

STATE OF ARKANSAS

Revisions to the Arkansas State Implementation Plan

National Ambient Air Quality Standards
Infrastructure SIPs And NAAQS SIP per Ark.
Code Ann. § 8-4-318

**Prepared by the
Arkansas Department of Environmental Quality
Office of Air Quality
Policy and Planning Branch**

March 2017

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Revisions to the Arkansas State Implementation Plan

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State Implementation Plan

Submittal Letter



STATE OF ARKANSAS
ASA HUTCHINSON
GOVERNOR

March 24, 2017

Mr. Samuel Coleman
Acting Regional Administrator
United States EPA Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Arkansas State Implementation Plan (SIP)

Dear Mr. Coleman:

The Arkansas Department of Environmental Quality (ADEQ) hereby respectfully submits to the United States Environmental Protection Agency (EPA) Revisions to the Arkansas State Implementation Plan (SIP), including revisions to the Arkansas Pollution Control and Ecology Commission's ("Commission" or APC&EC) Regulation No. 19, *Regulations of the Arkansas Plan of Implementation for Air Pollution Control*, for approval. The Commission adopted changes to APC&EC Regulation No. 19 to include revisions to the 2012 particulate matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}) National Ambient Air Quality Standards (NAAQS) on February 26, 2016, in response to the following rule finalized by the EPA:

- "National Ambient Air Quality Standards for Particulate Matter" (78 FR 3086, January 15, 2013), which revised the primary and secondary standards for annual PM_{2.5} NAAQS.

Additionally, on February 26, 2016, the Commission adopted changes to APC&EC Regulation No. 19 to include the NAAQS revisions for the following criteria pollutants: 2006 PM_{2.5} NAAQS, 2008 ozone NAAQS, 2008 lead NAAQS, 2010 nitrogen dioxide (NO₂) NAAQS, and 2010 sulfur dioxide (SO₂) NAAQS that provide for the attainment

and maintenance of such standards and for the prevention of significant deterioration program that covers these pollutants. This SIP submission includes the State's infrastructure plan to maintain, enforce, and implement these revised NAAQS that are now effective in APC&EC Regulation No. 19.

Arkansas also requests that EPA take the following actions with regard to this SIP submittal:

- i. replace the 2008 lead NAAQS infrastructure SIP, previously submitted on March 9, 2012, as the State has now adopted the revised standards in the APC&EC Regulation No.19 and provides updated information in this submission;
- ii. withdraw the finding of failure for Arkansas to submit a complete infrastructure SIP that provides for the basic Clean Air Act (CAA) program elements necessary to implement the 2008 8-hour ozone NAAQS published by the EPA in the Federal Register on January 15, 2013 (78 FR 2882);
- iii. withdraw the finding of failure for Arkansas to submit a complete infrastructure SIP that provides for the basic CAA program elements necessary to implement the 2010 NO₂ primary NAAQS published in the Federal Register on November 24, 2014 (79 FR 69769);
- iv. withdraw the disapproval proposed by the EPA, on January 11, 2016, on portions of Arkansas SIP submittal addressing EPA's July 20, 2011 rule deferring PSD requirements for carbon dioxide (CO₂) emissions from bioenergy and other biogenic sources ("Biomass Deferral") 81 FR 1141; and
- v. consider the revisions Arkansas has made to the 2006 24-hour PM_{2.5} NAAQS infrastructure SIP, submitted on September 16, 2009, addressing the deficiencies found by EPA's partial disapproval on August 20, 2012 (77 FR 50033).

In addition to the State infrastructure SIP, which demonstrates that the Department has the authority to implement, maintain and enforce the new or revised NAAQS in the State, ADEQ is required under Ark. Code Ann. § 8-4-318 to address certain factors when a "NAAQS SIP" is submitted to EPA. A "NAAQS SIP" is required to include the measures necessary for the attainment and maintenance of the NAAQS in each air quality control region (AQCR) or portion of an AQCR within the State.

This submission also includes revisions to update the incorporation by reference date for the Code of Federal Regulations Title 40 Part 70 (40 C.F.R. Part 70) in SIP-related parts of Regulation No. 26 to reflect current federal regulations (75 FR 31607, June 3, 2010).

The SIP package accompanying this letter consists of one hard copy and one electronic copy (on compact disc), summarized as follows:

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Tab B Infrastructure State Implementation Plans and NAAQS State Implementation Plan

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 - 1.1 Arkansas State Implementation Plan Revision
 - 1.2 Approved Arkansas SIP components included in this Revision
- 2 National Ambient Air Quality Standards – Levels, Health Impacts, and Sources
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 - 2.2 Protection of the National Ambient Air Quality Standards
- 3 Infrastructure State Implementation Plan
 - 3.1 2006 Particulate Matter less than 2.5 Micrometers in Diameter (PM_{2.5}) NAAQS
 - 3.2 2008 Ozone NAAQS
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- 4 NAAQS State Implementation Plan pursuant to Arkansas Code Annotated. § 8-4-318
 - 4.1 Background
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 - 4.2.2 Pollutant-Specific Minor NSR NAAQS Evaluation Requirements

Tab C Evidence of Adoption of the Revised Plan into Regulations No. 19 and No. 26

Tab D Legal Authority to Adopt and Implement the Plan

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Arkansas requests that EPA review and approve this SIP revision as expeditiously as possible and within the legal timeframe of one year as in the Clean Air Act.

I certify that all documents submitted to the Regional Office in electronic form are exact duplicates of the hard copy documents. Should questions arise, please do not hesitate to contact the ADEQ Associate Director of the Office of Air Quality Stuart Spencer at (501) 682-0750, or by email at spencer@adeq.state.ar.us. Thank you for your consideration of Arkansas's submission.

Sincerely,

A handwritten signature in blue ink, appearing to read "Asa Hutchinson", with a stylized flourish at the end.

Asa Hutchinson,

Enclosures

Tab B:

Introduction—

Infrastructure State Implementation Plans
and NAAQS State Implementation Plan

Infrastructure State Implementation Plans and NAAQS State Implementation Plan

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1 Introduction

1.1 Arkansas State Implementation Plan Revision

Arkansas has included revisions to adopt National Ambient Air Quality Standards (NAAQS) finalized by the Environmental Protection Agency (EPA) and listed below into Arkansas Pollution Control & Ecology Commission's ("Commission" or APC&EC) Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, allowing the Arkansas Department of Environmental Quality (ADEQ or the "Department") to retain permitting authority for each of the NAAQS, including the Prevention of Significant Deterioration (PSD) program. The revised standards adopted into APC&EC Regulation No. 19 are as follows:

- October 17, 2006: EPA revised the 24-hour primary and secondary standards for particulate matter less than 2.5 micrometers in diameter (PM_{2.5} NAAQS) from 65 micrograms per cubic meter (µg/m³) to 35 µg/m³ (71 FR 61144).
- March 27, 2008: EPA revised the 8-hour ozone NAAQS from 0.08 parts per million (ppm) to 0.075 ppm (73 FR 16436).
- November 12, 2008: EPA revised the lead NAAQS from a calendar quarter average of 1.5 µg/m³ to a rolling three-month average of 0.15µg/m³ (73 FR 66964).
- June 22, 2010: EPA retained the secondary 3-hour NAAQS of 0.5 ppm for sulfur dioxide (SO₂), and added a 1-hour standard of 75 parts per billion (ppb) (75 FR 35520).
- February 9, 2010: EPA added for nitrogen dioxide (NO₂) a primary 1-hour NAAQS of 100 ppb and retained the primary and secondary annual standards of 53 ppb (75 FR 6474).
- January 15, 2013: EPA revised primary standards for annual PM_{2.5} NAAQS from 15 µg/m³ to 12 µg/m³. In the same rule, EPA retained the 24-hour primary and secondary PM_{2.5} standard at a level of 35 µg/m³ and the secondary PM_{2.5} standard at a level of 15 µg/m³ (78 FR 3086).

The enclosed State Implementation Plan (SIP) revision satisfies requirements for these criteria pollutants revised by EPA.

In order to implement the stationary source permitting program, including minor source and PSD permitting in Arkansas and to allow ADEQ to retain permitting authority for each of the NAAQS, revisions to APC&EC Regulation No. 19 were required. APC&EC Regulation No. 19 is applicable to any stationary source with the potential to emit any federally regulated air

pollutant equal to or in excess of the threshold for both major and minor sources, and is federally enforceable.

This submission also includes revisions to update the incorporation by reference date for the Code of Federal Regulations Title 40 Part 70 (40 C.F.R. Part 70) in SIP-related parts of APC&EC Regulation No. 26 to reflect current federal law (75 FR 31607, June 3, 2010).

1.2 Approved Arkansas SIP components included in this Revision

APC&EC Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control

- Chapter 2 – *Definitions*
- Chapter 4 – *Minor Source Review*
 - Reg. 19.401, “General Applicability”
 - Reg. 19.407, “Permit Amendments”
 - Reg. 19.412, “Dispersion Modeling”
- Chapter 7 – *Sampling, Monitoring, And Reporting Requirements*
 - Reg. 19.702, “Air Emissions Sampling”
 - Reg. 19.703, “Continuous Emissions Monitoring”
- Chapter 9 – *Prevention of Significant Deterioration*
 - Reg. 19.903, “Definitions”
 - Reg. 19.904, “Adoption of Regulations”
- Appendix A – Insignificant Activities List
- Appendix B – *National Ambient Air Quality Standards List*

Substantive changes to APC&EC Regulation No. 19 were made in response to EPA’s revised annual primary standard for PM_{2.5}, which lowered the level to 12.0 µg/m³ from 15µg/m³. (78 FR 3086, January 15, 2013.)

The regulatory amendments related to the Arkansas SIP involve the following:

- Revisions to include the federal revised 2012 PM_{2.5} NAAQS.
- Revision to update the definition of “Volatile Organic Compounds” to match the federal definition. (77 FR 37610, June 22, 2012; 78 FR 9823, February 12, 2013; 78 FR 53029, August 28, 2013; 78 FR 62451, October 22, 2013; and 79 FR 17037, March 27, 2014.)

Additional non-substantive changes were made to APC&EC Regulation No. 19 chapters 1, 3, 5, 11, 13, 14 and 15 for clarification, consistency and correction.

APC&EC Regulation No. 26: Regulations of the Arkansas Operating Air Permit Program

- Chapter 4 – *Applications for Permits*
 - Reg. 26.401, “Duty to apply”
- Chapter 6 – Permit Review by The Public, Affected States, and EPA
 - Reg. 26.603, “Transmission of permit information to the Administrator”
 - Reg. 26.604, “Review of draft permit by affected States”

The regulatory amendments related to the SIP involve the following:

- Revisions to update the incorporation by reference date for 40 C.F.R. Part 70 throughout APC&EC Regulation No. 26 to reflect current federal law (75 FR 31607, June 3, 2010).

Additional non-substantive changes were made to APC&EC Regulation No. 26 chapters 3 and 5 for clarification, correction and consistency.

The Department filed APC&EC Regulations No. 19 and 26 with the Commission to initiate rulemaking on November 21, 2014. The Commission initiated the rulemaking on December 5, 2014. Stakeholder meetings occurred on December 18, 2014, January 13, 2015, January 28, 2015, February 10, 2015, February 24, 2015 and March 19, 2015. The public hearing for APC&EC Regulations No. 19 and 26 was held on January 12, 2015, and the 30-day public comment period ended February 17, 2015. ADEQ worked closely with EPA and stakeholders to produce the most equitable solutions to public concerns after consideration of public comments. ADEQ then finalized a responsive summary addressing all comments received, and prepared final revisions to APC&EC Regulations No. 19 and 26. ADEQ presented the regulatory packets to the Arkansas Legislative Joint Public Health, Welfare and Labor Committee on January 11, 2016 and the Arkansas Legislative Council Administrative Rules and Regulations Subcommittee Council on January 12, 2016. After these committees reviewed and approved the proposed revisions to the regulations, the Department submitted and filed the revised and final regulations with the Commission on February 12, 2016, for final adoption. The Commission adopted revisions to APC&EC Regulations No. 19 and 26 on February 26, 2016. Following the Commission’s approval, the regulations were filed with the Arkansas Secretary of State, and revisions outlined herein are fully effective as of March 14, 2016. ADEQ prepared revisions to the SIP and on January 18, 2017 published a notice of SIP draft availability. In this notice, ADEQ also offered the opportunity to request a public hearing with a deadline of February 14, 2017 for such a request to be made. No request for a public hearing was submitted by February 14, 2017; therefore, ADEQ posted notice that the public hearing would not be held to its website on February 15, 2017. The public comment period for the SIP ended February 27, 2017, and the Department prepared a responsive summary addressing all comments received on the SIP proposal.

Making these changes will maintain consistency between federal air pollution control programs and the Commission's regulations governing air pollution in Arkansas.

The changes to APC&EC Regulations No. 19 and 26 are consistent with and allowable under federal programs. The changes are protective of air quality in the State and will not negatively affect attainment goals.

Sources affected by these program revisions are found throughout the State.

These revisions ensure ADEQ's ability to protect the NAAQS, PSD increments, reasonable further progress demonstrations, and visibility goals.

No substantive revisions have been made to the emission limitations, work practice standards or recordkeeping/reporting requirements portions of this program at this time. A permit threshold and De Minimis levels for PM_{2.5} have been adopted and NAAQS evaluation requirements for non-PSD permit applications have been elaborated in the NAAQS SIP included as chapter 4 of this package.

Furthermore, ADEQ's existing compliance and enforcement strategies will remain in place.

2 National Ambient Air Quality Standards – Levels, Health Impacts, and Sources

2.1 Background

Arkansas State Implementation Plan Development

On August 22, 2014, the Commission adopted revisions pertaining to the Prevention of Significant Deterioration (PSD) permitting proposed by ADEQ to APC&EC Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control (APC&EC Regulation No. 19). The revisions to APC&EC Regulation No. 19 were necessary to implement the revised NAAQS under the PSD and Major Source Air program. EPA published several final rules in the Federal Register (FR) promulgating the following requirements:

- October 17, 2006: EPA revised the 24-hour $PM_{2.5}$ primary and secondary NAAQS from $65 \mu\text{g}/\text{m}^3$ to $35 \mu\text{g}/\text{m}^3$, revoked the annual standard for particulate matter with an aerodynamic diameter less than 10 micrometers (PM_{10}), and retained the 24-hour primary and secondary NAAQS standards of $150 \mu\text{g}/\text{m}^3$ for PM_{10} (71 FR 61144, Oct. 17, 2006).
- March 27, 2008: EPA revised the 8-hour ozone NAAQS standard from 0.08 ppm to 0.075 ppm (73 FR 16436, Mar. 27, 2008).
- November 12, 2008: EPA revised the lead NAAQS standard from a calendar quarter average of $1.5 \mu\text{g}/\text{m}^3$ to a rolling three-month average of $0.15 \mu\text{g}/\text{m}^3$ (73 FR 66964, Nov. 12, 2008).
- June 22, 2010: EPA retained the secondary 3-hour NAAQS standard of 0.5 ppm for SO_2 , and added a 1-hour standard of 75 ppb (75 FR 35520, Jun. 22, 2010).
- February 9, 2010: EPA added a primary 1-hour NAAQS standard of 100 ppb for NO_2 and retained the primary and secondary annual NO_2 standard of 53 ppb (75 FR 6474, Feb. 9, 2010).
- January 15, 2013: EPA published a final rule in the Federal Register that promulgated the revised primary standard for the annual $PM_{2.5}$ NAAQS by lowering the level from $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. EPA's revised primary standard provides increased protection against health effects associated with long- and short-term exposures. In the same rule, EPA retained the 24-hour $PM_{2.5}$ standard at a level of $35 \mu\text{g}/\text{m}^3$ and the secondary annual $PM_{2.5}$ standard at the level of $15 \mu\text{g}/\text{m}^3$ (78 FR 3086).

On February 26, 2016, the Commission adopted revisions proposed by ADEQ to APC&EC Regulation No. 19 to implement the revised NAAQS for all purposes of the Arkansas air program and to implement the revised NAAQS for PM_{2.5} published subsequent to the initiation of the previous rulemaking. Arkansas’s current revisions to the State’s infrastructure State Implementation Plan (SIP) to maintain, enforce, and implement the NAAQS are for the following criteria pollutant standards: 2006 and 2012 PM_{2.5} NAAQS, 2008 ozone NAAQS, 2008 lead NAAQS, 2010 NO₂ NAAQS, and 2010 SO₂ NAAQS.

In this SIP submission, ADEQ also addresses certain state requirements for a NAAQS SIP required by Ark. Code Ann. § 8-4-317 in which ADEQ shall consider and take into account the factors specified in the Ark. Code Ann. § 8-4-312 in the case of any emission limit, work practice or operation standard, environmental standard, analytical method, dispersion air modeling requirement, or monitoring requirement which is not identical to standards or requirements in the federal regulations. Thus, this SIP includes a reasoned consideration of the relevant factors pertaining to the permit threshold and De Minimis levels established for PM_{2.5} and additional modeling requirements for PM₁₀, NO₂, and SO₂.

2.2 Protection of the National Ambient Air Quality Standards

The Clean Air Act (CAA) section 109 requires EPA to set NAAQS for pollutants considered harmful to public health and the environment. EPA has set NAAQS for six principal pollutants, which are called "criteria" pollutants, listed in Table 1. Units of measure for the standards are ppm by volume, ppb by volume, and µg/m³. Regulatory information about NAAQS is found in the Code of Federal Regulations, Title 40, Part 50 (40 C.F.R. Part 50). EPA sets two types of NAAQS:

1. Primary NAAQS are limits set to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly.
2. Secondary NAAQS are limits set to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Table 1. National Ambient Air Quality Standards

Pollutant [final rule citation]	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]	primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]	primary and secondary	Rolling 3 month average	0.15 µg/m ³	Not to be exceeded

Pollutant [final rule citation]		Primary/ Secondary	Averaging Time	Level	Form
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution Dec 14, 2012 [18 FR 3086, Jan 15, 2013]	PM _{2.5}	primary	Annual	12 µg/m ³	Annual mean, averaged over 3 years
		secondary	Annual	15 µg/m ³	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

3 Infrastructure State Implementation Plan

Under CAA sections 110(a)(1) and 110(a)(2), each state is required to submit a SIP that provides for the implementation, maintenance, and enforcement of a revised primary or secondary NAAQS. CAA section 110(a)(1) and section 110(a)(2) require each state to make this new SIP submission within three years after EPA promulgates a new or revised NAAQS for approval into the existing SIP to assure that the SIP meets the applicable requirements for such new and revised NAAQS. This type of SIP submission is commonly referred to as an “infrastructure SIP.”

The national and state infrastructure reports contain the status of the state submissions to meet the requirements and EPA's actions on the submissions. The required infrastructure elements tracked for each state are labeled in the report as:

- Section 110(a)(2)(A) Emission limits and other control measures
- Section 110(a)(2)(B) Ambient air quality monitoring/data system
- Section 110(a)(2)(C) Program for enforcement of control measures
- Section 110(a)(2)(D)(i)(I) Prong 1: Interstate transport – significant contribution
- Section 110(a)(2)(D)(i)(I) Prong 2: Interstate transport – interfere with maintenance
- Section 110(a)(2)(D)(i)(II) Prong 3: Interstate transport – prevention of significant deterioration
- Section 110(a)(2)(D)(i)(II) Prong 4: Interstate transport – protect visibility
- Section 110(a)(2)(D)(ii) - Interstate and international pollution abatement
- Section 110(a)(2)(E) Adequate authority and resources
- Section 110(a)(2)(F) Stationary source monitoring system
- Section 110(a)(2)(G) Emergency power
- Section 110(a)(2)(H) Future SIP revisions
- Section 110(a)(2)(J) Consultation with government officials; Public notification; PSD and visibility protection
- Section 110(a)(2)(K) Air quality modeling/data
- Section 110(a)(2)(L) Permitting fees
- Section 110(a)(2)(M) Consultation/participation by affected local entities

2006 PM_{2.5} NAAQS Infrastructure State Implementation Plan

3.1 2006 Particulate Matter less than 2.5 Micrometers in Diameter (PM_{2.5}) NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of the CAA relevant to the 2006 PM_{2.5} NAAQS are contained in the current SIP or SIP revisions which have been submitted, but not yet approved by EPA, and the attachments included in this SIP submittal, which are hereby incorporated by reference. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

On September 16, 2009, the State of Arkansas submitted a SIP that addressed the infrastructure elements specified in the CAA section 110(a)(2) for the 2006 PM_{2.5} NAAQS. On August 20, 2012 (77 FR 50033), EPA partially approved and partially disapproved the submittal provided by the State of Arkansas to demonstrate that Arkansas meets the requirements for the 2006 PM_{2.5} NAAQS.

In this revision to the SIP, Arkansas demonstrates that it has adequate resources and authority to implement, maintain, and enforce the 2006 24-hour PM_{2.5} NAAQS and addresses the deficiencies from the August 20, 2012 partial disapproval. The elements that have been approved by the EPA on August 20, 2012 are listed in the column “Approved by EPA” and have not been revised in this submission.

For consistency in formatting throughout all of the 110 infrastructure SIPs included in this submission, some abbreviations were included or changed, such as “A.C.A.” for “Ark. Code Ann.” and “APC&EC” was added for “Arkansas Pollution Control and Ecology Commission” or “Commission.”

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals	Approved by EPA
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to</i>	•Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (“Ark. Code Ann.”) § 8-4-101 <i>et. seq.</i> , and those provisions of the Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. §	77 FR 50033

2006 PM_{2.5} NAAQS Infrastructure State Implementation Plan

	<p><i>meet the applicable requirements of this Act;</i></p>	<p>52.170.</p> <ul style="list-style-type: none"> •The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to Section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit. 	
<p>110(a)(2)(B) Ambient air quality monitoring and data analysis system</p>	<p><i>provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation Number 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Reg. 19.302 grants the Arkansas Department of Environmental Quality (ADEQ) responsibility for ambient air monitoring as a precaution to prevent the NAAQS from being exceeded. •Ark. Code Ann. § 8-1-202 grants the ADEQ Director authority to provide technical and legal expertise and assistance in the field of environmental protection. Ark. Code Ann. § 8-4-311 (a)(3) empowers ADEQ to encourage and conduct studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement. 	<p>77 FR 50033</p>

2006 PM_{2.5} NAAQS Infrastructure State Implementation Plan

<p>110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources and a permit program</p>	<p><i>include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<p>Ark. Code Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. Ark. Code Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive program for the prevention and control of all sources of air pollution in the State of Arkansas.</p> <ul style="list-style-type: none"> •Chapter 4 of APC&EC Regulation 19 describes the regulation and permitting of the operation, modification and construction of minor stationary sources. •Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Ark. Code Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark Code Ann. § 8-4-311(a)(7) empowers 	

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		<p>ADEQ to administer and enforce all laws and regulations relating to pollution of the air.</p> <p>This SIP Revision:</p> <p>Arkansas perceives there to be no changes necessary to the PSD program to implement the 2006 PM_{2.5} NAAQS. On May 22, 2014, EPA published “Finding of Failure To Submit a Prevention of Significant Deterioration State Implementation Plan Revision for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5}).” On September 10, 2014, Arkansas submitted to EPA a request for parallel processing of proposed revisions to the SIP which would fully comply with the federal PM_{2.5} PSD regulations and with required elements involving PM_{2.5} increments for the 2006 PM_{2.5} NAAQS. On November 10, 2014, EPA proposed to approve three revisions submitted by ADEQ on July 26, 2010, November 6, 2012, and September 10, 2014 and proposed to approve a portion of the December 17, 2007 SIP submittal for the PM_{2.5} NAAQS pertaining to interstate transport of air pollution and PSD (79 FR 66663). On December 4, 2014, Arkansas submitted the final SIP revisions to address the 2006 PM_{2.5} PSD elements. EPA’s final approval was published on March 4, 2015 (80 FR 11573). ADEQ has the authority to implement the 2006 PM_{2.5} NAAQS and regulate</p>	
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		<p>and permit PM_{2.5} emissions, and its precursors, through the Arkansas PSD program.</p> <ul style="list-style-type: none"> •Arkansas submitted the Greenhouse Gases (GHG) SIP on July 17, 2010 and a revision on November 6, 2010 addressing the PSD program for EPA approval. EPA-approved Arkansas’s SIP revisions on April 2, 2013 (78 FR 19596), and rescinded the FIP that was in place which addressed permitting for GHG PSD purposes in Arkansas. <p>With the approval of the SIP revisions to address GHG PSD permitting and 2006 PM_{2.5} PSD elements, ADEQ has a complete EPA-approved PSD permitting program in place covering the required elements for all regulated New Source Review (NSR) pollutants.</p>	
<p>110(a)(2)(D)(i) Interstate transport provisions</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to</i></p>	<p>This SIP Revision:</p> <ul style="list-style-type: none"> •APC&EC Reg. 19.402 states: “No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.” 	

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	<p><i>be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>APC&EC Reg. 19.402 is consistent with these requirements as it is an Arkansas promulgated regulation that applies to all stationary sources in Arkansas.</p> <ul style="list-style-type: none"> •According to EPA’s modeling in “Air Quality Modeling Final Rule Technical Support Document”¹ published in June 2011 to support the Final Cross-State Air Pollution Rule (76 FR 48208), Arkansas’s largest downwind contribution to nonattainment for the 2006 PM_{2.5} annual standard was 0.1 µg/m³ and Arkansas’s largest downwind contribution to maintenance of the 2006 PM_{2.5} annual standard was 0.04 µg/m³. Arkansas’s largest downwind contribution to nonattainment for the 2006 24-hour PM_{2.5} NAAQS was 0.24 µg/m³ and Arkansas’s largest downwind contribution to maintenance of the 2006 24-hour PM_{2.5} NAAQS was 0.23 µg/m³. Because Arkansas’s largest downwind contributions to nonattainment and largest downwind contributions to maintenance were below 1 %, EPA found that Arkansas did not significantly contribute to nonattainment or maintenance of the 2006 PM_{2.5} annual and 24-hour NAAQS in another state. Additionally, on August 29, 2013, EPA finalized a rule (78 FR 53269) in which they determined that the 	
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¹ Air Quality Modeling Final Rule Technical Support Document, June 2011 <http://www.epa.gov/airtransport/CSAPR/pdfs/AQModeling.pdf>

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		<p>existing SIP for Arkansas contains adequate provisions to prohibit air emissions from significantly contributing to nonattainment or interfering with maintenance of the 1997 annual and 24-hour PM_{2.5} NAAQS and the revised 2006 24-hour PM_{2.5} NAAQS in any other state as required by section 110(a)(2)(D)(i)(1) of the Act.</p> <ul style="list-style-type: none">•All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.•Arkansas is currently subject to the Regional Haze Rule which addresses visibility-impairing pollutants. Arkansas's PSD program is used to further protect visibility. In 2008, Arkansas submitted a Regional Haze SIP, but EPA partially approved and partially disapproved it. Arkansas has experienced considerable improvement in regional haze in relation to the reasonable progress goals and uniform rate of progress established in the Regional Haze SIP.	
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		<p>The most recent data from 2015 and current five-year rolling averages show that visibility impairment in Arkansas’s Class I areas is decreasing more rapidly than the uniform rate of progress and 2018 reasonable progress goals submitted in the 2008 Regional Haze SIP.²</p> <p>•Additionally, visibility at Federal Class I areas in other states affected by Arkansas sources has improved for the least and most impaired days between 2000 and 2015. On the most impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.92 deciview (dv) and 5.24 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and 2011 – 2015 analysis period. On the least impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.54dv and 2.42 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and the 2011 – 2015 analysis period. Based on the visibility improvement in Class I areas in nearby states, ADEQ concludes that stationary sources in Arkansas do not significantly interfere with other states’ plans to protect visibility.³</p>	
110(a)(2)(D)(ii) Interstate	<i>contain adequate provisions- (ii) insuring</i>	•Ark. Code Ann. § 8-4-311(a)(8) authorizes	

²Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

³Id.

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<p>and International pollution abatement</p>	<p><i>compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement)</i></p>	<p>ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control.</p> <p>This SIP Revision:</p> <ul style="list-style-type: none"> •Based on information gathered from ADEQ's permit database, ADEQ concludes that the limited amount of point and area source PM_{2.5} emissions do not preclude the State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2006 PM_{2.5} NAAQS. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •APC&EC Reg. 19.903 describes the notification required when dealing with a major 	
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		new source or major modification.	
110(a)(2)(E)(i) Adequate personnel, funding and authority to carry out plan,	<i>provide (i) necessary assurances that the State (or, except were the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof),</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-103(1)(A) grants APC&EC the authority to establish, by regulation, reasonable fees for initial issuance, annual review, and modification of permits. ADEQ is authorized to collect the fees established by APC&EC and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to pay the fees after reasonable notice. •Ark. Code Ann. § 8-1-202 states that the Director of ADEQ’s duties include the day-to-day administration of all activities that the Department is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with the Department. •APC&EC Regulation 9, Fee Regulation, Chapter 5, Air Permit Fees, contains the air permit fees applicable to non-part 70 permits, part 70 permits and general permits. 	77 FR 50033
110(a)(2)(E)(ii) Comply with state boards,	<i>(ii)requirements that the State comply with the requirements respecting State boards under section 128,</i>	•The requirements of §110(a)(2)(E)(ii) are not applicable because permit and enforcement orders are issued directly by ADEQ, not state	77 FR 50033

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		boards or commissions.	
110(a)(2)(E)(iii) Oversee local and regional governments/ agencies	<i>(iii) necessary assurances that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i>	The requirements of §110(a)(2)(E)(iii) are not applicable to Arkansas because it does not rely on localities for specific SIP implementation.	77 FR 50033
110(a)(2)(F) Stationary source emissions monitoring and reporting system	<i>require, as may be prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i>	<ul style="list-style-type: none"> •Regulatory requirements have been codified in APC&EC Regulation 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Chapter 7 (pertaining to sampling and testing). •Requirements in Chapter 7, Reg.19.705 provide for the reporting of emissions inventories in a format established by the ADEQ on a schedule set forth in the section. In addition, Reg.19.705 requires the submission of emission statements as required by the CAA. •Area, mobile, and nonroad data are reported on a three-year cycle. •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement 	77 FR 50033

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		are found in the monitoring, recordkeeping and reporting requirements for sources in these control measures as well as individual SIP permits.	
110(a)(2)(G) Authority to declare air pollution emergency and notify public	<i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(C) empowers the ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. APC&EC Reg. 8.502 requires ADEQ to publish a Notice of Emergency Order in a newspaper covering the affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action and other information appropriate to ensure the public is informed about the action. •Ark. Code Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if APC&EC determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits. •APC&EC Regulation 8, Administrative 	77 FR 50033

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		procedures, Reg. 8.807 authorizes APC&EC to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days.	
110(a)(2)(H) Future SIP revisions	<i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this Act;</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Chapter 1, provides a clear delineation of those regulations that are promulgated by APC&EC in satisfaction of certain requirements of the CAA. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark. Code Ann. § 8-4-202(d)(4)(A) authorizes APC&EC to refer to the Code of Federal Regulations for any APC&EC standard or regulation that is identical to a regulation promulgated by the EPA. 	77 FR 50033
110(a)(2)(I) Nonattainment areas (interstate transport)	<i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i>	•Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Currently, Arkansas does not have any areas designated nonattainment for PM _{2.5} .	
110(a)(2)(J) (§ 121	<i>meet the applicable requirements of section 121 (relating to consultation),</i>	•Arkansas has incorporated by reference into the APC&EC Regulation 19, Regulations of the	77 FR 50033

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consultation),		Arkansas Plan of Implementation for Air Pollution Control, Chapter 9, the requirements in 40 C.F.R. Part 52 under § 161 of the CAA (42 U.S.C.A. § 7471) for PSD in their entirety, with the exception of 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 40 C.F.R. 52.21(b)(55-58), 40 C.F.R. 52.21(i) and 40 C.F.R. 52.21(cc). These provisions were approved by EPA as part of the SIP.	
110(a)(2)(J) (Section 127 public notification)	<i>meet the applicable requirements of section 127 (relating to public notification),</i>	•The public is notified of concentrations that exceed the NAAQS from the ADEQ website (www.adeg.state.ar.us) that contains hourly concentrations of PM _{2.5} taken from monitoring sites throughout the state. These monitoring sites also upload data to EPA's AirNow website, which provides data to the public.	77 FR 50033
110(a)(2)(J) PSD & visibility protection	<i>meet the applicable requirements of part C (relating to prevention of significant deterioration of air quality and visibility protection);</i>	This SIP Revision: •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference the requirements in 40 C.F.R. Part 52 for PSD in their entirety, with the exception of 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i) and 52.21(cc). These provisions were approved by EPA as part of the SIP. These incorporated provisions also provide for protection of visibility in Federal Class I areas.	

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		<ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •The visibility subelement of Element J is not being addressed because EPA stated in their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)”⁴ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS. 	
110(a)(2)(K) Air quality modeling/data	<i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a</i>	<ul style="list-style-type: none"> •Arkansas has submitted the Emissions Inventory SIP revision pertaining to Crittenden County during calendar years 2006 and 2007. These plans submitted the necessary modeling where required. The status of this SIP revision is below: 	77 FR 50033

⁴ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 11(a)(2), September 13, 2013.

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		<i>national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator;</i>	<ul style="list-style-type: none"> •The Emissions Inventory SIP for Crittenden County was submitted to EPA and approved on January 15, 2009. 	
110(a)(2)(L) Stationary permitting fees	Major source	<i>require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V; and</i>	<ul style="list-style-type: none"> •The fee requirements of APC&EC Regulation 26, Regulations of the Arkansas Operating Air Permit Program, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP. Arkansas's Title V operating permit program in Chapter 11 was approved October 9, 2001. •APC&EC Regulation 9, Fee Regulation, Chapter 5, Air Permit Fees, contains the air permit fees applicable to non-part 70 permits, part 70 permits and general permits. 	77 FR 50033
110(a)(2)(M) Consultation/ Participation by local entities	affected	<i>provide for consultation and participation by local political subdivisions affected by the plan.</i>	<ul style="list-style-type: none"> •Pursuant to APC&EC Regulation 8, Administrative Procedures, Arkansas will continue to provide for consultation and participation from those affected by the SIP. (Reg. 8.205 Public Notice of Permit Application; Reg. 8.207 Public Notice of Draft Permitting Decision; Reg. 8.405 Public Notice of Notices of 	77 FR 50033

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		<p>Violation and Consent Administrative Orders; and Reg. 8.801 Public Notice of Rulemaking.)</p> <ul style="list-style-type: none">•In addition, ADEQ participates in the Central Regional Air Planning Association, which is an organization of states, tribes, federal agencies, and other interested parties concerned with air quality. Through these interactions and public participation on rule and plan development, the requirements of 100(a)(2)(M) are fulfilled. We believe the public notice and hearing processes fulfill the requirements for consultation with local political subdivisions affected by the SIP.	
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3.2 2008 Ozone NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of the CAA relevant to the 2008 ozone NAAQS are included in this SIP submittal. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

In this revision to the SIP, Arkansas demonstrates that it has adequate resources and authority to implement, maintain, and enforce the 2008 8-hour ozone NAAQS.

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;</i>	<ul style="list-style-type: none"> •Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark. Code Ann.) § 8-4-101 <i>et. seq.</i>, and those provisions of the Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. § 52.170. •The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit.
110(a)(2)(B) Ambient air quality	<i>provide for establishment and operation of appropriate</i>	<ul style="list-style-type: none"> •APC&EC Reg. 19.302 grants ADEQ responsibility for ambient air monitoring and computer modeling of regulated air pollutant emissions. •Ark. Code Ann. § 8-4-311(a)(3) empowers ADEQ to encourage and conduct

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<p>monitoring and data analysis system</p>	<p><i>devices, methods, systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<p>studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement.</p> <ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-311(a)(4) grants ADEQ the ability to collect and disseminate information relative to air pollution and its prevention and control. •In conjunction with the references above, Arkansas monitors air quality for ozone at appropriate locations throughout the state using EPA-approved methods and submits ozone data to the EPA’s Air Quality System (AQS) consistent with EPA regulations under 40 C.F.R. Part 58. •Ark. Code Ann. § 8-4-311(a)(2) gives ADEQ the ability to advise, consult, and cooperate with the federal government in furtherance of safeguarding the air resources of the state by controlling or abating air pollution and preventing new air pollution if it is in the interest of the public health and welfare of the people. See also Ark. Code Ann. § 8-4-301 and § 8-4-302. Under this authority, ADEQ submits annual monitoring network plans, consistent with EPA’s ambient air monitoring regulations, which describe how ADEQ has complied with monitoring requirements and explains proposed changes to the network, if any. •Ark. Code Ann. § 8-1-202 grants the ADEQ Director authority to retain the technical and legal expertise and assistance in the field of environmental protection.
<p>110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources and a permit</p>	<p><i>include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. Ark. Code Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive program for the prevention and control of all sources of air pollution in the State of Arkansas. •Chapter 4 of APC&EC Regulation 19 describes the regulation and permitting of the

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<p>program</p>	<p><i>stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<p>operation, modification, and construction of minor stationary sources.</p> <ul style="list-style-type: none"> •Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Ark. Code Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling, or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark .Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •ADEQ has a complete EPA-approved PSD permitting program in place covering the required elements for all regulated New Source Review (NSR) pollutants, including greenhouse gases (GHG). EPA had previously published a finding of failure to submit a PSD SIP for PM_{2.5} (79 FR 29354) and imposed a Federal Implementation Plan for PSD permitting of GHGs (75 FR 82246); however, ADEQ submitted SIP revisions addressing 2006 PM_{2.5} PSD elements, which was approved on March 4, 2015 (80 FR 11573), and GHG PSD permitting, which was approved on April 2, 2013 (78 FR 19596). No changes to the PSD program are necessary to implement the 2008 ozone NAAQS.
<p>110(a)(2)(D)(i) Interstate transport provisions</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.402 states the following: “No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.” APC&EC Reg. 19.402 is consistent with these requirements as it is an Arkansas promulgated regulation that applies to all stationary sources in

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	<p><i>pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>Arkansas.</p> <ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Arkansas is currently subject to the Regional Haze Rule, which addresses visibility-impairing pollutants. Arkansas’s PSD program is used to further protect visibility. In 2008, Arkansas submitted a Regional Haze SIP and EPA partially approved and partially disapproved it on March 12, 2012. Arkansas has experienced considerable improvement in regional haze in relation to the reasonable progress goals and uniform rate of progress established in the Regional Haze SIP. The most recent data from 2015 and current five-year rolling averages show that visibility impairment in Arkansas’s Federal Class I areas is decreasing more rapidly than the uniform rate of progress and 2018 reasonable progress goals submitted in the 2008 Regional Haze SIP.⁵ •Additionally, visibility at Federal Class I areas in other states affected by Arkansas sources has improved for the least and most impaired days between 2000 and 2015. On the most impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.92 deciview (dv) and 5.24 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and 2011 – 2015 analysis period. On the least impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.54dv and 2.42 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and the 2011 – 2015 analysis period. Based on the visibility improvement in Class I areas in nearby states,
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⁵Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

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		ADEQ concludes that stationary sources in Arkansas do not significantly interfere with other states' plans to protect visibility. ⁶
110(a)(2)(D)(ii) Interstate and International pollution abatement	<i>contain adequate provisions- (ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement)</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-311(a)(8) authorizes ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control. •Based on information gathered from ADEQ's permit database, ADEQ concludes that the limited amount of point and area source ozone emissions do not preclude the State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2008 ozone NAAQS. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •APC&EC Reg. 19.903 describes the notification required when dealing with a major new source or major modification.
110(a)(2)(E)(i) Adequate personnel, funding and	<i>provide (i) necessary assurances that the State (or, except were the Administrator deems</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-103(1)(A) grants ADEQ and APC&EC the authority to establish by regulation, reasonable fees for initial issuance, annual review, and modification of permits. •Under Ark. Code Ann. § 8-1-103(3) and § 8-1-103(5), ADEQ is authorized to

⁶Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

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<p>authority to carry out plan, (ii) Comply with state boards, (iii) Oversee local and regional governments/agencies</p>	<p><i>inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 128, (iii) necessary assurances that where the State has relied on a local or</i></p>	<p>collect the fees established by APC&EC and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to pay the fees after reasonable notice.</p> <ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(D) states that duties of the Director of ADEQ include the day-to-day administration of all activities that ADEQ is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with ADEQ. •APC&EC Regulation 9, Fee Regulation, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. •APC&EC Reg. 19.301 gives ADEQ the responsibility of meeting all applicable regulations and requirements contained in the CAA, as amended, if any area of the State is determined to be in violation of the NAAQS. •APC&EC Reg. 19.410 gives ADEQ the authority to revoke, suspend, or modify any permit for cause. •The requirements of §110(a)(2)(E)(ii) are not entirely applicable because permit and enforcement orders are issued directly by ADEQ, not approved by state boards or commissioners. •Under APC&EC Reg. 8.202, the Director or the Director’s delegate shall issue all permits with nothing in APC&EC Regulation 8 being construed to authorize APC&EC to issue a permit, including the power to reverse or affirm a permitting decision by the Director. •APC&EC Regulation 8, Chapter 4, highlights that APC&EC does not play a leading role in approving enforcement actions.
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	<p><i>regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i></p>	<ul style="list-style-type: none"> •Under Ark. Code Ann. § 21-8-1001, no member of a state board or commission or board member of an entity receiving state funds shall participate in, vote on, influence or attempt to influence an official decision if the member has a pecuniary interest in the matter under consideration by the board, commission, or entity. In addition, no member of a state board or commission or board member of an entity receiving state funds shall participate in any discussion or vote on a rule or regulation that exclusively benefits the member. •Arkansas does not rely on local agencies for specific SIP implementation. The requirements of §110(a)(2)(E)(iii) are not applicable.
<p>110(a)(2)(F) Stationary source emissions monitoring and reporting system</p>	<p><i>require, as may be prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii)</i></p>	<ul style="list-style-type: none"> •Regulatory requirements pertaining to sampling, monitoring, and reporting are codified in APC&EC Regulation 19, Chapter 7. •APC&EC Reg. 19.705 provides the record keeping and reporting requirements for stationary sources subject to APC&EC Regulation 19. APC&EC Reg. 19.705 outlines how records of air emissions are to be maintained and how information and data should be submitted to ADEQ. •APC&EC Reg. 19.702 provides guidelines and timelines for air emissions sampling necessary to enable Arkansas to determine whether the sources are in compliance. •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement are found in the monitoring, recordkeeping, and reporting requirements for sources in these control measures as well as individual SIP permits. •APC&EC Reg. 19.703 requires any stationary source subject to this regulation to install, calibrate, operate, and maintain equipment to continuously monitor or

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	<p><i>correlation of such reports by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i></p>	<p>determine federally regulated air pollutant emissions in accordance with Federal specification and in accordance with any joint specifications outlined by ADEQ, with the concurrence of EPA.</p> <ul style="list-style-type: none"> •APC&EC Reg. 19.701 states that ADEQ will use any credible evidence based on sampling, monitoring, and reporting, to determine violations of applicable emissions limitations. •Under Ark. Code Ann. § 8-4-311(a)(2), ADEQ has the power to advise, consult, and cooperate with the federal government, including EPA Region 6 administrator. Arkansas submits emission inventory data annually to EPA for inclusion in the National Emissions Inventory. •APC&EC Reg. 19.706 requires public availability of emissions data.
<p>110(a)(2)(G) Authority to declare air pollution emergency and notify public</p>	<p><i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(C) empowers the Director of ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. APC&EC Reg. 8.502 gives the Director the ability to issue an Emergency Order when necessary to meet an emergency or situation of imminent hazard. APC&EC Reg. 8.502 requires the Director to publish a Notice of Emergency Order in a newspaper covering the affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action, and other information appropriate to ensure the public is informed about the action. •Ark. Code Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if APC&EC determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits.

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		<ul style="list-style-type: none"> •APC&EC Reg. 8.807 authorizes APC&EC to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days unless allowed by law.
<p>110(a)(2)(H) Future SIP revisions</p>	<p><i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 1, provides a clear delineation of those regulations that are promulgated by APC&EC in satisfaction of certain requirements of the CAA, including making ADEQ responsible for administering the attainment and maintenance of the NAAQS. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark. Code Ann. § 8-4-202(d)(4)(A)(ii) authorizes APC&EC to refer to the Code of Federal Regulations for any APC&EC standard or regulation that is identical to a regulation promulgated by EPA. •Under APC&EC Regulation 19, Chapter 3, ADEQ is charged with the protection of the NAAQS. According to APC&EC Reg. 19.301, if any area of the State is determined to be in violation of the NAAQS, all applicable requirements contained in the CAA, as amended, and all regulations promulgated thereto shall be met by ADEQ.

