ADEQ

A R K A N S A S
Department of Environmental Quality

March 16, 2015

Via Electronic Transmission via the Federal eRulemaking Portal and U.S. Mail Delivery

Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mailcode 28221T
Attention: Docket ID No. OAR–2008–0699
1200 Pennsylvania Ave., NW
Washington, DC 20460

RE: Docket ID Number EPA-HQ-OAR-2008-0699

Dear Administrator McCarthy:

Since the Clean Air Act (CAA) was enacted, the citizens of Arkansas have been in an enviable position of full attainment of national air quality standards (NAAQS) for the majority of the State. Federal emission standards, regional partnerships, and local initiatives have driven continuous improvements in our State's air quality. We have done so while adhering to the principle that meaningful environmental measures can and must coexist with policies that promote job growth and economic development. Recently, the U.S. Environmental Protection Agency (the EPA) proposed changes to the NAAQS for ground-level ozone. We encourage the EPA to retain the current ozone NAAQS (the standard) rather than ratchet it down any further. We believe this action is protective of both the health and economic well-being of the citizens of Arkansas.

We also strongly urge the EPA to consider the fact that many of Arkansas's counties are rural and/or have small populations. As such, many areas in Arkansas have no direct control over whether they will attain the standard. Some of these same counties are already economically challenged and/or do not have adequate resources to address requirements which were established by Congress to address air quality problems in large metropolitan areas. We are greatly concerned that where imposed, a nonattainment designation would create sufficient permitting uncertainty and additional costs such that economic development plans would be preempted or curtailed.

Further, the proposed ozone NAAQS rule has the potential to create additional burden and impose obligations which may not result in any measureable improvement in air quality for local citizens. Because the EPA has proposed a wide range for the standard, the State is unable to fully assess the true impacts of the proposal. On the extreme low end of the proposed range, it is reasonable to believe that some of our State and National parks may not achieve the standard. Indeed, many areas across the country and here in Arkansas have background levels of ozone at or near the levels the EPA has proposed.

While ozone monitors throughout Arkansas have shown decreasing levels from 2003 to present, a recent study by the Arkansas Department of Environmental Quality (ADEQ or Department) has shown that all of these monitors may show future levels violating the standard under EPA's proposal. In addition, the EPA has only recently provided implementation guidance for the 2008 ozone rule. We do not support tightening the standard further at a time when our State is acting to come into compliance with the existing ozone standard.

Finally, a large number of new regulations already put in place by the EPA over the past several years are expected to collectively work to lower ozone emissions. In fact, many of our nation's states, including Arkansas, have seen a steady decrease in ozone levels over the past decade under the current, more flexible standard. Therefore, we submit the following comments on the proposed ozone rule, and ask you to retain the current standard of 75 ppb until the benefits of these regulations and implementation of the current standard have been fully realized.

Sincerely,

Becky W. Keogh
ADEQ Director

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Introduction

The following comments from ADEQ are being submitted in response to the EPA proposal to establish new primary and secondary NAAQS for ozone (Federal Register / Vol. 79, No. 242 / Wednesday, December 17, 2014 / Proposed Rules) (proposed rule). ADEQ supports retaining the primary ozone NAAQS at the current level of 75 ppb.

Revising the primary standard without it ever having been implemented precludes the ability to determine the extent to which health benefits might have been realized and thus not considered in the evaluation of risk and exposure associated with the setting of a new, more stringent level. For this reason, retaining the current level of the primary standard would be appropriate.

The same logic applies to the secondary ozone standard. Revising the secondary standard without it ever having been implemented precludes the ability to determine the extent to which welfare benefits might have been realized and thus not considered in the evaluation of the need for a new more stringent standard.

