ozone forming compounds during the summer months. The Kansas City area is attaining the 2015 ozone standard based on 2015-2017, 2016-2018, and 2017-2019 monitoring data, and modeling shows that ozone forming compounds from transportation sources will continue to decrease even without the RVP rule. The Bureau of Air concludes that a rule change from summertime 7.0 psi RVP to summertime 9.0 psi RVP gasoline will not interfere with continued attainment of the 2015 ozone standard. The rule is no longer necessary and is proposed for revocation.

b) Environmental benefit

The rule revocation provides no environmental benefit but does not cause environmental detriment. The RVP rule was originally promulgated as one of a suite of measures designed to reduce volatile organic compounds (VOCs), which are precursors to ozone formation, in the KC Metro Area. The Kansas City metropolitan area, once a nonattainment area for ozone, is now in attainment with the EPA's 2015 ozone standard, which is the most stringent to date.

In January of 2020, Missouri proposed a rescission of their parallel RVP rule to be finalized and effective by September 30, 2020. A divide in the gasoline market will be created if Missouri offers cheaper 9.0 psi RVP gasoline to consumers and Kansas continues to require the sale of more expensive 7.0 psi RVP fuel. The disparity in gas prices within the KC Metro Area will disadvantage Kansas businesses as well as consumers who purchase gasoline in Kansas.

Despite these economic pressures, KDHE's priority is to maintain the health and wellbeing of the citizens in Kansas; which includes ensuring that Kansas citizens have access to clean air. The accompanying Technical Support Document (TSD) demonstrates the revocation of the summertime 7.0 psi RVP requirement of K.A.R. 28-19-719 will not interfere with attainment, maintenance, or reasonable further progress for any National Ambient Air Quality Standard or with any other applicable requirement of the Clean Air Act (CAA). Further, the TSD includes a modeling analysis conducted by Sonoma Technology to determine the air quality impacts of this proposed regulatory action (See TSD, Appendix A). The modeling analysis found that RVP fuel currently provides very little VOC reduction for the Kansas City area. The revocation of the RVP rule will not cause the Kansas City area to exceed the EPA 2015 standard for ozone. Therefore, the RVP rule is being proposed for revocation.

2) When applicable, a summary of the research indicating the level of risk to the public health or the environment being removed or controlled by the proposed rules and regulations or amendment.

The accompanying TSD demonstrates that removal of the summertime 7.0 psi RVP requirement for gasoline offered for sale in Johnson and Wyandotte Counties in Kansas complies with Section 110(l) of the Clean Air Act (CAA) and includes a modeling analysis conducted by Sonoma Technology to determine the air quality

impacts of the RVP rule revocation (See TSD, Appendix A). Specifically, the analysis examined how NO_x and VOC emissions will change over time in Kansas counties Johnson and Wyandotte. Three scenarios were modeled using the EPA's Motor Vehicle Emissions Simulator (MOVES) 2014b model. The MOVES model is used to estimate pollution emissions from mobile (transportation, and non-road vehicles) sources. The inputs into these scenarios included the most recent 2017 National Emissions Inventory (NEI) data from the EPA as well as Vehicle Miles Traveled (VMT) data from Kansas Department of Transportation.

The first scenario was used to calculate baseline emissions from mobile sources using 2017 as a baseline year. The second scenario modeled emissions with the current RVP requirements and the third modeled emissions with the rescission of the RVP. The results of all three scenarios showed a trend of decreasing NO_x and VOC emissions. In the scenario where the RVP requirements have been removed, NO_x and VOC emissions are slightly higher than the scenario where the RVP requirements remain in place. However, it is important to note that both of these scenarios have lower NO_x and VOC emissions than the baseline year.

The reduction in transportation emissions is primarily being impacted by the (average) vehicle age. Newer vehicles have lower emissions standards and pollute less than older vehicles. The (average) vehicle age in Kansas is lower than the (average) vehicle age in the Missouri counties of Kansas City. Therefore, despite predictions for growth in Johnson and Wyandotte counties, it is predicted that NO_x and VOC emissions will continue to decrease as older vehicles are replaced by newer ones.

3) If specific contaminants are to be controlled by the proposed regulations or amendment, a description indicating the level at which the contaminants are considered harmful according to current available research.