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	<i>any additional requirements established under this Act;</i>	
110(a)(2)(I) Nonattainment areas (interstate transport)	<i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i>	<p>•Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Arkansas had one area that was designated nonattainment as nonattainment for the 2008 Ozone NAAQS, Crittenden County, which was classified as Marginal. As such, a nonattainment SIP submittal was not required. An emission inventory SIP for Crittenden County was submitted to the EPA on August 28, 2015 and EPA published the final rule on January 14, 2016 approving this SIP revision (81 FR 1884). On December 10, 2015, Arkansas submitted to EPA the 2008 8-hour ozone NAAQS redesignation to attainment request and a maintenance plan for Crittenden County. On February 10, 2016, EPA published a proposal to redesignate Crittenden County as attainment for the 2008 8-hour ozone NAAQS and to approve the maintenance plan (81 FR 7046) and on April 25, 2016, EPA finalized the redesignation of Crittenden County to attainment for the 2008 8-hour ozone NAAQS and its approval of the maintenance plan (81 FR 24030). Crittenden County is presently designated attainment for the 2008 8-hour ozone NAAQS.</p>
110(a)(2)(J) (§ 121 consultation), (§127 public notification), PSD and visibility protection	<i>meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable requirements of part C (relating to prevention of</i>	<p>•Ark. Code Ann. § 8-4-301(b) prescribes a method of utilizing the program for the control of air pollution. Under Ark. Code Ann. § 8-4-301(b), the program shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by a maximum of cooperation and conciliation among all the parties concerned. In addition, Ark. Code Ann. § 8-4-302 reiterates Ark. Code Ann. § 8-4-301(b) by affirming that the purpose is to safeguard the air resources of the State by controlling or abating air pollution that exists and preventing new air pollution under a program which shall be consistent with the declaration of policy stated in Ark. Code Ann. § 8-4-301 and with Ark. Code Ann. Title 8, Chapter, 4,</p>

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	<p><i>significant deterioration of air quality and visibility protection);</i></p>	<p>Subchapter 3.</p> <ul style="list-style-type: none"> •All SIP revisions in Arkansas undergo public notice and hearing, which provides for comment by the public. •Air quality data from Arkansas's monitoring network is published on ADEQ's website. Additionally, Arkansas is required to submit monitoring data to the Air Quality System in a timely manner. •Ark. Code Ann. § 8-4-311(a)(6) encourages voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity of the air within the State. •The public is notified of concentrations that exceed the NAAQS from the ADEQ website (https://www.adeq.state.ar.us/techsvs/air_chem_lab/) that contains hourly concentrations taken from monitoring sites throughout the State and the Air Quality Index for the Little Rock and Springdale metropolitan areas. This index displays which sensitive groups are at greater risk from each pollutant. •These monitoring sites also upload data to EPA’s AirNow website, which provides data to a broader section of the public and includes links to help the public understand what they can do to keep their air clean. •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference the requirements in 40 C.F.R. Part 52 for PSD in their entirety, with the exception of 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i) and 52.21(cc). These provisions were approved by EPA as part of the SIP. These incorporated provisions also provide for protection of visibility in Federal Class I areas. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved
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		<p>on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.</p> <ul style="list-style-type: none"> •The visibility subelement of Element J is not being addressed because EPA stated in their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)”⁷ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS.
<p>110(a)(2)(K) Air quality modeling/data</p>	<p><i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 3, outlines that ADEQ is responsible for ambient air monitoring and computer modeling of regulated air pollutant emissions in any area that can reasonably be expected to be in excess of the NAAQS and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. See APC&EC Reg. 19.302(A) and (B). Under APC&EC Reg. 19.302 (B), all computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS. •ADEQ has the ability to submit data related to air quality modeling to the Administrator under Ark. Code Ann. § 8-4-311 (a)(2) which gives ADEQ the power to advise, consult, and cooperate with the federal government.

⁷ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 11(a)(2), September 13, 2013.

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	<i>Administrator;</i>	
<p>110(a)(2)(L) Major Stationary source permitting fees</p>	<p><i>require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the</i></p>	<ul style="list-style-type: none"> •The fee requirements of APC&EC Regulation 26, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP. Arkansas's Title V operating permit program was approved by EPA October 9, 2001 (66 FR 51313). •ADEQ has the authority to adjust the fee as necessary using its rulemaking authority. APC&EC Regulation 9, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. Revisions to air permitting fee in Chapter 5 were approved by EPA on April 30, 2015 (80 FR 24216).

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	<p><i>Administrator's approval of a fee program under title V; and</i></p>	
<p>110(a)(2)(M) Consultation/ Participation by affected local entities</p>	<p><i>provide for consultation and participation by local political subdivisions affected by the plan.</i></p>	<ul style="list-style-type: none"> •Pursuant to APC&EC Regulation 8, Arkansas will continue to provide for consultation and participation from those affected by the SIP. Under APC&EC Reg. 8, those organizations affected by the SIP will be able to participate in developing the SIP via comments and potential public hearings. ADEQ is the sole state-level enforcer and implementer of the SIP. See APC&EC Reg. 8.205 <i>Public Notice of Permit Application</i>; APC&EC Reg. 8.206 <i>Request for Public Hearing on Application for Permit</i>; APC&EC Reg. 8.207 <i>Public Notice of Draft Permitting Decision</i>; APC&EC Reg. 8.208 <i>Public Comment on Draft Permitting Decision</i>; APC&EC Reg. 8.209 <i>Public Hearings</i>; APC&EC Reg. 8.405 <i>Public Notice of Notices of Violations and Consent Administrative Orders</i>; APC&EC Reg. 8.801 <i>Public Notice of Rulemaking</i>. •ADEQ participates in the Central States Air Resources Agencies, which is an organization of states, tribes, federal agencies, and other interested parties concerned with air quality. The interactions and public participation on rule and plan development play a role in satisfying the requirements of § 110(a)(2)(M).

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3.3 2008 Lead NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of CAA relevant to the 2008 lead NAAQS are contained in the current SIP or SIP revisions which have been submitted, but not yet approved by EPA and the attachments included in this SIP submittal, which are hereby incorporated by reference. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

In this revision to the SIP, Arkansas demonstrates that it has adequate resources and authority to implement, maintain, and enforce the 2008 lead NAAQS.

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;</i>	<ul style="list-style-type: none"> •Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark.Code.Ann.) § 8-4-101 <i>et. seq.</i>, and those provisions of the Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. § 52.170. •The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit.
110(a)(2)(B)	<i>provide for</i>	•APC&EC Reg. 19.302, grants ADEQ responsibility for ambient air monitoring and

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<p>Ambient air quality monitoring and data analysis system</p>	<p><i>establishment and operation of appropriate devices, methods, systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<p>computer modeling of regulated air pollutant emissions.</p> <ul style="list-style-type: none"> •Ark. Code. Ann. § 8-4-311(a)(3) empowers ADEQ to encourage and conduct studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement. •Ark. Code. Ann. § 8-4-311(a)(4) grants ADEQ the ability to collect and disseminate information relative to air pollution and its prevention and control. •In conjunction with the references above, Arkansas monitors air quality for lead at appropriate locations throughout the state using EPA-approved methods and submits lead data to the EPA’s Air Quality System (AQS) consistent with EPA regulations under 40 C.F.R. Part 58. •Ark. Code. Ann. § 8-4-311(a)(2) gives ADEQ the ability to advise, consult, and cooperate with the federal government in furtherance of safeguarding the air resources of the State by controlling or abating air pollution and preventing new air pollution if it is in the interest of the public health and welfare of the people. See Ark. Code. Ann. § 8-4-302 and § 8-4-301.
<p>110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources and a permit program</p>	<p><i>include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to</i></p>	<ul style="list-style-type: none"> •Ark. Code. Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. •Ark. Code. Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive program for the prevention and control of all sources of pollution of the air of the State of Arkansas. •Chapter 4 of APC&EC Regulation 19, describes the regulation and permitting of the operation, modification, and construction of minor stationary source. •Chapter 9 of APC&EC Regulation 19, authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations

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	<p><i>assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<p>governing the protection of visibility in mandatory Federal Class I areas.</p> <ul style="list-style-type: none"> •Ark. Code. Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark. Code. Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. No changes to the PSD program are necessary to implement the 2008 lead NAAQS.
<p>110(a)(2)(D)(i) Interstate transport provisions</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality</i></p>	<ul style="list-style-type: none"> •ADEQ has determined that there are few sources of lead emissions located in close proximity to Arkansas's borders (e.g., within 2 miles). The physical properties of lead prevent lead emissions from experiencing the same travel or formation phenomena as PM_{2.5} or ozone and there is a sharp decrease in lead concentrations as the distance from a lead source increases. •There are four nonattainment areas for the 2008 lead NAAQS in states neighboring Arkansas: Bristol in Sullivan County, Tennessee; Frisco in Collin County, Texas; Iron, Dent, and Reynolds Counties in Missouri; and Jefferson County, Missouri. None of these nonattainment areas are within 50 miles of the Arkansas border. Because the physical properties of lead prevent long distance transport of lead emissions, the Department concludes that Arkansas does not significantly contribute to nonattainment or maintenance in other states. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including Greenhouse Gas (GHG) PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant

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	<p><i>standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.</p> <ul style="list-style-type: none"> •Arkansas has two Federal Class I areas within its borders and determined in its 2008 Regional Haze SIP that sources located in Arkansas also contribute to regional haze in two additional Federal Class I areas: Hercules Glade Wilderness and Mingo National Wildlife Refuge in Missouri; however, the contribution to visibility impairment from lead emitted by sources in Arkansas on Hercules Glade and Mingo is negligible. According to the 2011 National Emissions Inventory (NEI), only two sources emitted greater than 0.5 tons of lead in 2011, the most recent year for which data is available. These sources were Trefilarbed Arkansas Inc. in Jefferson County and Remington Arms Co Inc. in Lonoke County which emitted 0.813 and 0.753 tons of lead, respectively, in 2011. Neither of these facilities is located near a Federal Class I area. Trefilarbed Arkansas Inc. and Remington Arms Co Inc. are both located more than a 150 miles from the nearest Federal Class I area in another state.⁸ •The Totty Field airport is the closest lead source in Arkansas to the Hercules Glade Wilderness area in Missouri. This facility is approximately 18.4 miles from the boundary of the Hercules Glade to the source and emitted 7.69×10^{-6} tons of lead in 2011 according to the 2011 NEIv2.⁹ The Ark-Mo airport is the closest lead source in Arkansas to the Mingo Wilderness National Wildlife Refuge in Missouri. This facility is approximately 31.3 miles from the boundary of the Mingo National Wildlife Refuge and emitted 8.6×10^{-4} tons of lead in 2011 according to the 2011 NEIv2.¹⁰ Based on the small amounts of lead emitted and the distance of lead stationary sources from Federal Class I areas, the Department has determined that
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⁸ Proximity of Arkansas Lead Sources to Class I Wilderness Areas Map (attached after the 2008 Lead NAAQS Infrastructure State Implementation Plan table)

⁹ Id. and EPA 2011 National Emissions Inventory version 2.

¹⁰ Id.

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		lead stationary sources have a negligible impact on visibility.
110(a)(2)(D)(ii) Interstate and International pollution abatement	<i>contain adequate provisions- (ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement)</i>	<ul style="list-style-type: none"> •Ark. Code. Ann. § 8-4-311(a)(8) authorizes ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control. •Based on information gathered from ADEQ's permit database, ADEQ concludes that the limited amount of point and area source lead emissions do not preclude the State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2008 lead NAAQS. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. • APC&EC Reg. 19.903 describes the notification required when dealing with a major new source or major modification.
110(a)(2)(E)(i) Adequate personnel, funding and authority to carry out plan, (ii) Comply with state boards, (iii)	<i>provide (i) necessary assurances that the State (or, except were the Administrator deems inappropriate, the general purpose local government or governments, or a</i>	<ul style="list-style-type: none"> •Ark. Code. Ann. § 8-1-103(1)(A) grants ADEQ and APC&EC the authority to establish by regulation, reasonable fees for initial issuance, annual review, and modification of permits. •Under Ark. Code. Ann. § 8-1-303(3), ADEQ is authorized to collect the fees established by the Commission and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to

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<p>Oversee local and regional governments/agencies</p>	<p><i>regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii)requirements that the State comply with the requirements respecting State boards under section 128, (iii) necessary assurances that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any</i></p>	<p>pay the fees after reasonable notice.</p> <ul style="list-style-type: none"> •Ark. Code. Ann. § 8-1-202(b)(2)(D) states that the ADEQ Director’s duties include the day-to-day administration of all activities that ADEQ is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with the department. •APC&EC Regulation 9, Fee Regulation, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. •APC&EC Reg. 19.301, gives ADEQ the responsibility of meeting all applicable regulations and requirements contained in the CAA, as amended, if any area of the state is determined to be in violation of the NAAQS. •APC&EC Reg. 19.410, gives ADEQ the authority to revoke, suspend, or modify any permit for cause. •The requirements of §110(a)(2)(E)(ii) are not entirely applicable because permit and enforcement orders are issued directly by ADEQ, not approved by state boards or commissioners. •Under the APC&EC Reg. 8.202, the Director or the Director’s delegate shall issue all permits with nothing in APC&EC Regulation 8 being construed to authorize the Commission to issue a permit, including the power to reverse or affirm a permitting decision by the Director. APC&EC Regulation 8, Chapter 4, highlights that the Commission does not play a leading role in approving enforcement actions. •Under Ark. Code. Ann. § 21-8-1001, no member of a state board or commission or board member of an entity receiving state funds shall participate in, vote on, influence or attempt to influence an official decision if the member has a pecuniary interest in the matter under consideration by the board, commission, or entity. In
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	<p><i>plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i></p>	<p>addition, no member of a state board or commission or board member of an entity receiving state funds shall participate in any discussion or vote on a rule or regulation that exclusively benefits the member.</p> <ul style="list-style-type: none"> •Arkansas does not rely on local agencies for specific SIP implementation. The requirements of §110(a)(2)(E)(iii) are not applicable.
<p>110(a)(2)(F) Stationary source emissions monitoring and reporting system</p>	<p><i>require, as may be prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or</i></p>	<ul style="list-style-type: none"> •Regulatory requirements pertaining to sampling, monitoring and reporting have been codified in APC&EC Regulation 19, Chapter 7. Requirements in Chapter 7, APC&EC Reg. 19.705 provide the record keeping and reporting requirements for stationary sources subject to APC&EC Regulation 19. APC&EC Reg. 19.705 outlines how records of emissions are to be maintained and how information and data should be submitted to ADEQ. •APC&EC Reg. 19.702 provides guidelines and timelines for air emissions sampling necessary to enable Arkansas to determine whether the sources are in compliance. •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code. Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement are found in the monitoring, recordkeeping, and reporting requirements for sources in these control measures as well as individual SIP permits. •APC&EC Reg. 19.703 requires any stationary source subject to this regulation to install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with Federal specification and in accordance with any joint specifications outlined by ADEQ, with the concurrence of EPA.

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	<p><i>standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.701 states that ADEQ will use any credible evidence based on sampling, monitoring, and reporting, to determine violations of applicable emissions limitations. •Under Ark. Code. Ann. § 8-4-311(a)(2), ADEQ has the power to advise, consult, and cooperate with the federal government, including EPA Region 6 administrator. Arkansas submits emission inventory data annually to EPA for inclusion in the NEI. •Reg. 19.706 requires public availability of emissions data.
<p>110(a)(2)(G) Authority to declare air pollution emergency and notify public</p>	<p><i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;</i></p>	<ul style="list-style-type: none"> •Ark. Code. Ann. § 8-1-202(b)(2)(C) empowers the Director of ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. •APC&EC Reg. 8.502 gives the Director the ability to issue an Emergency Order when necessary to meet an emergency or situation of imminent hazard. Reg. 8.502 requires the Director to publish a Notice of Emergency Order in a newspaper covering the affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action and other information appropriate to ensure the public is informed about the action. •Ark. Code. Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if the Commission determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits. •APC&EC Reg. 8.807 authorizes the Commission to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days unless allowed by law.

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<p>110(a)(2)(H) Future SIP revisions</p>	<p><i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 1, provides a clear delineation of those regulations that are promulgated by the Commission in satisfaction of certain requirements of the CAA, including making ADEQ responsible for administering the attainment and maintenance of the NAAQS. •Ark.Code.Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark.Code.Ann. § 8-4-202(d)(4)(A)(ii) authorizes APC&EC to refer to the Code of Federal Regulations for any Commission standard or regulation that is identical to a regulation promulgated by the EPA. •Under APC&EC Regulation 19, Chapter 3, ADEQ is charged with the protection of the NAAQS. According to APC&EC Reg. 19.301, if any area of the State is determined to be in violation of the NAAQS, all applicable requirements contained in the CAA, as amended, and all regulations promulgated thereto shall be met by ADEQ.
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	<i>Act;</i>	
110(a)(2)(I) Nonattainment areas (interstate transport)	<i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i>	<ul style="list-style-type: none"> •Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Currently, Arkansas does not have any area designated nonattainment for lead.
110(a)(2)(J) (§ 121 consultation), (§127 public notification), PSD and visibility protection	<i>meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable requirements of part C (relating to prevention of significant deterioration of air quality and visibility protection);</i>	<ul style="list-style-type: none"> •Ark. Code. Ann. § 8-4-301(b), prescribes a method of utilizing the program for the control of air pollution. Under Ark. Code. Ann. § 8-4-301(b), the program shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by a maximum of cooperation and conciliation among all the parties concerned. In addition, Ark. Code. Ann. § 8-4-302 reiterates Ark. Code. Ann. § 8-4-301(b) by affirming that the purpose is to safeguard the air resources of the State by controlling or abating air pollution that exists and preventing new air pollution under a program which shall be consistent with the declaration of policy stated in Ark. Code Ann. § 8-4-301 and with Ark. Code Ann, Title 8, Chapter 4, Subchapter 3. •All SIP revisions undergo public notice and hearing, which provides for comment by the public. •Air quality data from Arkansas's monitoring network is published on ADEQ's website. Additionally, Arkansas is required to submit monitoring data to the Air Quality System (AQS) in a timely manner. •Ark. Code. Ann. § 8-4-311(a)(6) encourages voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity

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		<p>of the air within the State.</p> <ul style="list-style-type: none"> •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference the requirements in 40 C.F.R. Part 52 for PSD in their entirety, with the exception of 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i) and 52.21(cc). These incorporated provisions also provide for protection of visibility in Federal Class I areas. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •The visibility subelement of Element J is not being addressed because EPA stated in their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)”¹¹ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS.
110(a)(2)(K) Air quality modeling/data	<i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 3, outlines that ADEQ is responsible for ambient air monitoring and computer modeling of regulated air pollutant emissions in any area that can reasonably be expected to be in excess of the NAAQS and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. See APC&EC Reg. 19.302(A) and (B). Under APC&EC Reg. 19.302 (B), all computer modeling shall be performed using EPA-approved models, and using averaging times

¹¹ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2). September 13, 2013.

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	<p><i>quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator;</i></p>	<p>commensurate with averaging times stated in the NAAQS.</p> <ul style="list-style-type: none"> •ADEQ has the ability to submit data related to air quality modeling to the Administrator under Ark. Code. Ann. § 8-4-311 (a)(2) which gives ADEQ the power to advise, consult, and cooperate with the federal government.
<p>110(a)(2)(L) Major Stationary source permitting fees</p>	<p><i>require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and</i></p>	<ul style="list-style-type: none"> •The fee requirements of APC&EC Regulation 26, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP. Arkansas's Title V operating permit program was approved by EPA October 9, 2001 (66 FR 51313). •ADEQ has the authority to adjust the fee as necessary using its rulemaking authority. APC&EC Regulation 9, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. Revisions to the air permitting fees in Chapter 5 were approved by EPA on April 30, 2015 (80 FR 24216).

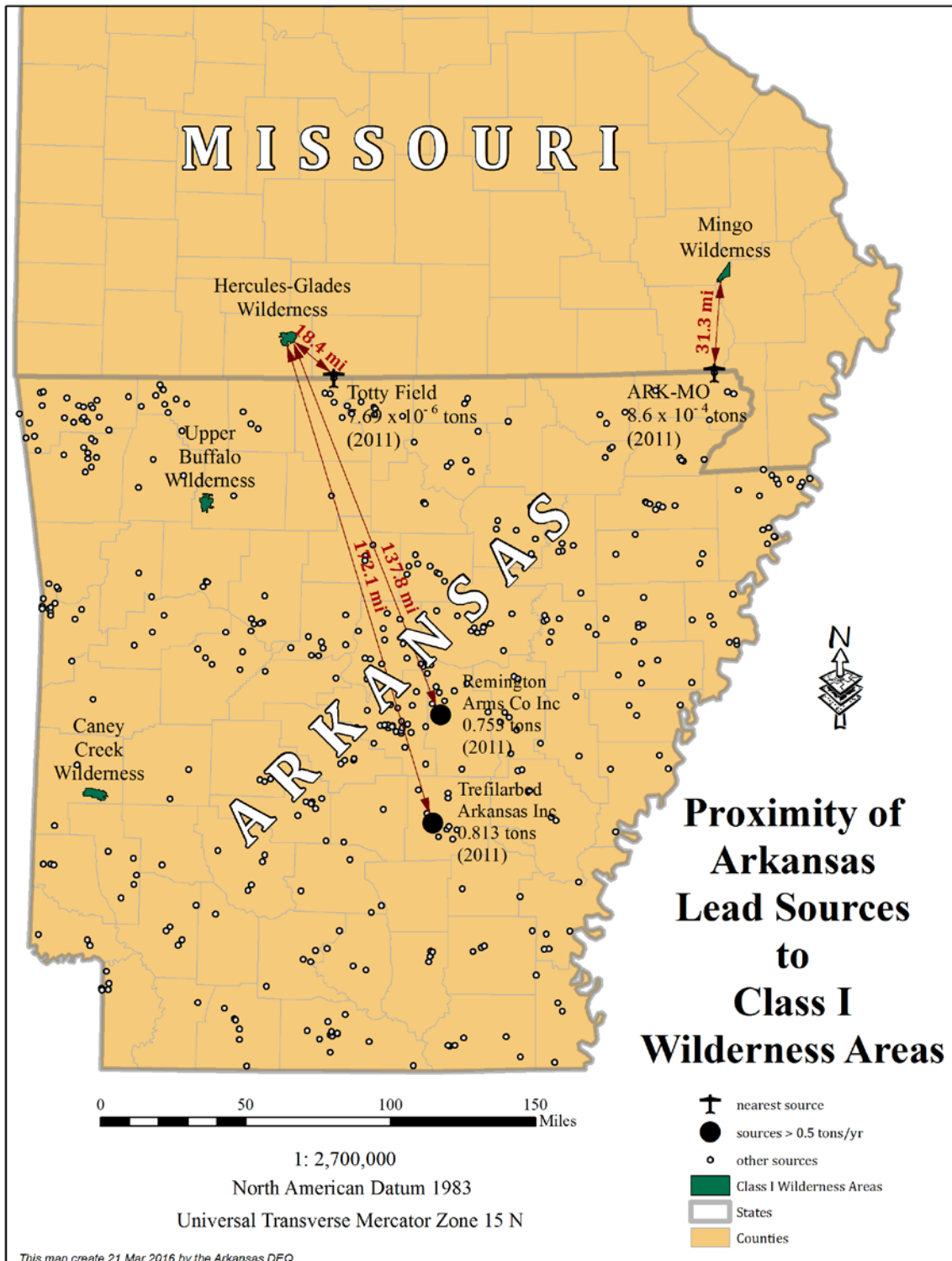
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	<p><i>enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V; and</i></p>	
<p>110(a)(2)(M) Consultation/ Participation by affected local entities</p>	<p><i>provide for consultation and participation by local political subdivisions affected by the plan.</i></p>	<ul style="list-style-type: none"> •Pursuant to the APC&EC Regulation 8, Arkansas will continue to provide for consultation and participation from those affected by the SIP. Under Regulation 8, those organizations affected by the SIP will be able to participate in developing the SIP via comments and potential public hearings. ADEQ is the sole state-level enforcer and implementer of the SIP. See APC&EC Reg. 8.205 <i>Public Notice of Permit Application</i>; APC&EC Reg. 8.206 <i>Request for Public Hearing on Application for Permit</i>; APC&EC Reg. 8.207 <i>Public Notice of Draft Permitting Decision</i>; APC&EC Reg. 8.208 <i>Public Comment on Draft Permitting Decision</i>; APC&EC Reg. 8.209 <i>Public Hearings</i>; APC&EC Reg. 8.405 <i>Public Notice of Notices of Violations and Consent Administrative Orders</i>; APC&EC Reg. 8.801 <i>Public Notice of Rulemaking</i>. •ADEQ participates in the Central State Air Resources Agencies, which is an organization of states, tribes, federal agencies and other interested parties concerned with air quality. The interactions and public participation on rule and plan

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		development play a role in satisfying the requirements of § 110(a)(2)(M).
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Figure 1. Proximity of Arkansas Lead Sources to Federal Class I Wilderness Areas



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3.4 2010 Nitrogen Dioxide (NO₂) NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of the CAA relevant to the 2010 NO₂ NAAQS are contained in this SIP. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

In this revision to the SIP, Arkansas is demonstrating that it has adequate resources and authority to implement, maintain, and enforce the 2010 NO₂ NAAQS.

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;</i>	<ul style="list-style-type: none"> •Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark. Code Ann.) § 8-4-101 <i>et. seq.</i>, and those provisions of the Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. § 52.170. •The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit.

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<p>110(a)(2)(B) Ambient air quality monitoring and data analysis system</p>	<p><i>provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.302 grants ADEQ responsibility for ambient air monitoring and computer modeling of regulated air pollutant emissions. •Ark. Code Ann. § 8-4-311(a)(3) empowers ADEQ to encourage and conduct studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement. •Ark. Code Ann. § 8-4-311(a)(4) grants ADEQ the ability to collect and disseminate information relative to air pollution and its prevention and control. •In conjunction with the references above, Arkansas monitors air quality for NO₂ at appropriate locations throughout the state using EPA-approved methods and submits NO₂ data to the EPA’s Air Quality System (AQS) consistent with EPA regulations under 40 C.F.R. Part 58. EPA has approved ADEQ’s placement of NO₂ core samplers at the NCore site for ambient monitoring. •Ark. Code Ann. § 8-4-311(a)(2) gives ADEQ the ability to advise, consult, and cooperate with the federal government in furtherance of safeguarding the air resources of the state by controlling or abating air pollution and preventing new air pollution if it is in the interest of the public health and welfare of the people. See also Ark. Code Ann. § 8-4-301 and § 8-4-302. Under this authority, ADEQ submits annual monitoring network plans, consistent with EPA’s ambient air monitoring regulations, which describe how ADEQ has complied with monitoring requirements and explains proposed changes to the network, if any. •Ark. Code Ann. § 8-1-202 grants the ADEQ Director authority to retain the technical and legal expertise and assistance in the field of environmental protection.
<p>110(a)(2)(C) Program to enforce control</p>	<p><i>include a program to provide for the enforcement of the</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. Ark. Code Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive

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<p>measures, regulate modification and construction of stationary sources and a permit program</p>	<p><i>measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<p>program for the prevention and control of all sources of air pollution in the State of Arkansas.</p> <ul style="list-style-type: none"> •Chapter 4 of APC&EC Regulation 19 describes the regulation and permitting of the operation, modification and construction of minor stationary sources. •Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Ark. Code Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •ADEQ has a complete EPA-approved PSD permitting program in place covering the required elements for all regulated New Source Review (NSR) pollutants, including greenhouse gases (GHG). EPA had previously published findings of failure to submit a PSD SIP for PM_{2.5} (79 FR 29354) and imposed a Federal Implementation Plan for PSD permitting of GHG (75 FR 82246); however, ADEQ submitted SIP revisions addressing 2006 PM_{2.5} PSD elements, which was approved on March 4, 2015 (80 FR 11573), and GHG PSD permitting, which was approved on April 2, 2013 (78 FR 19596). Arkansas perceives there to be no changes necessary to the PSD program to implement the 2010 NO₂ NAAQS.
<p>110(a)(2)(D)(i) Interstate transport</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of</i></p>	<p>•APC&EC Reg. 19.402 states: “No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering</p>

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<p>provisions</p>	<p><i>this title, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>with the attainment or maintenance of a national ambient air quality standard.” APC&EC Reg. 19.402 is consistent with these requirements as it is an Arkansas promulgated regulation that applies to all stationary sources in Arkansas.</p> <ul style="list-style-type: none"> •On January 20, 2012, the EPA determined that no area in the country is in violation of the 2010 NO₂ NAAQS. Since there are no nonattainment areas in the country for this pollutant, Arkansas’s NO₂ emissions cannot be significantly contributing to nonattainment in any other state. Arkansas also does not have any nonattainment areas for NO₂. Further evidence to support the Department’s determination that Arkansas does not significantly contribute to nonattainment or interfere with maintenance of the 2010 NO₂ NAAQS is provided in Appendix H. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including Greenhouse Gas (GHG) PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Arkansas is currently subject to the Regional Haze Rule, which addresses visibility-impairing pollutants. Arkansas’s PSD program is used to further protect visibility. In 2008, Arkansas submitted a Regional Haze SIP and EPA partially approved and partially disapproved it on March 12, 2012. Arkansas has experienced considerable improvement in regional haze in relation to the reasonable progress goals and uniform rate of progress established in the Regional Haze SIP. The most recent data from 2015 and current five-year rolling averages show that visibility impairment in Arkansas’s Federal Class I areas is decreasing more rapidly than the uniform rate of progress and 2018 reasonable progress goals submitted in the 2008 Regional Haze
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		<p>SIP.¹²</p> <ul style="list-style-type: none"> •Additionally, visibility at Federal Class I areas in other states affected by Arkansas sources has improved for the least and most impaired days between 2000 and 2015. On the most impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.92 deciview (dv) and 5.24 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and 2011 – 2015 analysis period. On the least impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.54dv and 2.42 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and the 2011 – 2015 analysis period. Based on the visibility improvement in Class I areas in nearby states, ADEQ concludes that stationary sources in Arkansas do not significantly interfere with other states’ plans to protect visibility.¹³
<p>110(a)(2)(D)(ii) Interstate and International pollution abatement</p>	<p><i>contain adequate provisions- (ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement)</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-311(a)(8) authorizes ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control. •Based on information gathered from ADEQ's permit database, ADEQ concludes that the limited amount of point and area source NO₂ emissions do not preclude the State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2010 NO₂ NAAQS. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement

¹²Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

¹³Id.

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		<p>of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.</p> <ul style="list-style-type: none"> •APC&EC Reg. 19.903 describes the notification required when dealing with a major new source or major modification.
<p>110(a)(2)(E)(i) Adequate personnel, funding and authority to carry out plan, (ii) Comply with state boards, (iii) Oversee local and regional governments/ agencies</p>	<p><i>provide (i) necessary assurances that the State Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-103(1)(A) grants the ADEQ and the APC&EC the authority to establish by regulation, reasonable fees for initial issuance, annual review, and modification of permits. •Under Ark. Code Ann. § 8-1-103(3) and § 8-1-103(5), ADEQ is authorized to collect the fees established by APC&EC and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to pay the fees after reasonable notice. •Ark. Code Ann. § 8-1-202(b)(2)(D) states that duties of the Director of ADEQ include the day-to-day administration of all activities that ADEQ is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with ADEQ. •APC&EC Regulation 9, Fee Regulation, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. •APC&EC Reg. 19.301 gives ADEQ the responsibility of meeting all applicable regulations and requirements contained in the CAA, as amended, if any area of the State is determined to be in violation of the NAAQS. •APC&EC Reg. 19.410 gives ADEQ the authority to revoke, suspend, or modify any permit for cause. •The requirements of §110(a)(2)(E)(ii) are not entirely applicable because permit and

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	<p><i>portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 128, (iii) necessary assurances that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i></p>	<p>enforcement orders are issued directly by ADEQ, not approved by state boards or commissioners.</p> <ul style="list-style-type: none"> •Under APC&EC Reg. 8.202, the Director or the Director’s delegate shall issue all permits with nothing in APC&EC Regulation 8 being construed to authorize APC&EC to issue a permit, including the power to reverse or affirm a permitting decision by the Director. •APC&EC Regulation 8, Chapter 4, highlights that APC&EC does not play a leading role in approving enforcement actions. •Under Ark. Code Ann. § 21-8-1001, no member of a state board or commission or board member of an entity receiving state funds shall participate in, vote on, influence or attempt to influence an official decision if the member has a pecuniary interest in the matter under consideration by the board, commission, or entity. In addition, no member of a state board or commission or board member of an entity receiving state funds shall participate in any discussion or vote on a rule or regulation that exclusively benefits the member. •Arkansas does not rely on local agencies for specific SIP implementation. The requirements of §110(a)(2)(E)(iii) are not applicable.
<p>110(a)(2)(F) Stationary source emissions monitoring and reporting system</p>	<p><i>require, as may be prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by</i></p>	<ul style="list-style-type: none"> •Regulatory requirements pertaining to sampling, monitoring, and reporting are codified in APC&EC Regulation 19, Chapter 7. •APC&EC Reg. 19.705 provides the record keeping and reporting requirements for stationary sources subject to APC&EC Regulation 19. APC&EC Reg. 19.705 outlines how records of air emissions are to be maintained and how information and data should be submitted to ADEQ. •APC&EC Reg. 19.702 provides guidelines and timelines for air emissions sampling

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	<p><i>owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i></p>	<p>necessary to enable Arkansas to determine whether the sources are in compliance.</p> <ul style="list-style-type: none"> •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement are found in the monitoring, recordkeeping, and reporting requirements for sources in these control measures as well as individual SIP permits. •APC&EC Reg. 19.703 requires any stationary source subject to this regulation to install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with federal specification and in accordance with any joint specifications outlined by ADEQ, with the concurrence of EPA. •APC&EC Reg. 19.701 states that ADEQ will use any credible evidence based on sampling, monitoring, and reporting, to determine violations of applicable emissions limitations. •Under Ark. Code Ann. § 8-4-311(a)(2), ADEQ has the power to advise, consult, and cooperate with the federal government, including EPA Region 6 administrator. Arkansas submits emission inventory data annually to EPA for inclusion in the National Emissions Inventory. •APC&EC Reg. 19.706 requires public availability of emissions data.
<p>110(a)(2)(G) Authority to declare air pollution emergency and</p>	<p><i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(C) empowers the Director of ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. APC&EC Reg. 8.502 gives the Director the ability to issue an Emergency Order when necessary to meet an emergency or situation of imminent hazard. APC&EC Reg. 8.502 requires the Director to publish a Notice of Emergency Order in a newspaper covering the

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<p>notify public</p>	<p><i>authority;</i></p>	<p>affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action and other information appropriate to ensure the public is informed about the action.</p> <ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if APC&EC determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits. •APC&EC Reg. 8.807 authorizes APC&EC to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days unless allowed by law.
<p>110(a)(2)(H) Future SIP revisions</p>	<p><i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 1, provides a clear delineation of those regulations that are promulgated by APC&EC in satisfaction of certain requirements of the CAA, including making ADEQ responsible for administering the attainment and maintenance of the NAAQS. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark. Code Ann. § 8-4-202(d)(4)(A)(ii) authorizes APC&EC to refer to the Code of Federal Regulations for any APC&EC standard or regulation that is identical to a regulation promulgated by EPA. •Under APC&EC Regulation 19, Chapter 3, ADEQ is charged with the protection of the NAAQS. According to APC&EC Reg. 19.301 , if any area of the State is determined to be in violation of the NAAQS, all applicable requirements contained in the CAA, as amended, and all regulations promulgated thereto shall be met by

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	<i>the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this Act;</i>	ADEQ.
110(a)(2)(I) Nonattainment areas (interstate transport)	<i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i>	•Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Currently, Arkansas does not have any area designated nonattainment for NO ₂ .
110(a)(2)(J) (§ 121 consultation), (§127 public notification), PSD and visibility protection	<i>meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable</i>	•Ark. Code Ann. § 8-4-301(b) prescribes a method of utilizing the program for the control of air pollution. Under Ark. Code Ann. § 8-4-301(b), the program shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by a maximum of cooperation and conciliation among all the parties concerned. In addition, Ark. Code Ann. § 8-4-302 reiterates Ark. Code Ann. § 8-4-301(b) by affirming that the purpose is to safeguard the air resources of the State by controlling or abating air pollution that exists and preventing new air pollution under a program which shall be consistent with the declaration of policy

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	<p><i>requirements of part C (relating to prevention of significant deterioration of air quality and visibility protection);</i></p>	<p>stated in Ark. Code Ann. § 8-4-301 and with Ark. Code Ann. Title 8, Chapter 4, Subchapter 3.</p> <ul style="list-style-type: none"> •All SIP revisions in Arkansas undergo public notice and hearing, which provides for comment by the public. •Air quality data from Arkansas's monitoring network is published on ADEQ's website. Additionally, Arkansas is required to submit monitoring data to the Air Quality System in a timely manner. •Ark. Code Ann. § 8-4-311(a)(6) encourages voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity of the air within the State. •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference the requirements in 40 C.F.R. Part 52 for PSD in their entirety, with the exception of 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 40 C.F.R. § 52.21(b)(55-58), 40 C.F.R. § 52.21(i) and 40 C.F.R. § 52.21(cc). These provisions were approved by EPA as part of the SIP. These incorporated provisions also provide for protection of visibility in Federal Class I areas. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •The visibility subelement of Element J is not being addressed because EPA stated in
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		their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)” ¹⁴ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS.
110(a)(2)(K) Air quality modeling/data	<i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator;</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 3, outlines that ADEQ is responsible for ambient air monitoring and computer modeling of regulated air pollutant emissions in any area that can reasonably be expected to be in excess of the NAAQS and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. See APC&EC Reg. 19.302(A) and (B). Under APC&EC Reg. 19.302 (B), all computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS. •ADEQ has the ability to submit data related to air quality modeling to the Administrator under Ark. Code Ann. § 8-4-311 (a)(2) which gives ADEQ the power to advise, consult, and cooperate with the federal government.
110(a)(2)(L) Major Stationary	<i>require the owner or operator of each major</i>	•The fee requirements of APC&EC Regulation 26, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP.

¹⁴ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2). September 13, 2013.

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<p>source permitting fees</p>	<p><i>stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V; and</i></p>	<p>Arkansas's Title V operating permit program was approved by EPA October 9, 2001 (66 FR 51313).</p> <ul style="list-style-type: none"> •ADEQ has the authority to adjust the fee as necessary using its rulemaking authority. APC&EC Regulation 9, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. Revisions to air permitting fee in Chapter 5 were approved by EPA on April 30, 2015 (80 FR 24216).
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<p>110(a)(2)(M) Consultation/ Participation by affected local entities</p>	<p><i>provide for consultation and participation by local political subdivisions affected by the plan.</i></p>	<ul style="list-style-type: none"> •Pursuant to APC&EC Regulation 8, Arkansas will continue to provide for consultation and participation from those affected by the SIP. Under APC&EC Regulation 8, those organizations affected by the SIP will be able to participate in developing the SIP via comments and potential public hearings. ADEQ is the sole state-level enforcer and implementer of the SIP. See APC&EC Reg. 8.205 <i>Public Notice of Permit Application</i>; APC&EC Reg. 8.206 <i>Request for Public Hearing on Application for Permit</i>; APC&EC Reg. 8.207 <i>Public Notice of Draft Permitting Decision</i>; APC&EC Reg. 8.208 <i>Public Comment on Draft Permitting Decision</i>; APC&EC Reg. 8.209 <i>Public Hearings</i>; APC&EC Reg. 8.405 <i>Public Notice of Notices of Violations and Consent Administrative Orders</i>; APC&EC Reg. 8.801 <i>Public Notice of Rulemaking</i>. •ADEQ participates in the Central States Air Resources Agencies, which is an organization of states, tribes, federal agencies and other interested parties concerned with air quality. The interactions and public participation on rule and plan development play a role in satisfying the requirements of § 110(a)(2)(M).
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3.5 2010 Sulfur Dioxide (SO₂) NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of the CAA relevant to the SO₂ NAAQS are included in this SIP submittal. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

In this revision to the SIP, Arkansas is demonstrating that it has adequate resources and authority to implement, maintain, and enforce the 2010 SO₂ NAAQS.

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;</i>	<ul style="list-style-type: none"> • Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark. Code Ann.) § 8-4-101 <i>et. seq.</i>, and those provisions of Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. § 52.170. • The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit.
110(a)(2)(B) Ambient air quality	<i>provide for establishment and operation of appropriate</i>	• APC&EC Reg. 19.302 grants ADEQ responsibility for ambient air monitoring and computer modeling of regulated air pollutant emissions.

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<p>monitoring and data analysis system</p>	<p><i>devices, methods, systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-311(a)(3) empowers ADEQ to encourage and conduct studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement. •Ark. Code Ann. § 8-4-311(a)(4) grants ADEQ the ability to collect and disseminate information relative to air pollution and its prevention and control. •In conjunction with the references above, Arkansas monitors air quality for SO₂ at appropriate locations throughout the state using EPA-approved methods and submits SO₂ data to the EPA’s Air Quality System (AQS) consistent with EPA regulations under 40 C.F.R. Part 58. •Ark. Code Ann. § 8-4-311(a)(2) gives ADEQ the ability to advise, consult, and cooperate with the federal government in furtherance of safeguarding the air resources of the State by controlling or abating air pollution and preventing new air pollution if it is in the interest of the public health and welfare of the people. See also Ark. Code Ann. § 8-4-301 and § 8-4-302. Under this authority, ADEQ submits annual monitoring network plans, consistent with EPA’s ambient air monitoring regulations, which describe how ADEQ has complied with monitoring requirements and explains proposed changes to the network, if any. •Ark. Code Ann. § 8-1-202 grants the ADEQ Director authority to retain the technical and legal expertise and assistance in the field of environmental protection.
<p>110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources</p>	<p><i>include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. Ark. Code Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive program for the prevention and control of all sources of air pollution in the State of Arkansas. •Chapter 4 of APC&EC Regulation 19 describes the regulation and permitting of the

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<p>and a permit program</p>	<p><i>construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<p>operation, modification, and construction of minor stationary sources.</p> <ul style="list-style-type: none"> •Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Ark. Code Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling or abating pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •ADEQ has a complete EPA-approved PSD permitting program in place covering the required elements for all regulated New Source Review (NSR) pollutants, including greenhouse gases (GHG). EPA had previously published findings of failure to submit a PSD SIP for PM_{2.5} (79 FR 29354) and imposed a Federal Implementation Plan for PSD permitting of GHG (75 FR 82246); however, ADEQ submitted SIP revisions addressing 2006 PM_{2.5} PSD elements, which was approved on March 4, 2015 (80 FR 11573), and GHG PSD permitting, which was approved on April 2, 2013 (78 FR 19596). Arkansas perceives there to be no changes necessary to the PSD program to implement the SO₂ NAAQS.
<p>110(a)(2)(D)(i) Interstate transport provisions</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.402 states: “No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.” APC&EC Reg. 19.402 is consistent with these requirements as it is an Arkansas promulgated regulation that applies to all stationary sources in Arkansas.

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	<p><i>pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>•In EPA’s initial round of SO₂ nonattainment designations (78 FR 47191), counties in three neighboring states—Jackson County, MO (partial); Jefferson County MO (partial); Sullivan County, TN (partial); and St. Bernard Parish, LA (whole county)—were designated as nonattainment for the 2010 SO₂ NAAQS. The nearest nonattainment area for the 2010 SO₂ NAAQS is approximately 104 miles from the Arkansas border and over 150 miles from any major SO₂ source in Arkansas.¹⁵ In EPA’s memorandum “Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard” issued on March 1, 2011, EPA indicates that SO₂ as a directly emitted unreacted pollutant causes relatively localized health impacts and that the maximum concentrations can be expected to be observed within 1 – 2 miles of some large power plants and other facilities. Given that the nearest nonattainment area for the 2010 SO₂ NAAQS is over 150 miles away from any major SO₂ source in Arkansas, ADEQ concludes that sources in Arkansas do not contribute to nonattainment or interfere with maintenance of the 2010 SO₂ NAAQS in other states. Further evidence to support the Department’s determination that Arkansas does not significantly contribute to nonattainment or interfere with maintenance of the 2010 SO₂ NAAQS in other states is provided in Appendix H.</p> <p>•All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.</p> <p>••Arkansas is currently subject to the Regional Haze Rule, which addresses visibility-</p>
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¹⁵ Proximity of Arkansas SO₂ Sources to Nonattainment Areas Map (attached after the 2010 SO₂ NAAQS Infrastructure State Implementation Plan table)
EPA 2011 National Emission Inventory version 2

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		<p>impairing pollutants. Arkansas’s PSD program is used to further protect visibility. In 2008, Arkansas submitted a Regional Haze SIP and EPA partially approved and partially disapproved it on March 12, 2012. Arkansas has experienced considerable improvement in regional haze in relation to the reasonable progress goals and uniform rate of progress established in the Regional Haze SIP. The most recent data from 2015 and current five-year rolling averages show that visibility impairment in Arkansas’s Federal Class I areas is decreasing more rapidly than the uniform rate of progress and 2018 reasonable progress goals submitted in the 2008 Regional Haze SIP.¹⁶</p> <p>•Additionally, visibility at Federal Class I areas in other states affected by Arkansas sources has improved for the least and most impaired days between 2000 and 2015. On the most impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.92 deciview (dv) and 5.24 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and 2011 – 2015 analysis period. On the least impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.54dv and 2.42 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and the 2011 – 2015 analysis period. Based on the visibility improvement in Class I areas in nearby states, ADEQ concludes that stationary sources in Arkansas do not significantly interfere with other states’ plans to protect visibility.¹⁷</p>
<p>110(a)(2)(D)(ii) Interstate and International pollution abatement</p>	<p><i>contain adequate provisions- (ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate</i></p>	<p>•Ark. Code Ann. § 8-4-311(a)(8) authorizes ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control.</p> <p>•Based on information gathered from ADEQ’s permit database, ADEQ concludes that the limited amount of point and area source SO₂ emissions do not preclude the</p>

¹⁶Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

¹⁷Id.