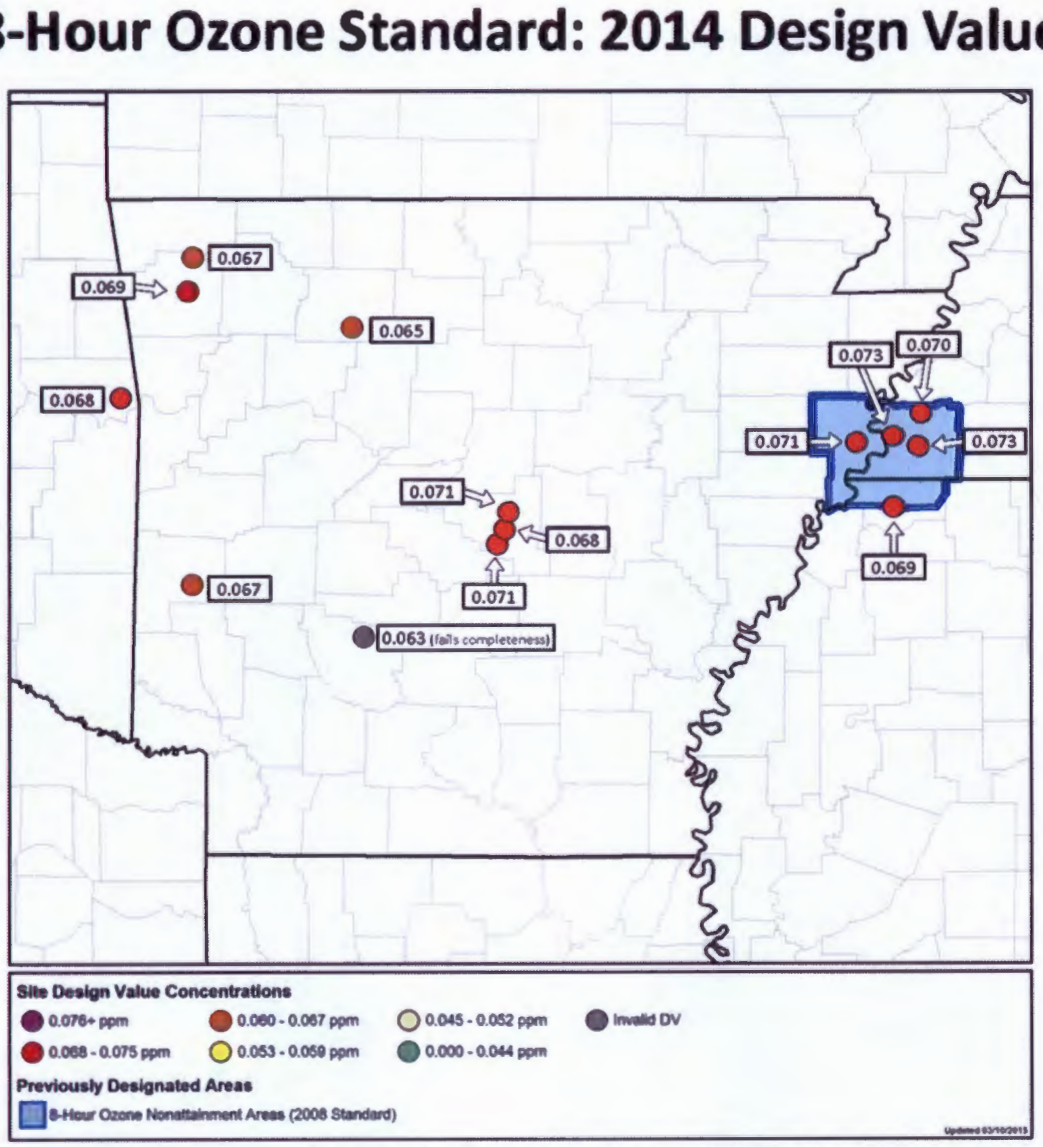
NAAQS "Achievability"

When setting a NAAQS, the EPA must consider "achievability". To that point, it must consider whether high background ozone levels render a lower NAAQS unachievable. The CAA is concise and clear in its directive that the NAAQS should be standards that can be achieved by regulation of sources. Specifically, Section 107(a) of the CAA states that implementation plans submitted by a state are to specify the manner in which the NAAQS "**will be achieved** and maintained." (emphasis added). Further, Section 110(a)(2)(C) of the CAA holds that SIPS must include an enforcement and regulation program "as necessary to assure that [NAAQS] **are achieved**." (emphasis added). In addition to the plain meaning of the statutory language, both the legislative history of the CAA and legal precedent recognize that it is inappropriate to set a NAAQS below a level that can be achieved.

We have a prime example of potential "unachievablility" here in Arkansas. The fourth highest daily eight-hour reading at Deer monitor in Newton County in 2014 was 63 ppb for ozone, and the 2014 Design Value (DV) was 65 ppb. See Figure 1. This monitor is very rural, far removed from the effects of population, highways, or industry. If a monitor in one of the most rural areas of the state is reading 60-65 ppb, that bodes poorly for monitors in more populated portions of Arkansas being able to achieve the more stringent levels contemplated in the proposed rule.

Ultimately, the benefits of an unachievable NAAQS are merely hypothetical if that standard cannot actually be reached. The reality is that an unachievable standard is no more protective of public health than a less stringent, but attainable, standard.

Figure 1:

