



# Sierra Club

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*Kansas Chapter Air Quality Committee*  
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Mr. Mark J. Hague  
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11201 Renner Blvd.  
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Subject: Need for a Mitigation Plan for the annual burning of the Flint Hills of Kansas  
Per Revised Rule @ **40 CFR Parts 50 and 51 Treatment of Data Influenced by  
Exceptional Events**, issued October 3, 2016 in *Federal Register*

**Introduction.** This letter serves as notification, per 40 CFR §51.930(b)(ii), that EPA should issue an order to the Kansas Department of Health and Environment to prepare a Mitigation Plan for the annual burning of grasslands in the Kansas Flint Hills. This action is required by the occurrence of 3 or more ozone NAAQS exceedances within the 3-year period, 2014 - 2016, attributable to widespread prescribed fire activities in April of those years. These exceedances establish the area as subject to "historically documented or known seasonal events" thereby initiating the requirement for a mitigation plan per 40 CFR §51.930(b).

Ozone exceedances occurred at three monitors in and around Wichita, just west of the southern Flint Hills on April 11, 2014. One ozone exceedance occurred in Chanute, in Neosho County, just east of the southern Flint Hills on April 10, 2015, and two ozone exceedances occurred in Wichita on April 4, 2016. KDHE's December, 2010 Smoke Management Plan (SMP), pages 5-9, established a large group of counties within the Flint Hills Physiographic Region as the relevant source of emissions. Indeed the burning of the Flint Hills grasslands in late March and April of that period caused a number of additional ozone and/or PM<sub>2.5</sub> exceedances in Nebraska and Oklahoma as shown in the attached list. Since the relevant period is three years prior to April 4, 2016, it is not necessary to wait until data from more recent periods in 2016 is posted to the AQS system in order to take action.

**Initial EPA Action.** In their revised rule, EPA ordered a number of air quality jurisdictions to prepare a Mitigation Plan on account of exceedances in the 2013 - 2015 period. In a note to the Table 6 of the Preamble, EPA stated as follows:

<sup>113</sup> *Because the Initial Notification of Potential Exceptional Event is a new requirement in this action, we cannot use it to define recurrence for those areas that are initially subject to the requirement to develop a mitigation plan. For these areas, we are defining recurrence as three events or event seasons for which an air agency submitted a demonstration within a 3-year period or three events or event seasons in a 3-year period that resulted in a NAAQS exceedance(s) or violation(s) for which an*

*air agency has previously flagged events for concurrence in AQS (regardless of whether the air agency submitted a demonstration).*

This precedent would apply also to the period 2014 to 2016, which had not yet come to a close at the time the subject rule was issued. According to the AQS database, KDHE flagged the relevant data in those years. USEPA should also note that a monitor in Ponca City, Oklahoma suffered, in each year of this same period, PM<sub>2.5</sub> exceedances attributable to seasonal prescribed burning in the Flint Hills of Oklahoma and/or Kansas. However this data was apparently not flagged.

**Why the Flint Hills Burning Must Have a Mitigation Plan.** In the revised rule, USEPA qualifies a relevant event as follows:

*§ 50.1 (j) Exceptional event means an event(s) and its resulting emissions that affect air quality in such a way that there exists a clear causal relationship between the specific event(s) and the monitored exceedance(s) or violation(s), is not reasonably controllable or preventable, is an event(s) caused by human activity that is unlikely to recur at a particular location or a natural event(s) . . .*

Thus the *event* is the widespread, seasonal *prescribed fire* activity on what KDHE has characterized in their Flint Hills SMP as *wildland*, and the emissions therefrom, and the effect is one or more exceedances of the NAAQS.

Then to determine whether such exceedances qualify as related to "historically documented or known seasonal events," EPA looks at another element of the definition related to whether the event was a *human activity that is unlikely to recur at a particular location* or was a natural event.

Prescribed burning is clearly a human activity. EPA has declared that such activity can stand for exceptional status "as unlikely to recur at a particular location" only if it is performed under a smoke management plan or practices with a stated objective to *establish, restore and/or maintain a sustainable and resilient wildland ecosystem*. EPA Region 7 approved KDHE's 2010 SMP on that basis. Since the ecosystem presumably being preserved is all of the tallgrass prairie in the Flint Hills, the full extent of the area defined by KDHE in their SMP is the relevant area or "particular location" under consideration.

As discussed on page 68233 of the Preamble, EPA decided not to define the relevant area or location subject to recurrence as an Air Quality Control Area. Rather they left it up to the EPA Region to collaborate with an air quality agency to define the area where the event is recurring. As previously noted, Region 7 and KDHE made this designation in the 2010 SMP.