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	<p><i>and international pollution abatement)</i></p>	<p>State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2010 SO₂ NAAQS.</p> <ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •APC&EC Reg. 19.903 describes the notification required when dealing with a major new source or major modification.
<p>110(a)(2)(E)(i) Adequate personnel, and authority to carry out plan, (ii) Comply with state boards, (iii) Oversee local and regional governments/ agencies</p>	<p><i>provide (i) necessary assurances that the State (or, except were the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-103(1)(A) grants ADEQ and APC&EC the authority to establish by regulation, reasonable fees for initial issuance, annual review, and modification of permits. •Under Ark. Code Ann. § 8-1-103(3) and § 8-1-103(5), ADEQ is authorized to collect the fees established by APC&EC and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to pay the fees after reasonable notice. •Ark. Code Ann. § 8-1-202(b)(2)(D) states that duties of the Director of ADEQ include the day-to-day administration of all activities that ADEQ is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with ADEQ. •APC&EC Regulation 9, Fee Regulation, Chapter 5, contains the air permit fees

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	<p><i>appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 128, (iii) necessary assurances that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i></p>	<p>applicable to non-part 70 permits, part 70 permits, and general permits.</p> <ul style="list-style-type: none"> •APC&EC Reg. 19.301 gives ADEQ the responsibility of meeting all applicable regulations and requirements contained in the CAA, as amended, if any area of the State is determined to be in violation of the NAAQS. •APC&EC Reg. 19.410 gives ADEQ the authority to revoke, suspend, or modify any permit for cause. •The requirements of §110(a)(2)(E)(ii) are not entirely applicable because permit and enforcement orders are issued directly by ADEQ, not approved by state boards or commissioners. •Under APC&EC Reg. 8.202, the Director or the Director’s delegate shall issue all permits with nothing in APC&EC Regulation 8 being construed to authorize APC&EC to issue a permit, including the power to reverse or affirm a permitting decision by the Director. •APC&EC Regulation 8, Chapter 4, highlights that APC&EC does not play a leading role in approving enforcement actions. •Under Ark. Code Ann. § 21-8-1001, no member of a state board or commission or board member of an entity receiving state funds shall participate in, vote on, influence or attempt to influence an official decision if the member has a pecuniary interest in the matter under consideration by the board, commission, or entity. In addition, no member of a state board or commission or board member of an entity receiving state funds shall participate in any discussion or vote on a rule or regulation that exclusively benefits the member. •Arkansas does not rely on local agencies for specific SIP implementation. The requirements of § 110(a)(2)(E)(iii) are not applicable.
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<p>110(a)(2)(F) Stationary source emissions monitoring and reporting system</p>	<p><i>require, as may be prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i></p>	<ul style="list-style-type: none"> •Regulatory requirements pertaining to sampling, monitoring, and reporting are codified in APC&EC Regulation 19, Chapter 7. •APC&EC Reg. 19.705 provides the record keeping and reporting requirements for stationary sources subject to APC&EC Regulation 19. APC&EC Reg. 19.705 outlines how records of air emissions are to be maintained and how information and data should be submitted to ADEQ. •APC&EC Reg. 19.702 provides guidelines and timelines for air emissions sampling necessary to enable Arkansas to determine whether the sources are in compliance. •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement are found in the monitoring, recordkeeping and reporting requirements for sources in these control measures as well as individual SIP permits. •APC&EC Reg. 19.703 requires any stationary source subject to this regulation to install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with federal specification and in accordance with any joint specifications outlined by ADEQ, with the concurrence of EPA. •APC&EC Reg. 19.701 states that ADEQ will use any credible evidence based on sampling, monitoring, and reporting to determine violations of applicable emissions limitations. •Under Ark. Code Ann. § 8-4-311(a)(2), ADEQ has the power to advise, consult, and cooperate with the federal government, including the EPA Region 6 administrator. Arkansas submits emission inventory data annually to EPA for inclusion in the National Emissions Inventory.
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		<ul style="list-style-type: none"> •APC&EC Reg. 19.706 requires public availability of emissions data.
110(a)(2)(G) Authority to declare air pollution emergency and notify public	<i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(C) empowers the Director of ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. APC&EC Reg. 8.502 gives the Director the ability to issue an Emergency Order when necessary to meet an emergency or situation of imminent hazard. APC&EC Reg. 8.502 requires the Director to publish a Notice of Emergency Order in a newspaper covering the affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action and other information appropriate to ensure the public is informed about the action. •Ark. Code Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if APC&EC determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits. •APC&EC Reg. 8.807 authorizes APC&EC to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days unless allowed by law.
110(a)(2)(H) Future SIP revisions	<i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 1, provides a clear delineation of those regulations that are promulgated by APC&EC in satisfaction of certain requirements of the CAA, including making ADEQ responsible for administering the attainment and maintenance of the NAAQS. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark. Code Ann. § 8-4-202(d)(4)(A)(ii) authorizes APC&EC to refer to the Code of

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	<p><i>availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this Act;</i></p>	<p>Federal Regulations for any APC&EC standard or regulation that is identical to a regulation promulgated by EPA.</p> <ul style="list-style-type: none"> •Under APC&EC Regulation 19, Chapter 3, ADEQ is charged with the protection of the NAAQS. According to APC&EC Reg. 19.301, if any area of the State is determined to be in violation of the NAAQS, all applicable requirements contained in the CAA, as amended, and all regulations promulgated thereto shall be met by ADEQ.
<p>110(a)(2)(I) Nonattainment areas (interstate transport)</p>	<p><i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i></p>	<ul style="list-style-type: none"> •Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Currently, Arkansas does not have any area designated nonattainment for SO₂.

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<p>110(a)(2)(J) (§ 121 consultation), (§127 public notification), PSD and visibility protection</p>	<p><i>meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable requirements of part C (relating to prevention of significant deterioration of air quality and visibility protection);</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-301(b) prescribes a method of utilizing the program for the control of air pollution. Under Ark. Code Ann. § 8-4-301(b), the program shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by a maximum of cooperation and conciliation among all the parties concerned. In addition, Ark. Code Ann. § 8-4-302 reiterates Ark. Code Ann. § 8-4-301(b) by affirming that the purpose is to safeguard the air resources of the State by controlling or abating air pollution that exists and preventing new air pollution under a program which shall be consistent with the declaration of policy stated in Ark. Code Ann. § 8-4-301 and with Ark. Code Ann. Title 8, Chapter 4, Subchapter 3. •All SIP revisions in Arkansas undergo public notice and hearing, which provides for comment by the public. •Air quality data from Arkansas's monitoring network is published on ADEQ's website. Additionally, Arkansas is required to submit monitoring data to the Air Quality System in a timely manner. •Ark. Code Ann. § 8-4-311(a)(6) encourages voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity of the air within the State. •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference the requirements in 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i) and 52.21(cc). These provisions were approved by EPA as part of the SIP. These incorporated provisions also provide for protection of visibility in Federal Class I areas. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4,
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		<p>2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas.</p> <ul style="list-style-type: none"> •The visibility subelement of Element J is not being addressed because EPA stated in their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)”¹⁸ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS.
<p>110(a)(2)(K) Air quality modeling/data</p>	<p><i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the</i></p>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 3, outlines that ADEQ is responsible for ambient air monitoring and computer modeling of regulated air pollutant emissions in any area that can reasonably be expected to be in excess of the NAAQS and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. See APC&EC Reg. 19.302(A) and (B). Under APC&EC Reg. 19.302 (B), all computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS. •ADEQ has the ability to submit data related to air quality modeling to the Administrator under Ark. Code Ann. § 8-4-311 (a)(2) which gives ADEQ the power to advise, consult, and cooperate with the federal government.

¹⁸ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(2). September 13, 2013.

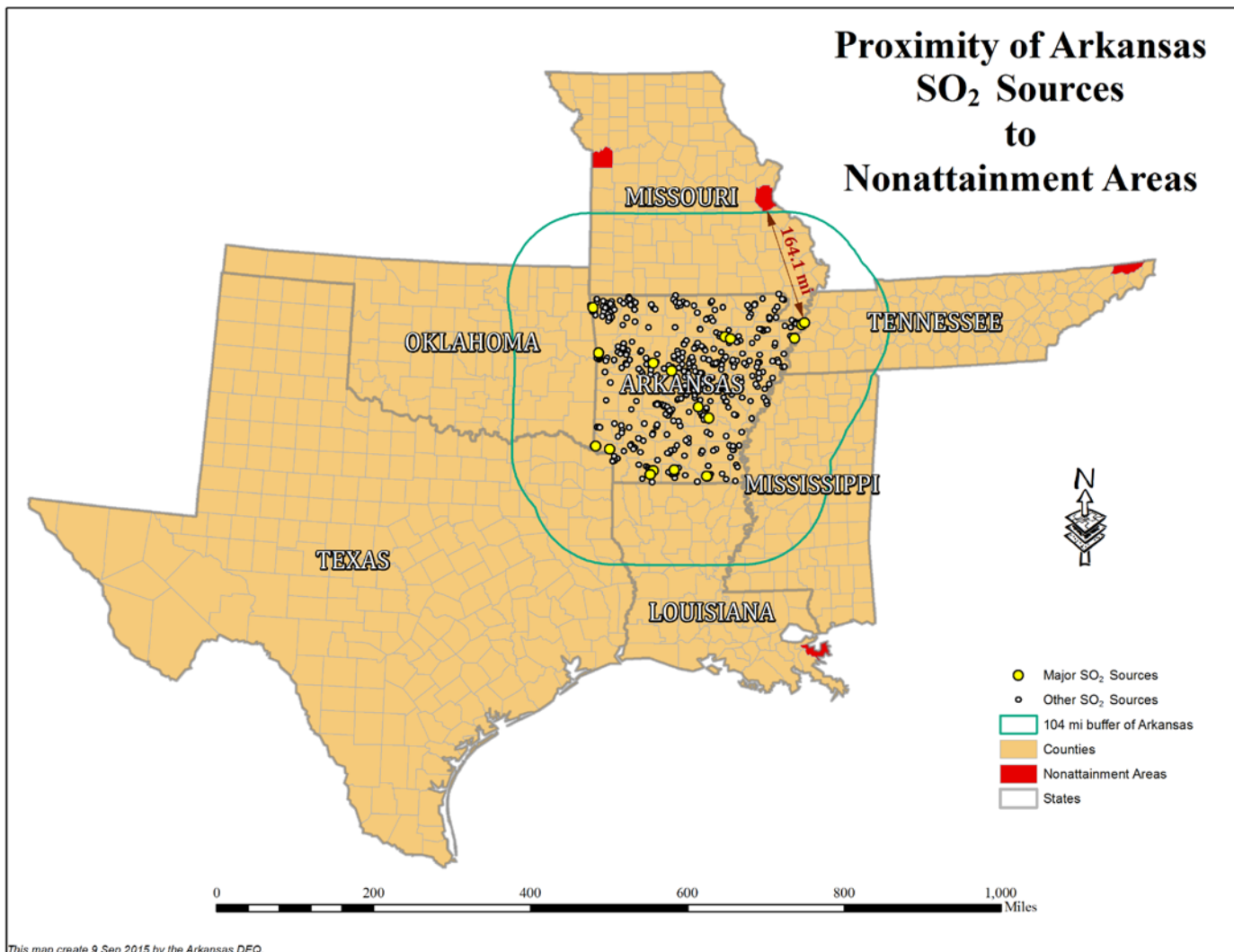
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	<i>Administrator;</i>	
<p>110(a)(2)(L) Major Stationary source permitting fees</p>	<p><i>require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the</i></p>	<ul style="list-style-type: none"> •The fee requirements of APC&EC Regulation 26, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP. Arkansas's Title V operating permit program was approved by EPA October 9, 2001 (66 FR 51313). •ADEQ has the authority to adjust the fee as necessary using its rulemaking authority. APC&EC Regulation 9, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. Revisions to air permitting fee in Chapter 5 were approved by EPA on April 30, 2015 (80 FR 24216).

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	<p><i>Administrator's approval of a fee program under title V; and</i></p>	
<p>110(a)(2)(M) Consultation/ Participation by affected local entities</p>	<p><i>provide for consultation and participation by local political subdivisions affected by the plan.</i></p>	<ul style="list-style-type: none"> •Pursuant to APC&EC Regulation 8, Arkansas will continue to provide for consultation and participation from those affected by the SIP. Under APC&EC Regulation 8, those organizations affected by the SIP will be able to participate in developing the SIP via comments and potential public hearings. ADEQ is the sole state-level enforcer and implementer of the SIP. See APC&EC Reg. 8.205 <i>Public Notice of Permit Application</i>; APC&EC Reg. 8.206 <i>Request for Public Hearing on Application for Permit</i>; APC&EC Reg. 8.207 <i>Public Notice of Draft Permitting Decision</i>; APC&EC Reg. 8.208 <i>Public Comment on Draft Permitting Decision</i>; APC&EC Reg. 8.209 <i>Public Hearings</i>; APC&EC Reg. 8.405 <i>Public Notice of Notices of Violations and Consent Administrative Orders</i>; APC&EC Reg. 8.801 <i>Public Notice of Rulemaking</i>. •ADEQ participates in the Central State Air Resources Agencies, which is an organization of states, tribes, federal agencies and other interested parties concerned with air quality. The interactions and public participation on rule and plan development play a role in satisfying the requirements of § 110(a)(2)(M).

Figure 2. Proximity of Arkansas SO₂ Sources to Nonattainment Areas



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3.6 2012 Particulate Matter less than 2.5 Micrometers in Diameter (PM_{2.5}) NAAQS

The federally enforceable SIP for Arkansas is compiled in 40 C.F.R. Part 52 Subpart E § 52.170. The requirements of sections 110(a)(2)(A) – (M) of the CAA relevant to the 2012 PM_{2.5} NAAQS are included in this SIP submittal. The following table summarizes where and how the requirements of sections 110(a)(2)(A) – (M) are addressed.

In this revision to the SIP, Arkansas is demonstrating that it has adequate resources and authority to implement, maintain, and enforce the 2012 PM_{2.5} NAAQS.

Section 110(a)(2) Element	Summary of Element (Statutory Language)	Provisions in the Current SIP or Recent SIP Revision Submittals
110(a)(2)(A) Emission limits and other control measures	<i>include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this Act;</i>	<ul style="list-style-type: none"> •Arkansas's enforceable emission limitations and other control measures are covered in Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark. Code Ann.) § 8-4-101 <i>et. seq.</i>, and those provisions of Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation 19, listed in 40 C.F.R. § 52.170. •The regulations in APC&EC Regulation 19 have been duly adopted by APC&EC. Where these provisions relate to section 110 requirements, SIP revisions have been submitted to and approved by EPA. EPA-approved SIP revisions are codified at 40 C.F.R. Part 52, Subpart E. Arkansas has an EPA-approved air permitting program for both major and minor facilities, which ensures that all applicable requirements are included in the facility permit.
110(a)(2)(B) Ambient air quality monitoring and	<i>provide for establishment and operation of appropriate devices, methods,</i>	<ul style="list-style-type: none"> •APC&EC Reg. 19.302 grants ADEQ responsibility for ambient air monitoring and computer modeling of regulated air pollutant emissions. •Ark. Code Ann. § 8-4-311(a)(3) empowers ADEQ to encourage and conduct studies, investigations, and research relating to air pollution and its causes,

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<p>data analysis system</p>	<p><i>systems, and procedures necessary to- (i) monitor, compile, and analyze data on ambient air quality, and (ii) upon request, make such data available to the Administrator;</i></p>	<p>prevention, control, and abatement.</p> <ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-311(a)(4) grants ADEQ the ability to collect and disseminate information relative to air pollution and its prevention and control. •In conjunction with the references above, Arkansas monitors air quality for PM_{2.5} at appropriate locations throughout the State using EPA-approved methods and submits PM_{2.5} data to the EPA’s Air Quality System (AQS) consistent with EPA regulations under 40 C.F.R. Part 58. •Ark. Code Ann. § 8-4-311(a)(2) gives ADEQ the ability to advise, consult, and cooperate with the federal government in furtherance of safeguarding the air resources of the State by controlling or abating air pollution and preventing new air pollution if it is in the interest of the public health and welfare of the people. See also Ark. Code Ann. § 8-4-301 and § 8-4-302. Under this authority, ADEQ submits annual monitoring network plans, consistent with EPA’s ambient air monitoring regulations, which describe how ADEQ has complied with monitoring requirements and explains proposed changes to the network, if any. •Ark. Code Ann. § 8-1-202 grants the ADEQ Director authority to retain the technical and legal expertise and assistance in the field of environmental protection.
<p>110(a)(2)(C) Program to enforce control measures, regulate modification and construction of stationary sources and a permit</p>	<p><i>include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-203(a)(1) authorizes ADEQ to issue, continue in effect, revoke, modify, or deny permits to prevent, control, or abate pollution. Ark. Code Ann. § 8-4-311 (a)(1) empowers ADEQ to develop and effectuate a comprehensive program for the prevention and control of all sources of air pollution in the State of Arkansas. •Chapter 4 of APC&EC Regulation 19 describes the regulation and permitting of the operation, modification and construction of minor stationary sources.

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<p>program</p>	<p><i>the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D;</i></p>	<ul style="list-style-type: none"> •Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration (PSD) of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Ark. Code Ann. § 8-4-311(a)(10) empowers ADEQ to make, issue, modify, revoke, and enforce orders prohibiting, controlling or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution. •Ark .Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. Arkansas perceives there to be no changes necessary to the PSD program to implement the 2012 PM_{2.5} NAAQS.
<p>110(a)(2)(D)(i) Interstate transport provisions</p>	<p><i>contain adequate provisions- (i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.402 states: “No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of ADEQ that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.” APC&EC Reg. 19.402 is consistent with these requirements as it is an Arkansas

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	<p><i>from emitting any air pollutant in amounts which will- (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,</i></p>	<p>promulgated regulation that applies to all stationary sources in Arkansas.</p> <p>•According to EPA modeling, 19 monitoring sites in the United States are projected to be in nonattainment or maintenance of the 2012 PM_{2.5} annual NAAQS in 2017.¹⁹ Of those sites projected to be nonattainment or maintenance areas for the 2012 PM_{2.5} annual NAAQS in 2017, 17 are in California, two are in Shoshone County Idaho, and one is located in Allegheny County, Pennsylvania. EPA modeling further indicates that “All of the receptors, except for the Allegheny County receptor, are projected to remain problem receptors in 2025.”²⁰</p> <p>In the past, EPA provided source apportionment modeling to identify upwind states contributing to nonattainment and maintenance areas in downwind states; however, EPA stated in a March 17, 2016 memorandum that such contribution modeling for the purposes of the 2012 PM_{2.5} NAAQS was unnecessary given the limited number of receptors and their locations.²¹ Therefore, the Department has reviewed other evidence in making its determination as to what is necessary to address prongs 1 and 2.</p> <p>Past contribution modeling by EPA for the 2006 PM_{2.5} NAAQS, included in “Air Quality Modeling Final Rule Technical Support Document” published in June 2011 to support the Final Cross-State Air Pollution Rule (76 FR 48208), demonstrated that Arkansas’s did not significantly contribute to nonattainment or interfere with maintenance of the annual PM_{2.5} NAAQS that was set in 1997 and retained in 2006.²² Arkansas’s largest contribution to nonattainment for the 2006 annual PM_{2.5} NAAQS was 0.1 µg/m³ and Arkansas’s largest downwind contribution to</p>
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¹⁹ CSAPR Update, Proposed Rule, 80 FR 75705, October 26, 2015

²⁰ Information on Interstate Transport “Good Neighbor” Provision for the 2012 Fine Particulate Matter National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I), March 17 2016 Memorandum

²¹ Id.

²² Air Quality Modeling Final Rule Technical Support Document, June 2011 <http://www.epa.gov/airtransport/CSAPR/pdfs/AQModeling.pdf>

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		<p>maintenance of the 2006 PM_{2.5} annual standard was 0.04 µg/m³. Not only are both of these values below the 1 % significance threshold for the annual PM_{2.5} NAAQS retained in 2006 (15 µg/m³), they are also below 1 % of the 2012 PM_{2.5} NAAQS value of 12 µg/m³.</p> <p>For Arkansas, the projected Allegheny County, PA nonattainment area is the closest projected PM_{2.5} nonattainment area to Arkansas with the straight-line distance of approximately 620 miles. Although EPA and ADEQ have not conducted contribution modeling for the 2012 PM_{2.5} NAAQS, EPA has performed contribution modeling showing that Arkansas does not significantly contribute to Allegheny County, PA for the 2008 ozone NAAQS.²³ This modeling showed that Arkansas’s projected contribution to ozone design value for Allegheny County, PA would be 0.22 ppb, well below the significant contribution level of one percent (0.75 ppb) of the 2008 ozone NAAQS (75 ppb). Further evidence to support the Department’s determination that Arkansas does not significantly contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS is provided in Appendix H.</p> <ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting which was approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting which was approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •Arkansas is currently subject to the Regional Haze Rule, which addresses visibility-impairing pollutants. Arkansas’s PSD program is used to further protect visibility. In 2008, Arkansas submitted a Regional Haze SIP and EPA partially approved and
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²³ Air Quality Modeling TSD for the 2008 Ozone NAAQS Cross-State Air Pollution Rule Proposal, November 2015:<https://www.epa.gov/airmarkets/air-quality-modeling-technical-support-document-2008-ozone-naaq-cross-state-air>

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		<p>partially disapproved it on March 12, 2012. Arkansas has experienced considerable improvement in regional haze in relation to the reasonable progress goals and uniform rate of progress established in the Regional Haze SIP. The most recent data from 2015 and current five-year rolling averages show that visibility impairment in Arkansas’s Federal Class I areas is decreasing more rapidly than the uniform rate of progress and 2018 reasonable progress goals submitted in the 2008 Regional Haze SIP.²⁴</p> <p>•Additionally, visibility at Federal Class I areas in other states affected by Arkansas sources has improved for the least and most impaired days between 2000 and 2015. On the most impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.92 deciview (dv) and 5.24 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and 2011 – 2015 analysis period. On the least impaired days, Hercules Glade, MO and Mingo, MO achieved a 2.54dv and 2.42 dv reduction in haziness, respectively, between the 2000 – 2004 baseline period and the 2011 – 2015 analysis period. Based on the visibility improvement in Class I areas in nearby states, ADEQ concludes that stationary sources in Arkansas do not significantly interfere with other states’ plans to protect visibility.²⁵</p>
<p>110(a)(2)(D)(ii) Interstate and International pollution abatement</p>	<p><i>contain adequate provisions- (ii) insuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international</i></p>	<p>•Ark. Code Ann. § 8-4-311(a)(8) authorizes ADEQ to represent the State in all matters pertaining to the plans, procedures, or negotiations for interstate compacts in relation to air pollution control.</p> <p>•Based on information gathered from ADEQ's permit database, ADEQ concludes that the limited amount of point and area source PM_{2.5} emissions do not preclude the State from ensuring compliance with CAA § 126 and § 115. There are no final findings under § 115 of the CAA against Arkansas with respect to the 2012 PM_{2.5}</p>

²⁴Arkansas Regional Haze Five Year Progress Report, May 2015: https://www.adeg.state.ar.us/air/planning/pdfs/ar_5yr_prog_rep_review-final-6-2-2015.pdf; Federal Land Manager Environmental Database < <http://views.cira.colostate.edu/fed/ToolsMenu.aspx>>

²⁵Id.

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	<p><i>pollution abatement)</i></p>	<p>NAAQS.</p> <ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •APC&EC Reg. 19.903 describes the notification required when dealing with a major new source or major modification.
<p>110(a)(2)(E)(i) Adequate personnel, funding and authority to carry out plan, (ii) Comply with state boards, (iii) Oversee local and regional governments/agencies</p>	<p><i>provide (i) necessary assurances that the State (or, except were the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local government for such purpose) will have adequate personnel, funding, and authority under State (and, as</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-103(1)(A) grants the ADEQ and APC&EC the authority to establish by regulation, reasonable fees for initial issuance, annual review, and modification of permits. •Under Ark. Code Ann. § 8-1-103(3) and § 8-1-103(5), ADEQ is authorized to collect the fees established by APC&EC and shall deny the issuance of an initial permit, a renewal permit, or a modification permit if and when a facility fails or refuses to pay the fees after reasonable notice. •Ark. Code Ann. § 8-1-202(b)(2)(D) states that duties of the Director of ADEQ include the day-to-day administration of all activities that ADEQ is empowered by law to perform, including, but not limited to, the employment and supervision of such technical, legal, and administrative staff, within approved appropriations, as is necessary to carry out the responsibilities vested with ADEQ. •APC&EC Regulation 9, Fee Regulation, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits.

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	<p><i>appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof), (ii) requirements that the State comply with the requirements respecting State boards under section 128, (iii) necessary assurances that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision;</i></p>	<ul style="list-style-type: none"> •APC&EC Reg. 19.301 gives ADEQ the responsibility of meeting all applicable regulations and requirements contained in the CAA, as amended, if any area of the State is determined to be in violation of the NAAQS. •APC&EC Reg. 19.410 gives ADEQ the authority to revoke, suspend, or modify any permit for cause. •The requirements of §110(a)(2)(E)(ii) are not entirely applicable because permit and enforcement orders are issued directly by ADEQ, not approved by state boards or commissioners. •Under APC&EC Reg. 8.202, the Director or the Director’s delegate shall issue all permits with nothing in APC&EC Regulation 8 being construed to authorize APC&EC to issue a permit, including the power to reverse or affirm a permitting decision by the Director. •APC&EC Regulation 8, Chapter 4, highlights that APC&EC does not play a leading role in approving enforcement actions. •Under Ark. Code Ann. § 21-8-1001, no member of a state board or commission or board member of an entity receiving state funds shall participate in, vote on, influence or attempt to influence an official decision if the member has a pecuniary interest in the matter under consideration by the board, commission, or entity. In addition, no member of a state board or commission or board member of an entity receiving state funds shall participate in any discussion or vote on a rule or regulation that exclusively benefits the member. •Arkansas does not rely on local agencies for specific SIP implementation. The requirements of §110(a)(2)(E)(iii) are not applicable.
110(a)(2)(F)	<p><i>require, as may be</i></p>	<ul style="list-style-type: none"> •Regulatory requirements pertaining to sampling, monitoring and reporting are

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<p>Stationary source emissions monitoring and reporting system</p>	<p><i>prescribed by the Administrator-- (i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources, (ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and (iii) correlation of such reports by the State agency with any emission limitations or standards established pursuant to this Act, which reports shall be available at reasonable times for public inspection;</i></p>	<p>codified in APC&EC Regulation 19, Chapter 7.</p> <ul style="list-style-type: none"> •APC&EC Reg. 19.705 provides the record keeping and reporting requirements for stationary sources subject to APC&EC Regulation 19. APC&EC Reg. 19.705 outlines how records of air emissions are to be maintained and how information and data should be submitted to ADEQ. •APC&EC Reg. 19.702 provides guidelines and timelines for air emissions sampling necessary to enable Arkansas to determine whether the sources are in compliance. •Enforceable emission limitations and other control measures are covered in the Arkansas Water and Air Pollution Control Act and those provisions of Ark. Code Ann. §§ 8-4-310 and 8-4-311. Elements of the program for enforcement are found in the monitoring, recordkeeping and reporting requirements for sources in these control measures as well as individual SIP permits. •APC&EC Reg. 19.703 requires any stationary source subject to this regulation to install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with federal specification and in accordance with any joint specifications outlined by ADEQ, with the concurrence of EPA. •APC&EC Reg. 19.701 states that ADEQ will use any credible evidence based on sampling, monitoring, and reporting, to determine violations of applicable emissions limitations. •Under Ark. Code Ann. § 8-4-311(a)(2), ADEQ has the power to advise, consult, and cooperate with the federal government, including EPA Region 6 administrator. Arkansas submits emission inventory data annually to EPA for inclusion in the National Emissions Inventory.
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		<ul style="list-style-type: none"> •APC&EC Reg. 19.706 requires public availability of emissions data.
110(a)(2)(G) Authority to declare air pollution emergency and notify public	<i>provide for authority comparable to that in section 303 and adequate contingency plans to implement such authority;</i>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-1-202(b)(2)(C) empowers the Director of ADEQ to issue orders under circumstances that reasonably require emergency measures to be taken to protect the environment or the public health and safety. APC&EC Reg. 8.502 gives the Director the ability to issue an Emergency Order when necessary to meet an emergency or situation of imminent hazard. APC&EC Reg. 8.502 requires the Director to publish a Notice of Emergency Order in a newspaper covering the affected area, or in a newspaper of statewide circulation. The notice must contain a description of the action, ADEQ's authority for taking the action and other information appropriate to ensure the public is informed about the action. •Ark. Code Ann. § 8-4-202(e)(1) empowers APC&EC to declare an emergency and implement emergency rules, regulations, suspensions, or moratoria on categories or types of permits if APC&EC determines that imminent peril to the public health, safety, or welfare requires immediate change in the rules or immediate suspension or moratorium on categories or types of permits. •APC&EC Reg. 8.807 authorizes APC&EC to waive or reduce the notice requirements in cases involving emergency rulemaking. No emergency rule shall be effective for more than one hundred eighty (180) days unless allowed by law.
110(a)(2)(H) Future SIP revisions	<i>provide for revision of such plan- (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 1, provides a clear delineation of those regulations that are promulgated by APC&EC in satisfaction of certain requirements of the CAA, including making ADEQ responsible for administering the attainment and maintenance of the NAAQS. •Ark. Code Ann. § 8-4-311(a)(7) empowers ADEQ to administer and enforce all laws and regulations relating to pollution of the air. •Ark. Code Ann. § 8-4-202(d)(4)(A)(ii) authorizes APC&EC to refer to the Code of

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	<p><i>availability of improved or more expeditious methods of attaining such standard, and (ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this Act;</i></p>	<p>Federal Regulations for any APC&EC standard or regulation that is identical to a regulation promulgated by EPA.</p> <ul style="list-style-type: none"> •Under APC&EC Regulation 19, Chapter 3, ADEQ is charged with the protection of the NAAQS. According to APC&EC Reg. 19.301, if any area of the State is determined to be in violation of the NAAQS, all applicable requirements contained in the CAA, as amended, and all regulations promulgated thereto shall be met by ADEQ.
<p>110(a)(2)(I) Nonattainment areas (interstate transport)</p>	<p><i>in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D (relating to nonattainment areas);</i></p>	<ul style="list-style-type: none"> •Arkansas's nonattainment area plans required under part D are on a different schedule from the section 110 infrastructure elements. Currently, Arkansas does not have any area designated nonattainment for PM_{2.5}.

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<p>110(a)(2)(J) (§ 121 consultation), (§127 public notification), PSD and visibility protection</p>	<p><i>meet the applicable requirements of section 121 (relating to consultation), meet the applicable requirements of section 127 (relating to public notification), meet the applicable requirements of part C (relating to prevention of significant deterioration of air quality and visibility protection);</i></p>	<ul style="list-style-type: none"> •Ark. Code Ann. § 8-4-301(b) prescribes a method of utilizing the program for the control of air pollution. Under Ark. Code Ann. § 8-4-301(b), the program shall be undertaken in a progressive manner, and each of its successive objectives shall be sought to be accomplished by a maximum of cooperation and conciliation among all the parties concerned. In addition, Ark. Code Ann. § 8-4-302 reiterates Ark. Code Ann. § 8-4-301(b) by affirming that the purpose is to safeguard the air resources of the State by controlling or abating air pollution that exists and preventing new air pollution under a program which shall be consistent with the declaration of policy stated in Ark. Code Ann. § 8-4-301 and with Ark. Code Ann. Title 8, Chapter 4, Subchapter 3. •All SIP revisions in Arkansas undergo public notice and hearing, which provides for comment by the public. •Air quality data from Arkansas's monitoring network is published on ADEQ's website. Additionally, Arkansas is required to submit monitoring data to the Air Quality System in a timely manner. •Ark. Code Ann. § 8-4-311(a)(6) encourages voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity of the air within the State. •The public is notified of concentrations that exceed the NAAQS from the ADEQ website ((https://www.adeq.state.ar.us/techsvs/air_chem_lab) that contains hourly concentrations taken from monitoring sites throughout the State and the Air Quality Index for the Little Rock and Springdale metropolitan areas. This Index displays which sensitive groups are at greater risk from each pollutant. •These monitoring sites also upload data to EPA's AirNow website, which provides data to a broader section of the public and includes links to help the public understand what they can do to keep their air clean. •Under APC&EC Regulation 19, Chapter 9, Arkansas has incorporated by reference
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		<p>the requirements in 40 C.F.R. §§ 52.21(b)(2)(iii)(a), 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), § 52.21(i) and 52.21(cc). These provisions were approved by EPA as part of the SIP. These incorporated provisions also provide for protection of visibility in Federal Class I areas.</p> <ul style="list-style-type: none"> •All new major sources and major modifications are subject to a comprehensive EPA-approved PSD permitting program, including GHG PSD permitting which was approved on April 2, 2013 (78 FR 19596) and PM_{2.5} PSD permitting which was approved on March 4, 2015 (80 FR 11573). Chapter 9 of APC&EC Regulation 19 authorizes enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Federal Class I areas. •The visibility subelement of Element J is not being addressed because EPA stated in their September 13, 2013 “Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2)”²⁶ that they believe that there are no newly applicable visibility protection obligations pursuant to Element J after the promulgation of a new or revised NAAQS.
110(a)(2)(K) Air quality modeling/data	<i>provide for- (i) the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for</i>	<ul style="list-style-type: none"> •APC&EC Regulation 19, Chapter 3, outlines that ADEQ is responsible for ambient air monitoring and computer modeling of regulated air pollutant emissions in any area that can reasonably be expected to be in excess of the NAAQS and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. See APC&EC Reg. 19.302(A) and (B). Under APC&EC Reg. 19.302 (B), all computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS. •ADEQ has the ability to submit data related to air quality modeling to the

²⁶ EPA Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(A)(2). September 13, 2013.

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	<p><i>which the Administrator has established a national ambient air quality standard, and (ii) the submission, upon request, of data related to such air quality modeling to the Administrator;</i></p>	<p>Administrator under Ark. Code Ann. § 8-4-311 (a)(2) which gives ADEQ the power to advise, consult, and cooperate with the federal government.</p>
<p>110(a)(2)(L) Major Stationary source permitting fees</p>	<p><i>require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this Act, a fee sufficient to cover- (i) the reasonable costs of reviewing and acting upon any application for such a permit, and (ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such</i></p>	<ul style="list-style-type: none"> •The fee requirements of APC&EC Regulation 26, Chapter 11, were approved by EPA as meeting the CAA requirements and were incorporated in Arkansas's SIP. Arkansas's Title V operating permit program was approved by EPA on October 9, 2001 (66 FR 51313). •ADEQ has the authority to adjust the fee as necessary using its rulemaking authority. APC&EC Regulation 9, Chapter 5, contains the air permit fees applicable to non-part 70 permits, part 70 permits, and general permits. Revisions to air permitting fee in Chapter 5 were approved by EPA on April 30, 2015 (80 FR 24216).

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	<p><i>permit (not including any court costs or other costs associated with any enforcement action), until such fee requirement is superseded with respect to such sources by the Administrator's approval of a fee program under title V; and</i></p>	
<p>110(a)(2)(M) Consultation/ Participation by affected local entities</p>	<p><i>provide for consultation and participation by local political subdivisions affected by the plan.</i></p>	<ul style="list-style-type: none"> •Pursuant to APC&EC Regulation 8, Arkansas will continue to provide for consultation and participation from those affected by the SIP. Under APC&EC Regulation 8, those organizations affected by the SIP will be able to participate in developing the SIP via comments and potential public hearings. ADEQ is the sole state-level enforcer and implementer of the SIP. See APC&EC Reg. 8.205 <i>Public Notice of Permit Application</i>; APC&EC Reg. 8.206 <i>Request for Public Hearing on Application for Permit</i>; APC&EC Reg. 8.207 <i>Public Notice of Draft Permitting Decision</i>; APC&EC Reg. 8.208 <i>Public Comment on Draft Permitting Decision</i>; APC&EC Reg. 8.209 <i>Public Hearings</i>; APC&EC Reg. 8.405 <i>Public Notice of Notices of Violations and Consent Administrative Orders</i>; APC&EC Reg. 8.801 <i>Public Notice of Rulemaking</i>. •ADEQ participates in the Central State Air Resources Agencies, which is an organization of states, tribes, federal agencies and other interested parties concerned with air quality. The interactions and public participation on rule and plan development play a role in satisfying the requirements of § 110(a)(2)(M).

4 NAAQS State Implementation Plan pursuant to Arkansas Code Annotated. § 8-4-318

4.1 Background

Under Ark. Code Ann. § 8-4-318, ADEQ must develop a NAAQS state implementation plan (NAAQS SIP), which includes measures necessary for the attainment and maintenance of the NAAQS in each air quality control region (AQCR) or portion of an AQCR within the State. The Department is including this NAAQS SIP in addition to the required federal submissions.

Ark. Code Ann. § 8-4-317(C)(i) requires a written explanation of (1) the rationale for the proposal demonstrating a reasoned consideration of factors set forth in Ark. Code Ann. § 8-4-312; (2) the need for each measure in attaining or maintaining the NAAQS; and (3) that any requirements or standards are based upon generally accepted scientific knowledge and engineering practices. For standards or requirements identical to an applicable federal regulation, Ark. Code Ann. § 8-4-317(b)(1)(C)(ii) states that the demonstration required under Ark. Code Ann. § 8-4-317(b)(1)(C)(i) may be satisfied by reference to the federal regulation.

In this SIP, ADEQ proposed and is finalizing a new minor new source review (NSR) permitting strategy. The permit thresholds and NAAQS evaluation requirements included in the minor NSR permitting strategy were developed after reasoned consideration of the factors in exercising ADEQ's powers and responsibilities codified in Ark. Code Ann. § 8-4-312 and with significant input from stakeholders. The Department is confident that implementation of the minor NSR permitting strategy included in this SIP is adequate to ensure that minor source construction or modification activities do not interfere with attainment or maintenance of the NAAQS.

ADEQ is including PM_{2.5} thresholds and De Minimis levels in this strategy. A written explanation of both the rationale for PM_{2.5} thresholds and De Minimis levels in maintaining the NAAQS and an explanation of the basis upon generally accepted scientific knowledge and engineering practices is set forth in section 4.2.1.1. Additional supporting documentation is attached in Appendix C. A written consideration of the factors set forth in Ark. Code Ann. § 8-4-312 for PM_{2.5} thresholds and De Minimis levels is located in section 4.2.1.2.

In addition, ADEQ proposed and is finalizing pollutant-specific minor NSR NAAQS evaluation requirements. A written explanation of the rationale for these requirements, an explanation of their basis in generally accepted scientific knowledge and engineering practices, and a consideration of the factors in Ark. Code Ann. § 8-4-312 are set forth in the following sections and additional supporting documentation is contained in Appendix I and Appendix G: section 4.2.2.1 for the PM₁₀ NAAQS evaluation requirements, section 4.2.2.2 for the SO₂ NAAQS evaluation requirements, and 4.2.2.3 for the NO₂ NAAQS evaluation requirements.

On February 26, 2016, the Commission adopted revisions to APC&EC Regulation No. 19 to include the 2006 PM_{2.5} NAAQS, the 2008 ozone NAAQS, the 2008 lead NAAQS, the 2010 SO₂ NAAQS, the 2010 NO₂ NAAQS, and the 2012 PM_{2.5} NAAQS. ADEQ now has the authority to implement, maintain, and enforce these standards. Because these standards adopted into APC&EC Regulation No. 19 and included in this SIP submission are identical to federal standards, the demonstration required under Ark. Code Ann. § 8-4-317(b)(1)(C)(i) is satisfied by reference to the applicable federal regulation. Table 2 lists the standards adopted in APC&EC Regulation No. 19 on February 26, 2016 and the applicable federal regulation.

Table 2. Federal Standards Incorporated into the NAAQS SIP

Standard	Promulgation of Federal Final Rule
2006 PM _{2.5} NAAQS	71 FR 61144
2008 ozone NAAQS	73 FR 16483
2008 lead NAAQS	73 FR 66964
2010 SO ₂ NAAQS	75 FR 35520
2010 NO ₂ NAAQS	75 FR 6474
2012 PM _{2.5} NAAQS	78 FR 3086

4.2 Minor New Source Review Permitting Strategy

Revisions to the minor NSR permitting strategy included in this NAAQS SIP are the establishment of permitting and De Minimis thresholds for PM_{2.5} adopted in Reg. 19.401 and Reg. 19.407(c) and NAAQS evaluation requirements for non-PSD permitting actions under the authority in SIP-approved Reg. 19.402 and Reg. 19.405.

4.2.1 Adoption of PM_{2.5} Thresholds and De Minimis Levels

4.2.1.1 Determination of PM_{2.5} Thresholds and De Minimis Levels

On February 26, 2016, in an amendment to the APC&EC Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control (APC&EC Regulation No. 19), the Commission adopted a PM_{2.5} permit threshold of 10 tons per year (tpy) in Reg. 19.401 and a PM_{2.5} De Minimis level of 10 tpy in Reg. 19.407(c). The level at which the PM_{2.5} thresholds were set was based on the Significant Emissions Rate (SER) for PM_{2.5} promulgated by EPA under 40 C.F.R. § 51.166(b)(23)(i). In EPA’s “Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers (PM_{2.5})” rule finalized on May 16, 2008, EPA stated that the agency considers “emissions increases [lower than the SERs] to be De Minimis.”²⁷ According to EPA’s analysis of modeling using the ISC3 model described in 70 FR 66038, increases in direct PM_{2.5} emissions less than 10 tpy would be unlikely to increase annual average ambient PM_{2.5} concentrations by more than four percent of the annual PM_{2.5} standard. Based on EPA’s assertion that increases in PM_{2.5} below the SER promulgated under 40

²⁷ 73 FR 28332

C.F.R. § 51.166(b)(23)(i) can be considered De Minimis, the Department set the permitting thresholds at 10 tpy.

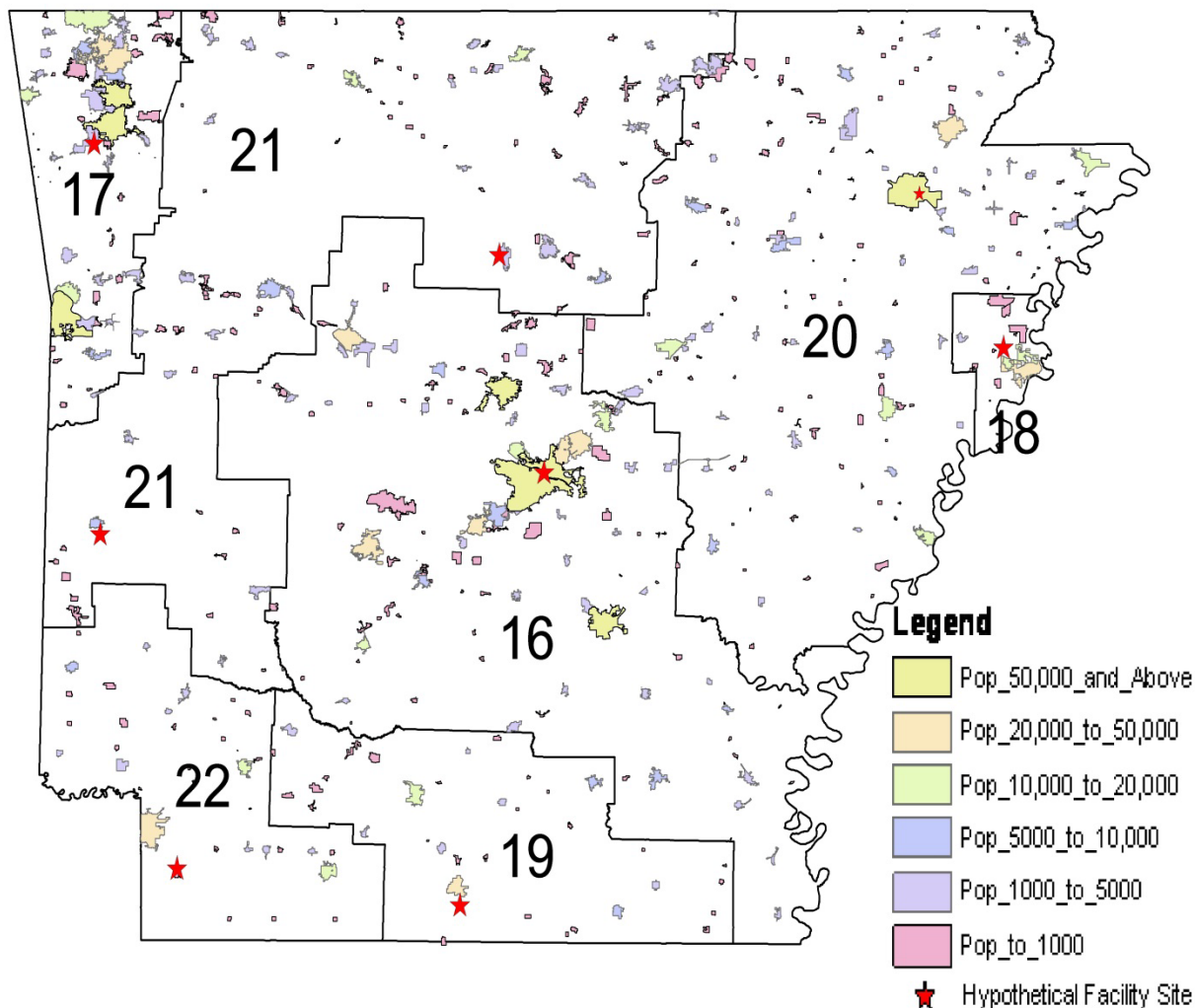
The Department also contracted with ICF to produce a modeling-based analysis which demonstrated that emission increases less than the proposed thresholds will not cause or contribute to a violation of the NAAQS or interfere with NAAQS attainment or maintenance. ICF modeled the potential impacts of emissions increases equal to the PM_{2.5} permit threshold and De Minimis level of 10 tpy. ICF's full report, which includes modeling for the other criteria pollutant permit thresholds, can be found in Appendix C.²⁸ As a part of this modeling exercise, ICF conducted Community Multiscale Air Quality (CMAQ) analysis using CMAQ results from a previous modeling exercise²⁹ for the 2008 base year and the 2008/2015 future year from the Arkansas statewide modeling effort. Based on this modeling demonstration, the Department has determined that sources which emit less than PM_{2.5} threshold/De Minimis level will not cause or contribute to a violation of the NAAQS or interfere with attainment or maintenance of the NAAQS.