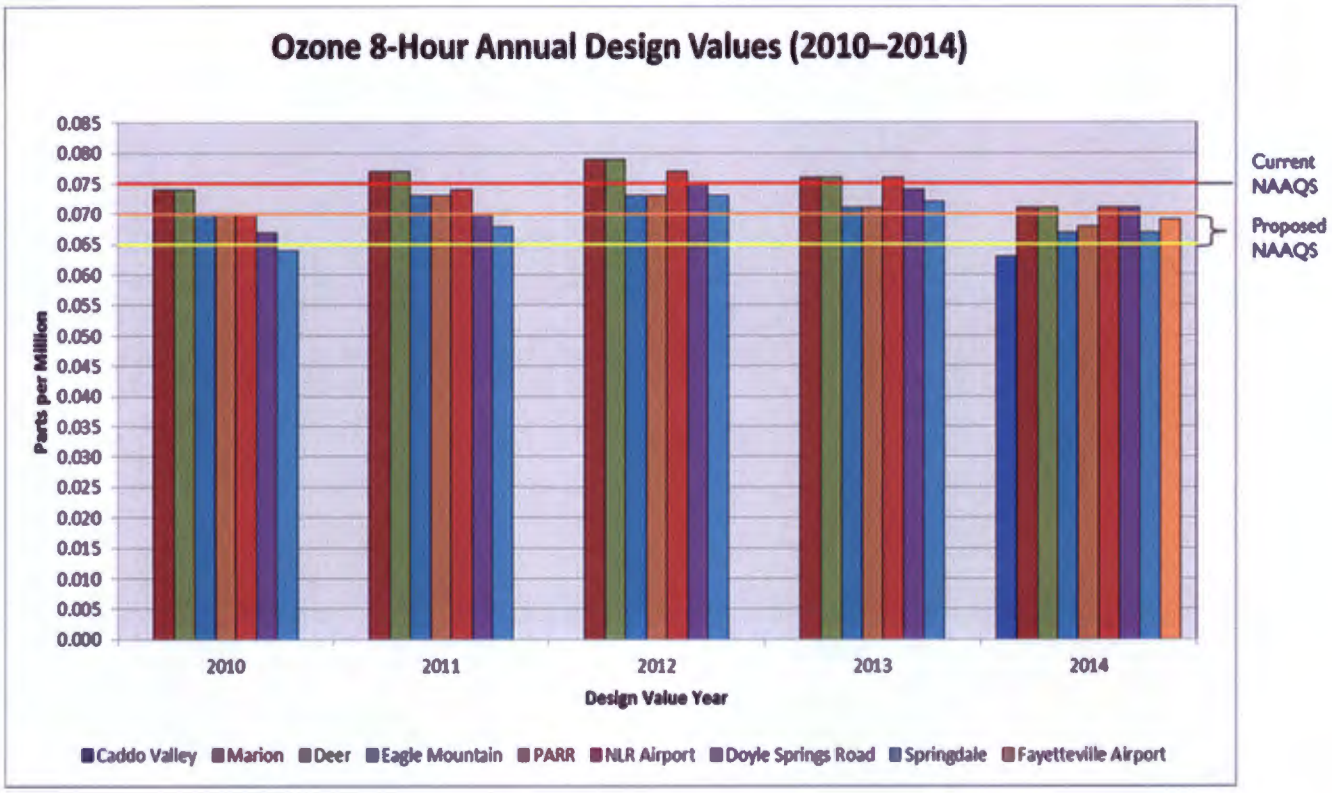


NOTE: 2014 data have not yet been certified and is subject to change.

Ozone Trends in Arkansas

The ozone monitors throughout Arkansas have shown decreasing levels from 2003 to present. The map above depicts the current status of DVs at ozone monitors located throughout Arkansas. However, a recent study by ADEQ has shown that despite the downward trends, all of these monitors may show future levels violating the standard within the range proposed by the EPA. See Figure 2. In addition, the EPA has only recently provided implementation guidance for the 2008 ozone rule. It makes more sense to bring our state and nation into compliance with the existing 75 ppb standard before tightening the standard further.

Figure 2:



Primary Standard

For the primary NAAQS for ozone, the EPA is proposing to set the standard within a range of 65–70 ppb, but will consider either retaining the current standard of 75 ppb or setting a standard as low as 60 ppb.[1] The EPA is proposing to retain the form and averaging time used for the current standard, which is a three-year average of the annual fourth highest eight-hour average concentration.

Limiting Exposures to Ozone Concentrations Demonstrated to Result in Adverse Health Impacts

Based on the evidence presented by the EPA in the proposed rule and associated supporting documents, the highest level of ozone demonstrated to result in a statistically significant health effect at a level deemed to be adverse in controlled human exposure studies was 70 ppb. Thus, in conformance with the EPA's own studies, there is absolutely no scientific basis for setting the level of the primary NAAQS at a level lower than 70 ppb. Additionally, monitored data does not directly correspond to exposure risk. Human activity patterns including time spent outdoors and averting behavior must be considered when determining exposure risk. Therefore, retaining the standard of 75 ppb limits the risk of an eight-hour exposure to concentrations demonstrated to elicit statistically significant health effects.

[1] National Ambient Air Quality Standards for Ozone Proposed Rule (Docket ID No. EPA-HQ-OAR-2008-0599)

In the 2013 Integrated Science Assessment for Ozone and Related Photochemical Oxidants (2013 Final ISA), the EPA discusses the evidence from human exposure, toxicological, and epidemiological studies on the effects of exposure to ozone on health outcomes.[2] These studies investigate a broad span of health metrics, including respiratory function and inflammation effects, cardiovascular effects, central nervous system effects, and mortality. Human exposure studies provide a valuable tool for assessing the impact of specific ozone concentrations, including environmentally relevant concentrations, on human health metrics in a controlled environment. Toxicological studies provide evidence for mechanisms by which ozone damages physiological systems or alters behavior. Epidemiological studies generally assess the association between incremental changes in ozone concentration with morbidity and mortality by correlating ozone monitor data and hospital admissions for ozone-related adverse health impacts such as respiratory health effects and mortality.

By the EPA's own admission, in the summary of quantitative uncertainty for key modeling elements in ozone benefit, there are a number of areas within which the EPA states that its confidence in the analytical approach is low, low-medium or medium (as opposed to high). Adding to this uncertainty, human exposure, toxicological, and epidemiological studies each have strengths and limitations. Human exposure studies, which expose individuals to environmentally relevant concentrations of ozone, can identify whether such exposures result in changes in health metrics in a controlled environment; but, such studies do not provide evidence as to whether such changes will result in short-term or long-term morbidity or mortality. Human exposure studies typically use healthy adults as subjects. The effects of specific concentrations on children and sensitive individuals may differ from the responses seen in studies using healthy adults.