Also in this section of the Preamble, EPA allowed that *a single event, natural or caused by human activity, can span multiple days and result in an air agency flagging multiple monitor-day values in AQS (i.e., multiple exceedances of a given NAAQS at a single monitor in a single day or multiple NAAQS exceedances at multiple monitors on multiple days)*. EPA reiterates this interpretation on page 68271 that events may apply to *the same general geographic area and (multiple) monitors*.

Finally, in the Mitigation section of the rule (§51.930(b)(1)(i)), EPA further established that, *historically documented or known seasonal events shall include those events of the same type and pollutant that recur in a 3-year period.*

The seasonal, prescribed burning of the Flint Hills is the “same type” and in this case the NAAQS exceedance(s) in each of the three years was for ozone.

**The Failure of the Existing SMP.** In the Preamble, EPA allows that KDHE's SMP may serve as the template for a mitigation plan. However, KDHE's December 2010 SMP fails in several respects to include the components of a mitigation plan required under the rule.

-- The Mitigation Plan must: (§51.930a(3)) *Provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events, and include . . .(b)(2)(ii)(A) Measures to abate or minimize contributing controllable sources of identified pollutants.*

**1. KDHE's SMP failed to abate or minimize controllable emissions.** KDHE issued their SMP in December of 2010. In the previous 5 burn seasons (2006 - 10) there were **17 NAAQS exceedances** attributable to the burning including those in Ponca City, OK near the Kansas state line, and at the Konza Prairie CASTNET ozone monitor. KDHE requested the CASTNET monitor be shut when EPA assigned it FRM status in 2013. These figures also include the Lincoln-Lancaster Co. (Neb.) Health Department continuous PM2.5 BAM monitor, which is not an FRM, but is used by EPA's Air Now system to indicate a serious health threat. Exceedances on the same day, at multiple monitors in an urban area, are counted as one event in this analysis.

In the five burn seasons (excluding 2013) *after* December 2010 there were **27 such exceedances of the NAAQS** and fewer total acres were burned. In 2013 there was almost no burning due to drought the previous year. If one removes the Ponca City monitors that are influenced also by burning in the Oklahoma segment of the Flint Hills, the comparison is 14 before and 20 after the SMP was issued. Either way, the SMP has clearly failed to reduce or minimize emissions from the annual Flint Hills burn.

-- The Mitigation Plan must include (b)(iii): *Provisions for periodic review and evaluation of the mitigation plan and its implementation and effectiveness by the State and all interested stakeholders.*

**2. The 2010 KDHE SMP provided no schedule for formal, public review and update.** While KDHE conducted informal annual reviews of the SMP with advisory committee members involved in the original formulation of the SMP, this privilege was not formally extended to the general public. KDHE left completely open the question of when the SMP would be updated and subjected to public comment. We are now *six years* beyond the time when the SMP was issued.

-- The Mitigation Plan requires: (b)(2)(ii)(C): *Processes to collect and maintain data pertinent to the event.*

**3. KDHE has made little or no effort to specifically monitor the emissions from the seasonal burns, nor to assess its human health impact.** In 2016 KDHE made plans to add a continuous FRM PM2.5 monitor in the Wichita area. However, as noted above, in 2013 KDHE arranged for the shutdown of the Konza Prairie CASTNET ozone monitor near Manhattan KS and has made no attempt to provide continuous monitoring of fine particulates between Wichita to the south and the Nebraska state line to the north, and between Kansas City, Kansas to the east and the Cedar Bluff monitor station to the west, a distance of some 280 miles.

On page 68270 of the preamble, EPA reiterated *Section 319(b)(3)(A)* of the CAA that identifies principles that the EPA must follow in developing implementing regulations for exceptional events. The first two principles are:

- (i) Protection of public health is the highest priority;*
- (ii) Timely information should be provided to the public in any case in which the air quality is unhealthy.*

Currently we must wait for the burn plume to reach Lincoln, Nebraska to obtain a timely and accurate characterization of air quality downwind of a typical heavy burn day in the Flint Hills. This is too late to warn the predominantly rural and small-town citizens in northeast and north central Kansas. We note also that there are three Native American Reservations in this area.

Likewise KDHE has not followed through with its intent, per Sec. 7.2.6 of the SMP, to conduct a comprehensive health study of the impacts of this activity. Without adequate monitoring, it is doubtful scientists could formulate valid exposure estimates for that purpose.

**Moving forward.** We would have no objection if KDHE revised and updated the existing SMP to serve as the required mitigation plan as long as it provides for effective and measurable improvements in the level of emissions, and otherwise resolves the aforementioned deficiencies, including public comment. The large number of continuing NAAQS exceedances establishes that the current SMP has failed to protect the public health. Continued delay in resolving these issues is not acceptable.

Sincerely,

Craig Volland, Chair  
Air Quality Committee  
Kansas Chapter, Sierra Club

cc. Secretary of KDHE