In this modeling analysis, a CMAQ simulation using the 2015 future year from the previous statewide modeling effort was rerun with the addition of eight new theoretical sources with emissions set equal to the PM_{2.5} permit threshold/De Minimis level in APC&EC Regulation No. 19. These eight hypothetical sources were distributed such that each AQCR identified in Figure 3 contained at least one approximately centrally located hypothetical source (two hypothetical sources were sited in AQCR 21 due to its geographic scope). Most of these hypothetical facility locations also tended to be located in or near urban areas. Stack parameters for these hypothetical sources were set at the median values for stack height, stack diameter, exit temperature, and exit velocity of all minor point sources in Arkansas, based on the 2011 National Emissions Inventory. CMAQ was used to evaluate the potential impact of hypothetical emission increases equal to the permitting thresholds for PM_{2.5} using future year 2015 as background. The maximum CMAQ-derived impact was calculated for the 24-hour average PM_{2.5} NAAQS and annual average PM_{2.5} NAAQS. This maximum impact was then applied statewide to determine the worst-case impacts from emission increases equal to the permit thresholds anywhere in the State. Relative response factors (RRF), the ratio of future-year to base-year simulated concentrations, were derived based on the modeling results and were used to calculate future year design values (FDV). The results of this modeling effort are described below.

²⁸ ICF (2015). "Air Quality Modeling Analysis of Minor Source Permit Thresholds." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (15-003).

²⁹ ICF (2014). "Criteria Pollutant Modeling Analysis for Arkansas." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (14-003).

Figure 3. Arkansas AQCRs and hypothetical minor point source facility locations in relation to human population density



AQCR 16, Pulaski County; AQCR 17, Washington County; AQCR 18, Crittenden County; AQCR 19, Union County; AQCR 20, Craighead County; AQCR 21, Van Buren and Polk Counties; AQCR 22, Miller County

Annual average $PM_{2.5}$ NAAQS and 24-hour $PM_{2.5}$ NAAQS maximum simulated impacts occur at or near the hypothetical sources with the maximum difference varying by location and ranging from approximately 0.2 to 0.3 $\mu\text{g}/\text{m}^3$ on a monthly average basis. The maximum differences in 24-hour average $PM_{2.5}$ NAAQS concentration for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline 24-hour $PM_{2.5}$ NAAQS concentration for each day and each grid cell to create the 2015 plus maximum impact (PMI) dataset for $PM_{2.5}$ NAAQS. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid. EPA's Model Attainment Test Software (MATS) was applied for monitoring

sites (for both 24-hour and annual average $PM_{2.5}$) and for unmonitored areas (for annual average $PM_{2.5}$ NAAQS only). MATS does not support spatial-field analysis for 24-hour $PM_{2.5}$ NAAQS.

Regarding site-specific modeling results for 24-hour $PM_{2.5}$, NAAQS the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. Current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006 – 2008, 2007 – 2009, and 2008 – 2010) and all sites with data during the 2006 to 2010 period are included. The current-year design values are based on the data contained within the MATS database and are calculated within MATS. MATS input parameters were set to the EPA-recommended default values and, per EPA guidance, the ten percent highest concentrations based on the baseline simulation results were used in the calculation of the RRFs for each site. Daily $PM_{2.5}$ design values for 2015 PMI are estimated to be 0.2 to 0.6 $\mu\text{g}/\text{m}^3$ higher than the 2015 baseline values and the estimated future-year design values for all sites are well below the NAAQS. Annual $PM_{2.5}$ design values for 2015 PMI are estimated to be 0.2 to 0.4 $\mu\text{g}/\text{m}^3$ higher than the 2015 baseline values and also do not affect attainment or maintenance of the annual $PM_{2.5}$ NAAQS for any monitoring site.

MATS was also used to conduct a spatial-fields analysis for $PM_{2.5}$ consisting of: 1) modeled concentrations being used to calculate RRFs for every grid cell, 2) the model-derived gradients were used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) results of steps 1 and 2 were used to estimate FDVs for every grid cell. The objective was to determine whether there are unmonitored areas more sensitive to the addition of emissions corresponding to amount and type modeled than other areas. The average $PM_{2.5}$ RRF is 0.8619 for the 2015 baseline and 0.9045 for the 2015 PMI scenario with the increase of 0.0425 representing a 0.4 $\mu\text{g}/\text{m}^3$ increase relative to a base concentration of 10 $\mu\text{g}/\text{m}^3$. For the AQCRs, worst-case impacts are expected to increase the average RRFs by 0.0284 to 0.0501 and in no case is the average RRF expected to increase to a value greater than one.

In both the 2015 baseline and 2015 PMI plots, MATS projected FDVs show several isolated unmonitored areas with annual average $PM_{2.5}$ concentrations greater than 12 $\mu\text{g}/\text{m}^3$, which are greater than those projected for the monitoring sites. This result is due to the fact that the modeled concentration gradients are used in MATS to estimate current and future design values for unmonitored areas and this can result in estimated current-year design values for unmonitored areas that are greater than at any monitoring site. Without use of the modeled concentration gradients, the monitored data are simply interpolated to each grid cell, which results in more uniform FDVs and lower peak values, by up to 5 $\mu\text{g}/\text{m}^3$. The spatial-fields analysis is not intended to examine if there are unmonitored areas for which the minor source impacts would potentially result in nonattainment issues. Since the result depends on the assumed current-year design value at each unmonitored location, which is unknown, this analysis is most useful at identifying areas where the impacts are likely to have a greater effect on the design values. Nevertheless, the FDVs indicate a few isolated areas/grid cells within Arkansas

greater than 12 $\mu\text{g}/\text{m}^3$ for the gradient-adjusted case and no grid cells greater than 12 $\mu\text{g}/\text{m}^3$ for the straight interpolation case for both the 2015 baseline and 2015 PMI scenarios. The maximum impact at any grid cell is 0.41 $\mu\text{g}/\text{m}^3$.

The regional-scale modeling and impact assessment methodology were designed to examine worst-case impacts from threshold emission increases at each location within the modeling grid. The addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 24-hour or annual $\text{PM}_{2.5}$ NAAQS for any monitoring site. The results estimated the 2015 FDVs for 24-hour $\text{PM}_{2.5}$ NAAQS to be 0.2 to 0.6 $\mu\text{g}/\text{m}^3$ higher than the 2015 baseline values and that the FDVs for annual average $\text{PM}_{2.5}$ will be 0.2 to 0.4 $\mu\text{g}/\text{m}^3$ higher than the 2015 baseline values. The data indicate that central and southwestern Arkansas may be more sensitive to the addition of PM-related (VOC, NO_x , SO_2 , and primary $\text{PM}_{2.5}$) emissions, relative to the calculation of $\text{PM}_{2.5}$ NAAQS-relevant metrics; however, all worst-case impacts were below the NAAQS.

4.2.1.2 Consideration of the factors in Ark. Code Ann. § 8-4-312

Pursuant to Ark. Code Ann. § 8-4-317, the Department must demonstrate a reasoned consideration of the factors set forth in in Ark. Code Ann. § 8-4-312 “[i]n the case of any emission limit, work practice or operational standard, environmental standard, analytical method, air dispersion modeling requirement, or monitoring requirement that is incorporated as an element of the proposed state implementation plan submittal.” Table 3 provides a written explanation of the Department’s consideration of the factors in Ark. Code Ann. § 8-4-312 in setting the $\text{PM}_{2.5}$ NAAQS minor source permit and De Minimis levels, as applicable.

Table 3. Consideration of the Ark. Code Ann. § 8-4-312 in Setting $\text{PM}_{2.5}$ Permitting and De Minimis Thresholds

Ark. Code Ann. § 8-4-312 Factors	Consideration of the Factors
(1) The quantity and characteristics of air contaminants and the duration of their presence in the atmosphere that may cause air pollution in a particular area of the state;	$\text{PM}_{2.5}$ is emitted directly from sources such as diesel engines, other combustion sources, and smelters. This is considered primary $\text{PM}_{2.5}$. Secondary $\text{PM}_{2.5}$ can also form in the atmosphere due to complex reactions of precursor compounds such as oxides of sulfur (SO_x) and oxides of nitrogen (NO_x). $\text{PM}_{2.5}$ may be composed of sulfate, nitrate, ammonium and /or hydrogen ions. It may also contain elemental carbon, metal compounds, organic compounds, and particle-bound water. It is very difficult to tie secondary $\text{PM}_{2.5}$ in the atmosphere to specific sources. The nature of $\text{PM}_{2.5}$ is such that it may stay suspended in the

	<p>atmosphere for long periods of time and may be transported hundreds of miles.</p> <p>Monitored concentrations of PM_{2.5} have decreased steadily across Arkansas since 2005. Annual PM_{2.5} design values decreased significantly between 2005 and 2014 and all monitoring locations now exhibit design values below the NAAQS. The permit and De Minimis levels adopted into APC&EC Regulation No. 19 and included in this SIP will be applicable statewide, and are expected to be protective of the NAAQS.</p>
(2) Existing physical conditions and topography;	This factor is not applicable to setting a statewide minor source permit and De Minimis level thresholds.
(3) Prevailing wind directions and velocities;	This factor is not applicable to setting a statewide minor source permit and De Minimis level thresholds.
(4) Temperatures and temperature-inversion periods, humidity, and other atmospheric conditions;	This factor is not applicable to setting a statewide minor source permit and De Minimis level thresholds.
(5) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture, or sunlight;	NO _x , SO _x , and VOCs, and soot emitted from a variety of sources, along with water vapor may react in the atmosphere to form sulfates, nitrates, and other types of fine particles.
(6) The predominant character of development of the area of the state such as residential, highly developed industrial, commercial, or other characteristics	This factor is not applicable to setting minor source permit and De Minimis level thresholds since these thresholds will be applicable statewide.
(7) Availability of air-cleaning devices;	This factor is not applicable to setting minor source permit and De Minimis level thresholds.
(8) Economic feasibility of air-cleaning devices	This factor is not applicable to setting minor source permit and De Minimis level thresholds.
(9) Effect on normal human health of particular	PM _{2.5} contains microscopic solids and liquid

<p>air contaminants</p>	<p>droplets that are small enough to get deep into the lungs when inhaled. Numerous scientific studies have linked particle pollution to a number of adverse health effects. These effects include: premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of airways, coughing, and difficulty breathing.</p> <p>The Commission adopted PM_{2.5} permit thresholds and De Minimis levels of 10 tpy which were set at the SER for PM_{2.5} NAAQS promulgated by EPA under 40 C.F.R. § 51.166(b)(23)(i). In EPA’s “Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers (PM_{2.5})” rule finalized on May 16, 2008, EPA states that the agency considers “emissions increases [lower than the SERs] to be De Minimis.”³⁰ According to EPA’s analysis of modeling using the ISC3 model described in 70 FR 66038, increases in direct PM_{2.5} emissions less than 10 tons per year would be unlikely to increase annual average ambient PM_{2.5} concentrations by more than four percent of the annual PM_{2.5} standard.</p> <p>Setting the permit and De Minimis levels at 10 tpy is unlikely to endanger the public health because emissions increases below this level are unlikely to interfere with attainment or maintenance of the annual or 24-hour PM_{2.5} NAAQS. Permitting of sources with emission increases greater than this level allows the Department to ensure that construction and operation of those sources will not interfere with attainment or maintenance of the PM_{2.5}</p>
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³⁰ 73 FR 28332

	NAAQS.
(10) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;	This factor is not applicable to setting minor source permit and De Minimis level thresholds.
(11) The extent of danger to property in the area reasonably to be expected from any particular air contaminant;	<p>Damage from particulate matter can include staining and damage of stone and other material, including culturally important buildings, statues, and monuments. Particles can also damage sensitive farm crops and forest plants.</p> <p>The permit and De Minimis levels adopted into APC&EC Regulation No. 19 and included in this SIP allow the Department to regulate sources with emissions above those levels. In doing so, the Department can ensure that construction and operation of those sources will not interfere with attainment or maintenance of the NAAQS. No specific danger to property is anticipated as a result of the proposed permit and De Minimis levels.</p>
(12) Interference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants;	NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. Pollutant levels at or below these levels would not be expected to interfere with reasonable enjoyment of life by persons in the area. Since the proposed permit and De Minimis levels of 10 tpy of PM _{2.5} are expected to be protective of the NAAQS, these limits should not interfere with reasonable enjoyment of life by persons in the State.
(13) The volume of air contaminants emitted from a particular class of air contamination sources;	According to national emissions inventory (NEI) data, emissions of primary PM _{2.5} increased in Arkansas between 2002 and 2011. The increase is largely due to increased estimations of prescribed and wild fires. The contribution of industrial processes, fuel combustion, solvent, and miscellaneous sources have decreased over time. According

	<p>to 2011 NEI data, fires contributed 51 % of the direct PM_{2.5} emissions in Arkansas. Agriculture contributed 19 %. Dust accounted for 17 %. Mobile sources contributed 4 %. Industrial processes, miscellaneous sources, fuel combustion, and solvent sources contributed less than 9 % combined, indicating that stationary sources are not the driver for increases in primary PM_{2.5} emissions in the State.</p>
<p>(14) The economic and industrial development of the state and the social and economic value of the air contamination sources;</p>	<p>The economic and industrial development of the state is a priority for Arkansas and air contamination sources that will be subject to permitting yield economic benefits to the state and provide Arkansans with jobs. By setting the minor NSR permitting and De Minimis levels at the SER for PM_{2.5}, the state appropriately balances development with environmental protection.</p> <p>Establishing the minor source applicability thresholds for PM_{2.5} at the level of the SER for PM_{2.5} under 40 C.F.R. 51.166(b)(23)(i) ensures that sources which emit trivial amounts of PM_{2.5} will not be required to obtain a permit based on their PM_{2.5} emissions. Establishing the De Minimis level at the same level ensures that emission increases of PM_{2.5} less than the SER can be processed as De Minimis.</p> <p>Those sources that will be permitted for PM_{2.5} will be subject to air permit fees pursuant to APC&EC Regulation No. 9, Chapter 5. Currently, permit fees in Arkansas are \$23.93 per ton per pollutant, up to a cap of 4,000 tons per pollutant. It is unlikely that permit fees will increase due to a fee being imposed for PM_{2.5}. In most cases, the PM_{2.5} emissions from sources will already be included in emissions of other pollutants. By not requiring a permit</p>

	for sources with emissions below the threshold and by processing permitting actions for emission increases below De Minimis levels as De Minimis, unnecessary financial burdens to sources can be avoided.
(15) The maintenance of public enjoyment of the state's natural resources; and	PM _{2.5} can have many undesirable effects in the environment. Fine particles are the main cause of reduced visibility (haze) in parts of the United States, including many national parks and wilderness areas. Particles, which eventually settle out of the atmosphere onto land or water, can have a number of detrimental effects. These include acidification of lakes and streams, changing the nutrient balance in coastal waters and large river basins, depleting nutrients in soil, and damaging sensitive forests and farm crops. Since the thresholds adopted into APC&EC Regulation No. 19 and included in this SIP are expected to be protective of the PM _{2.5} NAAQS, no adverse effects to public enjoyment of the State's natural resources are expected.
(16) Other factors that the department or the commission may find applicable.	This factor is not applicable to setting a statewide minor source permit and De Minimis level thresholds.

4.2.2 Pollutant-Specific Minor NSR NAAQS Evaluation Requirements

Pursuant to Ark. Code Ann. § 8-4-318(a)(2), the Department determined that pollutant-specific NAAQS evaluation requirements for non-PSD (minor NSR) permitting actions under the authority in SIP-approved Reg. 19.402 and Reg. 19.405 are necessary for the attainment and maintenance of the NAAQS.

In reviewing the relevant requirements and selecting for which sources to require modeling, ADEQ adhered to EPA's rationale when it promulgated the only existing federal requirements to model specific sources, which is under the PSD program. In maintaining the NAAQS, "[i]t is the State's responsibility to decide what limits the SIP should impose upon the various sources." (Operating Permit Program, 56 FR 21712-01) Section 110(a)(2)(C) requires that each SIP "include a program to provide for the [...] regulation of the modification and construction of any

stationary source within the areas covered by the plan as necessary to assure that the [NAAQS] are achieved.”

ADEQ acknowledges, just as EPA did when it promulgated the PSD permitting requirements, that it is “not possible” to conduct preconstruction review for every source. (Approval and Promulgation of Implementation Plans, 39 FR 31000). Just as EPA chose to “concentrate the effort on important large sources,” ADEQ is also focusing minor NSR permitting requirements for modeling on those sources with large net emissions increases.

This is consistent with the framework that EPA envisioned when it promulgated the PSD permitting regulations, the preamble of which stated that “[t]he rulemaking allows States generally to exempt from air quality reviews those sources with minimal emissions.” (43 FR 26380) The preamble goes on to explain that “only those sources which would have allowable emissions equal to or greater than [PSD emission thresholds], or would impact a class I area or an area where the increment is known to be violated must receive ambient review (*Id.*). EPA referred to the idea that modeling demonstrations for every permitted source as “unduly burdensome,” and ADEQ agrees in the case of the minor NSR permitting as well. (57 FR 32276)

The presumption that modeling is not required for every source continues to the present day. EPA’s “Model Rule for Minor NSR Program,” which was released in 2012 as part of its “Tribal NSR Implementation Manual,” does not require routine modeling. Instead, the manual explains that the permitting authority will require an air quality impacts analysis from a minor source or modification only if it is concerned that construction of the minor source or modification would cause or contribute to a NAAQS or PSD increment violation. (EPA, Model Rule for Minor New Source Review Program)

In order to avoid the “unduly burdensome” requirement of routine modeling for all minor NSR sources, ADEQ determined that it is appropriate to only require modeling when there is sufficient cause for “concern” that construction or modification will impede the state’s ability to maintain the NAAQS. ADEQ is proposing modeling thresholds that reflect an appropriate level of stringency based on extensive modeling performed by ICF.

Specifically, the Department determined that it is necessary to require NAAQS evaluations for minor NSR permitting involving construction of stationary sources with relatively large proposed emissions of PM₁₀, SO₂, and NO_x and minor NSR permitting involving modification of stationary sources with relatively large proposed net emission increases of PM₁₀, SO₂, and NO_x. For the purposes of determining whether modeling is necessary for a minor NSR modification, the net emission increase will be determined based on the difference between the sum of proposed permitted emission rates and the sum of previously permitted emission rates for all units.

No new NAAQS evaluation requirements are included as part of this SIP for lead. Pursuant to monitoring requirements for lead under 40 C.F.R. 58 Appendix D § 4.5, the Department is

required to conduct ambient air lead monitoring near non-airport lead sources which emit 0.5 or more tons per year of lead and from each airport which emits one or more tons per year unless a waiver is obtained for the lead source. The Department has also determined that NAAQS evaluations will not be required for minor NSR permitting of ozone, PM_{2.5}, or CO. Support for the Department’s NAAQS evaluation requirements determination can be found in Appendix G and Appendix I.

The Department will continue to evaluate ambient concentrations of NAAQS in the State, permit data, and modeling updates based upon updated emission inventories, and modeling for new or revised NAAQS to determine whether revisions to the NAAQS evaluation requirements detailed below are necessary. If the Department determines that it is necessary and appropriate to revise or create new modeling requirements for minor NSR permitting, the Department shall do so through a NAAQS SIP revision.

4.2.2.1 PM₁₀ NAAQS Evaluation Requirements

For minor NSR permitting actions on proposed construction of new stationary sources with PM₁₀ emissions of 100 tpy or greater, the owner/operator shall demonstrate that the construction will not interfere with maintenance or attainment of the 24-hour PM₁₀ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department. For minor NSR permitting actions, existing stationary sources proposing a modification that will result in a net PM₁₀ emissions increase of 100 tpy or greater shall demonstrate that the modification will not interfere with maintenance or attainment of the 24-hour PM₁₀ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department.

4.2.2.1.1 Consideration of the factors in Ark. Code Ann. § 8-4-312

Per Ark. Code Ann. § 8-4-317, the Department must demonstrate reasoned consideration of the factors in exercising the ADEQ’s powers and responsibilities codified in Ark. Code Ann. § 8-4-312 for any new emission limit, work practice or operational standard, environmental standard, analytical method, air dispersion modeling requirement, or monitoring requirement that is incorporated as an element of a proposed SIP submittal. Table 4 provides a written explanation of the Department’s rationale for the modeling requirements for PM₁₀ NAAQS and the Department’s consideration of the factors in Ark. Code Ann. § 8-4-312, as applicable.

Table 4. Consideration of the Factors in Ark. Code. Ann. § 8-4-312 in Setting NAAQS Evaluation Requirements for PM₁₀

Ark. Code Ann. § 8-4-312 Factors	Consideration of the Factors
(1) The quantity and characteristics of air contaminants and the duration of their presence in the atmosphere that may cause air pollution	PM ₁₀ consists of particles, between 2.5 and 10 micrometers (µm) in diameter. These particles may be generated by grinding or crushing operations, mineral processing, agricultural

<p>in a particular area of the state;</p>	<p>operations, fuel combustion, and fires, among others. These particles originate from a variety of mobile and stationary sources and their chemical composition varies widely. PM₁₀ particles generally do not stay suspended in the atmosphere or travel long distances, as finer particles do, and often settle out in areas relatively near their sources.</p>
<p>(2) Existing physical conditions and topography;</p>	<p>Physical conditions and topography may affect the fate and transport of PM₁₀ in the atmosphere. Since PM₁₀ is emitted from many sources, both mobile and stationary throughout the State, the effects of physical conditions and topography are highly variable from one area of the state to another.</p>
<p>(3) Prevailing wind directions and velocities;</p>	<p>Prevailing wind directions and velocities may affect fate and transport of PM₁₀. Since PM₁₀ is emitted from many sources, both mobile and stationary throughout the State, the effects of wind directions and velocities are highly variable from one area of the state to another.</p>
<p>(4) Temperatures and temperature-inversion periods, humidity, and other atmospheric conditions;</p>	<p>Temperature and temperature-inversion periods, humidity, and other atmospheric conditions may affect fate and transport of PM₁₀. Since PM₁₀ is emitted from many sources, both mobile and stationary throughout the State, temperatures and temperature-inversion periods, humidity, and other atmospheric conditions are highly variable from one area of the state to another.</p>
<p>(5) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture, or sunlight;</p>	<p>PM₁₀ is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals and may also contain particles resulting from reactions of gases emitted from vehicles and industrial processes.</p>
<p>(6) The predominant character of development of the area of the state such as residential,</p>	<p>This factor is not applicable to setting a statewide threshold at which the Department</p>

highly developed industrial, commercial, or other characteristics	deems it necessary to evaluate the ambient air quality impact for PM ₁₀ sources for minor NSR permitting actions.
(7) Availability of air-cleaning devices;	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for PM ₁₀ sources for minor NSR permitting actions.
(8) Economic feasibility of air-cleaning devices	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for PM ₁₀ sources for minor NSR permitting actions.
(9) Effect on normal human health of particular air contaminants	<p>PM₁₀ is small enough to enter the respiratory tract as inhaled particles. Inhalation of PM₁₀ can increase the frequency and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Certain populations may be more sensitive to the effects of particulate pollution than others. These include children, the elderly, exercising adults, and those with pre-existing lung disease.</p> <p>Ambient air quality modeling analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS. Performing modeling for the PM₁₀ NAAQS for emission increases of 100 tpy or more will enable ADEQ to ensure that permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS and prevent exposures to concentrations of PM₁₀ that may have a deleterious effect on human health. The</p>

	<p>Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
<p>(10) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;</p>	<p>This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for PM₁₀ sources for minor NSR permitting actions.</p>
<p>(11) The extent of danger to property in the area reasonably to be expected from any particular air contaminant;</p>	<p>Acidic PM₁₀ particles may damage certain man-made materials. Additionally, PM₁₀ contributes to reduced visibility in many parts of the United States. NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. PM₁₀ levels below the NAAQS should not reasonably be expected to endanger property within Arkansas.</p> <p>Performing modeling for PM₁₀ for proposed emission increases of 100 tpy or greater will assist ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
<p>(12) Interference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be</p>	<p>NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. Pollutant levels at or below these levels would not be expected to</p>

<p>expected from air contaminants;</p>	<p>interfere with reasonable enjoyment of life by persons in the area.</p> <p>Modeling ambient air quality analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS.</p> <p>Performing modeling for the PM₁₀ NAAQS for emission increases of 100 tpy or more will enable ADEQ to ensure that permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with enjoyment of life and conduct of established enterprises within the State. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
<p>(13) The volume of air contaminants emitted from a particular class of air contamination sources;</p>	<p>According to national emissions inventory (NEI) data, 2011 emissions of PM₁₀ in Arkansas totaled 469,045 tons. Percentages from various sources are as follows: Dust – 46.3 %; Agriculture (28.9 %); Fires (18.4 %); Industrial (2.1 %); Mobile (1.7 %); Fuel Combustion (1.3 %); Miscellaneous (1.1 %); Solvent (0.00002 %).</p>
<p>(14) The economic and industrial development of the state and the social and economic value of the air contamination sources;</p>	<p>Minor source construction or modification activities that will cause an increase in PM₁₀ emissions greater than 100 tpy will be required to demonstrate compliance with the 24-hour PM₁₀ NAAQS by means of air dispersion modeling, unless the Department approves an</p>

	<p>alternative demonstration method. Air dispersion modeling costs may range from \$2,000 to \$10,000 per pollutant.</p> <p>Air contamination sources that will be subject to NAAQS compliance demonstrations yield significant economic benefits to the state and provide Arkansans with jobs. Setting the threshold for modeling at 100 tpy allows ADEQ to assess whether a proposed emission increase above the EPA-defined major source threshold would be likely to interfere with attainment or maintenance of the NAAQS while not requiring modeling for emission increases that are unlikely to adversely impact attainment and maintenance of the NAAQS. Thus establishing a 100 tpy threshold for NAAQS evaluation requirements for non-PSD sources provides a balanced approach to both economic development and environmental protection.</p>
<p>(15) The maintenance of public enjoyment of the state's natural resources; and</p>	<p>PM₁₀ is associated with respiratory health issues, visibility impairment, and damage to certain man-made materials under certain circumstances. NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. Pollutant levels at or below these levels would not be expected to interfere with public enjoyment of the State's natural resources.</p> <p>Modeling ambient air quality analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS. Performing modeling for the</p>

	<p>PM₁₀ NAAQS for proposed emission increases of 100 tpy or greater will enable ADEQ to ensure that permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with public enjoyment of the State's natural resources. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
<p>(16) Historical Modeling for Minor NSR Permitting</p>	<p>Beginning in the mid-1990s, the Air Permits Branch of ADEQ conducted dispersion modeling for all Title V permits in accordance with an established protocol. This protocol, among other things, required modeling for criteria pollutants permitted for 100 tpy emissions or greater. Because of the nature of PM₁₀ emission sources and background levels, PM₁₀ was modeled regardless of permitted emission rates. This protocol is no longer in effect.</p> <p>The typical scenario was for ADEQ to conduct an initial screening model. If results were less than 50 % of NAAQS, no further evaluation was done. If the results were greater than 50 %, background was added and the result compared to the NAAQS. If total concentrations, predicted values plus background, were over the NAAQS, the facility was contacted for refined modeling analysis. The results of this modeling were summarized in the Statement of Basis for each permit issued.</p> <p>As part of NAAQS SIP development, the Air Permit Branch compiled a list of every Title V issued in Arkansas; this consisted of 365</p>

facilities (2039 permit versions issued). This list is included in the “Historical Title V Modeling Results Technical Support Document” in Appendix G. Approximately 240 of the facilities had modeling results, the remainder did not, mainly because they fell below the then applicable modeling thresholds. Single or multiple pollutants may have been included in any specific facility modeling. Any ADEQ modeling result over 50 % of the NAAQS was then identified for further investigation, including the addition of background values.

Historical modeling by the Department has shown no correlation between PM₁₀ emission rates and predicted impacts to attainment and maintenance of the 24-hour PM₁₀ NAAQS. This is probably due to the wide variation in PM emission sources and the tendency of these sources to be fugitive or otherwise with minimal dispersion. These types of sources are also the most difficult to model; emission rates are questionable and the performance of the actual model is questionable in predicting these impacts. Past permit review has resulted in some control requirements. The most common has been controlling fugitive dust from roads, but there have been other controls (Dust control nozzles, baghouses on PM sources, etc.).

The 100 tpy threshold for modeling of the 24-hour PM₁₀ NAAQS for minor NSR construction or modification permitting was selected based on the EPA-defined major source emission rate.

4.2.2.2 SO₂ NAAQS Evaluation Requirements

For minor NSR permitting actions on proposed construction of new stationary sources with SO₂ emissions of 100 tpy or greater, the owner/operator shall demonstrate that the construction will not interfere with maintenance or attainment of the 1-hour SO₂ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department. For minor NSR permitting actions, existing stationary sources proposing a modification that will result in a net SO₂ emissions increase of 100 tpy or greater shall demonstrate that the modification will not interfere with maintenance or attainment of the 1-hour SO₂ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department. Demonstrating that a proposed construction or modification would not interfere with maintenance or attainment of the 1-hour SO₂ NAAQS is sufficient to demonstrate that the construction or modification would not interfere with the less stringent 3-hour SO₂ NAAQS.

4.2.2.2.1 Consideration of the factors in Ark. Code Ann. § 8-4-312

Per Ark. Code Ann. § 8-4-317, the Department must demonstrate reasoned consideration of the factors in exercising the ADEQ’s powers and responsibilities codified in Ark. Code Ann. § 8-4-312 for any new emission limit, work practice or operational standard, environmental standard, analytical method, air dispersion modeling requirement, or monitoring requirement that is incorporated as an element of a proposed SIP submittal. Table 5 provides a written explanation of the Department’s rationale for the modeling requirements for SO₂ and the Department’s consideration of the factors in Ark. Code Ann. § 8-4-312, as applicable.

Table 5. Consideration of the Factors in Ark. Code Ann. § 8-4-312 in Setting NAAQS Evaluation Requirements for SO₂

Ark. Code Ann. § 8-4-312 Factors	Consideration of the Factors
(1) The quantity and characteristics of air contaminants and the duration of their presence in the atmosphere that may cause air pollution in a particular area of the state;	SO ₂ is one of a group of highly reactive gasses known as “oxides of sulfur.” The largest sources of SO ₂ emissions are from fossil fuel combustion at power plants (73 %) and other industrial facilities (20 %). Smaller sources of SO ₂ emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and nonroad equipment. While SO ₂ tends not to be transported long distances in its original form, it does react with other pollutants and water vapor to form fine particulates and acidic aerosols that may be transported long

	distances. It also contributes to acid rain.
(2) Existing physical conditions and topography;	Physical conditions and topography may affect the fate and transport of SO ₂ in the atmosphere. Since SO ₂ is emitted from many sources, both mobile and stationary throughout the State, the effects of physical conditions and topography are highly variable from one area of the State to another.
(3) Prevailing wind directions and velocities;	Prevailing wind directions and velocities may affect the fate and transport of SO ₂ . Since SO ₂ is emitted from many sources, both mobile and stationary throughout the State, the effects of wind directions and velocities are highly variable from one area of the State to another.
(4) Temperatures and temperature-inversion periods, humidity, and other atmospheric conditions;	Temperature and temperature-inversion periods, humidity, and other atmospheric conditions may affect the fate and transport of SO ₂ . Since SO ₂ is emitted from many sources, both mobile and stationary throughout the State, temperatures and temperature-inversion periods, humidity, and other atmospheric conditions are highly variable from one area of the State to another.
(5) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture, or sunlight;	SO ₂ is highly reactive and does not tend to travel great distances in its original form. It can, however, react with other pollutants and/or water vapor to form fine particulates and acidic aerosols. Once formed, these particles/aerosols may remain in the atmosphere for long periods and travel hundreds of miles.
(6) The predominant character of development of the area of the state such as residential, highly developed industrial, commercial, or other characteristics	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for SO ₂ sources for minor NSR permitting actions.

(7) Availability of air-cleaning devices;	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for SO ₂ sources for minor NSR permitting actions.
(8) Economic feasibility of air-cleaning devices	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for SO ₂ sources for minor NSR permitting actions.
(9) Effect on normal human health of particular air contaminants	<p>Current scientific evidence links short-term exposures to SO₂, ranging from five minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing).</p> <p>Modeling ambient air quality analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS. Performing modeling for the 1-hour SO₂ NAAQS for emission increases of 100 tpy or more will enable ADEQ to ensure that permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS and will prevent exposures to concentrations of SO₂ that may have a deleterious effect on human health. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will</p>

	not interfere with attainment or maintenance of the NAAQS.
(10) Effect on efficiency of industrial operation resulting from use of air-cleaning devices;	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for SO ₂ sources for minor NSR permitting actions.
(11) The extent of danger to property in the area reasonably to be expected from any particular air contaminant;	<p>SO₂ is a precursor to sulfates, which are associated with acidification of lakes and streams, and accelerated corrosion of buildings and monuments. SO₂ also contributes to formation of fine particulate matter.</p> <p>Modeling ambient air quality analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS.</p> <p>The secondary 3-hour NAAQS for SO₂ is set to protect against damage to animals, crops, vegetation; therefore, performing modeling for the 1-hour SO₂ NAAQS, which is more stringent than the 3-hour NAAQS, for proposed emission increases of 100 tpy or greater will assist ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the secondary NAAQS. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the</p>

	NAAQS.
(12) Interference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants;	<p>NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. Pollutant levels at or below these levels would not be expected to interfere with reasonable enjoyment of life by persons in the area.</p> <p>Modeling ambient air quality analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS.</p> <p>The primary 1-hour NAAQS for SO₂ is set to protect public health; therefore, performing modeling for proposed emission increases of 100 tpy or greater will enable ADEQ to ensure that minor NSR permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with reasonable enjoyment of life and conduct of established enterprises from this pollutant. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
(13) The volume of air contaminants emitted from a particular class of air contamination sources;	<p>According to National Emission Inventory (NEI) data, 93,200 tpy of SO₂ were emitted from sources in Arkansas in 2011. Percentages from various sources are as follows: fuel combustion (85 %); fires (8 %); industrial processes (6 %); mobile (0.7 %); solvents</p>

	(0.00001%); and miscellaneous (0.09 %).
(14) The economic and industrial development of the state and the social and economic value of the air contamination sources;	<p>Minor source construction or modification activities that will cause an increase in SO₂ emissions greater than 100 tpy will be required to demonstrate compliance with the 1-hour SO₂ NAAQS by means of air dispersion modeling, unless the Department approves an alternative demonstration method. Air dispersion modeling costs may range from \$2,000 to \$10,000 per pollutant.</p> <p>Air contamination sources that will be subject to NAAQS compliance demonstrations yield significant economic benefits to the state and provide Arkansans with jobs. Setting the threshold for modeling at 100 tpy allows ADEQ to assess whether a proposed emission increase above the EPA-defined major source threshold would be likely to interfere with attainment or maintenance of the NAAQS while not requiring modeling for emission increases that are unlikely to adversely impact attainment and maintenance of the NAAQS. Thus establishing a 100 tpy threshold for NAAQS evaluation requirements for non-PSD sources provides a balanced approach to both economic development and environmental protection.</p>
(15) The maintenance of public enjoyment of the state's natural resources; and	<p>SO₂ can have many undesirable effects in the environment. Fine particles, of which sulfates derived from SO₂ are a constituent, are the main cause of reduced visibility (haze) in parts of the United States, including many national parks and wilderness areas. SO₂ contributes to acidification of lakes and streams and to acid rain, which may encourage corrosion and damage buildings and monuments made from stone and some other materials.</p> <p>Ambient air quality modeling analysis is a tool</p>

	<p>used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS.</p> <p>Performing modeling for the 1-hour SO₂ NAAQS for proposed emission increases of 100 tpy or greater will enable ADEQ to ensure that minor NSR permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with public enjoyment of the State's natural resources. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
(16) Historical Modeling for Minor NSR Permitting	<p>Beginning in the mid-1990s, the Air Permits Branch of ADEQ conducted dispersion modeling for all Title V permits in accordance with an established protocol. This protocol, among other things, required modeling for criteria pollutants permitted for 100 tpy emissions or greater. Because of the nature of PM₁₀ emission sources and background levels, PM₁₀ was modeled regardless of permitted emission rates. This protocol is no longer in effect.</p> <p>The typical scenario was for ADEQ to conduct an initial screening model. If results were less than 50 % of NAAQS, no further evaluation was done. If results were greater than 50 %, background was added and the result compared to the NAAQS. If total concentrations,</p>

predicted values plus background, were over the NAAQS, the facility was contacted for refined modeling analysis. The results of this modeling were summarized in the Statement of Basis for each permit issued.

As part of NAAQS SIP development, the Air Permit Branch compiled a list of every Title V issued in Arkansas; this consisted of 365 facilities (2039 permit versions issued). This list is included in the “Historical Title V Modeling Results Technical Support Document” in Appendix G. Approximately 240 of the facilities had modeling results, the remainder did not, mainly because they fell below the then applicable modeling thresholds. Single or multiple pollutants may have been included in any specific facility modeling. Any ADEQ modeling result over 50 % of the NAAQS was then identified for further investigation, including the addition of background values.

There were eight instances of the 3-hour SO₂ impacts predicted at 50 % of the 3-hour SO₂ NAAQS. Except for the case of some emergency diesel generators (LM Windpower) and the TEC unit at Riceland, emission rates modeled were in excess of 600 lb/hr. The LM scenario is an unrealistic event and the Riceland results were less than 52 % of the NAAQS. It does not appear that emission rates below major NSR levels would ever indicate a 3-hour SO₂ NAAQS compliance issue.

The primary 1-hour SO₂ NAAQS is a relatively new standard (2010) and the ADEQ does not have experience modeling for this standard for minor NSR permitting actions. Because of the much stricter 1-hour values and the shorter averaging times, any comparison to

	<p>past modeling would not suffice to assure compliance with these NAAQS.</p> <p>The 100 tpy threshold for modeling of the primary 1-hour SO₂ NAAQS for minor NSR construction or modification permitting was selected based on the EPA-defined major source emission rate.</p>
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4.2.2.3 NO₂ NAAQS Evaluation Requirements

For minor NSR permitting actions on proposed construction of new stationary sources with NO_x emissions of 100 tpy or greater, the owner/operator shall demonstrate that the construction will not interfere with maintenance or attainment of with the 1-hour NO₂ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department. For minor NSR permitting actions, existing stationary sources proposing a modification that will result in a net NO_x emissions increase of 100 tpy or greater shall demonstrate that the modification will not interfere with maintenance or attainment of the 1-hour NO₂ NAAQS using air dispersion modeling, unless an alternative demonstration method is approved by the Department. Modeling for the annual NO₂ NAAQS is not required for minor NSR construction or modification activities.

4.2.2.3.1 Consideration of the factors in Ark. Code Ann. § 8-4-312

Per Ark. Code Ann. § 8-4-317, the Department must demonstrate reasoned consideration of the factors in exercising the ADEQ’s powers and responsibilities codified in Ark. Code Ann. § 8-4-312 for any new emission limit, work practice or operational standard, environmental standard, analytical method, air dispersion modeling requirement, or monitoring requirement that is incorporated as an element of a proposed SIP submittal. Table 6 provides a written explanation of the Department’s rationale for the modeling requirements for NO₂ NAAQS and the Department’s consideration of the factors in Ark. Code Ann. § 8-4-312, as applicable.