Toxicological studies provide mechanisms to analyze the degree to which ozone causes adverse health impacts. However, these studies are often conducted at high levels of exposure and often involve laboratory animals rather than humans. Epidemiological studies can provide information about the association of ozone concentrations with morbidity and mortality, but such studies cannot determine cause-and-effect and may be confounded by other uncontrolled factors. Because controlled human exposure studies offer the most certain cause-and-effect evidence for occurrence of health effects following exposure to known concentrations of ozone, the EPA placed the most weight on information from these studies in making its decision on the proposed range for the primary ozone NAAQS. Therefore, the Department's comments on the level of the primary NAAQS will focus on the controlled human exposure evidence presented in the proposed rule and associated supporting documents.[3]

Controlled Human Exposure Studies

In examining human exposure studies that were cited in the 2013 ISA, the lowest concentration at which statistically significant ozone induced effects were observed was 60 ppb; however,

[2] U.S. EPA. 2013. Integrated Science Assessment of Ozone and Related Photochemical Oxidants (Final Report). (EPA document number EPA/600/R-10/076F)

[3] National Ambient Air Quality Standards for Ozone Proposed Rule, Docket ID No. EPA-HQ-OAR-2008-0599

statistically significant ozone induced effects at levels considered to be adverse were not observed at concentrations below 70 ppb. In a study conducted by Kim et al. (2011), statistically significant changes in polymorphonuclear neutrophil (PMN) influx (an indicator of pulmonary inflammation) and decrements in both Forced Expiratory Volume in 1 second (FEV_1) and Forced Vital Capacity (FVC) (=indicators of lung function) were observed.[4] Although a significant decrease in mean was observed after exposure to 60 ppb of ozone for 6.6 hours of moderate exertion in the Kim et al. study (2011), the group mean decrement (1.71 %) was below the level deemed to be adverse for sensitive individuals (FEV_1 decrement $\geq$ 10 %).[5] The proposed rule and supporting documents did not cite a level at which FVC decrements and PMN influx would be considered adverse. Although FEV_1 lung function decrements $\geq$ 10 % have been observed in some studies with 60 ppb ozone exposure (Adams, 2002; Adams, 2006; Kim et al., 2011; Schelegle et al., 2009), the FEV_1 decrements were typically small and generally differences between group means for individuals exposed to 60 ppb and individuals exposed to filtered air (control) were not statistically significant.[6] In the 2009 study by Schelegle et al., a statistically significant drop in FEV_1 was observed after exposure to 70 ppb for 6.6 hours.[7]

Although the mean FEV_1 decrement (5.34 %) was less than the 10 % threshold at which FEV_1 decrements are deemed adverse for sensitive groups, the difference in total subjective symptom scores (throat tickle, cough, shortness of breath, and pain on deep inspiration) between individuals exposed to 70 ppb ozone and individuals exposed to filtered air (control) was statistically significant. Based on American Thoracic Society guidelines, the EPA considered the combination of lung function decrements with respiratory symptoms.[8]

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[4] Kim, CS; Alexis, NE; Rappold, AG; Kehrl, H;Hazucha, MJ; Lay, JC; Schmitt, MT; Case, M; Devlin, RB; Peden, DB; Diaz-Sanchez, D.(2011). Lung function and inflammatory responses in healthy you adults exposed to 0.06 ppm ozone for 6.6 hours. AM J Respir. Crit. Care Med 183:1215-1221

[5] Letter from CASAC Chairman H. Christopher Frey to EPA Administrator Gina McCarthy. CASAC Review of the EPA's Second Draft Policy Assessment for the Review of the Ozone NAAQS June 26, 2014
National Ambient Air Quality Standards for Ozone Proposed Rule (Docket ID No. EPA-HQ-OAR-2008-0599)

[6] U.S. EPA. 2013. Integrated Science Assessment of Ozone and Related Photochemical Oxidants(Final Report). (EPA document number EPA/600/R-10/076F)
Adams, WC. (2002). Comparison of chamber and face-mask 6.6-hour exposures to ozone on pulmonary function and symptoms responses. Inhal. Toxicol. 14: 745-764.
Adams, WC. (2006a). Comparison of chamber 6.6-h exposures to 0.04-0.08 ppm ozone via square-wave and triangular profiles on pulmonary responses. Inhal. Toxicol. 18: 127-136.
Kim, CS; Alexis, NE; Rappold, AG; Kehrl, H;Hazucha, MJ; Lay, JC; Schmitt, MT; Case, M; Devlin, RB; Peden, DB; Diaz-Sanchez, D.(2011). Lung function and inflammatory responses in healthy you adults exposed to 0.06 ppm ozone for 6.6 hours. AM J Respir. Crit. Care Med. 183:1215-1221.
Schelegle, ES; Morales, CA; Walby, WF; Marion, S; Allen, RP. (2009). 6.6-hour inhalation of ozone concentrations from 60 to 87 parts per billion in healthy humans. Am J Respir. Crit. Care Med 180: 265-272.

[7] Schelegle, ES; Morales, CA; Walby, WF; Marion, S; Allen, RP. (2009). 6.6-hour inhalation of ozone concentrations from 60 to 87 parts per billion in healthy humans. Am J Respir. Crit. Care Med 180: 265-272.

[8] National Ambient Air Quality Standards for Ozone Proposed Rule (Docket ID No. EPA-HQ-OAR-2008-0599)
ATS (American Thoracic Society). (2000). What constitutes an Adverse Health Effect of Pollution? Am. J. Respir. Crit. Care Med.161: 665-573.