Ozone (O₃) is a secondary pollutant that is created through a photochemical reaction between oxygen (O₂), nitrogen oxides (NO_x), and volatile organic compounds (VOC). NO_x refers to the combination of nitrogen oxide (NO) and nitrogen dioxide (NO₂). The following reactions show how NO_x, VOC, and O₂ react in the presence of sunlight (hv) to form O₃:

The amount of ozone formed depends on several factors. Meteorological conditions, such as wind direction and speed, temperature, mixing height, solar radiation, and other parameters, affect the rates at which ozone formation occurs. The types and the concentration of precursors present can affect net reactivity of precursor compounds found in a plume of emissions.

Precursor compounds, NO_x and VOC also exist under natural conditions. Ozone is created and destroyed on a natural cycle according to atmospheric conditions and chemical concentrations, even in the absence of additional anthropogenic precursor sources. This natural ozone formation is known as "natural background" ozone and is the starting point for measuring the contribution of ozone and precursors attributable to human activity. Within an urban area, not all ozone formation is necessarily caused by emissions produced locally because anthropogenic precursors, along with ozone formed by them, are often transported over long distances. Because the amount of ozone formed depends on so many other variables, it can be difficult to quantify the exact contribution from specific sources.

The United States Environmental Protection Agency (EPA) revised the eight-hour ozone National Ambient Air Quality Standard (NAAQS) to 0.070 parts per million (ppm) or 70 parts per billion (ppb) in 2015.

On November 16, 2017, the EPA designated all of Kansas as attainment/unclassifiable for the 2015 eight-hour ozone NAAQS ([82 FR 54232](#)). These designations were based on 2015-2017 monitoring and emissions data.

Design value trends can be used to determine if various areas in Kansas are maintaining or improving their good air quality and maintaining the NAAQS. Table 1 provides the 2015-2017, 2016-2018 and 2017-2019 ozone design values for each of the three ozone monitoring sites located on the Kansas side of the bi-state Kansas City area. The Kansas City area design values remain in attainment of the 2015 ozone NAAQS based on the latest 3-year design value (2017-2019). Therefore, for both counties, the 2017 level of emissions represents an acceptable level to ensure that emissions in these two counties will not interfere with attainment or maintenance of the 2015 ozone standard.

Table 1 – Kansas City Area (Kansas) Eight-hour Ozone Design Values*

Monitoring Site	Kansas County	2015 Ozone NAAQS (ppb)	2015-2017 Design Values (ppb)	2016-18 Design Value (ppb)	2017-19 Design Value (ppb)
Heritage Park	Johnson	70	59	61	59
Leavenworth**	Leavenworth	70	60	61	61
JFK	Wyandotte	70	62	64	62

* Quality assured data through December 31, 2019

** The Leavenworth monitor is in a county that is not subject to the summertime 7.0 psi RVP requirement but is adjacent to Kansas City area counties that are subject to the requirement.

II. Additional Economic Impacts for Environmental Regulations

In addition to the Economic Impact Statement prepared for the Kansas Division of the Budget, for all environmental rules and regulations the following descriptions of costs are included:

1) Capital and annual costs of compliance with the proposed amendments and the persons who will bear those costs.

This rule limits the volatility of motor vehicle gasoline in the Kansas City area and affects persons who sell, dispense, supply, offer for sale, offer for supply, transport, or exchange in trade for use gasoline intended for final use in Johnson and Wyandotte counties. This proposed revocation is not expected to add any additional costs for private entities.

2) Initial and annual costs of implementing and enforcing the proposed amendments, including the estimated amount of paperwork, and the state agencies, other governmental agencies or other persons or entities who will bear the costs.

Addressed in the Economic Impact Statement prepared for the Kansas Division of the Budget under Section III, Subsection F.

3) Costs which would likely accrue if the proposed regulations are not adopted, the persons who will bear the costs and those who will be affected by the failure to adopt the regulations.

Addressed in the Economic Impact Statement prepared for the Kansas Division of the Budget under Section III, Subsection I.

4) A detailed statement of the data and methodology used in estimating the costs used in the statement.

Addressed in the Economic Impact Statement prepared for the Kansas Division of the Budget under Section III, Subsection F.