Table 6. Consideration of the Factors in Ark. Code. Ann. § 8-4-312 in Setting NAAQS Evaluation Requirements for NO₂

Ark. Code Ann. § 8-4-312 Factors	Consideration of the Factors
(1) The quantity and characteristics of air contaminants and the duration of their presence in the atmosphere that may cause air pollution in a particular area of the state;	NO ₂ is one of a group of highly reactive gases known as “oxides of nitrogen,” or “nitrogen oxides” (NO _x). Other nitrogen oxides include nitrous acid and nitric acid. EPA’s NAAQS uses NO ₂ as the indicator for the larger group of nitrogen oxides. NO ₂ forms quickly from emissions from cars, trucks and buses, power

	plants, and off-road equipment. ³¹ NO _x may be transported for long distances and may react with other pollutants or water vapor to form secondary pollutants.
(2) Existing physical conditions and topography;	Physical conditions and topography may affect fate and transport of NO ₂ in the atmosphere. Since NO ₂ is emitted from many sources, both mobile and stationary throughout the State, the effects of physical conditions and topography are highly variable from one area of the State to another.
(3) Prevailing wind directions and velocities;	Prevailing wind directions and velocities may affect the fate and transport of NO ₂ . Since NO ₂ is emitted from many sources, both mobile and stationary throughout the State, the effects of wind directions and velocities are highly variable from one area of the state to another.
(4) Temperatures and temperature-inversion periods, humidity, and other atmospheric conditions;	Temperature and temperature-inversion periods, humidity, and other atmospheric conditions may affect the fate and transport of NO ₂ . Since NO ₂ is emitted from many sources, both mobile and stationary throughout the State, temperatures and temperature-inversion periods, humidity, and other atmospheric conditions are highly variable from one area of the State to another.
(5) Possible chemical reactions between air contaminants or between such air contaminants and air gases, moisture, or sunlight;	NO ₂ and other NO _x , SO ₂ , and VOCs, emitted from a variety sources, along with water vapor may react in the atmosphere to form sulfates, nitrates, and other types of fine particles. NO ₂ and other NO _x also contribute to ozone formation.
(6) The predominant character of development of the area of the state such as residential, highly developed industrial, commercial, or	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air

³¹ EPA Nitrogen Dioxide – Retrieved from <http://www3.epa.gov/airquality/nitrogenoxides/index.html>

other characteristics	quality impact for NO ₂ sources for minor NSR permitting actions.
(7) Availability of air-cleaning devices;	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for NO ₂ sources for minor NSR permitting actions.
(8) Economic feasibility of air-cleaning devices	This factor is not applicable to setting a statewide threshold at which the Department deems it necessary to evaluate the ambient air quality impact for NO ₂ sources for minor NSR permitting actions.
(9) Effect on normal human health of particular air contaminants	<p>Exposure to NO₂ occurs through inhalation. Scientific studies link short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between breathing elevated short-term NO₂ concentrations, and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma.</p> <p>NO₂ exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma and other respiratory conditions, children, and the elderly. NO₂ and other NO_x react with ammonia, moisture, and other compounds to form small particles. These small particles can penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease,</p>

	<p>leading to increased hospital admissions and premature death.³²</p> <p>Ambient air quality modeling analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified without interfering with attainment or maintenance of the NAAQS. Performing modeling for the 1-hour NO₂ NAAQS for emission increases of 100 tpy or more will enable ADEQ to ensure that minor NSR permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS and will prevent acute exposures to concentrations of NO₂ that may have a deleterious effect on human health. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p> <p>Based on historical modeling of Title V sources by the air permit branch of ADEQ, it does not appear likely that emission rates below major NSR levels would ever indicate an primary and secondary annual NO₂ NAAQS compliance issue set to protect human health and the environment; therefore, minor source construction or modification activities in the State are not expected to cause long-term exposures to concentrations of NO₂ that may have a deleterious effect on human health.</p>
(10) Effect on efficiency of industrial operation	This factor is not applicable to setting a statewide threshold at which the Department

³² EPA Nitrogen Dioxide - Health – Retrieved from <http://www3.epa.gov/airquality/nitrogenoxides/health.html>

<p>resulting from use of air-cleaning devices;</p>	<p>deems it necessary to evaluate the ambient air quality impact for NO₂ sources for minor NSR permitting actions.</p>
<p>(11) The extent of danger to property in the area reasonably to be expected from any particular air contaminant;</p>	<p>NO₂ is an ingredient of acid rain (acid aerosols), which can damage stone used on buildings, statues, monuments, as well as vegetation and waterways. Acid aerosols can also reduce visibility.³³ NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment.</p> <p>Based on historical modeling of Title V sources by the air permit branch of ADEQ, it does not appear likely that emission rates below major NSR levels would ever indicate an primary and secondary annual NO₂ NAAQS compliance issue set to protect human health and the environment; therefore, minor source construction or modification activities in the State are not expected to endanger property within Arkansas.</p>
<p>(12) Interference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants;</p>	<p>NAAQS developed for various pollutants by EPA are designed to be protective of human health and the environment. Pollutant levels at or below these levels would not be expected to interfere with reasonable enjoyment of life by persons in the area.</p> <p>Ambient air quality modeling analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS.</p>

³³ Source: <http://www.fairfaxcounty.gov/hd/air/airpollutants.htm>

	<p>The primary standards for NO₂ were developed to protect human health, and the secondary standard to protect public welfare; therefore, performing modeling for the 1-hour NO₂ NAAQS for proposed emission increases of 100 tpy or greater will enable ADEQ to ensure that minor NSR permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with enjoyment of life and conduct of established enterprises within the State. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission increase will not interfere with attainment or maintenance of the NAAQS.</p>
<p>(13) The volume of air contaminants emitted from a particular class of air contamination sources;</p>	<p>According to EPA National Emissions Inventory (NEI) data, 257,601 tpy of NO₂ were emitted from sources in Arkansas in 2011. Percentages from various sources were as follows: mobile sources (52.22 %); fuel combustion (23.59 %); biogenics (9.83 %); industrial processes (8.18 %); Fires (5.68 %); miscellaneous (0.48 %); solvents (0.02 %).</p>
<p>(14) The economic and industrial development of the state and the social and economic value of the air contamination sources;</p>	<p>Minor source construction or modification activities that will cause an increase in NO₂ emissions greater than 100 tpy will be required to demonstrate compliance with the annual NO₂ NAAQS by means of air dispersion modeling, unless the Department approves an alternative demonstration method. Air dispersion modeling costs may range from \$2,000 to \$10,000 per pollutant.</p> <p>Air contamination sources that will be subject to NAAQS compliance demonstrations yield significant economic benefits to the state and</p>

	<p>provide Arkansans with jobs. Setting the threshold for modeling at 100 tpy allows ADEQ to assess whether a proposed emission increase above the EPA-defined major source threshold would be likely to interfere with attainment or maintenance of the NAAQS while not requiring modeling for emission increases that are unlikely to adversely impact attainment and maintenance of the NAAQS provides a balanced approach to both economic development and environmental protection</p>
<p>(15) The maintenance of public enjoyment of the state's natural resources; and</p>	<p>NO₂ contributes to the formation of ground-level ozone and fine particulate matter. In addition, it is associated with a number of adverse effects on the respiratory system. The primary NAAQS for NO₂, set by EPA at 53 ppb (annual) and 100 ppb (hourly) are designed to be protective of human health. The secondary standard of 53 ppb (annual) is designed to protect the public welfare.</p> <p>Ambient air quality modeling analysis is a tool used by ADEQ to assess the likely air quality impacts of a stationary source under proposed permit conditions. This tool assists ADEQ in ensuring that permitted stationary sources will be constructed or modified to operate without interfering with attainment or maintenance of the NAAQS. Performing modeling for the NO₂ NAAQS for proposed emission increases of 100 tpy or greater will enable ADEQ to ensure that minor NSR permitting of relatively large emission increases will not interfere with attainment or maintenance of the NAAQS or interfere with the enjoyment of the State's natural resources. The Department may allow an alternative demonstration submitted by the permittee in lieu of modeling if the Department deems that such a method is sufficiently robust as to ensure that the proposed emission</p>

	increase will not interfere with attainment or maintenance of the NAAQS.
(16) Other factors that the department or the commission may find applicable.	<p>Beginning in the mid-1990s, the air permits branch of ADEQ conducted dispersion modeling for all Title V permits in accordance with an established protocol. This protocol, among other things, required modeling for criteria pollutants permitted for 100 tpy emissions or greater. Because of the nature of PM₁₀ emission sources and background levels, PM₁₀ was modeled regardless of permitted emission rates. This protocol is no longer in effect.</p> <p>The typical scenario was for ADEQ to conduct an initial screening model. If results were less than 50 % of NAAQS, no further evaluation was done. If results were greater than 50 %, background was added and the result compared to the NAAQS. If total concentrations, predicted values plus background were over the NAAQS, the facility was contacted for refined modeling analysis. The results of this modeling were summarized in the Statement of Basis for each permit issued.</p> <p>As part of NAAQS SIP development, the Air Permit Branch compiled a list of every Title V permit issued in Arkansas; this consisted of 365 facilities (2039 permit versions issued). This list is included in the “Historical Title V Modeling Results Technical Support Document” in Appendix G. Approximately 240 of the facilities had modeling results, the remainder did not, mainly because they fell below the then applicable modeling thresholds. Single or multiple pollutants may have been included in any specific facility modeling. Any ADEQ modeling result over 50 % of the NAAQS was then identified for further</p>

	<p>investigation, including the addition of background values.</p> <p>Annual NO_x impacts approached the NAAQS on multiple occasions. There is no consistency or pattern of emission rates versus impact; however, the impacts did not approach 90 % of the NAAQS until around an equivalent emission rate of 250 tpy. It does not appear that emission rates below major NSR levels would ever indicate an annual NO₂ NAAQS compliance issue.</p> <p>The primary 1-hour NO₂ NAAQS is a relatively new standard (2010) and the ADEQ does not experience modeling for this standard for minor NSR permitting actions.</p> <p>The 100 tpy threshold for modeling of the primary 1-hour NO₂ NAAQS for minor NSR construction or modification permitting was selected based on the EPA-defined major source emission rate.</p>
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Appendix A

Current Voluntary Control Measures for
Protection of the National Ambient Air Quality
Standards in Arkansas

Current Voluntary Control Measures for Protection of the National Ambient Air Quality Standards in Arkansas

1. Forestry Smoke Management

40 C.F.R. § 51.308 (d)(3)(v)(E) requires Arkansas to consider smoke management techniques for the purposes of agricultural and forestry management. In 2007, the Arkansas Forestry Commission (AFC), approved revisions to the Arkansas Smoke Management Plan (SMP). The Arkansas SMP is designed to assure that prescribed fires are planned and executed in a manner designed to minimize impacts associated with the smoke produced by prescribed fires. A copy of the SMP may be found at:

<http://forestry.arkansas.gov/Services/KidsTeachersEveryone/Documents/ArkansasVSMG.pdf>

Arkansas has adopted a basic SMP, in which owners/managers voluntarily notify state officials of fire plans. Arkansas's SMP recommends a written fire plan that includes measures that can be taken to reduce residual smoke from burning activities. Arkansas's SMP recommends these actions to reduce smoke impacts where applicable:

- Reduce the fuel loading in the area to be burned by mechanical means or by using frequent, low-intensity burns to gradually reduce fuels
- Reduce the amount of fuel consumed by the fire by burning when fuel moistures for larger fuels and duff moistures are high
- Rapid and complete mop-up after the burn or mop-up of certain fuel
- Reference "Smoke Management Guide for Prescribed Fire and Wildland Fire" by National Wildfire Coordinating Group Fire Use Working Team, publication NFES 1279

In addition, the Arkansas SMP has a process to evaluate potential smoke impacts at sensitive receptors and schedule fires to minimize exposure of sensitive populations and avoid visibility impacts in Federal Class I areas. Arkansas's SMP details procedures for the identification of smoke sensitive targets and minimization of their exposure to smoke. Methodologies to reduce smoke exposure include smoke emissions estimates using determination of available fuels and identification of the category day based on local weather conditions forecast.

Arkansas's SMP details the AFC Dispatch Center's role in locating each prescribed fire in the center of an airshed. This system estimates the range, in tons of fuel, that can be allocated to an airshed based upon downwind distance to the nearest smoke sensitive target and monitors the total fuel loading tonnage burned within each air shed, each day, in order to ensure compliance

with permissible limits. If the AFC Dispatch center determines that the fuel tonnage for a single prescribed fire causes the air pollution tonnage for a given airshed to exceed these limits, the AFC Dispatch Center will recommend to the prescribed fire manager that the plan should be altered by measures such as delaying the burn and reducing the acreage to be burned.

Arkansas has a public notification process and exposure reduction process in place to reduce the impacts of burning. The AFC, in cooperation with the Arkansas Prescribed Fire Committee, explains the use and importance of fire for ecosystem management, the implications of smoke to public health and safety, and the goals of the SMP. This public awareness effort uses posters, pamphlets, news releases, and public presentations. Prescribed fire managers are encouraged to train on-the-ground personnel to understand the SMP. AFC cooperates with organizations and government agencies such as Arkansas Lung Association or the Arkansas Department of Environmental Quality to make the public aware of planned prescribed fires.

Arkansas's SMP states that monitoring of the smoke from the prescribed fire should match the size of the fire. For small or short duration fires (such as those in grass or leaf litter), visual monitoring of the directions of the smoke plume and monitoring nuisance complaints by the public may be sufficient. Other monitoring techniques include posting personnel on vulnerable roadways to look for visibility impairment and to initiate safety measures for motorists; posting personnel at other smoke sensitive areas to look for smoke intrusions; using aircraft to track the progress of smoke plumes; and continued tracking of meteorological conditions during the fire. For prescribed fires in fuels with longer duration burning (such as timber litter or slash), and which are expected to last more than one day, locating real-time particulate matter (PM) monitors at smoke- sensitive areas may be warranted to facilitate timely response to smoke problems.

The AFC has established a policy to issue health advisories when necessary. State and federal prescribed fire managers routinely notify landowners adjacent to prescribed burns of the potential for exposure to smoke. AFC Dispatch is currently developing a daily listing of planned prescribed fires on the AFC website (www.forestry.state.ar.us). The planned prescribed burn listing will have the county, nearest community, legal description, planned ignition time, and acres of the prescribed burn.

Arkansas's SMP has provisions for an annual review by the Arkansas Forestry Commission that will include the following activities:

- Collect and review information on acres burned by prescribed fire and wildfire
- Review the reference, continuous, and IMPROVE monitoring station data maintained by ADEQ
- Use information from reports of nuisance complaints or significant smoke intrusions to measure the effectiveness of the SMP

- Provide recommendations to ADEQ and Arkansas Prescribed Fire Committee concerning the SMP

Pursuant to the EPA's Interim guidance cited above, Arkansas has adopted a program that should help prevent National Ambient Air Quality Standard (NAAQS) violations and addresses visibility impairment due to fires. This program established the documentation of basic parameters such as: contact information of person in charge, purpose of prescribed burn, fuel type and tonnage, ignition time and duration of fire, wind speed, direction, location, and distance to sensitive receptors. Prescribed fire managers are required under Arkansas law to notify the AFC Dispatch Center on the morning of the prescribed fire by calling 1-800-830-8015. See Ark. Code Ann. § 20-22-302.

2. Ozone Action Days

During May through September, "Ozone Season," ozone forecasts for the Little Rock/North Little Rock Metropolitan Statistical Area (MSA) are conducted on a daily basis. This MSA includes Pulaski, Saline, Faulkner, and Lonoke Counties.

For air quality information throughout the entire year, the ADEQ Air Quality Index (AQI), a measure of overall air quality that identifies the most significant air pollutant for the day, is reported by ADEQ's Technical Services Division on weekdays.

There are now two basic types of Ozone Action Days:

1. An Ozone Action Advisory will be declared when the AQI forecast is code orange, indicating that prolonged outdoor exertion is unhealthy for sensitive groups (i.e., children and persons with asthma or other breathing problems).
2. An Ozone Action Alert will be declared when the AQI forecast is code red, indicating that prolonged outdoor exertion is unhealthy for everyone.

In addition, unusually sensitive people should routinely check the AQI as reported in newspapers and on the radio, television, and the Internet and consider limiting prolonged outdoor exertion when the AQI is code yellow.

A website dedicated to Ozone Action Days information has been set up by Metroplan. ADEQ advises Metroplan on ozone-related issues and provides support.

The Technical Services Division of ADEQ calculates the local Air Quality Index (AQI), not to be confused with the Ozone Forecast. It is a scale used to report risk based on actual levels of ozone and fine particulates. The higher the AQI value the greater the health concern.

3. Diesel Emissions Reduction Act (DERA) Go Red! Program

Through DERA and EPA, funding to reduce diesel emissions is allocated to states. States then have the option to award DERA funds to governmental, non-profit, and private entities on a competitive or first-come, first-served basis. Funding must be used to reduce diesel emissions utilizing exhaust controls, engine upgrades, idling reduction technology, engine replacements or vehicle/equipment replacements. The vehicles/equipment must be medium or heavy-duty diesels to be eligible for funding. ADEQ administers the Go Red! Program and receives applications for projects to reduce diesel emissions in Arkansas. This program has awarded funding assistance to more than 30 entities between 2008 and 2015 to reduce diesel emissions in Arkansas.

Appendix B

Future Consideration for Protection of the
National Ambient Air Quality Standards in
Arkansas

Future Consideration for Protection of the National Ambient Air Quality Standards in Arkansas

Background

The Department engaged in a series of robust meetings with stakeholders to suggest approaches to protect Arkansas from exceedances of the National Ambient Air Quality Standards (NAAQS). The provisions included in the infrastructure SIP and NAAQS SIP are sufficient to ensure attainment and maintenance of the NAAQS in the State. However, should areas of the State be at risk of nonattainment, the Department would like to present stakeholders' ideas to be used as possible approaches for Arkansas to consider in future revisions of the NAAQS.

Potential Control Strategies and Control Measures for Reducing Particulate Matter

1. Measures to Reduce Road Dust
 - Incentivize paving county roads
 - Use GIS and PM_{2.5} data to identify areas of concern with heavy use including traffic counts and weight impacts
 - Incentivize control measures for unpaved roads such as dust suppression from water trucks, especially during seasonal or short-term periods of heavy traffic
 - Incorporate PM_{2.5} reduction objectives into the Arkansas Unpaved Roads Program
2. Measures to Reduce Particulate Pollution from Wood Debris/Open Burning
 - Develop a wood waste chipping program for mulch
 - Encourage use of wood waste as fuel in wood-fired boilers
3. Measures to Reduce Particulate Pollution from Prescribed Burning
 - Encourage voluntary participation in the Arkansas Forestry Commission's Arkansas Smoke Management Program
 - Involve ADEQ in assisting the Arkansas Forestry Commission with implementation of the Arkansas Smoke Management Program by hiring a meteorologist
4. Measures to Reduce Particulate Pollution from Diesel Vehicles
 - Expand programs such as Go Red! (DERA)
 - Pursue additional money through grants or local venue funding from local sources

Potential Control Strategies and Control Measures for Reducing Ozone

1. Measures to Reduce On-Road Emissions of Ozone Precursors
 - Expansion of Clean Cities Program beyond Central Arkansas
 - Encourage reducing petroleum use in favor of alternative and renewable fuels
 - Encourage smarter driving practices and fuel economy improvements
 - Emphasize ozone issues during the transportation planning process
 - a. Improving vehicle movement efficiency
 - b. Raise the fuel tax to decrease the number of vehicles on the road and roll back the proceeds of this tax into transportation planning
2. Enact a program similar to the Texas Emission Reduction Program
 - Further information can be found at:
[https://www.tceq.texas.gov/publications/pd/020/2014/texas-emissions-reduction-plan-\(terp\)-the-success-continues](https://www.tceq.texas.gov/publications/pd/020/2014/texas-emissions-reduction-plan-(terp)-the-success-continues)
3. Encourage Employer-Based Measures to Reduce the Single Occupancy Vehicle Trips
 - Crowdsourcing
 - Natural Gas Van Pooling
 - Rideshare
 - State Government commuting policies, e.g. flex schedules
 - Telecommuting
 - Anti-idling

Conclusion

Although the Department believes that current measures included in the SIP are sufficient to ensure attainment with the NAAQS adopted in this SIP, these measures identified by the stakeholders could be implemented to further reduce emissions of criteria pollutants should the state identify potential areas of Arkansas to be at risk of non-compliance with the NAAQS. In addition to the potential control strategies and measures listed above, stakeholders suggested that the state should use its enforcement authority to ensure that current state and federal regulations achieve intended emissions reductions.

Appendix C

2010 Minor NSR Permitting Thresholds and De
Minimis Levels SIP Technical Support Document



ARKANSAS
Department of Environmental Quality

November 30, 2015

Ms. Ashley Mohr
Environmental Scientist, Air Permits Section
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200, Mail Code: 6PD
Dallas, Texas 75202-2733

Dear Ms. Mohr,

On July 11, 2014, EPA R6 contacted ADEQ regarding the need for additional information on the Arkansas Minor NSR Threshold State Implementation Plan (SIP) revision submitted on July 26, 2010 for EPA's review and approval. In reviewing Arkansas SIP submission, EPA identified two items as significant issues requiring resolution:

1. National Ambient Air Quality Standards Compliance Demonstration for Increased Minor NSR Permitting Thresholds
2. Minor New Source Review Program's Applicability for PM_{2.5}

Pursuant to the request for more information regarding the first item, the Arkansas Department of Environmental Quality (ADEQ) has performed technical analyses in support of the current State-effective permit thresholds and De Minimis levels for carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), which were revised in 2008 and were submitted to EPA as part of the 2010 Arkansas Minor NSR Threshold State Implementation Plan (SIP) revision. On July 10, 2015, the Arkansas Department of Environmental Quality (ADEQ) submitted a draft technical support document that provided a monitoring based analysis which demonstrated that exempting sources which emit less than the current State-effective permit thresholds and De Minimis levels for CO, NO_x, SO₂, VOC, and PM₁₀ has not interfered with attainment or maintenance of the NAAQS for CO, NO_x, SO₂, ozone, or PM₁₀ in the years since these thresholds were revised. Subsequent to this submission, ADEQ has also contracted with ICF International to model the potential impacts of emission increases equal to the revised permit thresholds and De Minimis levels using a combined AERMOD/Community Multiscale Air Quality (CMAQ) analysis. The results of this modeling analysis demonstrate that source which emit less than the revised permit thresholds and De Minimis levels will not cause or contribute to a violation of the NAAQS or interfere with attainment of the NAAQS.

At this time, ADEQ would like to submit the enclosed final technical support document for the 2010 Arkansas Minor NSR Threshold SIP Revision which details the rationale behind the levels at which the permit thresholds and De Minimis levels were set and provides monitoring and modeling

demonstrations which show that these thresholds are appropriate and do not interfere with attainment or maintenance of the National Ambient Air Quality Standards (NAAQS).

Regarding the second item, Minor NSR Program's Applicability for PM_{2.5}, ADEQ anticipates submitting a technical demonstration in support of the PM_{2.5} permit threshold and De Minimis level proposed in the current rulemaking for APC&EC Regulation No. 19 at a later date.

This demonstration should assist EPA in their review and approval of the 2010 Arkansas Minor NSR Threshold State Implementation Plan (SIP) revision. We would appreciate your feedback on the enclosed demonstration.

Sincerely,

Tony Davis, Planning Branch Manager
Air Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

Arkansas Department of Environmental Quality

2010 Minor NSR Permitting Thresholds and De Minimis Levels SIP Revision

Technical Support Document

November 2015

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2010 Minor NSR Permitting Thresholds and De Minimis Levels SIP Revision Technical Support Document

Executive Summary

On December 5, 2008, the Arkansas Pollution Control and Ecology Commission (APC&EC) adopted revisions to the minor new source review (Minor NSR) permit thresholds for carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀). The Arkansas Department of Environmental Quality (the Department) submitted a SIP revision to the United States Environmental Protection Agency (EPA) which included these threshold revisions. This technical support document details the rationale behind the levels at which the permit thresholds and De Minimis levels were set and provides monitoring and modeling demonstrations which show that these thresholds are appropriate and do not interfere with attainment or maintenance of the National Ambient Air Quality Standards in Arkansas.

Background

On December 5, 2008, in an amendment to the Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation Number 19 - Regulations of the Arkansas Plan of Implementation for Air Pollution Control (Regulation No. 19), minor new source review (Minor NSR) permit thresholds for carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), single hazardous air pollutant (HAP), and multiple HAPs were revised. Table 1 contains a comparison of the old (previous to the Minor NSR permit threshold revision) and the revised Minor NSR permit thresholds. De Minimis levels were also revised for CO, NO_x, SO₂, VOC, PM, and PM₁₀. The De Minimis levels for these pollutants were set equal to the permit thresholds. Table 2 contains a comparison of the old (previous to the De Minimis levels revision) and the revised De Minimis levels. The revised Minor NSR permit thresholds and De Minimis levels became effective in the State on January 25, 2009 and on July 26, 2010, the Arkansas Department of Environmental Quality (the Department) submitted to EPA a SIP revision (2010 Threshold SIP) containing the regulatory amendments reflecting the revised thresholds and De Minimis levels for certain pollutants.

Table 1 Comparison of Minor NSR Permit Thresholds in Tons per Year (tpy)

Pollutant	Previous Permit Threshold	Revised Permit Threshold adopted in 2008
CO	40	75
NO _x	25	40
SO ₂	25	40
VOC	25	40
PM ₁₀	10	15
Lead	0.5	0.5
Single Hazardous Air Pollutant (HAP)	1.0	2.0
Multiple HAPs	3.0	5.0

Table 2 Comparison of De Minimis Levels in Tons per Year (tpy)

Pollutant	Previous De Minimis Levels	Revised De Minimis Levels adopted in 2008
CO	5	75
NO _x	5	40
SO ₂	5	40
VOC	20	40
PM	NA	25
PM ₁₀	5	15
Lead	0.5	0.5

As part of the 2010 Threshold SIP revision submittal, the Department submitted emissions data for 20 facilities with emissions between the old and new proposed permit thresholds which opted to no longer operate under a permit. This data indicated that these 20 sources made up 0.125 % or less of total permitted emissions for each criteria pollutant.

The percentages of emissions from these sources for each criteria pollutant in Arkansas were compared to those percentages included in the EPA’s “Review of New Sources and Modifications in Indian Country” proposed rule (71 FR 48696). In the “Review of New Sources and Modifications in Indian Country,” EPA included a table, which listed the percentage of total emissions from unregulated sources for each criteria pollutant, and stated that the EPA “believes that [the table] provides excellent evidence that sources below the proposed minor NSR thresholds will be inconsequential to attainment and maintenance of the NAAQS.” The EPA did not include modeling to demonstrate that unregulated sources below EPA’s minor NSR permitting thresholds in Indian Country would not cause a violation or interfere with the maintenance of the NAAQS. In Arkansas’s 2010 Threshold SIP Revision submittal, the Department submitted data mirroring the table which EPA stated provided “excellent evidence” that proposed minor NSR thresholds will be inconsequential to attainment and maintenance of the NAAQS and the data provided by Arkansas showed that the percent of total emissions from the formerly permitted 20 sources would be lower than what EPA found to be negligible for tribal minor NSR.

Although, the Department mirrored its analysis of the change in Minor NSR permitting thresholds after the methodology that EPA considered reasonable in its “Review of New Sources and Modifications in Indian Country” rule, the EPA has requested additional documentation to support the revised Minor NSR permitting thresholds.

In response to EPA’s request, the Department submits the following additional information to support the revised Minor NSR permit thresholds and De Minimis levels contained in the 2010 Threshold SIP.

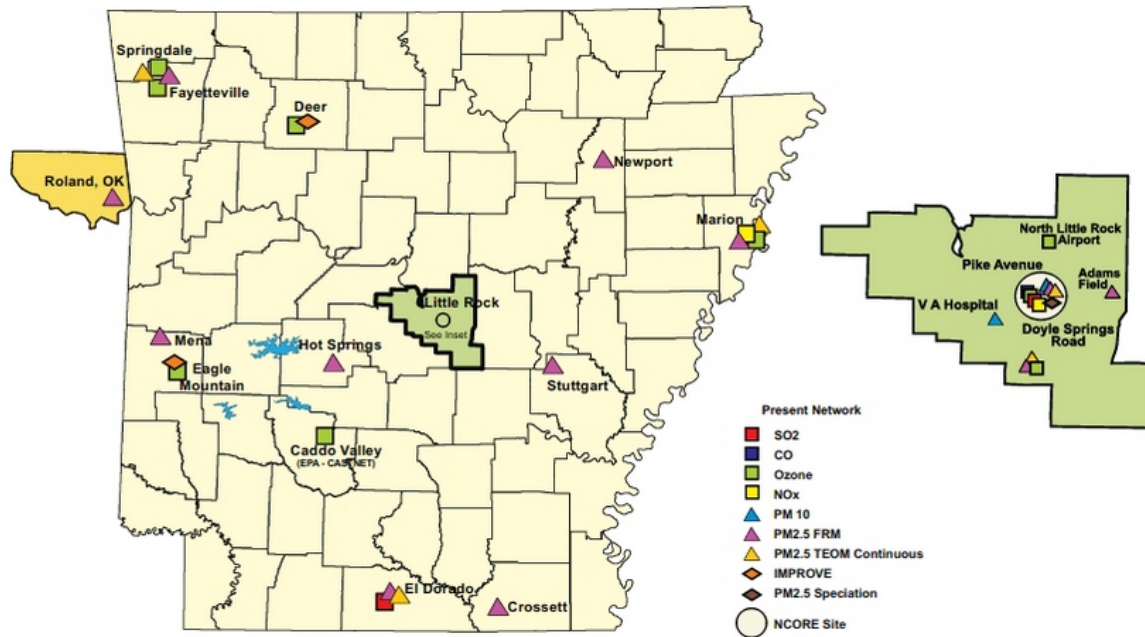
Determination of Permitting Thresholds and De Minimis Levels

The values of the current permit thresholds and De Minimis levels (permitting thresholds), with the exception of CO, were set at the significant emission rates (SER) promulgated under 40 C.F.R. 51.166(b)(23)(i) because EPA analysis has demonstrated that emission increases lower than these rates can be considered De Minimis. Because EPA’s analysis demonstrated that these levels can be considered De Minimis, the Department revised its thresholds to match these EPA-approved values. The permitting thresholds for CO were set below the SER. Although sources which emit less than the current permit thresholds are not required to obtain a permit, the Department still requires sources which emit greater than the previous permit thresholds to register with the Department.

Monitoring Trends Analysis

Although minor NSR permitting thresholds for CO, NO_x, SO₂, VOC, and PM₁₀ were increased in the December 2008 Regulation No. 19 rulemaking, these changes have not interfered with the ability of the Department to protect the National Ambient Air Quality Standards (NAAQS) in the State. Analysis of monitoring data demonstrates that, despite the change in the permitting thresholds for minor sources, air quality in Arkansas has improved since the adoption of these revised thresholds. This demonstration describes the trends in monitor design values for CO, ozone, NO₂, PM₁₀, and SO₂ prior to and following the revision of the minor NSR permitting thresholds for these pollutants and their precursors. Because permitting thresholds had not been established for PM_{2.5} and remained unchanged for lead in the 2008 amendment to APC&EC Regulation No. 19, trends in PM_{2.5} and lead design values are not discussed. Revisions to permitting thresholds for single HAP and multiple HAPs are not discussed because these pollutants fall under Clean Air Act (CAA) §112 and do not have NAAQS. Locations of monitors in the Arkansas Ambient Air Monitoring Network are depicted in Figure 1.

Figure 1. Arkansas Ambient Air Monitoring Network



Carbon Monoxide

Arkansas has one CO monitor located at the Pike Avenue at River Road (PARR, AQS ID 05-119-0007) NCORE site in Pulaski County. Despite the CO minor NSR permitting threshold increase from 40 to 75 tpy and the De Minimis level increase from 5 to 75 tpy, ambient CO concentrations at PARR have decreased since the adoption of the permitting threshold revisions in 2008. Figure 2 demonstrates the downward trend in design values at PARR for the 2011 1-hour CO NAAQS. Figure 3 demonstrates the downward trend in design values at PARR for the 2011 8-hour CO NAAQS.

Figure 2. Carbon Monoxide 1-Hour NAAQS Design Values at PARR

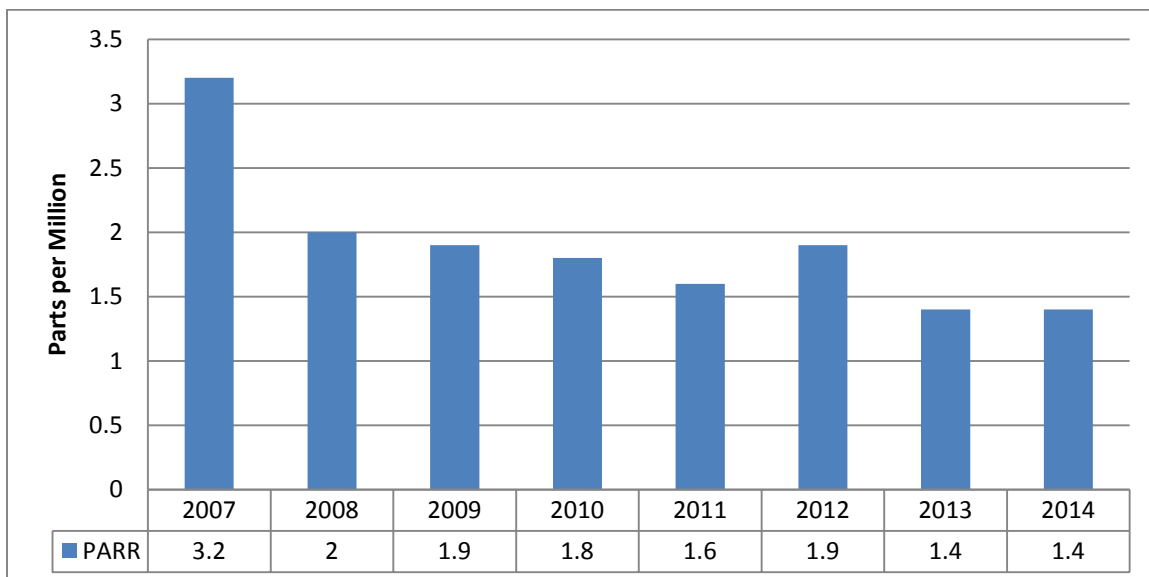
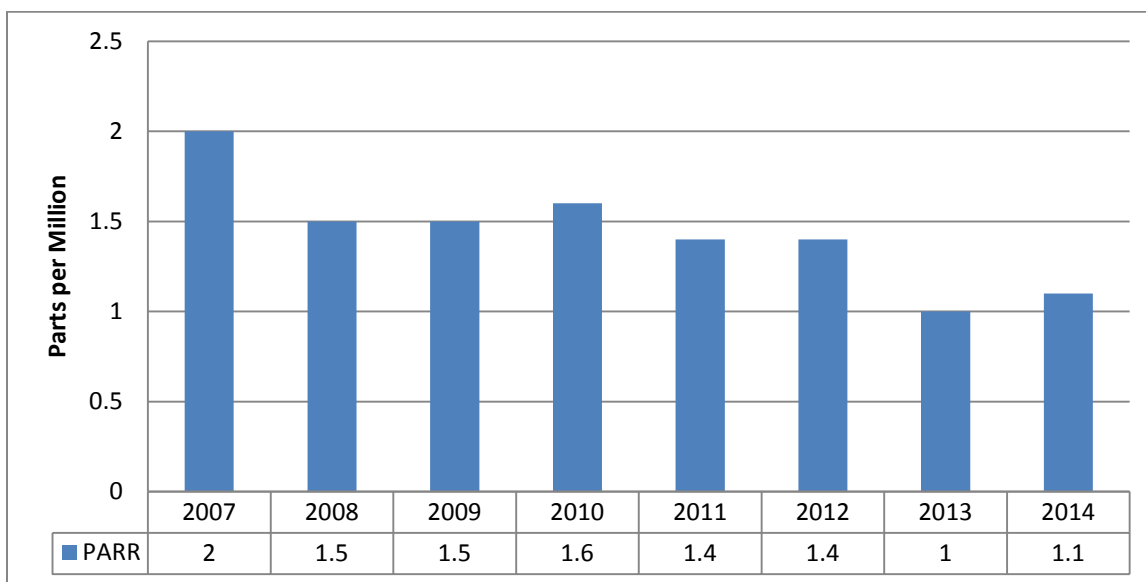


Figure 3. Carbon Monoxide 8-Hour NAAQS Design Value at PARR



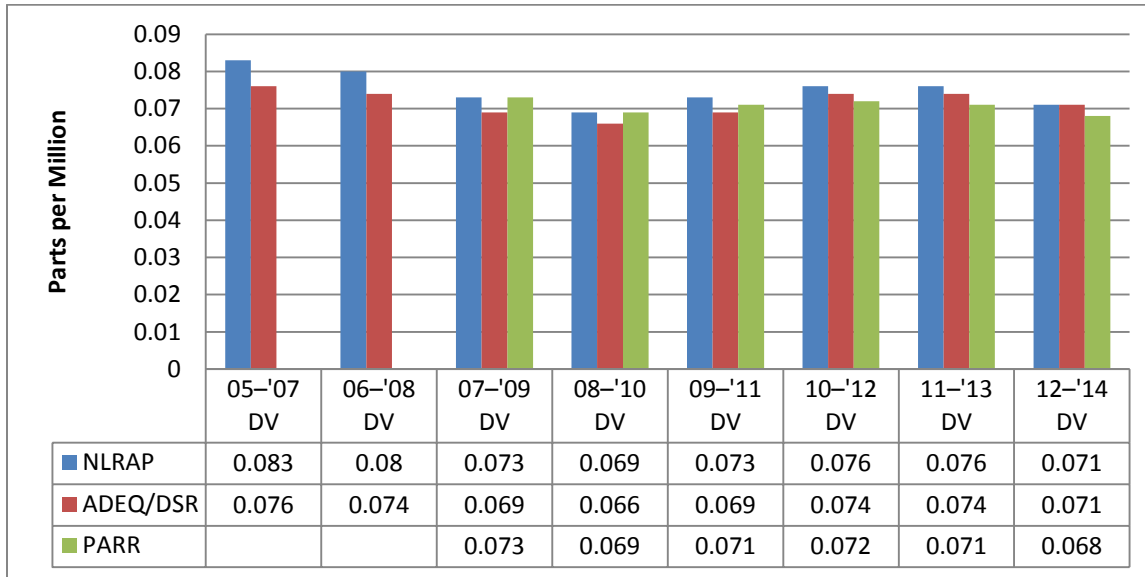
The 1-hour CO design value at PARR decreased from 3.2 parts per million (ppm) in 2007 (prior to adoption of the revised CO minor NSR permitting thresholds) to 1.4 ppm in 2014. The 1-hour CO design values at PARR for the years 2007–2014 were significantly lower than the current 1-hour CO NAAQS level of 35 ppm. The 8-hour CO design values have also decreased at PARR since the revision of the CO permitting thresholds. The 8-hour CO design value at PARR in 2014 (1.1 ppm) was 45% lower than the design value at PARR in 2007 (2 ppm). The PARR monitor data following the 2008 revision of the CO permitting thresholds indicate that exempting sources which emit less than the revised threshold from permitting and exempting emission increases less than the revised De Minimis level from review have not caused or contributed to a violation of the current 1-hour and 8-hour CO NAAQS.

Ozone

Arkansas currently has nine ozone monitors, seven of which were active prior to the revision of minor NSR permitting thresholds for ozone precursor pollutants—NO_x, VOC, and CO—in 2008. The permit thresholds for NO_x and VOC were revised from 25 tpy to 40 tpy and the De Minimis levels for both pollutants were revised from 5 to 40 tpy. The permit threshold for CO was revised from 40 tpy to 75 tpy and the De Minimis level was revised from 5 to 75 tpy. Despite the upward revision in minor source permitting thresholds for ozone precursors, the 2007–2014 ozone monitoring data demonstrates that air quality in Arkansas has continued to improve with respect to ozone pollution.

In Pulaski County, ozone monitors are located at the PARR NCORE site (AQS ID 015-119-007), the North Little Rock Airport (NLR Airport, AQS ID 05-119-1002), and Doyle Springs Road (AQS ID 05-119-1008). Although the Doyle Springs Road monitor was active during 2007 and 2008, a three-year design value for this monitor was not available until 2009. Figure 4 demonstrates the trend in design value for the 8-hour ozone NAAQS at the monitors in Pulaski County.

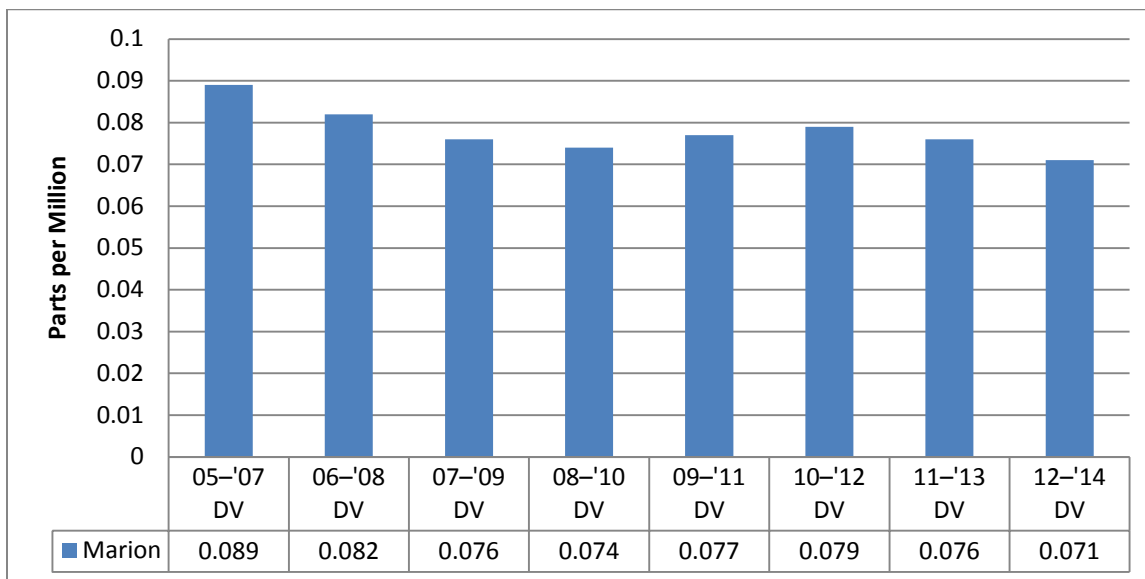
Figure 4. Ozone 8-Hour NAAQS Design Value Pulaski County



Although ozone 8-hour design values at PARR, NLR Airport, and Doyle Springs Road have fluctuated from year-to-year, the overall trend has been downward following the revision of the minor NSR permitting threshold values in 2008. As of 2014, the design values at all three monitoring locations were below the 2008 ozone NAAQS.

There is one ozone monitor located in the city of Marion at LH Polk and Colonial Drive in Crittenden County (Marion, AQS ID 05-035-0005). Crittenden County, part of the Memphis Metropolitan Statistical Area (MSA), is currently the only county in Arkansas that has been designated nonattainment for ozone. Figure 5 demonstrates the downward trend in design value at the Marion monitor.

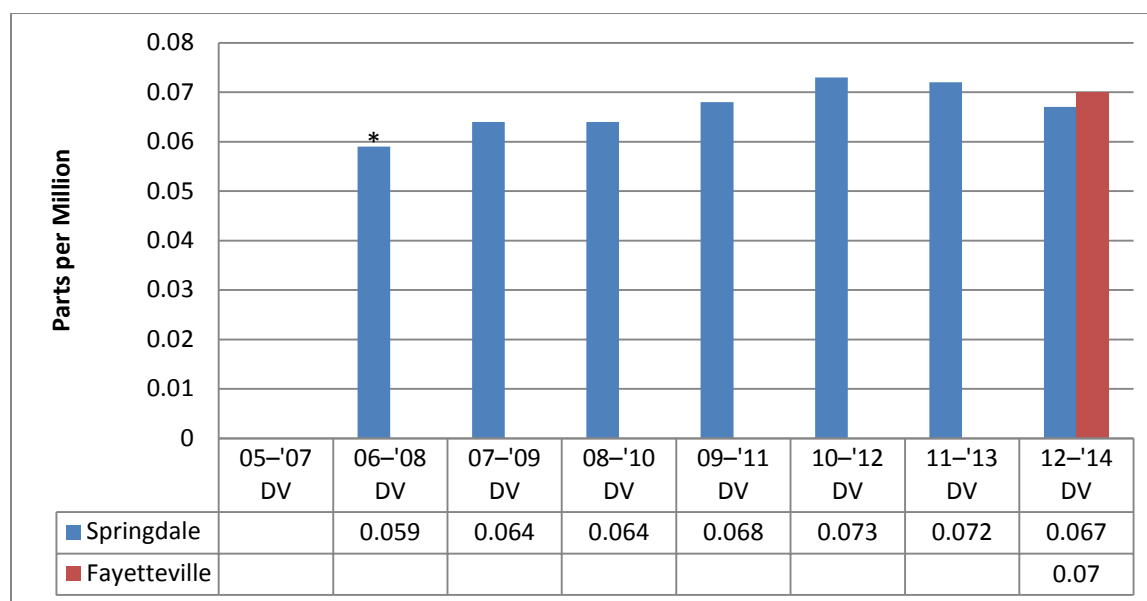
Figure 5. Ozone 8-Hour NAAQS Design Value Crittenden County



The design value for the Marion monitor decreased from 0.089 ppm in 2007—prior to the minor NSR permit threshold revision for VOC, NO_x, and CO—to 0.071 ppm in 2014, a 20 % reduction. Based on data for 2014, Crittenden County is now meeting the 2008 8-hour Ozone NAAQS. Arkansas plans to submit a redesignation request for Crittenden County based on the 0.071 ppm design value for 2012–2014 at the Marion monitor. Despite the revision in the minor NSR permitting thresholds for VOC, NO_x, and CO, air quality in Crittenden County improved in the years following the revision.

In Washington County, ozone monitors are located in Springdale at 600 Old South Missouri Road (Springdale, AQS ID 05-143-0005) and in Fayetteville at 429 Ernest Lancaster Drive (Fayetteville Airport, AQS ID 05-143-0006). Figure 6 below demonstrates the trend in the 8-hour ozone design value for the Springdale and Fayetteville monitors. Because the Fayetteville Airport monitor came online in 2012, a design value could only be calculated for 2014.