Health Risk and Exposure Assessment Based on Controlled Human Exposure Studies

The NAAQS should be set at a level to limit, but not necessarily eliminate, risk of an eight-hour exposure to concentrations demonstrated to elicit health effects deemed adverse for sensitive groups. In the 2014 Health Risk and Exposure Assessment for Ozone, Final Report (2014 Final HREA), the EPA discusses quantitative risk estimates developed for exposure to benchmark levels of concern and FEV_1 decrements.[9] The EPA set eight-hour benchmark concentrations at 60 ppb (the lowest concentration to elicit statistically significant lung function decrements), 70 ppb (the lowest concentration to elicit statistically significant effects deemed adverse for sensitive populations), and 80 ppb (a level for which there is substantial clinical evidence for ozone-related effects). In assessing risk of exposure to these threshold values, the EPA did not look at the general population. Instead it examined sensitive populations such as school-aged children, asthmatic school aged children, asthmatic adults, and older adults.

The EPA used the Air Pollutants Exposure (APEX) model, which combines air quality concentration modeling with human activity patterns data from the Consolidated Human Activity Database (CHAD), to assess potential exposures to eight-hour benchmark concentrations while engaging in moderate activity.[10] Using the APEX model, the EPA was able to estimate the number of individuals belonging to a given population (children, children with asthma, etc.) in fifteen urban study areas that would be exposed to the benchmark concentrations (60, 70, and 80 ppb), if air quality were adjusted to just meet the current or alternative primary standards. The EPA then used data from the controlled human exposure studies and the estimated exposures from APEX to estimate the percent of the population that would experience FEV_1 decrements during the ozone season. The controlled human exposure-based risk estimates are limited in that they estimate exposure risk and the risk of lung function decrements which may lead to increased morbidity or mortality, but do not quantify the risk of specific clinical outcomes.

The EPA's Urban-Scale Health Risk Exposure Assessment indicates that air quality meeting the current standard of 75 ppb limits eight-hour exposures to 70 ppb or higher ozone.[11] The EPA estimated that, in an average year, 0.6-3.3 % of school-age children in the assessed urban areas would be exposed to at least one eight-hour exposure and 0.1-0.6 % would be exposed to two or more eight-hour exposures at the 70 ppb benchmark concentration when air quality was adjusted to just meet the current 75 ppb standard. The range of potential eight-hour exposures when air quality was adjusted to just meet a 70 ppb alternative standard was 0.1-1.2 % of school-aged children experiencing at least one exposure and 0-0.1 % experiencing two or more exposures to the 70 ppb benchmark. The difference in the ranges of risk of exposure to at least one and two or more 8-hour exposures at the 70 ppb benchmark were very small when comparing risk for air quality that was adjusted to just meet a 70 ppb standard to air quality that was adjusted to just meet a 75 ppb standard in an average year.

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[9] U.S. Environmental Protection Agency. (2014a). Health Risk and Exposure Assessment for Ozone (EPA document Number EPA–452/P–14–004a)

[10] *Id.*

[11] U.S. Environmental Protection Agency. (2014a). Health Risk and Exposure Assessment for Ozone (EPA document Number EPA–452/P–14–004a)

The Urban-Scale Health Risk and Exposure Assessment indicates that air quality meeting the current standard of 75 ppb limits ozone-induced FEV_1 decrements. [12] The EPA estimated that 11-22 % of school-aged children would experience one or more FEV_1 decrements $\geq$ 10 % and that 1-6 % would experience six or more FEV_1 decrements during the average year when air quality was adjusted to just meet the current 75 ppb standard. When the EPA modeled ozone-induced FEV1 decrements for air quality adjusted to meet an alternative 70 ppb standard, the EPA estimated that 8-20 % of school-aged children would experience one or more days with FEV1 decrement $\geq$ 10 % and that 1-5 % would experience at least six days with FEV1 decrement $\geq$ 10%. The difference in the ranges of percent risk of school-aged children experiencing ozone-induced FEV1 decrements for at least one day and for six or more days were very small when comparing risk for air quality that was adjusted to just meet a 70 ppb standard to air quality that was adjusted to just meet a 75 ppb standard in an average year.

In the EPA's Urban-Scale Health Risk and Exposure Assessment, air quality adjusted to meet the current standard of 75 ppb has been modeled to limit the risk of single and repeated exposure to concentrations demonstrated to elicit adverse health effects and limits the percent of individuals estimated to experience ozone-induced FEV_1 decrements. The differences in risk modeled for scenarios in which air quality was adjusted to meet the current 75 ppb standard and scenarios in which air quality was adjusted to meet an alternative 70 ppb standard are small. Based on the evidence presented in the health risk and exposure assessment based on controlled human exposure, the Department supports retaining the current ozone NAAQS of 75 ppb.

Evidence from Epidemiology Studies

Epidemiological studies examined in the development of the proposed rule present evidence that ozone exposure is associated with increased respiratory symptoms, respiratory-related hospitalizations, and premature mortality.[13] Although epidemiological studies indicate links at various concentration levels, these studies are unable to precisely quantify duration of exposure or entirely rule out confounding variables such as exposure to other pollutants, lifestyle effects, etc.

Health Risk and Exposure Assessment based on Epidemiology Studies

The EPA used the Benefits Mapping and Analysis Program (BenMAP), which combines concentration modeling with concentration-response data from epidemiological studies, to assess ozone attributable incidences of mortality and morbidity at concentrations adjusted to just meet the level of the current or alternative standards.[14] Using BenMAP, the EPA was able to estimate mortality risk and risk of hospitalization for respiratory diseases associated with short-term ozone exposures in 12 urban study areas. The EPA also estimated mortality risks associated with long–term exposures to ozone in 12 urban study areas. Unlike the controlled human exposure-based risk assessment, the epidemiology-based risk assessment attempted to quantify the risk of

[12] *Id.*
[13] *Id.*
[14] *Id.*

experiencing clinical health effect endpoints. The epidemiology-based risk assessment is limited in its ability to assess health risk based on the nature of epidemiology studies which show associations, not cause-and-effect.

The EPA's urban scale epidemiology-based modeling produced some counterintuitive results. For instance, in certain areas (Boston, Detroit, and Houston) under the 2009 simulation year scenario, short-term ozone-related mortality risk actually increased after meeting a 70 ppb standard when compared to the risk remaining after meeting the existing standard.[15] For the 2009 simulation year, long-term mortality risk attributable to ozone increased for Detroit when modeled air quality was adjusted to meet a 70 ppb standard when compared to risk under the existing 75 ppb standard. The counterintuitive results from the EPA's urban scale epidemiology-based modeling indicate that lower alternatives for the ozone standard may not necessarily be more protective of health endpoints in every area than the current standard.

The level of the NAAQS should be set at a level to limit risk of ozone-induced morbidity and mortality. Based on the epidemiology-based risk assessment presented in the HREA, retaining the level of the primary standard at 75 ppb is adequate to protect the public health, including sensitive groups.

Effect of Implementation of a Revised Primary Standard on Air Quality

Although the current ozone standard of 75 ppb was adopted by the EPA in 2008, implementation of this standard has been significantly delayed. Designations for the 2008 ozone NAAQS were not completed until May of 2012.[16] Proposed State Implementation Plan (SIP) Requirements for implementing the 2008 ozone NAAQS were not issued until June of 2013 and were not promulgated until March 6, 2015.[17] In considering the downward revision of the ozone standard, the EPA should consider to what extent revising the standard will result in additional health benefits beyond what would be realized by fully implementing the 2008 ozone NAAQS.

Revising the standard within the range of 65–70 ppb is likely to result in the designation of a number of counties which had been attaining the current NAAQS as marginal nonattainment areas. Historically, the requirements for marginal nonattainment area SIPs have been largely administrative (Emissions Inventory SIP and Transportation Conformity) and restrictive of recruiting new industry to an area through the requirement of emissions offsets.[18] Crittenden County, the only county in Arkansas to have been designated nonattainment for the 2008 ozone standard, is currently meeting the 2008 ozone NAAQS without significant implementation

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[15] U.S. Environmental Protection Agency. (2014a). Health Risk and Exposure Assessment for Ozone (EPA document Number EPA–452/P–14–004a)

[16] Final Rule - Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards (Docket ID No. EPA–HQ–OAR–2008–0476)

[17] Final Rule - Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements (*Federal Register*, Friday March 6, 2015 - Docket ID No. EPA-HQ-OAR-2010-0885)

[18] Final Rule - Implementation of the 2008 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classifications Approach, Attainment Deadlines and Revocation of the 1997 Ozone Standards for Transportation Conformity Purposes (Docket ID No. EPA-HQ-OAR-2010-0885)

actions taken by the state to address its nonattainment status. Given that most of the new nonattainment areas are likely to be designated marginal with limited state-based emissions reduction strategies required, creating more marginal nonattainment areas by lowering the standard does little, if anything, to improve air quality in those areas.

Based on the air quality modeling presented in the EPA's Regulatory Impact Assessment (RIA) of the proposed rule, Arkansas air quality is expected to improve through the year 2025 without additional ozone reduction strategies implemented by the State.[19] Based on 2012–2014 monitoring data, Arkansas has two counties that have design values that exceed 70 ppb. See *Figure 1.* Under the EPA's 2025 Base Case Modeling Scenario (which incorporates only currently on-the-books state and federal programs), all counties in Arkansas are projected to have achieved design values below 70 ppb in 2025. Because air quality in Arkansas continues to improve and design values for Arkansas are projected to be below 70 ppb with or without the revision of the current ozone NAAQS based on the EPA 2025 base case modeled projections, revising the NAAQS to a level below the current standard is unlikely to offer appreciably more protection from exposures to levels deemed to cause adverse health effects in Arkansas than would otherwise be realized by continued implementation of the 2008 standard.

The EPA should consider to what extent revising a standard—thus creating additional economic, regulatory and administrative burdens—would result in air quality improvements beyond those that would occur from the ongoing implementation of current and planned emissions reductions measures. Because significant air quality improvements are likely to occur without revision of the standard such that the public health is adequately protected from ozone based on implementation of the current standard, the EPA should not revise the ozone NAAQS.

Conclusions on the Level of the Primary Standard

Based on a thorough review of evidence presented in the 2013 Final ISA and 2014 Final HREA, ADEQ concludes that achieving air quality that meets a 75 ppb standard protects individuals, including sensitive groups, from 8-hour exposures at levels demonstrated to result in adverse health effects. The Department observes that, according to the RIA, air quality has been modeled to continue to improve in Arkansas with or without the implementation of a revised ozone NAAQS. Therefore, the Department recommends retaining the current 75 ppb ozone NAAQS.