Figure 6. Ozone 8-Hour NAAQS Design Value Washington County



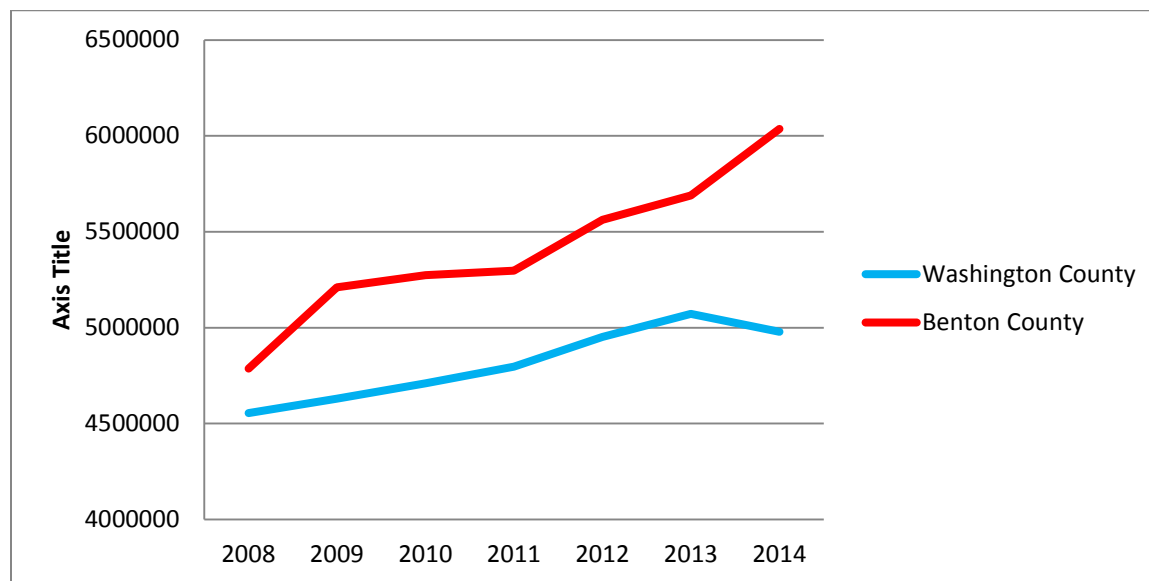
**The 2006 – 2008 design value at the Springdale monitor did not meet completeness criteria.*

The 8-hour ozone design value at the Springdale monitor, located in the Fayetteville-Springdale-Rogers MSA, has generally increased since the revision of the minor NSR permitting thresholds for NO_x, VOC, and CO. The Fayetteville-Springdale-Rogers MSA has undergone rapid population growth over the past twenty years. The U.S. Census Bureau estimates that the population of the Fayetteville-Springdale-Rogers MSA has grown by 65,528 people over the 2007 – 2014 timeframe for which ozone design values at the Springdale monitor were assessed.¹ According to the 2011 NEI v2, on-road mobile sources contributed 44 % percent of total NO_x emissions in Benton and Washington Counties—the two counties

¹ U.S. Census Bureau Annual Estimates of the Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2000 to July 1, 2007 (CBSA-EST2007-01) XLS
And Metropolitan and Micropolitan Statistical Area; and for Puerto Rico

covered by the Fayetteville-Springdale-Rogers MSA. Stationary sources which emit less than the current State-effective and the former permit thresholds for CO , NO_x, and VOC would typically be classified as nonpoint sources because these sources, unless required based on emissions other pollutants exceeding thresholds established in the EPA Air Emissions Reporting Requirements, would not be required to submit Emission Inventory reports. Nonpoint sources (excluding biogenics) made up only 6 % of total NO_x emissions. Nonpoint sources (excluding biogenics) only contributed 10 % to total VOC emissions in Benton and Washington counties in 2011; whereas biogenics, the largest contributor to VOC emissions in these counties, made up 72 % of VOC emissions. Because nonpoint sources (excluding biogenics) were not a major contributor to VOC and NO_x emissions in Benton and Washington Counties, it is likely that the increase in ozone concentration between 2008 and 2013 was due to other sources, such as increased mobile emissions in the Fayetteville-Springdale-Rogers MSA as a result of the rapid population growth in that area. Figure 7 demonstrates the increase in Daily Vehicle Miles Traveled (DVMT) between 2008 and 2014 for Benton and Washington Counties.² Despite the increase in ozone concentration between 2008 and 2014, the design value at the Springdale monitor did not exceed the 2008 8-hour ozone NAAQS. The 2014 design value at the Fayetteville Airport monitor was also below the 2008 8-hour ozone NAAQS.

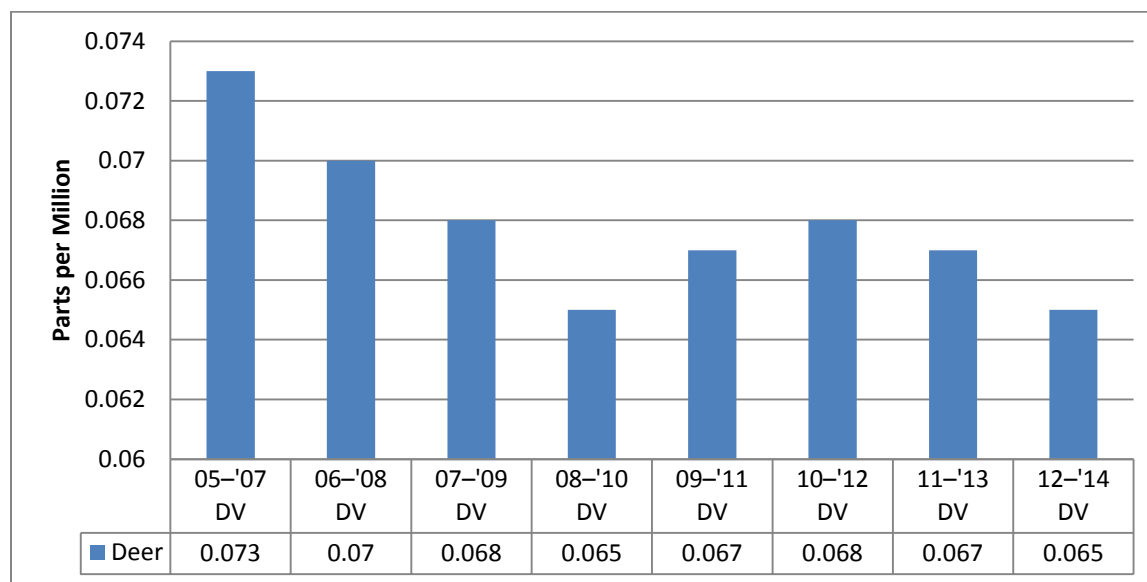
Figure 7. DVMT for Benton and Washington Counties 2008 – 2014



Newton County has one ozone monitor located on Highway 16 (Deer, AQS ID 05-113-0002). Figure 8 demonstrates the downward trend in 8-hour design values following the revision of the permitting thresholds for NO_x, VOC, and CO.

² Arkansas State Highway and Transportation Department
http://www.arkansashighways.com/System_Info_and_Research/traffic_information.aspx

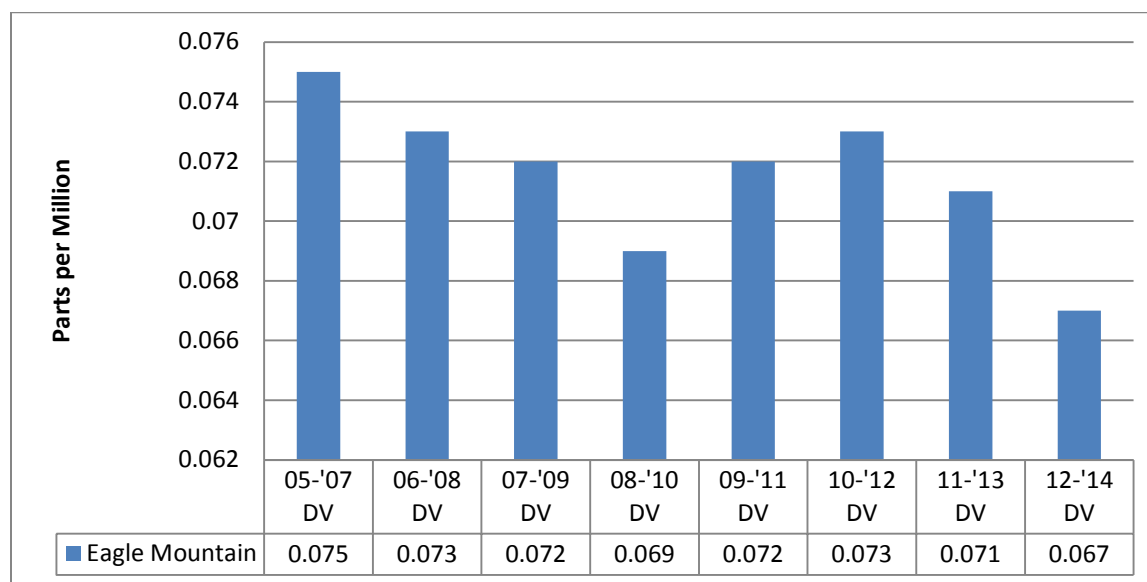
Figure 8. Ozone 8-Hour NAAQS Design Value Newton County



The 8-hour ozone design values at the Deer monitor have decreased from 0.073 ppm in 2007—prior to the revision of the minor NSR permit thresholds for NO_x, VOC, and CO—to 0.065 ppm in 2014, an 11 % decrease in ozone concentration. Despite the upward revision in NO_x, VOC, and CO permitting thresholds, air quality in Newton County continues to improve with respect to ozone and has remained below the level of the 2008 8-hour ozone NAAQS.

Polk County has one ozone monitor located in Mena at 463 Polk 631 (Eagle Mountain, AQS ID 05-113-0003). Figure 9 demonstrates the downward trend in 8-hour ozone design value at Eagle Mountain following the revision of the minor NSR permitting thresholds for CO, NO_x, and VOC.

Figure 9. Ozone 8-Hour NAAQS Design Value Polk County



The 8-hour ozone design values at the Eagle Mountain monitor have decreased from 0.075 ppm in 2007—prior to the revision of the minor NSR permitting thresholds for NO_x, VOC, and CO—to 0.067 ppm in 2014, an 11 % decrease in ozone concentration. Despite the upward revision in NO_x, VOC, and CO permit thresholds, air quality in Polk County continues to improve with respect to ozone and has remained below the level of the 2008 8-hour ozone NAAQS.

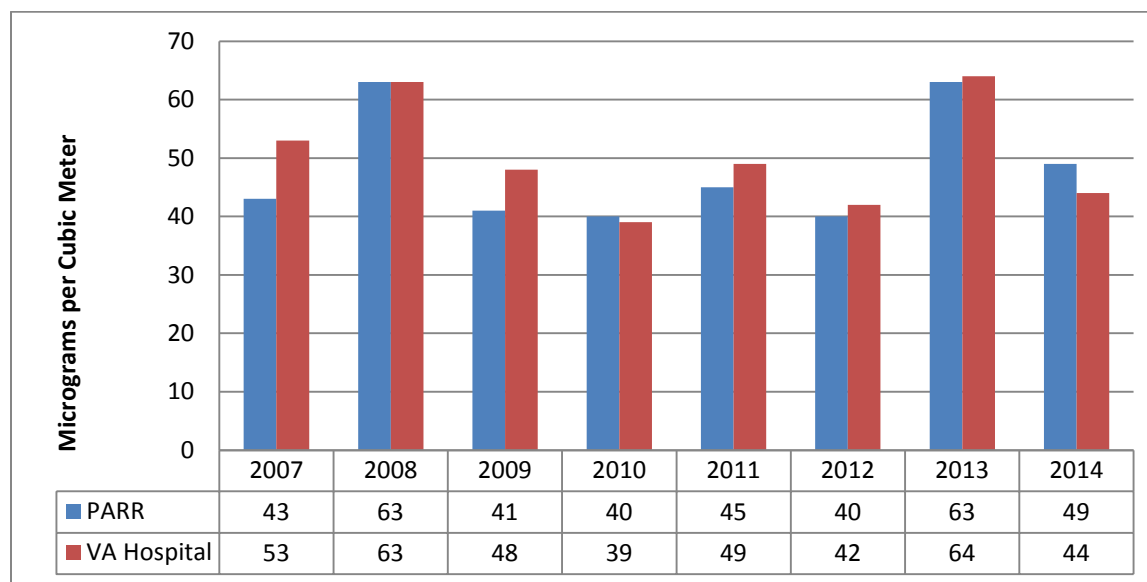
The ozone monitor located at Lower Lake Recreation Area in Clark County (Caddo Valley, AQS ID 05-019-9991) began operation in 2011. Because this monitor was not in operation prior to the revision of the minor NSR permitting thresholds for ozone precursors—CO, NO_x, and VOC, it is not possible to do a comparison of design values at this site prior to and following the permit threshold revisions in 2008. The design values for Caddo value in 2012 and 2013 did not meet completeness criteria; however, the design value based on data from 2012–2014 was 0.066 ppm which is well below the level of the 2008 8-hour ozone NAAQS.

With the exception of the Springdale monitor in Washington County, all monitored sites have experienced a decrease in the level of ambient ozone concentrations despite the 2008 revision to the minor NSR permitting thresholds for ozone precursors—NO_x, VOC, and CO. At the Springdale location, the design values have increased since 2007; however, these values remained below the level of the 2008 8-hour ozone NAAQS. The monitoring data for ozone following the 2008 revision of the NO_x, VOC, and CO permitting thresholds indicate that exempting source which emit less than the revised thresholds from permitting and less than the revised De Minimis levels from review have not caused or contributed to a violation of the current ozone NAAQS.

PM₁₀

There are two PM₁₀ monitors in Arkansas, both located in Pulaski County. One monitor is located at the PARR NCORE site (AQS 05-119-0007) and the other is located at the Veterans Affairs Hospital on the 4300 Block of West 7th Street (VA Hospital, AQS 04-119-1007). Figure 10 demonstrates the trends in PM₁₀ emissions both prior to and following the revision of the minor NSR permitting threshold values for PM₁₀.

Figure 10. PM₁₀ 24-Hour Maximum Pulaski County



PM₁₀ concentrations at the PARR monitor and the VA Hospital monitor fluctuated from year-to-year between 2007 and 2014. The maximum 24-hour average concentration has not exceeded the 24-hour PM₁₀ NAAQS at either monitor since the revision of the PM₁₀ minor NSR permitting thresholds. The highest maximum 24-hour average concentration (64 µg/m³) during the analysis years, which occurred in 2013, was less than half of the current 24-hour PM₁₀ NAAQS of 150 µg/m³. The monitor data following the 2008 revision of the PM₁₀ permit threshold indicate that exempting sources which emit less than the revised threshold from permitting and exempting emission increases less than the revised De Minimis levels from review have not caused or contributed to a violation of the 24-hour PM₁₀ NAAQS in Pulaski County.

NO₂

Arkansas has two NO₂ monitors in the state: one in Pulaski County and the other in Crittenden County. Data from these monitors indicate that the upward revision of the NO_x permit threshold from 25 tpy to 40 tpy and the revision of the NO_x De Minimis level from 5 to 40 tpy have not put Arkansas in danger of violating the NO₂ annual NAAQS or the NO₂ 1-hour NAAQS.

The NO₂ monitor in Pulaski County is located at the PARR NCORE site (AQS ID 05-119-0007). Figure 11 demonstrates the trend in the annual NO₂ design value at the PARR monitor. Figure 12 demonstrates the trend in 1-hour NO₂ design values at the PARR monitor following the revision in the Minor NSR NO_x permitting threshold values.

Figure 11. NO₂ Annual NAAQS Design Values Pulaski County

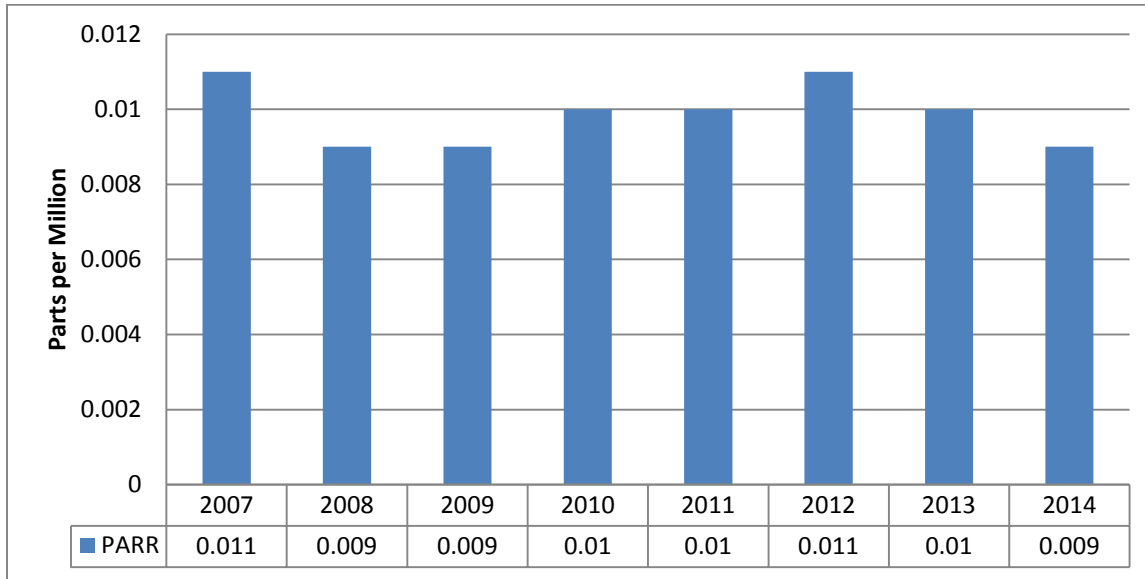
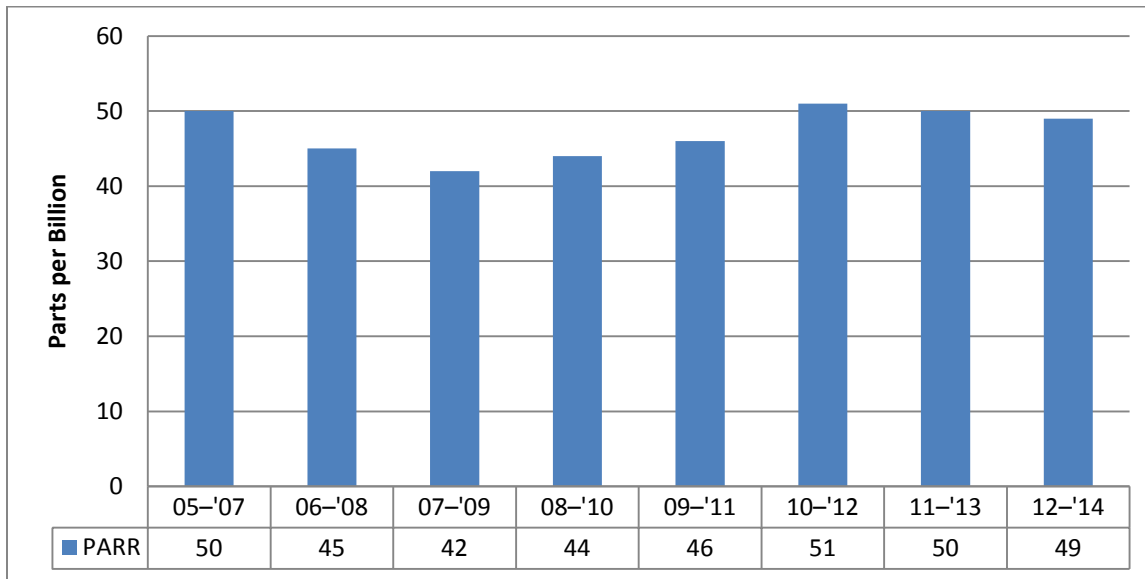


Figure 12. NO₂ 1-Hour NAAQS Design Values Pulaski County



The design values for the 1-hour and annual NO₂ NAAQS at PARR have fluctuated from year-to-year between 2007 and 2014; but, the overall trend indicates that NO₂ concentrations did not significantly change during this time period. The NO₂ annual design values at PARR, which ranged from 9 to 11 ppb did not approach the NO₂ Annual NAAQS of 53 ppb. The NO₂ 1-hour design values at PARR, which ranged from 42 to 51 ppb did not approach the NO₂ 1-hour NAAQS of 100 ppb. The monitoring data at PARR following the 2008 revision to the NO_x permitting thresholds indicate that exempting sources which emit less than the revised threshold from permitting and exempting emission increases less than the revised De Minimis levels from review has not caused or contributed to a violation of the annual or 1-hour NAAQS for NO₂.

The NO₂ monitor in Crittenden County is located at LH Polk and Colonial Drive (Marion, 05-035-0005). Figure 13 demonstrates the trend in the annual NO₂ design value at the Marion monitor. Figure 14 demonstrates the trend in 1-hour NO₂ design values at the Marion monitor following the revision in the NO_x minor NSR permitting threshold values.

Figure 13. Annual NO₂ NAAQS Design Values Crittenden County

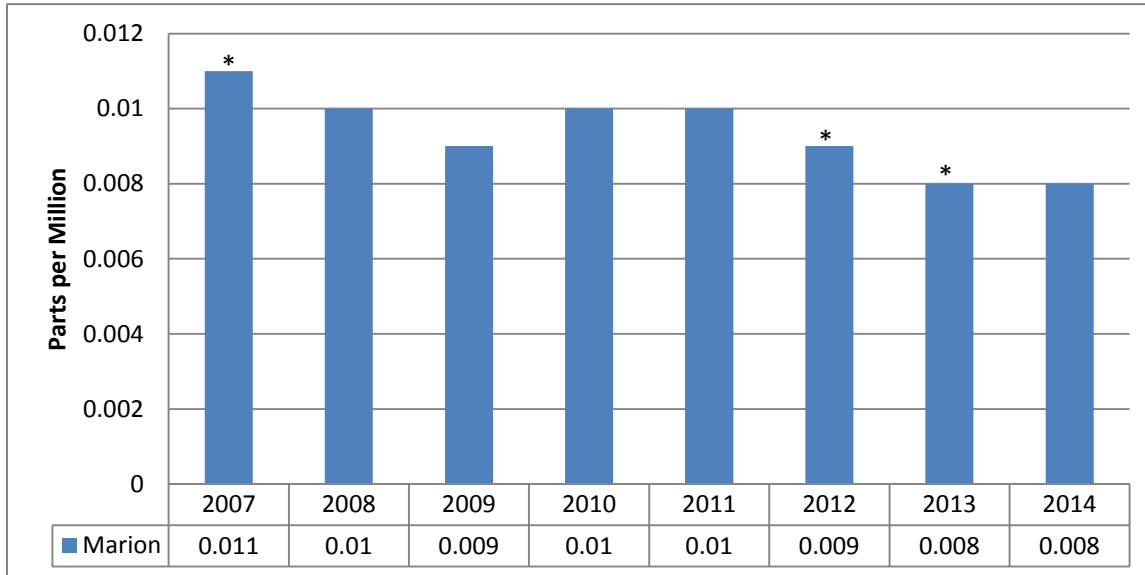
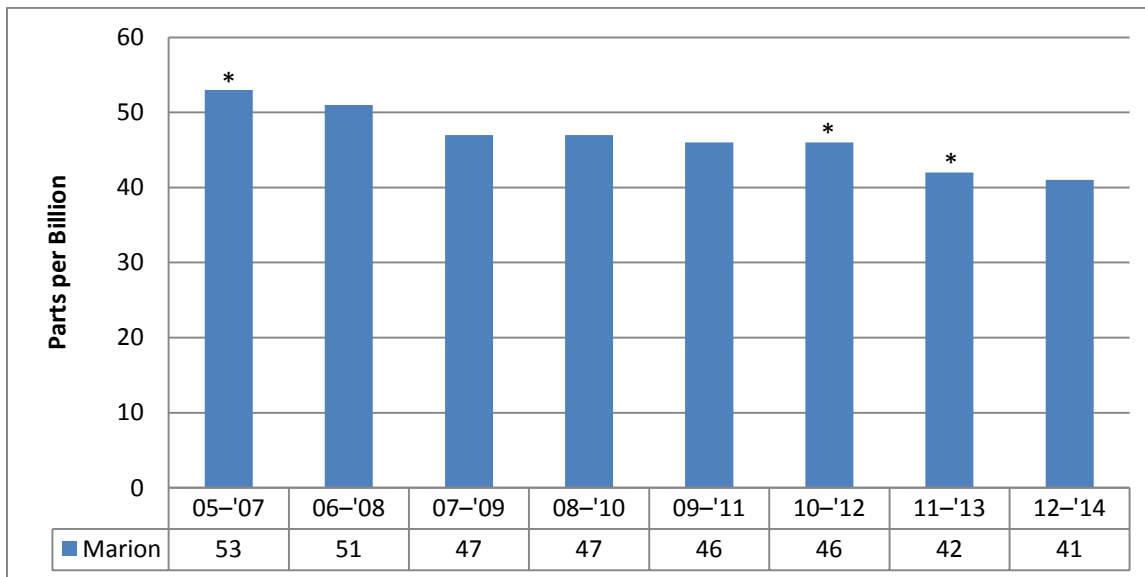


Figure 14. NO₂ 1-Hour NAAQS Design Values Crittenden County



**The 2007, 2012, and 2013 design values at the Marion monitor did not meet completeness criteria.*

The design values for the 1-hour and annual NO₂ NAAQS at Marion have fluctuated from year-to-year between 2007 and 2014, but the overall trend indicates that NO₂ concentrations have decreased since

the revision of the NO_x minor NSR permitting thresholds. The NO₂ annual design values at the Marion monitor, which ranged from 8 to 11 ppb, did not approach the NO₂ Annual NAAQS of 53 ppb. The NO₂ 1-hour design values at the Marion monitor, which ranged from 41 to 53 ppb, did not approach the NO₂ 1-hour NAAQS of 100 ppb. The monitoring data at the Marion monitor following the 2008 revision to the NO_x permitting thresholds indicate that exempting sources which emit less than the revised threshold from permitting and exempting emission increases less than the revised De Minimis levels from review has not caused or contributed to a violation of the annual or 1-hour NAAQS for NO₂.

SO₂

There are two SO₂ monitors in Arkansas: one in Pulaski County and one in Union County. Data from these monitors indicate that the upward revision of the SO₂ permit threshold from 25 tpy to 40 tpy and the revision of the SO₂ De Minimis level from 5 to 40 tpy have not put Arkansas in danger of violating the current 1-hour or 3-hour SO₂ NAAQS.

The monitor in Pulaski County is located at the PARR NCORE site (AQS ID 05-119-0007). Figure 15 demonstrates the trend in 1-hour SO₂ design values at PARR prior to and following the revision of the SO₂ permitting thresholds. Figure 16 demonstrates the trend in 3-hour SO₂ design values at PARR prior to and following the revision of the SO₂ permitting thresholds. When rounded to the first decimal place, as prescribed in 40 CFR §50.5(a), the 3-hour SO₂ design values for all years between 2007 and 2014 were 0.

Figure 15. SO₂ 1-Hour NAAQS Design Values Pulaski County

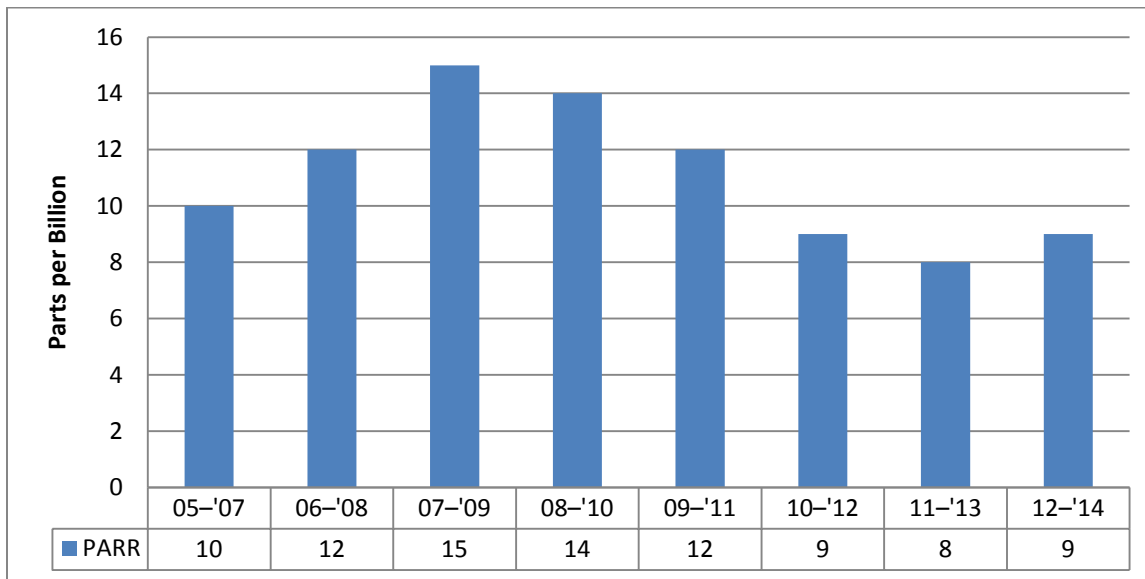
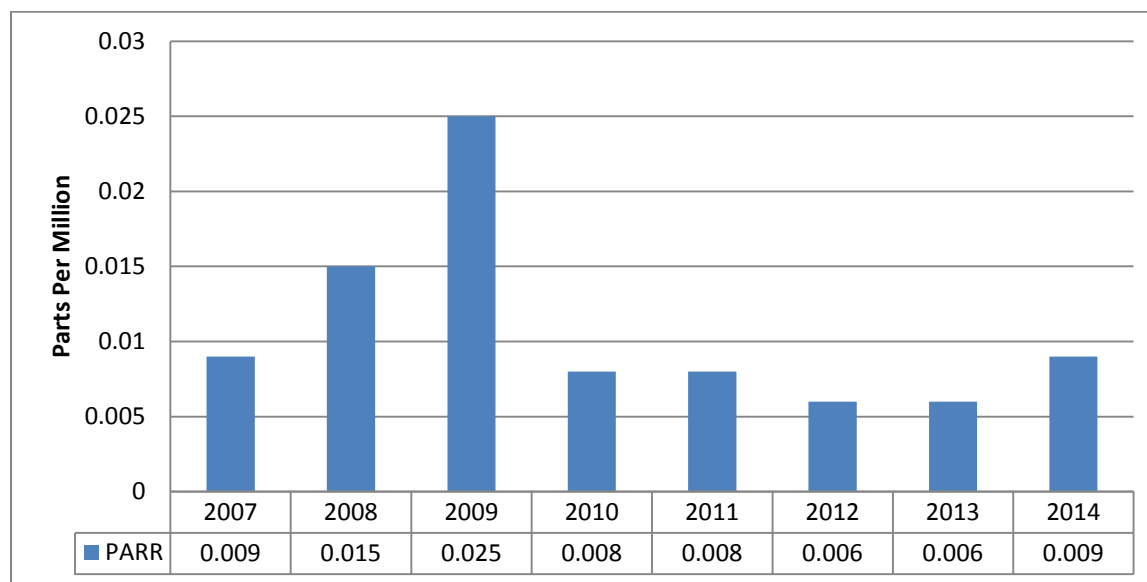


Figure 16. SO₂ 3-Hour NAAQS Design Values Pulaski County



The design value for 1-hour SO₂ NAAQS at PARR increased from 12 to 15 ppb between 2008 and 2009 following the revision of the SO₂ minor NSR permit threshold then began to decrease, reaching a low of 8 ppb in 2013. All 1-hour design values at the PARR monitor following the revision of the SO₂ permitting thresholds were well below the 2010 SO₂ 1-hour NAAQS of 75 ppb. All design values for the 3-hour SO₂ NAAQS at PARR were well below the standard of 0.5 ppm, and, when rounded to one decimal place as prescribed by 40 CFR §50.5(a), rounded to 0.0 ppm. The PARR monitor data following the revision of the SO₂ permitting thresholds indicate that exempting sources which emit less than the revised thresholds from permitting and exempting emission increases less than the revised De Minimis levels from review have not caused or contributed to a violation of the 1-hour or 3-hour NAAQS for SO₂ in Pulaski County.

The monitor in Union County is located in Union Memorial Hospital (El Dorado, AQS 05-139-0006). Figure 17 demonstrates the downward trend in 1-hour SO₂ design values at the El Dorado monitor following the revision of the SO₂ permitting thresholds. Figure 18 demonstrates the trend in 3-hour SO₂ design values at El Dorado following the revision of the SO₂ permitting thresholds. When rounded to the first decimal place, as prescribed in 40 CFR 50.5, only the 3-hour design value for 2012 was above 0.0 during the 2007 – 2014 timeframe.

Figure 17. SO₂ 1-Hour NAAQS Design Values Union County

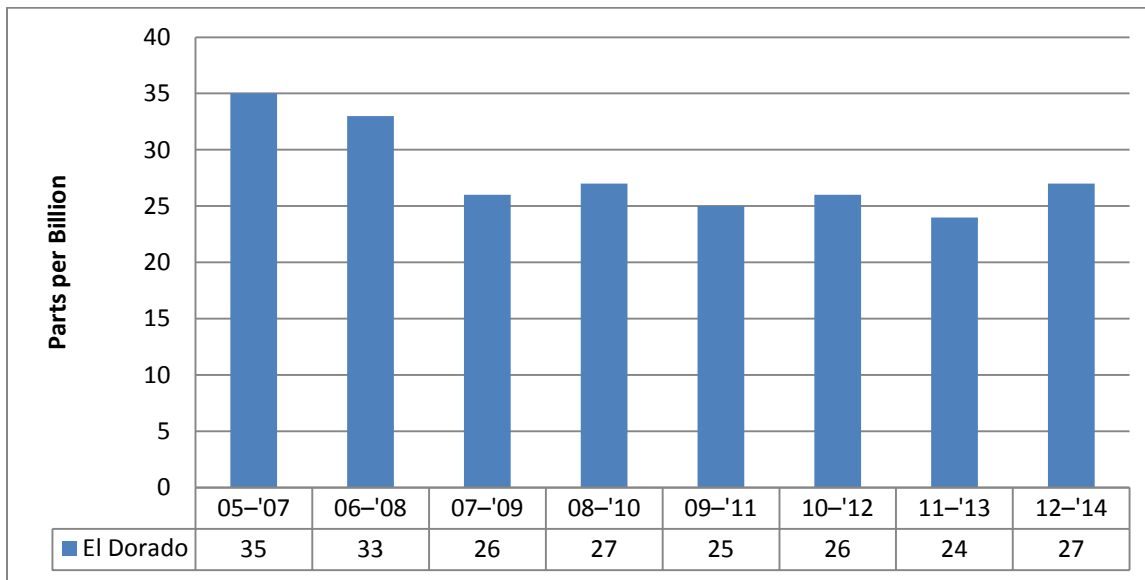
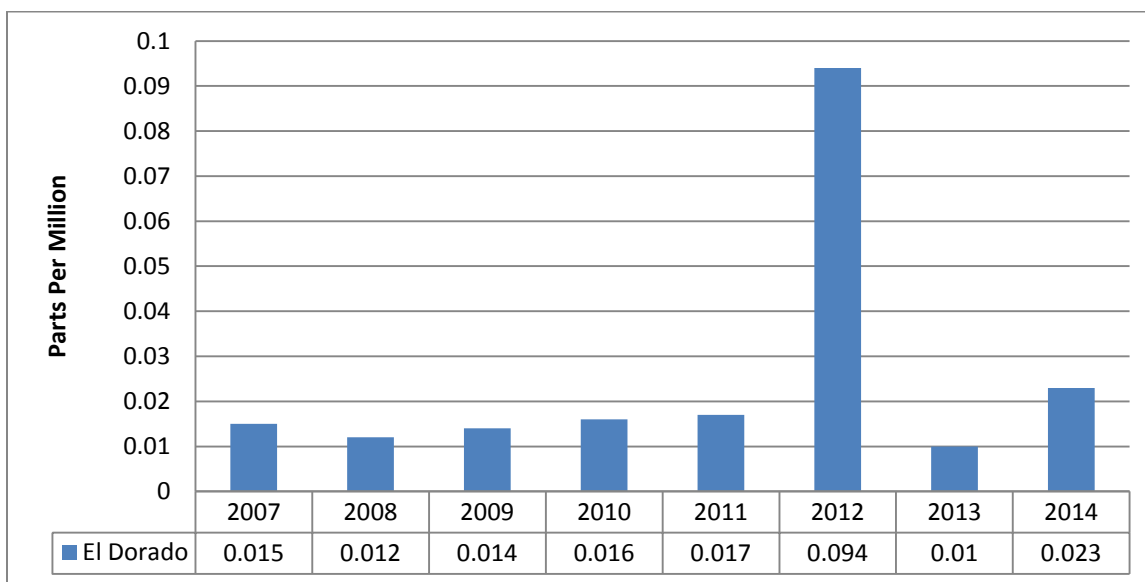


Figure 18. SO₂ 3-Hour NAAQS Design Values Union County



The design values for the 1-hour SO₂ standard at the El Dorado Monitor have declined following the revision of the SO₂ minor NSR permitting thresholds revision in 2008. All 1-hour design values at the El Dorado monitor following the revision of the SO₂ permitting thresholds were well below the 2010 SO₂ 1-hour NAAQS of 75 ppb. All design values for the 3-hour SO₂ NAAQS at PARR were well below the standard 0.5 ppm, and, when rounded to one decimal place as prescribed by 40 CFR §50.5(a), the 3-hour design values for all years except 2012 rounded to 0.0 ppm. The 3-hour SO₂ design value in 2012 was higher than in any of the other years in the 2007 – 2014 period; however, the 2012 3-hour design value was far below the 3-hour NAAQS of 0.5 ppm. The El Dorado monitor data following the revision of the SO₂ permitting thresholds indicate that exempting sources which emit less than the revised thresholds

from permitting and exempting emission increases less than the revised De Minimis levels from review have not caused or contributed to a violation of the 1-hour or 3-hour NAAQS for SO₂ Union County.

Summary of Monitoring Trends Analysis

The monitoring data indicate that the upward revision of the minor NSR permitting thresholds for CO, NO_x, VOC, PM₁₀, and SO₂ has not interfered with the ability of Arkansas to attain and maintain the current NAAQS for CO, ozone, PM₁₀, NO₂, and SO₂.

Arkansas has one nonattainment area, Crittenden County, which was designated marginal nonattainment for the 2008 Ozone NAAQS on March 24, 2010. Air quality has continued to improve in Crittenden County, despite the minor NSR permit threshold revision for ozone precursors, to the extent that the most recent data indicates that ozone concentrations in Crittenden County have fallen below the level of the 2008 8-hour ozone NAAQS. Arkansas anticipates submitting a redesignation request for Crittenden County in 2015. The rest of the State has been classified attainment/unclassifiable for all pollutants.

For the most part, design values at monitors for PM₁₀, CO, ozone, NO₂, and SO₂ have either decreased or remained largely unchanged over the 2007 – 2014 timeframe. The exception to this downward trend in design values at monitoring stations is the increase in ozone design values at the Springdale monitor in Washington County between 2008 and 2012. Ozone design values at the Springdale monitor decreased from the 2012 peak design value in 2013 and 2014. The increase in ozone concentrations in the Washington County area between 2008 and 2012 is likely due to the rapid population growth in that region rather than the exemption of small minor sources which emit below the revised thresholds from permitting and the exemption of emission increases below the revised De Minimis levels from review. Although ozone design values at the Springdale monitors have increased following the revision of the permitting thresholds for ozone precursors (NO_x, CO, and VOC), the design values at that monitor have remained below the level of the 2008 8-hour ozone NAAQS.

The monitoring data indicate that air quality in Arkansas has continued to improve following the SIP revision which increased the Minor NSR permitting thresholds for CO, NO_x, VOC, PM₁₀, and SO₂. Based on the trends in design values at monitored locations, it is unlikely exempting sources which emit less than the revised permitting thresholds from permitting and exempting emission increases less than the revised De Minimis levels will cause or contribute to a violation of the current NAAQS for CO, ozone, PM₁₀, NO₂, or SO₂.

Modeling Analysis

To examine the impact of emissions increases at the level of the revised permit thresholds and De Minimis levels submitted in the 2010 Threshold SIP revision, the Department contracted with ICF International to model the potential impacts of emissions increases equal to the revised permit

thresholds and De Minimis levels for CO, NO_x, SO₂, VOC, and PM₁₀.³ ICF's full report, which also includes a modeling demonstration in support of the currently proposed PM_{2.5} permit threshold and De Minimis level, can be found in Appendix A. As a part of this modeling exercise, ICF conducted a combined AERMOD/Community Multiscale Air Quality (CMAQ) analysis using CMAQ modeling for the 2008 base year and the 2008/2015 future year from the Arkansas statewide modeling effort.⁴ Based on this modeling demonstration, the Department has determined that sources which emit less than the revised permit thresholds/De Minimis levels will not cause or contribute to a violation of the NAAQS or interfere with attainment or maintenance of the NAAQS.

In this modeling analysis, a CMAQ simulation using the 2015 future year from the previous statewide modeling effort was rerun with the addition of eight new theoretical sources with emissions set equal to the revised permit thresholds: 75 tons per year (tpy) CO, 40 tpy NO_x, 40 tpy SO₂, 40 tpy VOC, and 15 tpy PM₁₀. These eight hypothetical sources were distributed such that each Air Quality Control Region (AQCR) identified in Figure 19 contained at least one approximately centrally located hypothetical source (two hypothetical sources were sited in AQCR 21 due to its geographic scope). Most of these hypothetical facility locations also tend to be located in or near urban areas. Stack parameters for these hypothetical sources were set at the median values for stack height, stack diameter, exit temperature, and exit velocity of all minor point sources in Arkansas, based on the 2011 National Emissions Inventory. AERMOD was used to evaluate the potential impact of hypothetical emission increases equal to the revised thresholds on CO, PM₁₀, NO₂, and SO₂ with the 2015 CMAQ future year concentrations as the background. CMAQ was used to evaluate the potential impact of hypothetical emission increases equal to the revised thresholds for Ozone, PM₁₀, NO₂, and SO₂ using future year 2015 as background. The maximum CMAQ-derived impact was calculated for the 8-hour ozone NAAQS, the 1-hour NO₂ NAAQS, the 1-hour SO₂ NAAQS, and the 24-hour PM₁₀ NAAQS. This maximum impact was then applied statewide to determine the worst case impacts from emission increases equal to the revised permit thresholds anywhere in the State. Relative response factors (RRF), the ratio of future-year to base-year simulated concentrations, were derived based on the modeling results and were used to calculate future year design values (FDV). The results of this modeling effort are described below.

³ ICF (2015). "Air Quality Modeling Analysis of Minor Source Permit Thresholds." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (15-003).

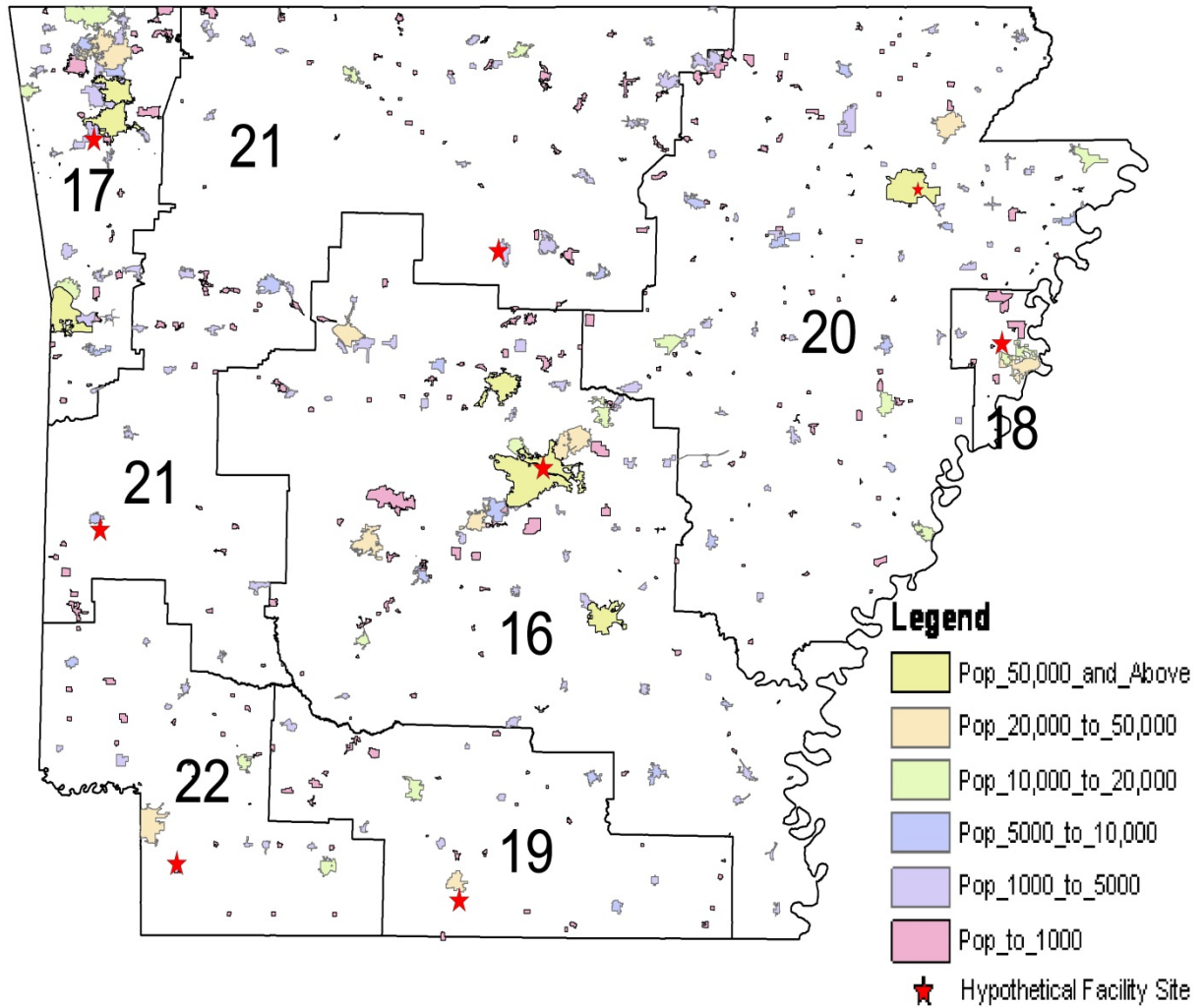
This modeling report has been included as Appendix A.

⁴ ICF (2014). "Criteria Pollutant Modeling Analysis for Arkansas." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (14-003).

This modeling report has been included as Appendix B.

Figure 19. Hypothetical Minor Point Source Facility Locations

Arkansas' Air Quality Control Regions (AQCR) and hypothetical minor point source facility locations (AQCR 16, Pulaski County; AQCR 17, Washington County; AQCR 18, Crittenden County; AQCR 19, Union County; AQCR 20, Craighead County; AQCR 21, Van Buren and Polk Counties; AQCR 22, Miller County) in relation to human population density.



Carbon Monoxide

For CO, the resultant AERMOD + Background maximum concentration of 0.972 ppm is much less than the 1-hour CO NAAQS of 35 ppm which indicates that worst-case near-field impacts would not result in an exceedance of the NAAQS for CO. When the daily maximum AERMOD-derived impacts were added to the simulated CMAQ-derived concentrations for each day and used in conjunction with the 2008 current-year modeling results to calculate RRF and FDV, for 2015, the 1-hour CO RRF of 0.6022 indicates that the future year value is less than the base year value and that the FDV of 1.927 ppm is less than the 35 ppm 1-hour NAAQS. The 8-hour CO NAAQS was not included in this analysis as the results for the 1-hour CO NAAQS are expected to be larger than for other averaging periods.

Ozone

EPA's Model Attainment Test Software (MATS) was used to calculate RRFs and FDVs for ozone following the recommendations outlined in the updated draft guidance issued by EPA in December 2014.⁵ MATS input parameters were set to the EPA-recommended default values and per EPA guidance, the ten highest concentrations, based on the baseline simulation results, were used in the calculation of the RRFs for each site. The simulated maximum impacts on 8-hour ozone concentration varied by location and by day, ranging from approximately zero to 1.1 ppb. The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 8-hour ozone concentration for each day and each grid cell to create the 2015 PMI dataset for ozone.

Monitoring site specific results assume that a hypothetical source is located such that the worst-case impact occurs at the monitoring site. Current-year design values were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010) and all sites with data during the 2006 to 2010 period are included. Ozone design values for 2015 plus maximum impact data set (PMI), the adjusted 2015 modeling results assuming worst-case impacts from threshold emission increases, are estimated to be 0.2 to 0.4 ppb higher than the 2015 baseline values. All RRF values are less than 1, indicating future year values are predicted to be less than the base year. Also, the highest FDV value is 70.2 ppb and all FDV values are less than the 75 ppb NAAQS threshold.

MATS was also used to conduct a spatial-fields analysis consisting of 1) modeled concentrations being used to calculate RRFs for every grid cell, 2) model-derived gradients being used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) the results of 1 and 2 being used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to the amount and type modeled than other areas. The average RRF for 8-hour ozone is 0.8910 for the 2015 baseline and 0.8942 for the 2015 PMI scenario; therefore, an average RRF increase of 0.0032 represents a 0.2 ppb increase relative to a base concentration of 70 ppb. There is little variation among the AQCRs with the worst-case impacts are expected to increase the average

⁵ US EPA (2014) "Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze"

RRFs by 0.0027 to 0.0039 and all RRFs were less than 1, indicating that the future year values are less than the base year value.

PM₁₀

The simulated maximum impacts on 24-hour PM₁₀ concentration occur at or near the hypothetical sources with the maximum difference varying by location and by day, ranging from approximately 0.1 to 2.7 µg/m³. The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 24-hour PM₁₀ concentration for each day and each grid cell to create the 2015 PMI dataset for PM₁₀. MATS was also applied to calculate RRF values only for both monitoring sites and unmonitored areas and although MATS does not accommodate PM₁₀, it can be used to calculate RRFs for any two datasets. The MATS input parameters were set to the EPA-recommended default values with only the RRFs being calculated using MATS and the FDVs being calculated by hand.

Arkansas has one PM₁₀ monitoring site and the site-specific modeling results assume that a hypothetical source is located such that the worst-case impact occurs at the monitoring site. The current-year design value used for this summary was calculated as the maximum 2nd highest PM₁₀ concentration for the three years ending with the modeled year 2006-2008. The MATS input parameters were set to the EPA-recommended default values for ozone and only RRFs were calculated using MATS; FDVs were then calculated by hand. Estimated future-year design values are well below the NAAQS with the PM₁₀ design value for 2015 PMI is estimated to be 0.8 µg/m³ higher than the 2015 baseline values. Likewise, the RRFs were less than 1, indicating that the future year values are less than the base year value.

A simple spatial-fields analysis was also conducted for PM₁₀ with 1) the modeled concentrations being used to calculate RRFs for every grid cell, 2) the design value being set equal to the value for the only monitoring site, and 3) the results of step 1 and 2 being used to estimate FDVs for every grid cell with the objective being to determine whether there are unmonitored areas that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas. The average RRF for 24-hour PM₁₀ is 0.8829 for the 2015 baseline and 0.9067 for the 2015 PMI scenario. The increase of 0.0238 represents 0.95 µg/m³ increase relative to a base concentration of 40 µg/m³. On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0170 to 0.0280. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in PM₁₀ over time). Overall, RRFs are increased the most for AQCRs 21 and 22, which represent the western and southwestern portions of the state. FDVs were calculated using a current year value of 40 µg/m³ for every grid cell based on the current-year value for the Little Rock monitoring site. FDVs are all well below 150 µg/m³ for all grid cells for both the 2015 baseline and the 2015 PMI scenarios with the maximum impact for any grid cell being 1.48 µg/m³. Difference plots for both RRFs and FDVs show that the worst-case impacts tend to increase RRFs and FDVs by a greater amount for western and northwestern Arkansas compared to the rest of the state. See ICF (2015) for RRFs by county, as well as both calculated RRF values and estimated FDVs for the 4-km grid (2015 baseline and 2015 PMI scenarios along with the differences between the two).

To further examine the potential near-field impacts from new or existing sources with emissions increases less than the proposed permit thresholds, a combined AERMOD/CMAQ analysis was also conducted. For each location, daily AERMOD-derived concentrations (for the receptor with the maximum annual average value) were added to the CMAQ-derived concentrations for the same location such that CMAQ values were used as “background”. All metrics were calculated in accordance with the form of the standard for each species. For 24-hour PM₁₀, the maximum AERMOD-derived concentration with a CMAQ-derived background was 47.6 µg/m³, less than the NAAQS of 150 µg/m³. For the North Little Rock monitoring site in Pulaski County, the AERMOD + Background RRF was 0.8992 and the FDV was 36.9 µg/m³. Therefore, the FDVs are less than the NAAQS and worst-case impacts would not result in an exceedance of the NAAQS.

NO₂

Simulated maximum impacts on 1-hr NO₂ concentration occur near and downwind of the hypothetical sources. Maximum differences vary by location and by day, ranging from approximately zero to 6 ppb. Considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour NO₂ concentration for each day and each grid cell to create the 2015 PMI dataset for NO₂. Adjusted 2015 modeling results (2015 PMI) were calculated based on the worst-case impacts from threshold emission increases at any location within the modeling grid. The annual NO₂ NAAQS was not included in this analysis as the results for the 1-hour NO₂ NAAQS are expected to be larger than for other averaging periods.

Regarding site-specific modeling results for NO₂, Arkansas has two NO₂ monitoring sites and the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. Current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). NO₂ design values for 2015 PMI are estimated to be 1.3 to 1.5 ppb higher than the 2015 baseline values and the estimated FDVs are well below the NAAQS such that addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS.

A simple spatial-fields analysis was also conducted for NO₂ consisting of: 1) modeled concentrations being used to calculate RRFs for every grid cell, 2) an average design value for the Arkansas was calculated based on data for the two monitoring sites, and 3) results of steps 1 and 2 being used to estimate FDVs for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas. The average RRF for 1-hour NO₂ is 0.6617 for the 2015 baseline and 0.7630 for the 2015 PMI scenario with the increase of 0.0743 representing a 3.3 ppb increase relative to a base concentration of 45 ppb. For the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0314 to 0.1519 and in no case is the average RRF increased to a value greater than one, indicating that the future year values are less than the base year value. RRFs increased the most for AQCRs 19 and 21 in south-central and southwestern Arkansas; see ICF 2015 for RRFs by county. FDVs were calculated using a current-year value of 45 ppb for every grid cell, which was based on an average (approximately) of the current-year design values for the Little Rock and Marion monitoring sites.

Estimated FDVs and the differences were calculated for the 2015 baseline and the 2015 PMI scenarios. Although the addition of the worst-case impacts tends to increase RRFs and FDVs more in northwestern, western, and southwestern Arkansas compare to the rest of the state, all of the FDVs are well below 100 ppb for both the 2015 baseline and 2015 PMI scenarios.

To further examine the potential near-field impacts from new or existing sources with emissions increases less than the proposed permit thresholds, a combined AERMOD/CMAQ analysis was also conducted. For each location, daily AERMOD-derived concentrations (for the receptor with the maximum annual average value) were added to the CMAQ-derived concentrations for the same location such that CMAQ values were used as “Background”. All metrics were calculated in accordance with the form of the standard for each species. For 1-hour NO₂, the maximum AERMOD-derived concentration with a CMAQ-derived background was 47.7 ppb, less than the NAAQS of 100 ppb. For Annual NO₂, the maximum AERMOD-derived concentration with a CMAQ-derived background was 6.7 ppb, less than the NAAQS of 53 ppb. For the North Little Rock monitoring site in Pulaski County, the AERMOD + Background RRF was 0.8281 and the FDV was 36.2 ppb. For the Marion monitoring site in Crittenden County, the AERMOD + Background RRF was 0.9764 and the FDV was 47.2 ppb; therefore, the FDVs are less than the NAAQS and worst-case impacts would not result in an exceedance of the NAAQS.

SO₂

Simulated maximum impacts on 1-hour SO₂ concentration occur near and downwind of the hypothetical sources and vary by location and by day, ranging from approximately zero to 4 ppb. Maximum differences for each day for all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour SO₂ concentration for each day and each grid cell to create the 2015 PMI dataset for SO₂. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location. Then, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas; MATS does not accommodate SO₂ but can be used to calculate RRFs for any two datasets. The 3-hour SO₂ NAAQS was not included in this analysis as the results for the 1-hour SO₂ NAAQS are expected to be larger than for other averaging periods.

Arkansas has two SO₂ monitoring sites and the modeling results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. Current-year design values were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010) and all sites with data during the 2006 to 2010 period are included. MATS input parameters were set to the EPA-recommended default values and only the RRFs were calculated using MATS. FDVs were then calculated by hand. SO₂ design values for 2015 PMI are estimated to be 0.90 to 3.9 ppb higher than the 2015 baseline values and the estimated FDVs are well below the NAAQS, not affecting attainment or maintenance of the NAAQS for either monitoring site.

A simple spatial-fields analysis was also conducted for SO₂: 1) modeled concentrations being used to calculate RRFs for every grid cell, 2) an average design value was calculated based on data for the two monitoring sites, and 3) results of steps 1 and 2 being used to estimate FDVs for every grid cell. The

objective was to determine whether there are unmonitored areas that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas. The average RRF for 1-hour SO₂ is 0.9943 for the 2015 baseline and 1.1809 for the 2015 PMI scenario for an increase of 0.1866 representing a 3.7 ppb increase relative to a base concentration of 20 ppb. On average for the AQCRs, worst-case impacts are expected to increase RRFs by 0.1089 to 0.2249 but in no case is the average RRF increased from a value less than one to a value greater than one, as several of the AQCR's baseline values are already greater than one. RRFs are increased the most for AQCR 21 which represents the western to northwestern portion of the state; see ICF 2015 for RRFs by county. FDVs were calculated to be 20 ppb using an average (approximately) current-year design values for the Little Rock and El Dorado monitoring sites and estimated FDVs and the differences were calculated for the 2015 baseline and the 2015 PMI scenarios. Difference plots show that the addition of the worst-case impacts tend to increase the RRFs and FDVs by a greater amount for northwestern Arkansas compared to the rest of the State but despite increased RRFs, the FDVs are all below 1-hour SO₂ NAAQS (75 ppb) for both the 2015 baseline and the 2015 PMI scenarios.

To further examine the potential near-field impacts from new or existing sources with emissions increases less than the proposed permit thresholds, a combined AERMOD/CMAQ analysis was also conducted. For each location, daily AERMOD-derived concentrations (for the receptor with the maximum annual average value) were added to the CMAQ-derived concentrations for the same location such that CMAQ values were used as "background". All metrics were calculated in accordance with the form of the standard for each species. For 1-hour SO₂, the maximum AERMOD-derived concentration with a CMAQ-derived background was 45.1 ppb, less than the NAAQS of 75 ppb. For the North Little Rock monitoring site in Pulaski County, the AERMOD + Background RRF was 1.6986 and the FDV was 20.0 ppb. For the El Dorado monitoring site in Union County, the AERMOD + Background RRF was 1.5221 and the FDV was 39.6 ppb. Even with the higher RRFs, the FDVs are less than the NAAQS and worst-case impacts would not result in an exceedance of the NAAQS.

Summary of Modeling Analysis

The modeling analysis utilized two, separately and in combination, air quality modeling systems (AERMOD and CMAQ) along with a variety of post-processing and analysis techniques to examine the potential impacts on the NAAQS from new minor point sources with emissions equal to the revised permit thresholds. These techniques were applied appropriately to examine impacts at both the regional and near-field resolutions.

Regional Scale Results

The regional-scale modeling and impact assessment methodology was designed to examine worst-case impacts from threshold emission increases at each location within the modeling grid.

Modeled worst-case impacts of 40 tpy of both VOC and NO_x to the 2015 baseline increases the FDVs by 0.2 to 0.4 ppb where they remain below the NAAQS and therefore not affecting attainment or maintenance of the ozone NAAQS for any monitoring site. While remaining below the NAAQS, the VOC

and NO_x analyses did indicate that central and southwestern Arkansas may be more sensitive to the addition of ozone-related emissions and could be areas for greater vigilance of these pollutants.

Although difference plots show that the addition of the worse-case impacts tend to preferentially increase calculated RRFs and FDVs in northwestern, western, and southwestern Arkansas for NO₂, in northwestern Arkansas for SO₂, and in western and northwestern Arkansas for PM₁₀, worse-case impacts of these pollutants to the 2015 baseline also does not affect attainment or maintenance of the NAAQS.

Combined Near-field/Regional Scale Results

The combined near-field/regional-scale modeling and impact assessment was designed to examine worst-case impacts from threshold emission increases for each AQCR and the maximum impacts were applied for each selected source and each monitoring site location.

For all species and metrics, the results for the AERMOD + Background concentrations are much less than the NAAQS. When applied to monitoring sites, the worse-case local impacts increase the FDVs but the resultant values are less than the NAAQS values and do not result in any NAAQS exceedances. For all species, with the exception of SO₂, the FDVs are lower than current year values for both the baseline and local impact scenarios. For SO₂, even though the FDVs are higher than the current year values, the FDVs are still only 53% of the NAAQS and worst-case impacts would not result in a NAAQS exceedance.

Conclusion

This technical support document has described the derivation of the revised permit thresholds and De Minimis levels for CO, NO_x, SO₂, VOC, PM, and PM₁₀ that were submitted in the 2010 Threshold SIP as well as a monitoring based analysis and modeling based analysis which support the levels at which these thresholds were set. The monitoring based analysis demonstrates that these revisions have not resulted in deterioration of air quality with respect to the CO, NO₂, SO₂, ozone, or PM₁₀ NAAQS, and a modeling based analysis. On the contrary, air quality with respect to these pollutants has improved in the years following the revision of the minor NSR permit thresholds and De Minimis levels. Furthermore, modeling conducted by ICF on behalf of the Department has shown that worst-case impacts from emission increases equal to the revised permit thresholds and De Minimis levels will not interfere with attainment or maintenance of the NAAQS. The Department has determined that the revised permit thresholds and De Minimis levels for CO, NO_x, SO₂, VOC, PM, and PM₁₀, which have been effective in the State since 2009, are sufficiently protective of the NAAQS and the monitoring trends and modeling analyses further support this determination.

Appendix A

ICF International Air Quality Modeling Analysis of Minor Source Permit Thresholds

September 30, 2015



MEMORANDUM

To: Mark McCorkle and David Clark, Arkansas Department of Environmental Quality (ADEQ)
From: Sharon Douglas, Jay Haney, Belle Hudischewskyj, Yihua Wei and Tom Myers, ICF
Date: September 30, 2015
Re: Air Quality Modeling Analysis of Minor Source Permit Thresholds

Introduction

This memorandum summarizes the methods and results of an air quality modeling exercise designed to inform minor source permit applications and future-year attainment of the National Ambient Air Quality Standards (NAAQS) for the State of Arkansas. Air quality modeling was used to demonstrate that sources permitted under the Minor New Source Review (NSR) program with emissions increases less than proposed permit thresholds will not cause or contribute to a violation of the NAAQS or interfere with the maintenance of the NAAQS.

In a February 17, 2015 letter “EPA Comments on Proposed Revisions to the Arkansas Plan of Implementation for Air Pollution Control - Regulation No. 19 (Docket No. 14-010-R),” EPA states that one of the requirements for approval of Reg. 19.305 is for ADEQ to demonstrate how all sources permitted under the Minor NSR Program will not cause or contribute to a NAAQS violation or interfere with the maintenance of the NAAQS. EPA further states “the ADEQ may achieve this by providing a detailed analysis and supporting documentation, such as generic air quality modeling, to demonstrate that all sources permitted under the Minor NSR program will not interfere with NAAQS attainment or maintenance for all NAAQS.” As part of this demonstration “the ADEQ needs to provide additional technical information to demonstrate that proposed changes with emissions increases less than the referenced thresholds will not cause or contribute to a violation of the NAAQS or interfere with the maintenance of the NAAQS. The referenced thresholds are the proposed permit threshold/de minimus levels listed in the 2010 Arkansas State Implementation Plan Revision. For criteria pollutants, these are as follows: carbon monoxide (CO) 75 tons per year (tpy), oxides of nitrogen (NO_x) 40 tpy, sulfur dioxide (SO₂) 40 tpy, volatile organic compounds (VOC) 40 tpy, particulate matter (PM) 25 tpy, PM₁₀ 15 tpy, and PM_{2.5} 10 tpy.

To examine the potential impacts on these pollutants from new sources or existing sources with emissions increases less than the proposed permit thresholds, ICF conducted a combined AERMOD/CMAQ analysis. The CMAQ modeling for the 2008 base year and the 2008/2015 future year from the Arkansas DEQ statewide modeling effort (ICF, 2014) was used for the regional-scale component of the modeling analysis.

Description of Minor Point Sources

As part of this study, hypothetical minor point sources were modeled using both regional-scale and source-specific modeling methods.

The sources were assumed to emit VOC, NO_x, SO₂, CO, PM_{2.5}, and PM₁₀. The emissions for each species were set equal to the permit threshold values, as follows:

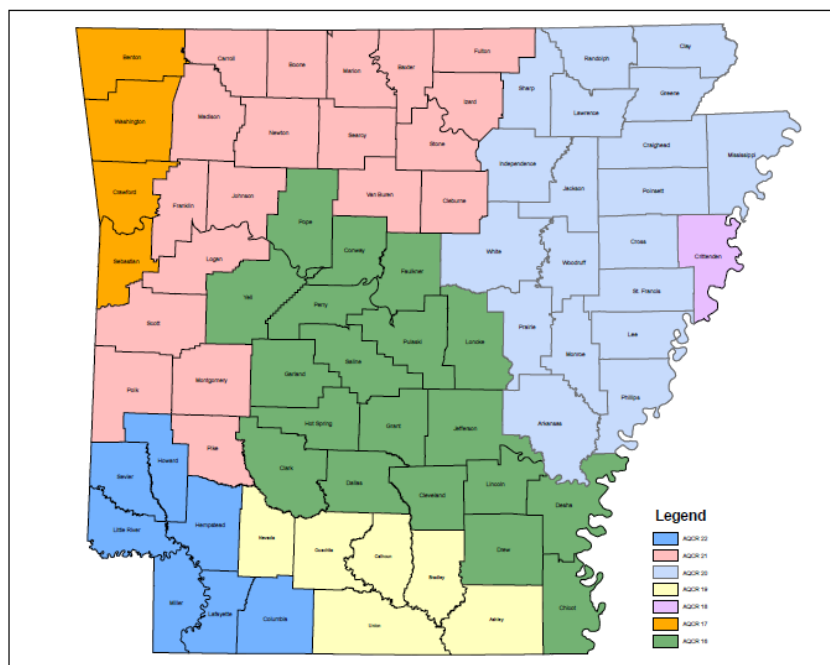
- VOC: 40 tpy
- NO_x: 40 tpy
- SO₂: 40 tpy
- CO: 75 tpy
- PM_{2.5}: 10 tpy
- PM₁₀: 15 tpy

The stack parameters were set equal to the median values of stack height, stack diameter, exit temperature, and exit velocity of all minor point sources in Arkansas, based on the 2011 National Emission Inventory (NEI). These values are as follows:

- Stack height: 12.7 meters (m)
- Stack diameter: 0.67 m
- Temperature: 337.8 degrees Kelvin
- Exit velocity: 9.2 meters per second (m/s)

Eight hypothetical sources were approximately centrally located within each State of Arkansas air quality control region (AQCR) identified in Figure 1. AQCR 21 (pink) includes two locations, since it covers two distinct geographical areas. Specifically, the sites were placed in the approximate centers of the following counties: Pulaski, Washington, Crittenden, Union, Craighead, Van Buren, Polk and Miller. The locations were shifted slightly from the center of the county for Polk, Van Buren, and Washington Counties to ensure that the source locations would be accessible (and near a populated or urban area).

Figure 1. Arkansas DEQ Air Quality Control Regions.



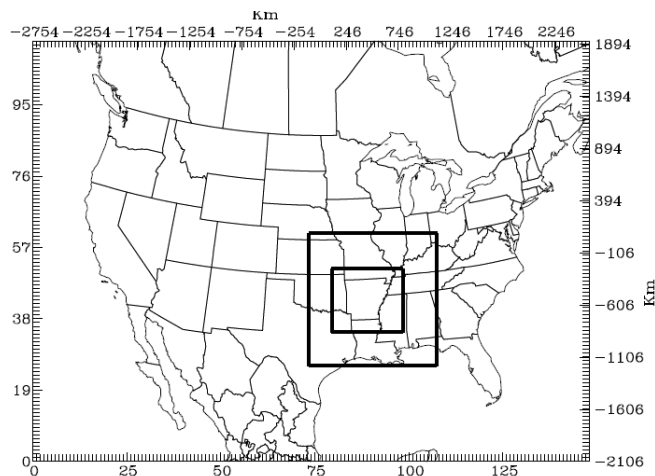
Regional-Scale Modeling

Methodology

Photochemical modeling was used to examine the potential impacts of emission increases from new sources on ozone and PM_{2.5} concentrations. Specifically, the Community Multiscale Air Quality (CMAQ) model was used to simulate the potential impacts from the hypothetical sources described in the previous section. While the photochemical modeling exercise was specifically designed to examine ozone and PM_{2.5}, CMAQ also simulates NO₂, SO₂, and PM₁₀ so the results for those pollutants were also examined. The CMAQ modeling for the 2008 base year (2008 current year scenario) and the 2008/2015 future year (2015 baseline scenario) from the Arkansas DEQ statewide modeling effort (ICF, 2014) was used as the basis for the regional-scale component of the modeling analysis.

The CMAQ future-year (2015) emission inventory was modified to include the eight hypothetical new point sources, distributed throughout the AQCRs. The emission sources were characterized as single low-level point sources with emission rates set to the threshold values. CMAQ was run (for the 4-km grid only) for the annual simulation period. The full CMAQ modeling domain is presented in Figure 2 and includes a 36-km resolution outer grid encompassing the continental U.S.; a 12-km resolution intermediate grid; and a 4-km resolution inner grid encompassing Arkansas. Only the 4-km grid was used for this application; the boundary conditions were obtained from the 12-km modeling results for the statewide modeling effort (ICF, 2014).

Figure 2. CMAQ Modeling Domain for the Arkansas Statewide Criteria Pollutant Air Quality Modeling Analysis.



The maximum CMAQ-derived impact on daily maximum 8-hour ozone, 24-hour average $PM_{2.5}$, and annual average $PM_{2.5}$ for any location in Arkansas was calculated. In addition, the maximum CMAQ-derived impact on daily maximum 1-hour NO_2 , daily maximum 1-hour SO_2 , and 24-hour average PM_{10} was also calculated. The statewide maximum impact for each simulation day (maximum over all AQCRs and grid cells in Arkansas) was used for the remaining steps of this analysis.

The daily maximum CMAQ-derived impact was then added to the simulated CMAQ-derived concentrations for each day and grid cell for the future-year (2015) simulation. The resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid. The adjusted 2015 modeling results will be referred to as the 2015 plus maximum impact dataset or 2015 PMI throughout the remainder of this memorandum.

The 2015 PMI values were used in conjunction with the 2008 current-year modeling results (again from the statewide modeling analysis) to calculate relative reduction factors (RRFs) and estimated future-year design values (FDVs) (for 2015) for both monitored and unmonitored locations. These results were compared with the prior 2015 results (from the original statewide modeling analysis) as well as with the NAAQS to examine whether emission increases less than the referenced thresholds will cause or contribute to a violation of the NAAQS or potentially interfere with the maintenance of the NAAQS.

EPA's MATS software was used to calculate RRFs and future-year design values for ozone and $PM_{2.5}$, following the recommendations outlined in the updated draft guidance issued by EPA in December 2014 (Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze [EPA, 2014]). MATS was also used to calculate RRFs for NO_2 , SO_2 and PM_{10} using the same methodology as used for ozone.

This methodology is based on relative (rather than absolute) use of the modeling results, and relies on the ability of the air quality modeling system to simulate the change in concentration due to changes in emissions, but not necessarily its ability to simulate exact values for future-year concentrations. For each air quality metric, a future-year estimated design value (FDV) is calculated using the “current-year” design value and the future-year and base-year modeling results.

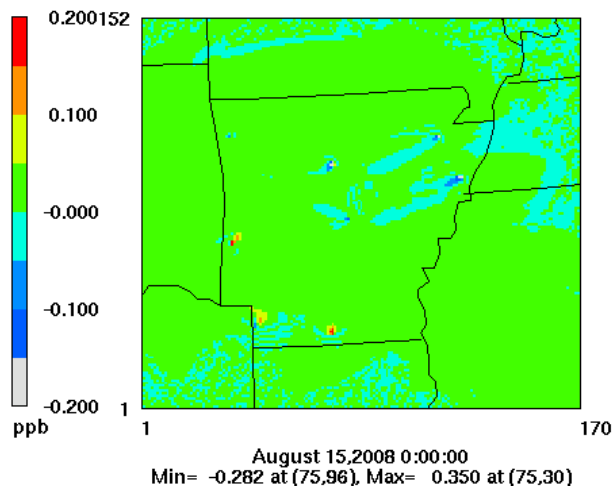
The current-year design value for each pollutant and monitoring site within Arkansas was calculated in accordance with the form of the standard for that pollutant. For this analysis (which is not an attainment demonstration) the current-year design values were based on data for 2006 through 2010. Calculation of the current year design values differs among the pollutants and the procedures outlined in the guidance document were followed. Additional detail for each pollutant is provided in the results sections.

The current-year design value for each site was then multiplied by a relative response factor (RRF), which is defined as ratio of the future-year to base-year simulated concentration in the vicinity of the monitoring site. The resulting value is referred to as the future-year design value or FDV. The methodology has additional layers of complexity for multi-species pollutants such as PM_{2.5}; these are outlined in the guidance document and were accounted for in this analysis. The resulting values were compared with the NAAQS. The analysis was conducted for both the 2008 current-year/2015 baseline and 2008 current year/2015 PMI simulation pairs. Tabular and graphical summaries of the RRFs and EDVs were prepared and average values of the RRFs for each county and AQCR were calculated.

Results for Ozone

The simulated maximum impacts on 8-hour ozone concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 1.1 parts per billion (ppb). An example difference plot illustrating the impacts for 15 August is provided in Figure 3.

Figure 3. Example Difference in CMAQ-Derived Daily Maximum 8-Hour Average Ozone Concentration with the Addition of Emissions from the Eight Hypothetical Minor Point Sources (August 15).



The plot shows a mix of small increases and decreases in simulated daily maximum 8-hour ozone concentrations for the selected day, near and downwind of the source locations. The largest increase is 0.35 ppb. The largest decrease is -0.28. Decreases in ozone are likely due to the added NO_x emissions from the hypothetical sources. The response of the CMAQ model to the changes in emissions is influenced by the complex photochemistry represented by the model. Under certain conditions increases in NO_x emissions can lead to decreases in ozone. This occurs when the conversion of NO to NO₂ is inhibited (due to either relatively low VOC concentrations or limited photolysis conditions – as might be expected to occur during the nighttime hours or on cloudy days).

The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 8-hour ozone concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied for both monitoring sites and unmonitored areas.

SITE-SPECIFIC MODELING RESULTS FOR OZONE

Table 1 summarizes the site-specific MATS results for 8-hour ozone. In this case, the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The current-year design values are based on the data contained within the MATS database and are calculated within MATS. The MATS input parameters were set to the EPA-recommended default values. Per current EPA guidance, the ten highest concentrations, based on

the baseline simulation results, were used in the calculation of the RRFs for each site. Units for the FDVs are ppb. The RRF values are unitless.

Table 1. RRFs and Estimated Future-Year 8-Hour Ozone Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 8-Hr Ozone Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	72.3	0.8837	63.8	0.8881	64.2	0.4
North Little Rock Airport	Pulaski	74.3	0.8773	65.1	0.8813	65.4	0.3
Little Rock (Doyle Springs Rd)	Pulaski	68.0	0.8762	59.5	0.8806	59.8	0.3
Marion	Crittenden	77.3	0.9059	70.0	0.9094	70.2	0.2
Deer	Newton	68.0	0.8966	60.9	0.8988	61.1	0.3
Springdale	Washington	64.0	0.8787	56.2	0.8823	56.4	0.2
Mena	Polk	71.7	0.8932	64.0	0.8966	64.2	0.2

Note: The NAAQS for 8-hour average ozone concentration is 75 ppb.

Ozone design values for 2015 PMI are estimated to be 0.2 to 0.4 ppb higher than the 2015 baseline values. The estimated future-year design values for all sites are below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for any monitoring site.

STATEWIDE MODELING RESULTS FOR OZONE

MATS was also used to conduct a spatial-fields analysis. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the model-derived gradients were used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 8-hour ozone for Arkansas (based on all grid cells that comprise the state) is 0.8910 for the 2015 baseline and 0.8942 for the 2015 PMI scenario. This increase in average RRF (0.0032) represents a 0.2 ppb increase relative to a base concentration of 70 ppb. Table 2 summarizes the RRFs by AQCR.

Table 2. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8842	0.8876	0.0034
AQCR 17	0.8974	0.9012	0.0038
AQCR 18	0.8880	0.8912	0.0032
AQCR 19	0.8959	0.8990	0.0031
AQCR 20	0.8878	0.8906	0.0027
AQCR 21	0.8987	0.9018	0.0031
AQCR 22	0.8896	0.8935	0.0039

For the AQCRs, the worst-case impacts are expected to increase the average RRFs by 0.0027 to 0.0039. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in ozone over time). Overall, there is little variation among the AQCRs. RRFs by county are provided in Attachment A.

Figure 4 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline. The difference plot is intended to examine whether there are areas within the state where the estimated worst-case impacts would have a greater effect on the RRFs compared to other areas.

Figure 4. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.

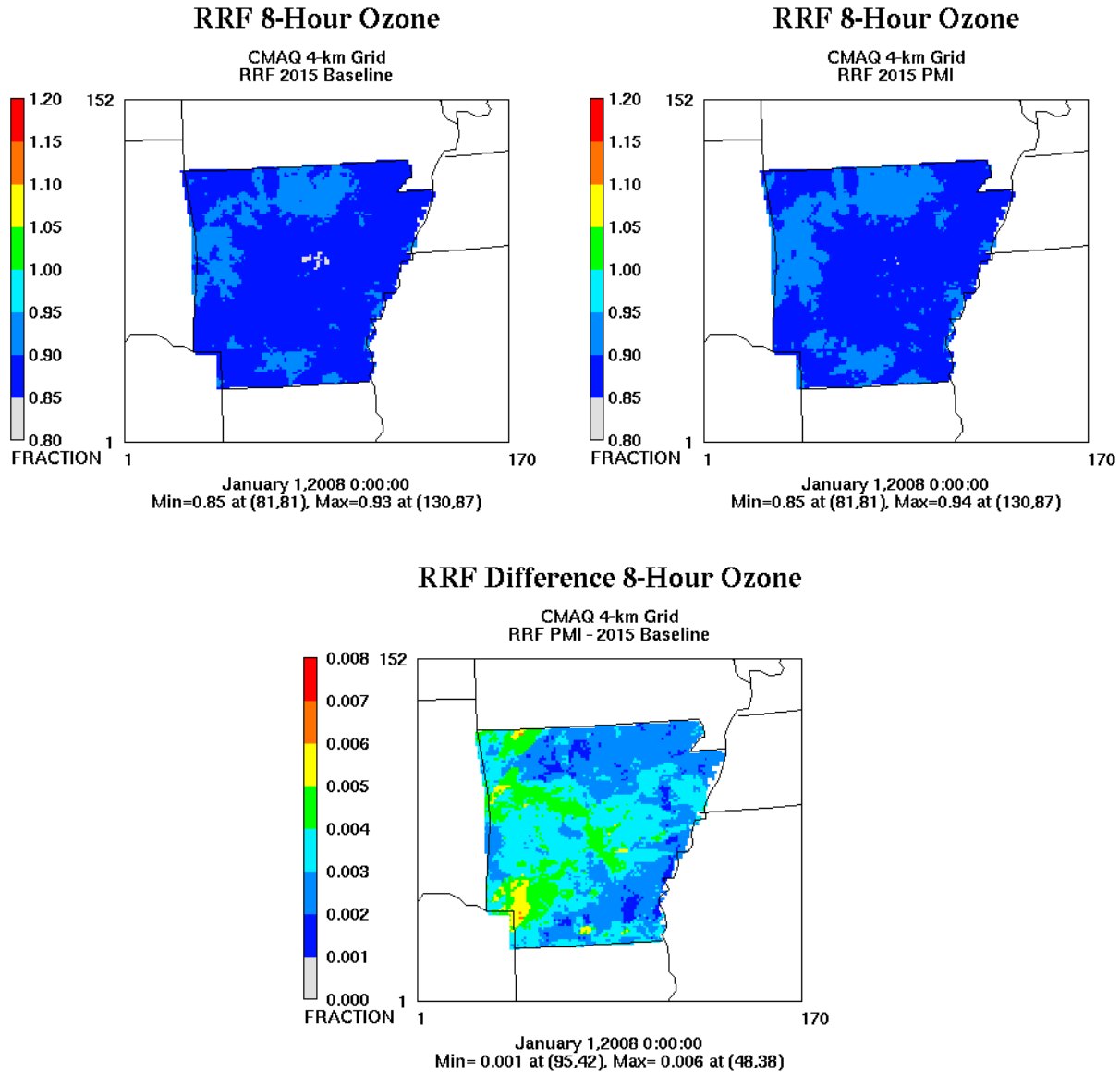
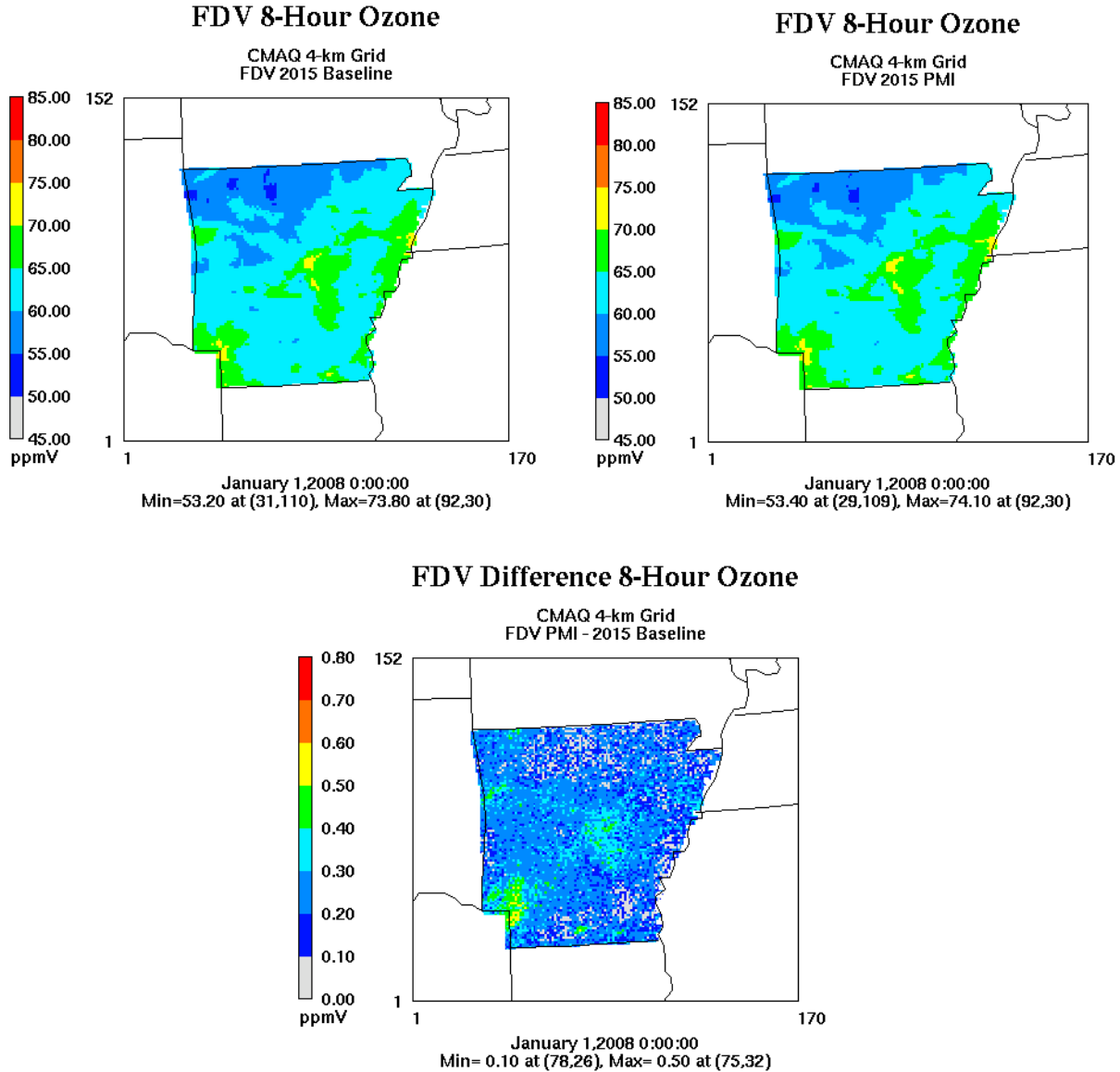


Figure 5 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 5. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.



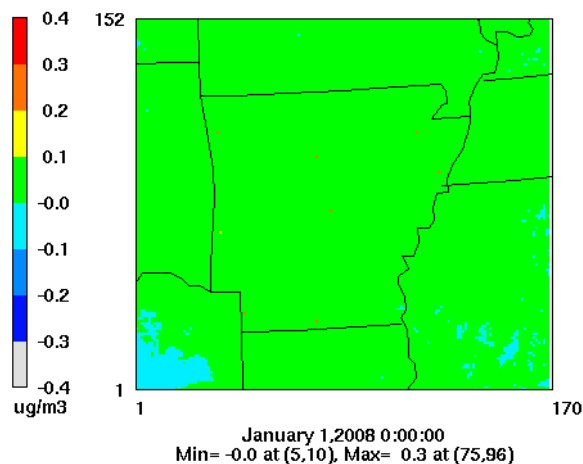
The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. This is likely because the impacts represent a greater percentage of the simulated concentrations on the days with the highest concentrations (those included in the calculation of the RRF) for these areas than for other areas. One possible conclusion is that worst-case impacts are more likely to affect the design values in these areas. Nevertheless, the impacts are small relative to the base concentrations.

Note that the FDVs for some unmonitored locations are greater than those projected for the monitoring sites (as presented in Table 1), for both the 2015 baseline and the 2015 PMI scenarios. This is due to the fact that the modeled concentration gradients are used in MATS to estimate current and future design values for unmonitored areas and this can result in estimated current-year design values for unmonitored areas that are greater than at any monitoring site. Without use of the modeled concentration gradients, the monitored data are simply interpolated to each grid cell. This results in more uniform FDVs and slightly lower peak values (by about 2 ppb). The spatial-fields analysis of the FDVs is not intended to examine if there are unmonitored areas for which the minor source impacts could potentially result in nonattainment issues. Since the result depends on the current-year design value at each unmonitored grid cell, which is unknown, this analysis is most useful at identifying those areas where the impacts are likely to have a greater effect on the design values. Nevertheless, the FDVs are less than 75 ppb (the current or 2015 NAAQS) for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios, and the maximum impact at any grid cell is 0.5 ppb.

Results for PM_{2.5}

The simulated maximum impacts on 24-hour and annual average PM_{2.5} concentration occur at or near the hypothetical sources. The maximum difference varies by location and ranges from approximately 0.2 to 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) on a monthly average basis. An example difference plot illustrating the impacts for annual average PM_{2.5} is provided in Figure 6.

Figure 6. Example Difference in CMAQ-Derived Annual Average PM_{2.5} Concentration with the Addition of Emissions from the Eight Hypothetical Minor Point Sources.



The plot shows small increases in simulated annual average PM_{2.5} concentration at or near the source locations. The largest increase is 0.3 $\mu\text{g}/\text{m}^3$.

The maximum differences in 24-hour average PM_{2.5} concentration for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline 24-hour PM_{2.5} concentration for each day and each grid cell to create the 2015 PMI dataset for PM_{2.5}. The 2015 PMI resultant values are

intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied for monitoring sites (for both 24-hour and annual average PM_{2.5}) and for unmonitored areas (for annual average PM_{2.5} only). MATS does not support spatial-fields analysis for 24-hour PM_{2.5}.

SITE-SPECIFIC MODELING RESULTS FOR PM_{2.5}

Table 3 summarizes the site-specific MATS results for 24-hour PM_{2.5} and Table 4 summarizes the results for annual average PM_{2.5}. The results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All currently operating sites with data during the 2006 to 2010 period are included in the table. The current-year design values are based on the data contained within the MATS database and are calculated within MATS. The MATS input parameters were set to the EPA-recommended default values. Per current EPA guidance, the ten percent highest concentrations, based on the baseline simulation results, were used in the calculation of the RRFs for each site. Units for the FDVs are µg/m³. For PM_{2.5}, the RRF values are calculated for each component species and are therefore not included in the table.

Table 3. RRFs and Estimated Future-Year 24-Hour PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 24-Hr PM _{2.5} Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	2015 PMI FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	25.4	21.6	22.0	0.4
Little Rock (Adams Field)	Pulaski	28.1	23.7	23.9	0.2
Little Rock (Doyle Springs Rd)	Pulaski	25.9	21.8	22.1	0.3
Marion	Crittenden	27.2	22.1	22.4	0.3
Stuttgart	Arkansas	25.4	21.2	21.5	0.3
Mena	Polk	23.3	20.6	22.2	0.6
Hot Springs	Garland	23.4	19.9	20.3	0.4
El Dorado	Union	23.0	19.7	19.9	0.2
Crossett	Ashley	22.9	19.3	19.5	0.2

Note: The NAAQS for 24-hour average PM_{2.5} concentration is 35 µg/m³.

Daily PM_{2.5} design values for 2015 PMI are estimated to be 0.2 to 0.6 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 24-hour PM_{2.5} NAAQS for any monitoring site.

Table 4. RRFs and Estimated Future-Year Annual Average PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year Annual PM _{2.5} Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	2015 PMI FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	11.8	10.4	10.6	0.2
Little Rock (Adams Field)	Pulaski	12.2	10.8	11.0	0.2
Little Rock (Doyle Springs Rd)	Pulaski	12.0	10.7	11.0	0.3
Marion	Crittenden	11.8	10.4	10.6	0.2
Stuttgart	Arkansas	11.3	10.2	10.4	0.2
Mena	Polk	10.9	9.8	10.2	0.4
Hot Springs	Garland	11.1	10.1	10.4	0.3
El Dorado	Union	11.3	10.1	10.4	0.3
Crossett	Ashley	11.1	10.0	10.2	0.2

Note: The NAAQS for annual average PM_{2.5} concentration is 12 µg/m³.

Annual PM_{2.5} design values for 2015 PMI are estimated to be 0.2 to 0.4 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites are all below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the annual PM_{2.5} NAAQS for any monitoring site.

STATEWIDE MODELING RESULTS FOR PM_{2.5}

MATS was also used to conduct a spatial-fields analysis for annual PM_{2.5}. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the model-derived gradients were used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for Arkansas (based on all grid cells that comprise the state) is 0.8619 for the 2015 baseline and 0.9045 for the 2015 PMI scenario. This increase (0.0425) represents a $0.4 \mu\text{g}/\text{m}^3$ increase relative to a base concentration of $10 \mu\text{g}/\text{m}^3$. Table 5 summarizes the RRFs by AQCR.