Secondary Standard

In its proposed rule, the EPA seeks comment on whether there should be a separate classification category scheme for the secondary standard if different than the primary. With a different form of the standard, a separate classification scheme would seem to be required. This is one of the complications associated with the difference between a primary standard expressed as a concentration and a secondary standard based on a seasonal index. The interpretation of CAA

[19] Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone (EPA Document Number EPA-452/P-14-006)

implementation requirements for distinct primary and secondary standards is beyond the scope of this rulemaking.

Additionally, the EPA seeks comment on what types of implementation-related issues states would face if a separate and distinct secondary standard were to be adopted. Under the CAA, a secondary standard is treated with the same gravity as a primary standard. With a separate and distinct secondary standard, there might be complications when an area is not attaining one standard, or the other, or both. Separate designations, classifications, SIP development processes, attainment schedules and attainment demonstrations might be required. The workload associated with administering these separate standards would be substantial, burdensome and unprecedented.

ADEQ supports retaining the "same as primary" approach rather than using a separate form (the W126 Index) for the secondary standard. Using two forms would complicate implementation by creating a need for separate attainment designations and demonstrations processes, monitor data assessments, monitor siting criteria, etc. for the primary and secondary standards.

"Unknown Controls"

By EPA's own admission:

"The baseline shows that by 2025, while ozone air quality would be significantly better than today under current requirements, depending on the alternative standard level analyzed, several areas in the Eastern, Central and Western U.S. would need to develop and adopt **additional controls** to attain alternative standard levels." ES-6/Regulatory Impact Analysis (RIA) (emphasis added)

"The EPA recognizes that the portion of the cost estimates from **unknown controls** reflects substantial uncertainty about which sectors and which technologies might become available for cost-effective application in the future." RIA 1-10 (emphasis added)

"There were several areas where known controls did not achieve enough emissions reductions to attain the alternative standards of 70, 65, and 60 ppb. To complete the analysis, the EPA then estimated the additional emissions reductions **beyond known controls** needed to reach attainment, also referred to as **unknown controls**." RIA 4-21 (emphasis added)

Further, in the Eastern United States, of which Arkansas is included in the EPA's analysis, the percentage NOx reductions attributed to unknown controls is as follows for the proposed range of standard values:

*70 ppb- 23 %

*65 ppb- 43 %

*60 ppb- 66 %

(See RIA 4-22)

The EPA's analysis indicates that, in order to attain the various levels of the standard, unknown controls would be required. Instead of using the term "unknown controls", it might be more appropriate to state that current technology limitations preclude additional control of sources beyond those controls modeled. "Unknown controls" implies that there are no current technologies or policies that might be used to regulate additional sources. At some point, the EPA has to acknowledge that, as the health-based level of the standard is lowered, there is a level at which further reductions in ozone concentrations are unachievable and additional health benefits cannot be realized.

Monitor Data

The EPA has requested comment on the scientific validity of combining data across monitors at a site to fill gaps at the "primary" monitor. It should be noted that this aspect of ozone NAAQS policy is not relevant to the standard setting process. Nevertheless, this would not be an appropriate change to current monitor data assessment requirements. The only purpose for secondary monitors at sites in Arkansas is for benchmarking. One monitor is designated as a site monitor and the second monitor is designated for quality assurance (QA) purposes only. Combining data from these monitors would negate the accepted QA approach. No change is the preferred option.

The EPA has also requested comment on the establishment of a formal procedure to "combine sites" in order to obtain valid design values. While there is validity to this approach in some cases, EPA has not described in detail the acceptability criteria for the formal procedure that it would use for this purpose. Combining sites may be appropriate in some instances but the existing practice of establishing a new and unique DV for a new site that does not meet the criteria for consideration of combining data with another site should be considered as the default.

Daily Maximum Concentrations

The EPA has proposed new procedures for determining daily maximum 8-hour average ozone concentrations based on 17 consecutive eight-hour periods beginning with 7:00 am to 3:00 pm and ending with 11:00 pm to 7:00 am LST. It proposes to maintain the existing provision allowing daily maximum 8-hour averages greater than the level of the NAAQS to be considered valid. ADEQ finds that this proposed change is appropriate.

Ozone Monitoring Season

The EPA has also proposed changes to the required ozone monitoring seasons to be published in Table D-3, 40 CFR 58, Appendix D. As proposed, the duration of the ozone seasons for Arkansas, Tennessee and Mississippi remain unchanged. The state-wide Arkansas ozone season is March - November while the season for both Tennessee and Mississippi is March – October (one month shorter). Based on latest available data, the EPA should consider either shortening the ozone season for Crittenden County, Arkansas by one month (March – October) or by lengthening the ozone season for the Tennessee and Mississippi Counties in the Metropolitan Statistical Area (MSA) by one month to March – November. Having two distinct ozone seasons

within a MSA could lead to disparate application of federal ozone policies that could affect an individual county within the MSA.

Submission of Infrastructure SIPS

The EPA has requested comment on whether submittal of infrastructure SIPs for the primary and secondary NAAQS should be the same or why states would need 18 more months for the secondary standard. Due to the complications and potential for confusion associated with multiple SIP submittals, public hearings and reviews, ADEQ prefers simultaneous submission of infrastructure SIPS. Simultaneous submittal is consistent with the intentions of the CAA.

Anthropogenic vs. Biogenic Sources

In its RIA, the EPA states that "[a}nthropogenic sources are also important for VOC emissions, though in some locations and at certain times of the year (e.g., southeastern states during summer) the majority of VOC emissions comes from vegetation." RIA 2-1. In Arkansas, biogenic VOC emissions represent approximately 80 % of total VOCs in the emission inventory. The extent to which regional ozone concentrations can be attributed to the interaction of biogenic VOCs with anthropogenic sources of NOx, as opposed to anthropogenic VOCs and anthropogenic NOx is poorly understood. In its modeling for this proposal, it appears that the EPA may have relied on an unproven methodology that attempts to separate and quantify the relative contributions of biogenic and anthropogenic emissions to ozone formation. This technique appears to exceed the capabilities of current "state-of-the-art" modeling platforms. For this reason, ADEQ considers the modeling used to support this proposed rule-making to be flawed and unsupportable.

Additionally, there is historical precedent for the EPA accounting for infrequent high background ozone based on non-anthropogenic sources. In 1997, the EPA declined to set the ozone NAAQS at 70 ppb in part because that level would be closer to peak backgrounds that infrequently occur in some areas due to non-athropogenic souces of ozone precursors, and thus more likely to be inappropriately targeted in some areas on such sources.

AQI Breakpoint

Many of the requests for comments relate to approaches for implementing the proposed standard. Implementation is not, however, directly related to standard-setting. While comments on implementation might be proffered at this time, there must be an additional opportunity to comment on these elements when the EPA proposes an implementation scheme.

In the event that the NAAQS is revised and in order to be consistent with such a revision, a change in the AQI breakpoint at the time of adoption would be appropriate. Changing AQI reporting requirements based on latest available Census estimates, however, would unnecessarily complicate AQI Reporting program implementation and possibly increase reporting burdens on reporting Agencies in an unpredictable manner.

EPA Implementation Policies Do Not Offer a Remedy for Unachievable NAAQS Caused by High Levels of Background Ozone

In the proposed rule, the EPA asserts that three CAA provisions can provide a state with regulatory relief in those instances where high background ozone exceeds the proposed standards. These provisions are:

1. Exceptional event exclusions (CAA Sec. 319);
2. Treatment as rural transport areas (CAA Sec. 182(h)); and
3. International transport provisions (CAA Sec. 179B).

The reality is that these regulatory mechanisms would not offer any meaningful relief from the NAAQS where exceedances are caused by high levels of background ozone.

In regard to the CAA's "exceptional events" provision, the EPA's approvability of such a request for relief is infrequent and difficult to obtain. While the EPA has indicated that it plans on proposing revisions to its Exceptional Events Rule sometime in 2015, it has yet to set out the changes it will be making in order to simplify the process for the states to make an exceptional events demonstration.

To date the EPA policy regarding the flagging and documenting of exceptional events has been haphazardly applied. The EPA's initial policy contained provisions for documentation that made it excessively complex and difficult to produce documentation sufficient to satisfy the criteria for consideration as an exceptional event. Also, the exceptional event policy is still incomplete as it does not address whether prescribed fires or agricultural burning, which are both possible causes for exceptional events, can be considered as such.

In 2007, smoke generated from wildfires in Georgia and Florida impacted particulate monitors in several states in the Southeast. ADEQ staff prepared an extensive assessment of the impact on two particulate monitors in East Arkansas. A 58-page report documenting this exceptional event was submitted to EPA Region 6 for consideration but was never acted on. While this event did significantly impact monitors, it did not result in a violation of the 24-hour or annual standards.

With regards to ozone, the demonstration of an exceptional event is complicated by the fact that determining the relative contribution of various emission sources is very difficult. While the EPA has continued to update and improve exceptional event reporting criteria for particulate matter and some ozone events, the policy for documenting ozone exceptional events is still under development and federal multi-agency review.

ADEQ has never flagged any ozone data as an exceptional event. If in the future, ADEQ does attempt to flag and demonstrate an exceptional event for ozone, it is uncertain what level of documentation the EPA would require. Until a complete exceptional event policy for ozone is established, there is no way of assuring that the EPA would consider an event as worthy of

exclusion from consideration as data to be included in determining compliance with the ozone NAAQS.

It is also questionable at this time whether it is either feasible or practical for a state to attempt to demonstrate that a nonattainment designation qualifies for consideration under Sect. 182(h) of the CAA. Despite the EPA's assertion that it is an available regulatory tool for relief, there is scant historical precedent for its application. By the EPA's own admission, even if the "rural transport area" provision of the CAA were to be invoked, a number of requirements would remain in place, including New Source Review permitting, conformity, and emission inventory and source emissions statement requirements.

Finally, the EPA states in its proposed rule that it maintains the authority to approve an ozone NAAQS attainment plan with no sanctions if a state demonstrates that but for international transport, an area would attain the standards. While this sounds like a viable option for relief in theory, the practical application of this "international transport" provision of the CAA is tenuous. Under this regulatory provision, a state must demonstrate that it has taken all possible steps to reduce ozone. As with the "exceptional events" provision, submitting approvable proof of such demonstration has proven to be historically difficult. Additionally, there is limited precedent for EPA approving an attainment plan under this provision. As such, its practical applicability to states as a viable avenue for relief is uncertain.

Conclusion

In closing, ADEQ requests that the EPA consider and respond to these comments. Our evaluation of the proposed changes to the ozone NAAQS results in the conclusion that implementing the current standard will result in health benefits that have not yet been realized and that on a national level, ozone concentrations will continue to trend downward through such implementation.