Table 5. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: Annual Average $\text{PM}_{2.5}$.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8619	0.9040	0.0421
AQCR 17	0.8633	0.9056	0.0424
AQCR 18	0.8530	0.8814	0.0284
AQCR 19	0.8629	0.9098	0.0469
AQCR 20	0.8587	0.8918	0.0330
AQCR 21	0.8661	0.9162	0.0501
AQCR 22	0.8588	0.9062	0.0474

For the AQCRs, the worst-case impacts are expected to increase the average RRFs by 0.0284 to 0.0501. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in $\text{PM}_{2.5}$ over time). Overall, RRFs are increased the most for AQCRs 19, 21 and 22, which encompass most of the southwestern part of the State. RRFs by county are provided in Attachment B.

Figure 7 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 7. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: Annual Average PM_{2.5}.

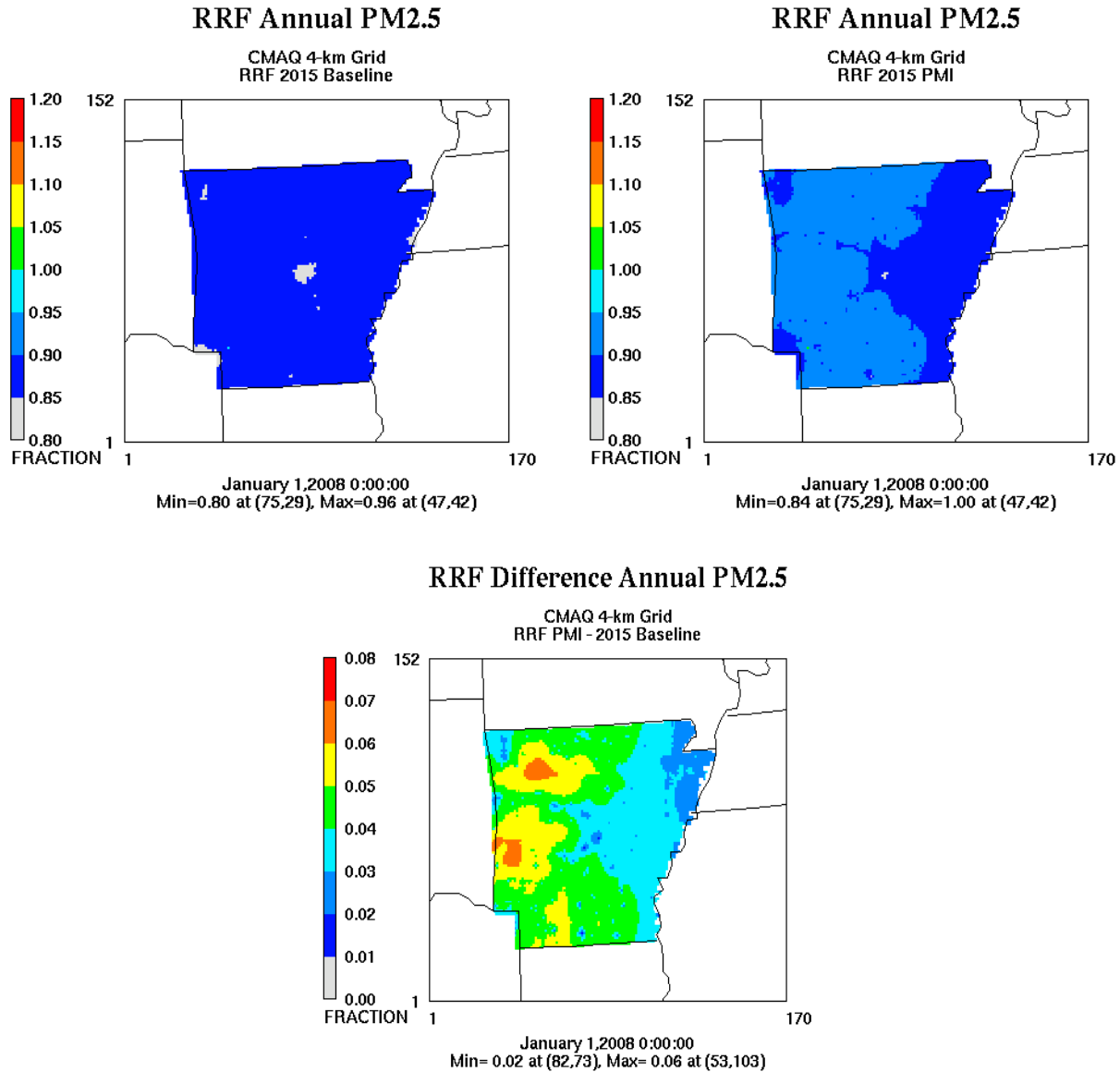
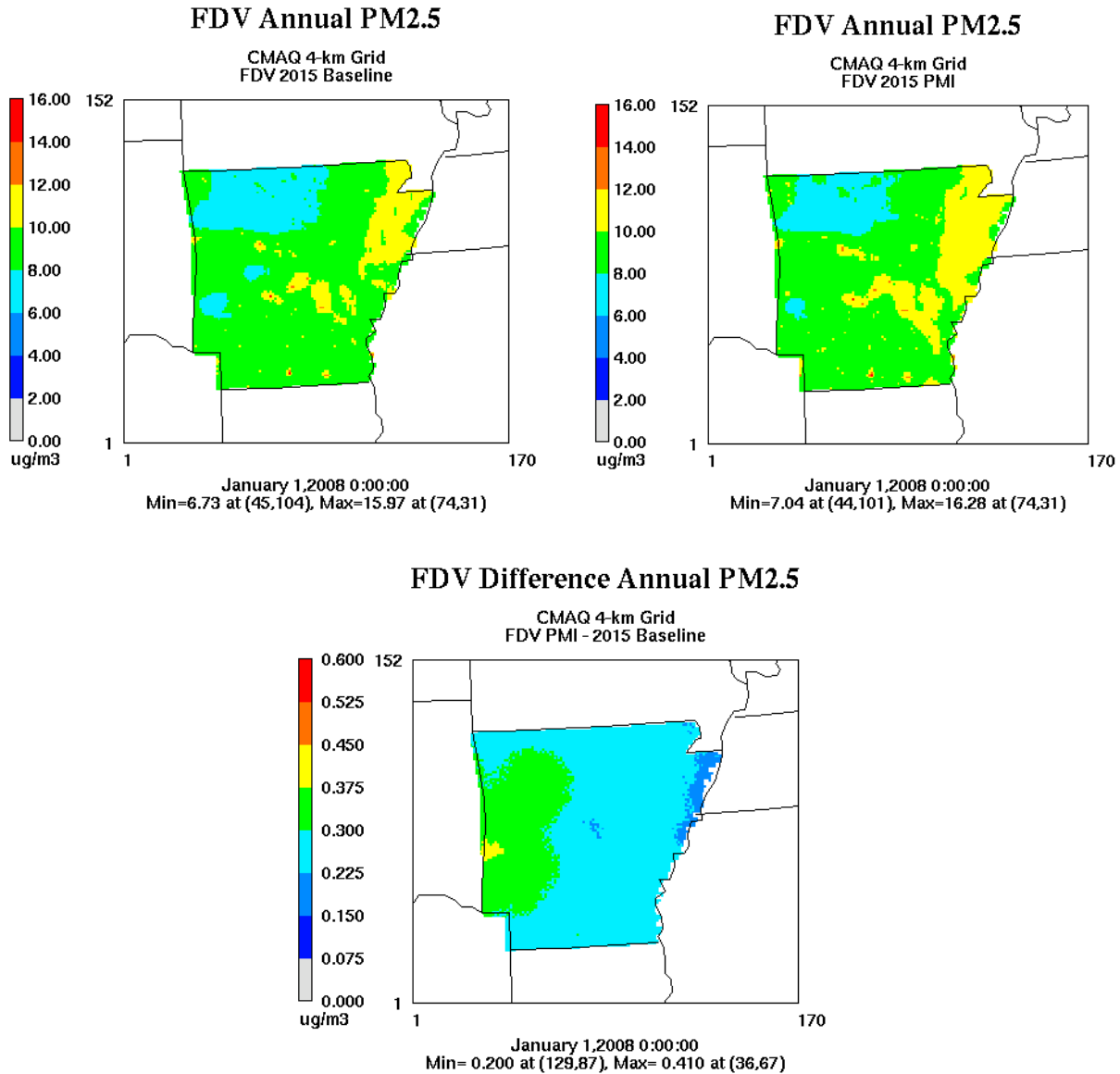


Figure 8 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 8. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: Annual Average PM_{2.5}.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in western Arkansas compared to the rest of the state. Worst-case impacts in these areas are more likely to affect the RRF and FDV values. Nevertheless, the impacts are small relative to the base concentrations.

The MATS projected FDVs show several isolated unmonitored areas throughout the state with annual average PM_{2.5} concentrations greater than 12 µg/m³. These appear in both the 2015 baseline and 2015 PMI plots. The values are greater than those projected for the monitoring sites (as presented in Table 4). This is due to the fact that the modeled concentration gradients are used in MATS to estimate current

and future design values for unmonitored areas and this can result in estimated current-year design values for unmonitored areas that are greater than at any monitoring site. Without use of the modeled concentration gradients, the monitored data are simply interpolated to each grid cell. This results in more uniform FDVs and lower peak values (by up to $5 \mu\text{g}/\text{m}^3$). The spatial-fields analysis is not intended to examine if there are unmonitored areas for which the minor source impacts would potentially result in nonattainment issues. Since the result depends on the assumed current-year design value at each unmonitored location, which is unknown, this analysis is most useful at identifying those areas where the impacts are likely to have a greater effect on the design values. Nevertheless, the FDVs indicate a few isolated areas/grid cells within Arkansas greater than $12 \mu\text{g}/\text{m}^3$ for the gradient-adjusted case and no grid cells greater than $12 \mu\text{g}/\text{m}^3$ for the straight interpolation case for both the 2015 baseline and 2015 PMI scenarios. The maximum impact at any grid cell is $0.41 \mu\text{g}/\text{m}^3$.

Results for NO₂

The simulated maximum impacts on 1-hour NO₂ concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 6 parts per billion (ppb). The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour NO₂ concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate NO₂ but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR NO₂

Table 6 summarizes the site-specific RRFs and FDVs for 1-hour NO₂. There are two NO₂ monitoring sites in Arkansas, and the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are ppb. The RRF values are unitless.

Table 6. RRFs and Estimated Future-Year 1-Hour NO₂ Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	43.7	0.6846	29.9	0.7150	31.2	1.3
Marion	Crittenden	48.3	0.7986	38.6	0.8308	40.1	1.5

Note: The NAAQS for 1-hour average NO₂ concentration is 100 ppb.

NO₂ design values for 2015 PMI are estimated to be 1.3 to 1.5 ppb higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for either monitoring site.

STATEWIDE MODELING RESULTS FOR NO₂

A simple spatial-fields analysis was also conducted for NO₂. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) an average design value for Arkansas (based on data for the two sites) was calculated, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 1-hour NO₂ for Arkansas (based on all grid cells that comprise the state) is 0.6617 for the 2015 baseline and 0.7630 for the 2015 PMI scenario. This increase (0.0743) represents a 3.3 ppb increase relative to a base concentration of 45 ppb. Table 7 summarizes the RRFs by AQCR.

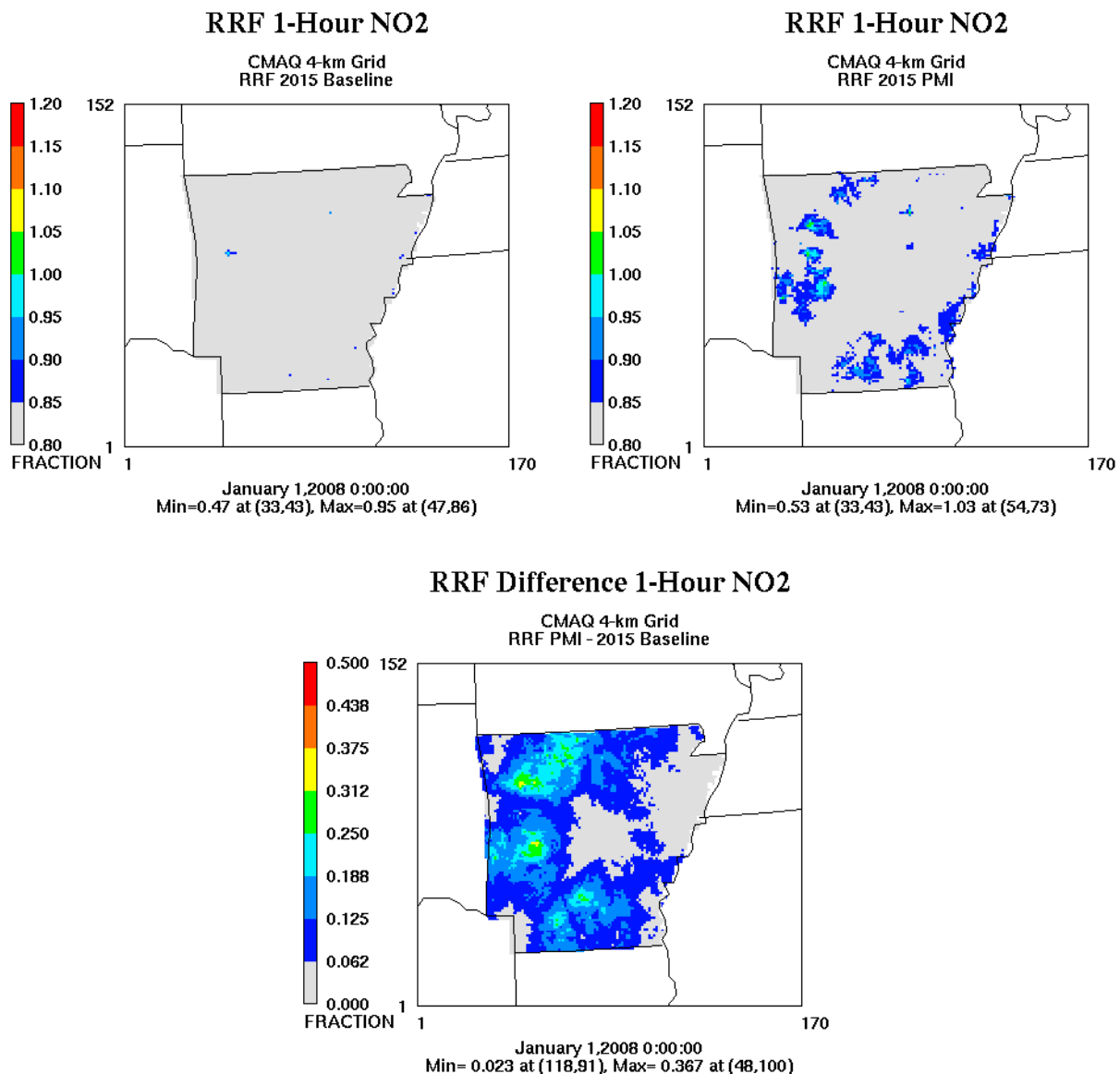
Table 7. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO₂.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.6464	0.7401	0.0937
AQCR 17	0.6462	0.7277	0.0816
AQCR 18	0.7997	0.8311	0.0314
AQCR 19	0.7049	0.8335	0.1286
AQCR 20	0.6861	0.7472	0.0611
AQCR 21	0.6307	0.7826	0.1519
AQCR 22	0.6735	0.7648	0.0912

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0314 to 0.1519. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in $PM_{2.5}$ over time). Overall, RRFs are increased the most for AQCRs 19 and 21, which represent the south-central and southwestern portions of the State. RRFs by county are provided in Attachment C.

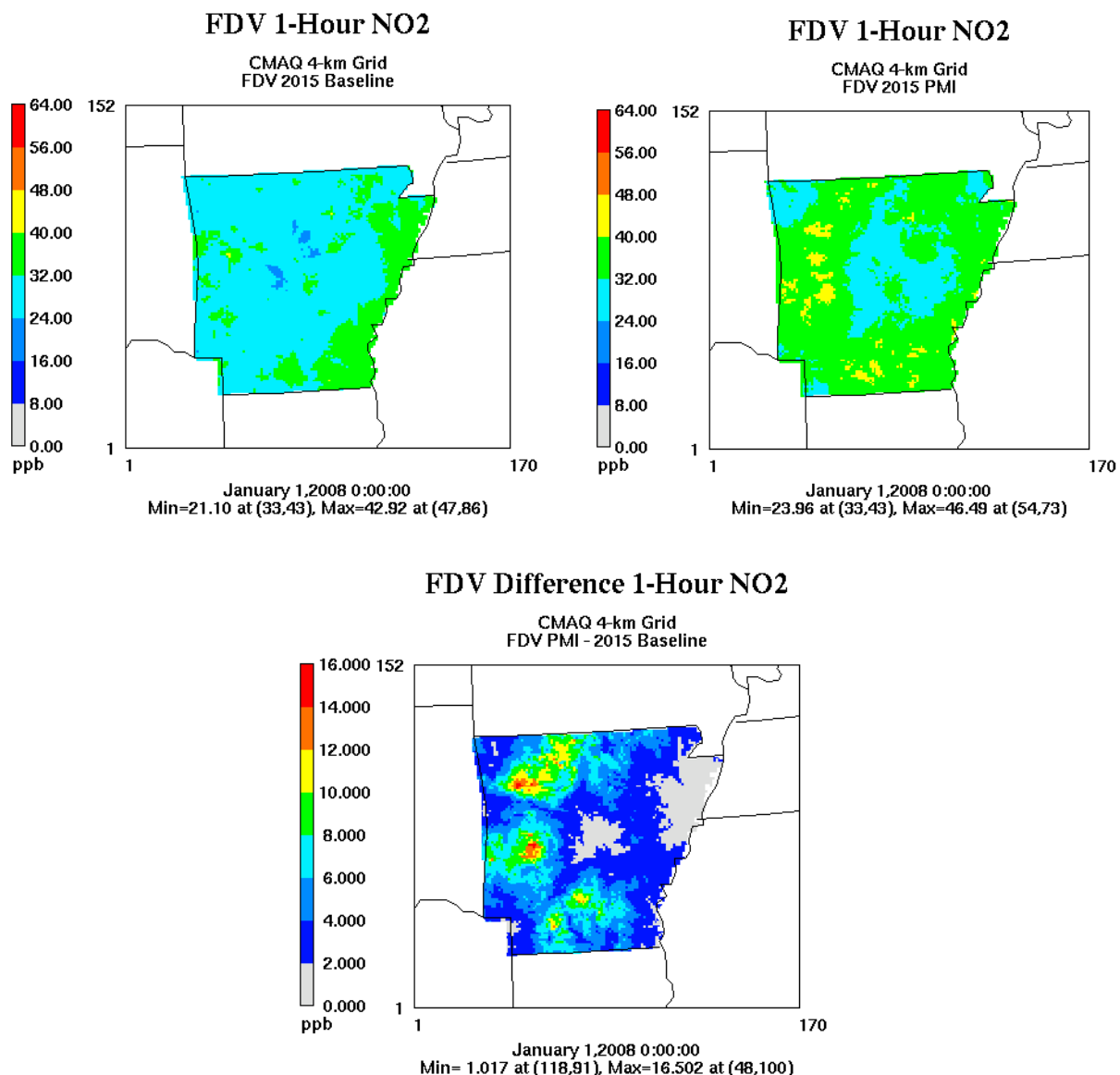
Figure 9 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 9. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO_2 .



FDVs were calculated using a current-year value of 45 ppb for every grid cell. This was based on an average (approximately) of the current-year design values for the Little Rock and Marion monitoring sites. Figure 20 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 10. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO₂.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in northwestern, western, and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of NO₂ emissions, relative to the calculation of 1-hour NO₂ NAAQS-relevant metrics. Despite the increased

RRFs, the FDVs are all well below 100 ppb for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios.

Regional-scale modeling may not be the best tool for the analysis of NO₂ impacts. NO₂ is directly emitted into the atmosphere and a grid-based model like CMAQ is not likely to capture the sub grid-scale impacts due to individual emissions sources. Additional analysis of NO₂ (both 1-hour and annual average concentrations) was performed using the AERMOD model and is presented later in the memorandum.

Results for SO₂

The simulated maximum impacts on 1-hour SO₂ concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 4 parts per billion (ppb). The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour SO₂ concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate SO₂ but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR SO₂

Table 8 summarizes the site-specific RRFs and FDVs for 1-hour SO₂. There are two SO₂ monitoring sites in Arkansas, and the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are ppb. The RRF values are unitless.

Table 8. RRFs and Estimated Future-Year 1-Hour SO₂ Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	12.3	0.7560	9.4	0.8412	10.3	0.9
El Dorado	Union	26.0	0.8914	23.2	1.0421	27.1	3.9

Note: The NAAQS for 1-hour average SO₂ concentration is 75 ppb.

SO₂ design values for 2015 PMI are estimated to be 0.9 to 3.9 ppb higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for either monitoring site.

STATEWIDE MODELING RESULTS FOR SO₂

A simple spatial-fields analysis was also conducted for SO₂. This analysis followed the same steps as that for NO₂: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) an average design value for Arkansas (based on data for the two sites) was calculated, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 1-hour SO₂ for Arkansas (based on all grid cells that comprise the state) is 0.9943 for the 2015 baseline and 1.1809 for the 2015 PMI scenario. This increase (0.1866) represents a 3.7 ppb increase relative to a base concentration of 20 ppb. Table 9 summarizes the RRFs by AQCR.

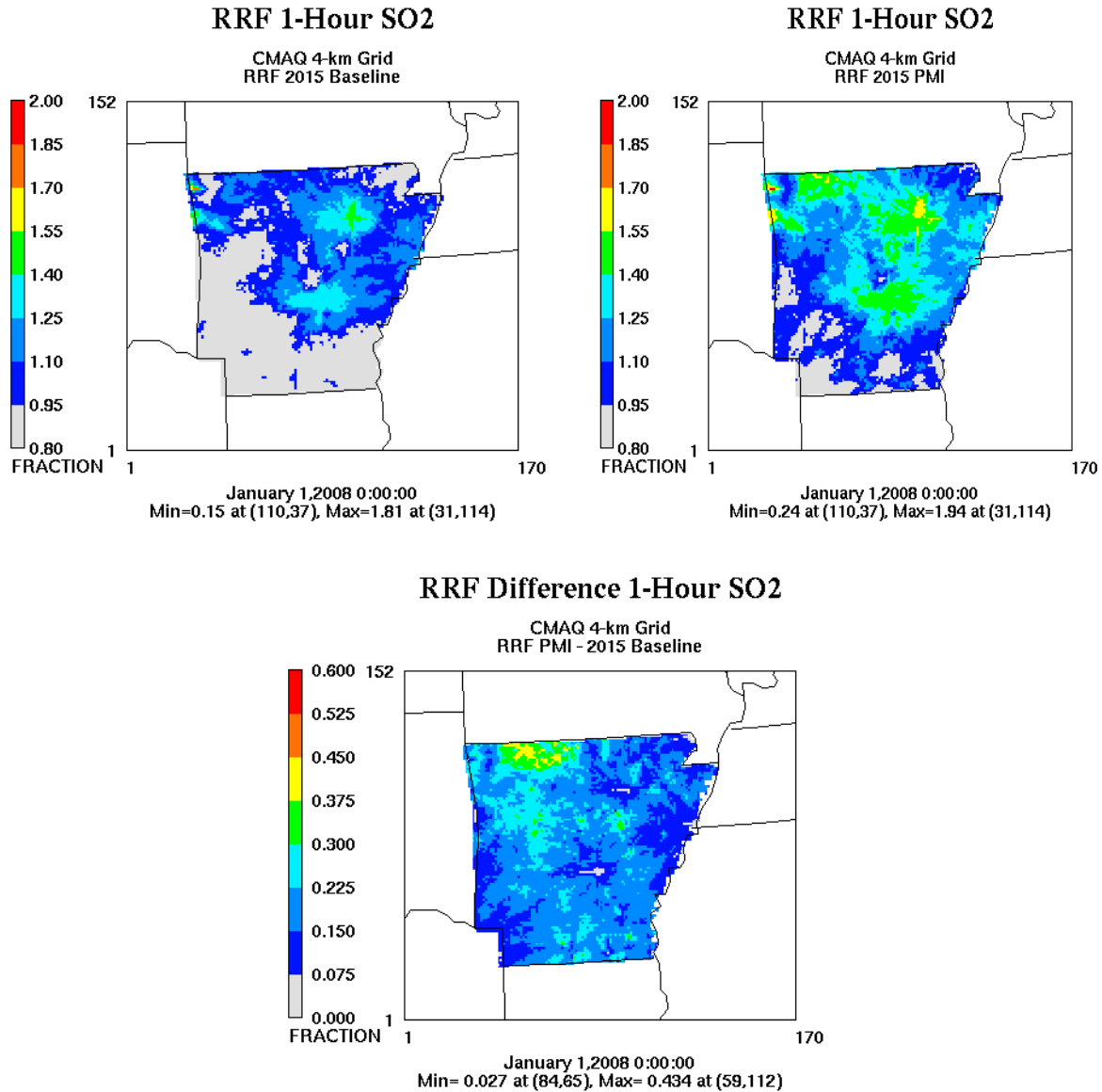
Table 9. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	1.0081	1.1978	0.1897
AQCR 17	1.0302	1.2201	0.1899
AQCR 18	1.1552	1.2641	0.1089
AQCR 19	0.7994	0.9999	0.2005
AQCR 20	1.0926	1.2510	0.1584
AQCR 21	1.0092	1.2341	0.2249
AQCR 22	0.7734	0.9217	0.1483

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.1089 to 0.2249. In no case is the average RRF increased from a value less than one to a value greater than one. However, for several of the AQCRs the baseline values are already greater than one and are increased further. This finding is consistent with that statewide modeling effort (ICF, 2014), which found that SO₂ concentrations in several areas were projected to increase between the base year and 2015. Overall, RRFs are increased the most for AQCR 21 which represents the western to northwestern portion of the State. RRFs by county are provided in Attachment D.

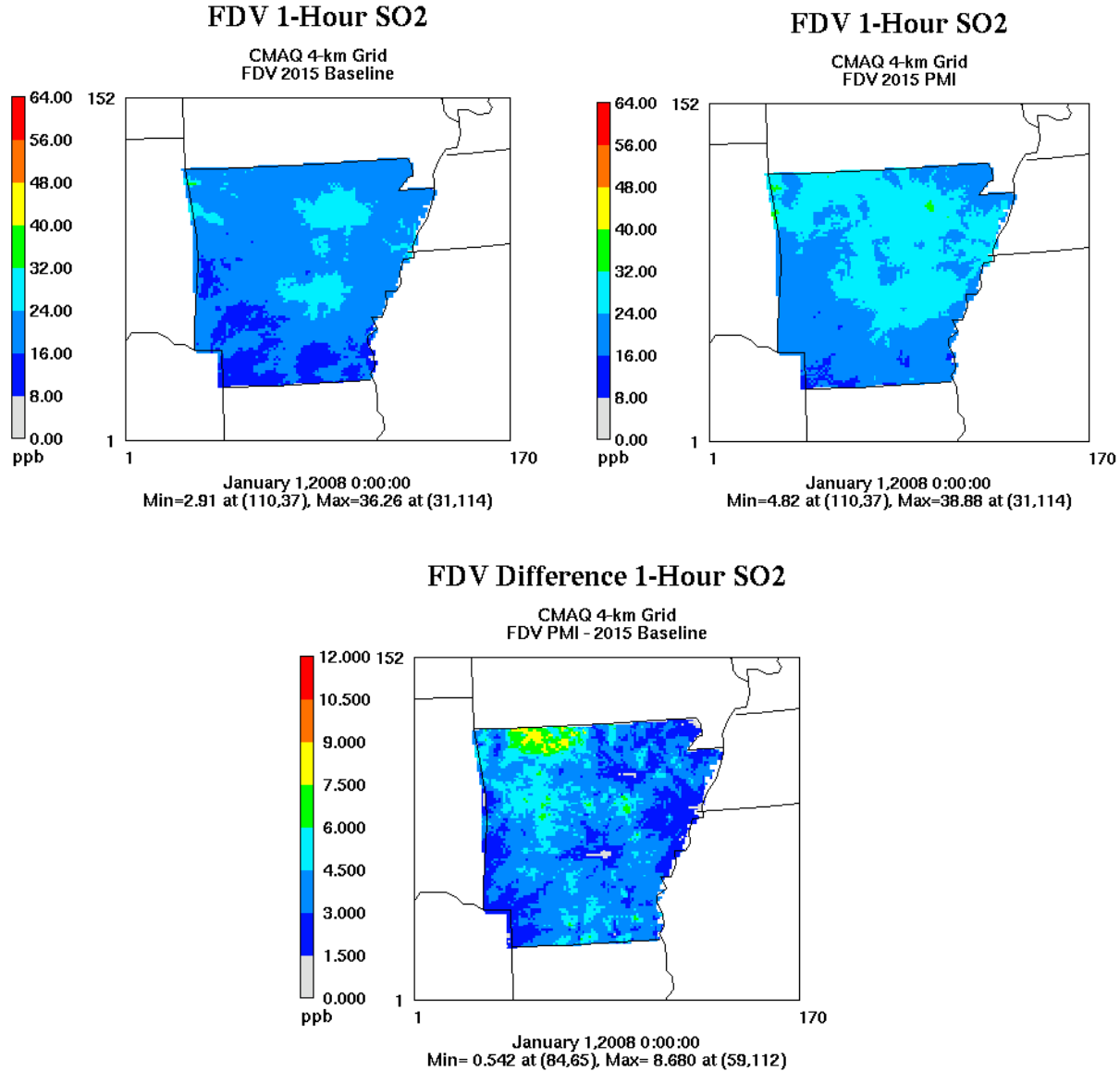
Figure 11 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 11. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.



FDVs were calculated using a current-year value of 20 ppb for every grid cell. This was based on an average (approximately) of the current-year design values for the Little Rock and El Dorado monitoring sites. Figure 12 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 12. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for northwestern Arkansas compared to the rest of the State. This area may be more sensitive to the addition of SO₂ emissions, relative to the calculation of 1-hour SO₂ NAAQS-relevant metrics. Despite the increased RRFs, the FDVs are all well below 75 ppb for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios. Note that the statewide criteria pollutant modeling analysis (ICF, 2014) also showed increases in SO₂ concentrations between the base year and 2015. This is attributable to a projected increase in SO₂ emissions for electric generating units (EGUs) throughout the state. The 2015 emissions used for this analysis reflect Clean Air Interstate Rule

(CAIR) controls. However, Arkansas was identified as one of the states for which CAIR calls for NO_x controls only; no controls are imposed on SO₂ emissions and the emission inventory for 2015 reflects a significant increase in SO₂ emissions for the larger EGU's compared to the base year.

Similar to NO₂, regional-scale modeling may not be the best tool for the analysis of SO₂ impacts. SO₂ is directly emitted into the atmosphere and a grid-based model like CMAQ is not likely to capture the sub-grid-scale impacts due to individual emissions sources. Additional analysis of SO₂ was performed using the AERMOD model and is presented later in the memorandum.

Results for PM₁₀

The simulated maximum impacts on 24-hour PM₁₀ concentration occur at or near the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately 0.1 to 2.7 µg/m³. The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 24-hour PM₁₀ concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate PM₁₀ but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR PM₁₀

Table 10 summarizes the site-specific RRFs and FDVs for 24-hour PM₁₀. There is only one PM₁₀ monitoring sites in Arkansas, and the results assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the maximum 2nd highest PM₁₀ concentration for the three years ending with the modeled year 2006-2008. For PM₁₀, the MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are µg/m³. The RRF values are unitless.

Table 10. RRFs and Estimated Future-Year 24-Hour PM₁₀ Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline		2015 PMI		Difference in FDV (µg/m ³)
			RRF	FDV (µg/m ³)	RRF	FDV (µg/m ³)	
North Little Rock (Pike Ave)	Pulaski	41.0	0.8434	34.6	0.8621	35.3	0.8

Note: The NAAQS for 24-hour PM₁₀ concentration is 150 µg/m³.

The PM₁₀ design value for 2015 PMI is estimated to be 0.8 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for the monitoring site.

STATEWIDE MODELING RESULTS FOR PM₁₀

A simple spatial-fields analysis was also conducted for PM₁₀. This analysis followed the same steps as that for NO₂: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the design value for Arkansas was set equal to the value for the only monitoring site, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 24-hour PM₁₀ for Arkansas (based on all grid cells that comprise the state) is 0.8829 for the 2015 baseline and 0.9067 for the 2015 PMI scenario. This increase (0.0238) represents a 0.95 µg/m³ increase relative to a base concentration of 40 µg/m³. Table 11 summarizes the RRFs by AQCR.

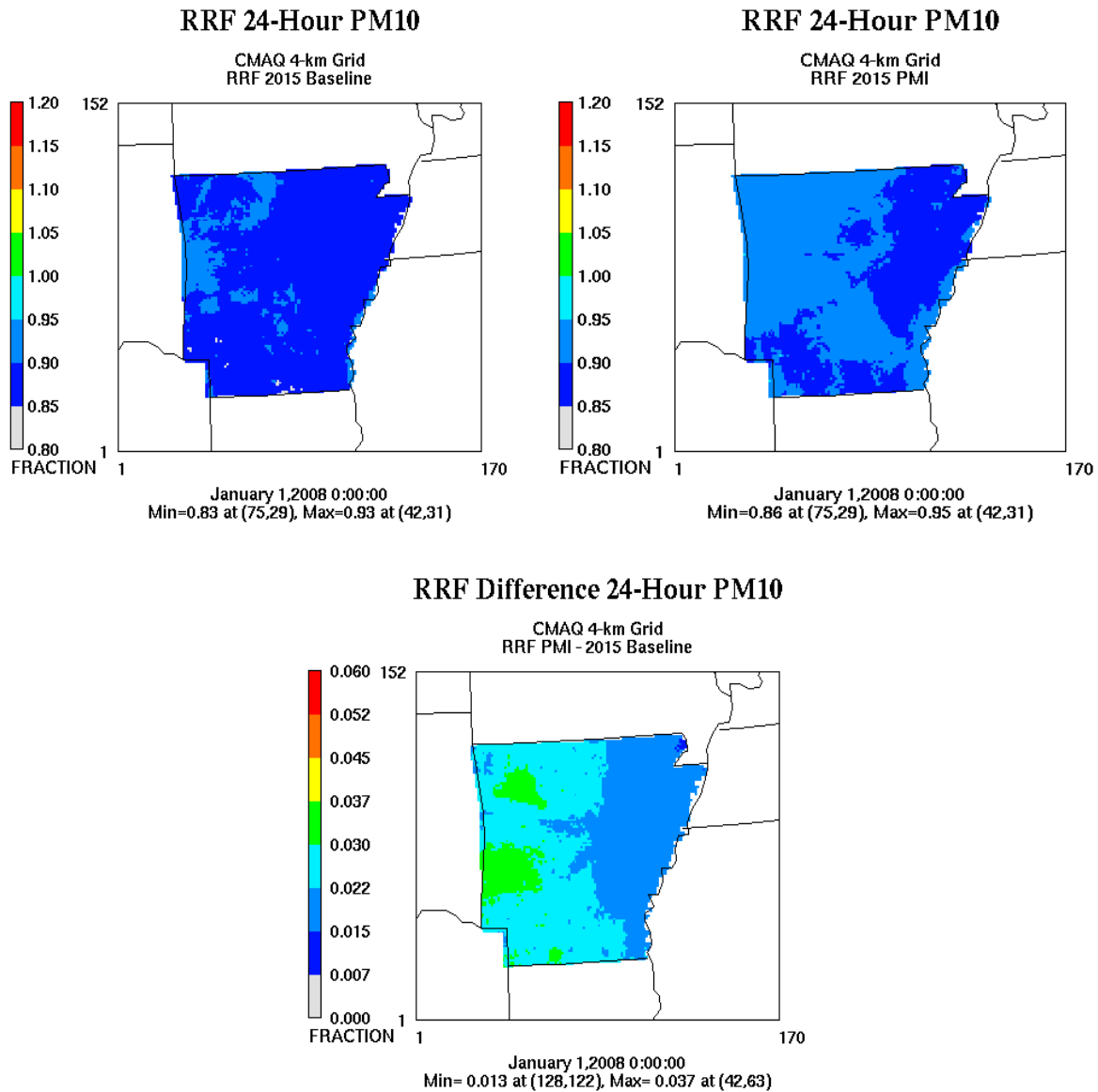
Table 11. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8876	0.9112	0.0236
AQCR 17	0.9017	0.9275	0.0258
AQCR 18	0.8793	0.8963	0.0170
AQCR 19	0.8726	0.8985	0.0259
AQCR 20	0.8727	0.8908	0.0181
AQCR 21	0.8917	0.9192	0.0275
AQCR 22	0.8725	0.9005	0.0280

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0170 to 0.0280. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in PM₁₀ over time). Overall, RRFs are increased the most for AQCRs 21 and 22, which represent the western and southwestern portions of the State. RRFs by county are provided in Attachment E.

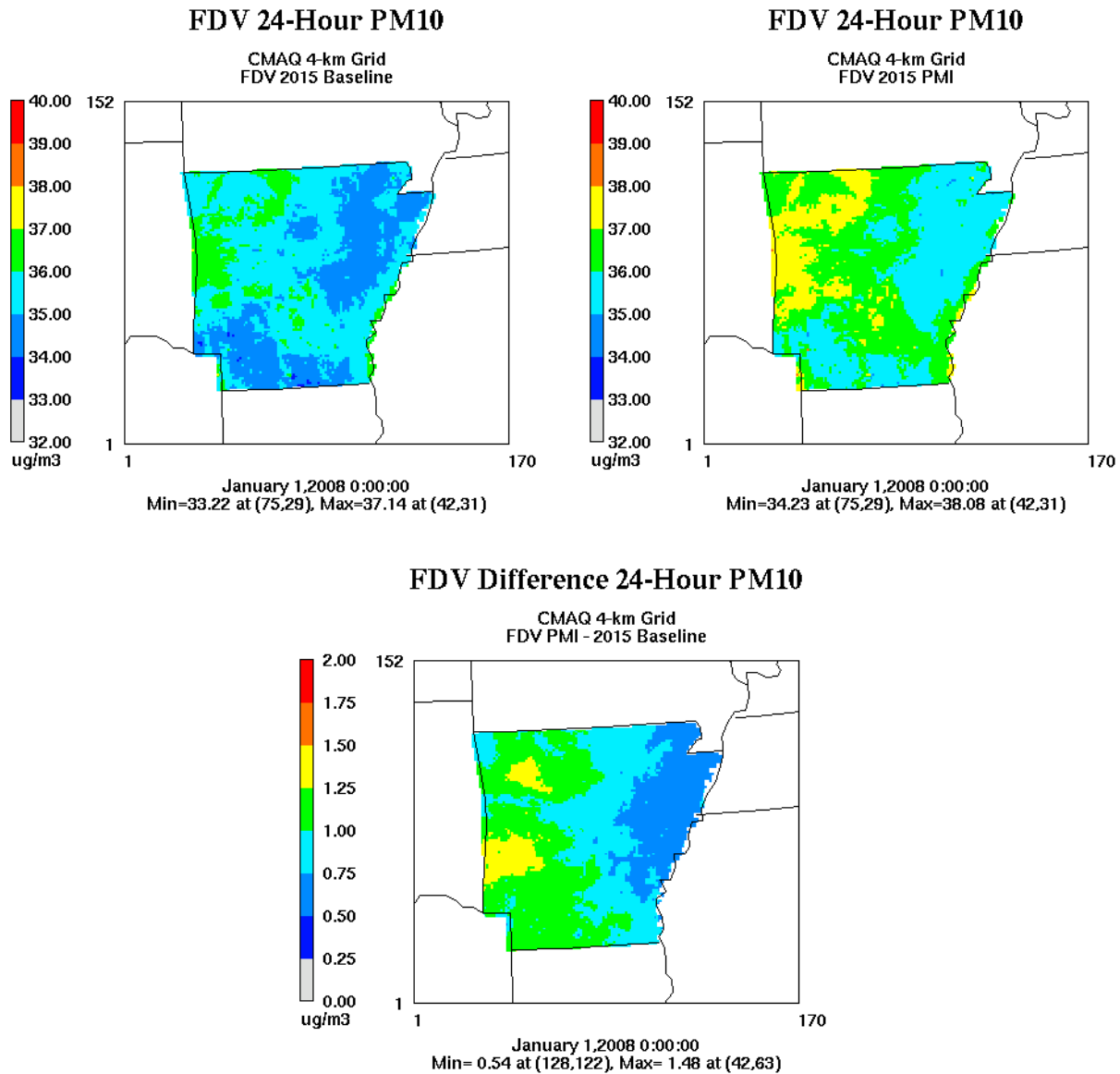
Figure 13 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 11. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.



FDVs were calculated using a current-year value of 40 $\mu\text{g}/\text{m}^3$ for every grid cell. This was based the current-year design value for the Little Rock monitoring site. Figure 12 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 12. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for western and northwestern Arkansas compared to the rest of the State. This area may be more sensitive to the addition of PM₁₀ emissions, relative to the calculation of 24-hour PM₁₀ NAAQS-relevant metrics. Despite the increased RRFs, the FDVs are all well below 150 µg/m³ for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios, and the maximum impact for any grid cell is 1.48 µg/m³.

Additional analysis of PM₁₀ was performed using the AERMOD model and is presented later in the memorandum.

Combined Near-Field/Regional Modeling

Methodology

To further examine the potential near-field impacts from new or existing sources with emissions increases less than the proposed permit thresholds, a combined AERMOD/CMAQ analysis was also conducted. The CMAQ modeling for the 2008 base year and the 2015 future year from the statewide modeling effort (ICF, 2014) was also used for this analysis.

AERMOD (version 15181) was applied for the same eight hypothetical sources used for the regional analysis, distributed throughout the AQCRs. Emissions for all species were set equal to permit thresholds (converted to emission rates in grams per second) and stack parameters were set to a median value for minor point sources in Arkansas.

Meteorological inputs for AERMOD were derived from the same gridded meteorological fields used for the CMAQ inputs. Specifically, the meteorological inputs were prepared based on Weather Research and Forecasting (WRF) meteorological inputs for the 2008 base year, using the Meteorological Model Interface (MMIF) program.

The receptor grid for each source consists of receptor cells spaced at 100 m intervals beginning 100 m from the source. This spacing continues out to 1000 m. The spacing then increases to 200 m and continues out to 2000 m from the source. The overall area covered by the receptor grid is 4000 x 4000 m (4 x 4 km), which is the size of one CMAQ grid cell.

For each source location, digital topographical data (in the form of 7.5 minute Digital Elevation Model (DEM) files) for the analysis region were obtained from the U.S. Geological Survey (USGS) and processed for use in AERMOD using the AERMAP preprocessor program.

AERMOD was applied for one year for each of NO_x , SO_2 , CO and PM_{10} . For NO_2 , the Ozone Limiting Method (OLM) module was used. Hourly ozone values were extracted from the CMAQ regional-scale modeling results and were used by AERMOD to approximate the rate of conversion of nitrogen oxide (NO) to NO_2 . In addition, an ambient NO_2/NO_x ratio of 90 percent and an in-stack NO_2/NO_x ratio of 50 percent by mass was used. These values are consistent with EPA guidance. The maximum AERMOD-derived impacts on daily maximum 1-hour NO_2 , annual average NO_2 , daily maximum 1-hour SO_2 , daily maximum 1-hour CO, daily maximum 8-hour average CO, and 24-hour average PM_{10} were calculated for each AQCR.

For each source location, daily AERMOD-derived concentrations (for the receptor with the maximum annual average value) were added to the CMAQ-derived concentrations for that same location. In this manner, the CMAQ values were used as “background”. The statewide daily maximum impact (maximum over all locations/AQCRs) and statewide average impacts (average over all locations/AQCRs) were obtained and used for the remaining steps of this analysis. The resultant values are expected to represent the near-field future-year concentrations assuming worst-case impacts from threshold emission increases at a range of locations throughout the State.

The daily maximum AERMOD-derived impacts were added to the simulated CMAQ-derived concentrations for each day and grid cell for the “future-year” (2015) simulation. The resultant values are expected to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

The adjusted (CMAQ + AERMOD) modeling results were used in conjunction with the 2008 current-year modeling results (again from the statewide modeling analysis) to calculate relative reduction factors (RRFs) and estimated future-year design values (FDVs) (for 2015) for monitored locations. These results were compared with the prior 2015 results (from the original statewide modeling analysis), the regional-scale (PMI) modeling results, and the NAAQS to examine whether emission increases less than the referenced thresholds could cause or contribute to a violation of the NAAQS or potentially interfere with the maintenance of the NAAQS. For this analysis the RRFs were calculated by hand, using the MATS methodology.

As for the regional-scale analysis, the current-year design value for each pollutant and monitoring site within Arkansas was calculated based on data for 2006 through 2010, in accordance with the form of the standard for that pollutant. Tabular summaries of the RRFs and FDVs were prepared and are presented in the results section.

Results

MAXIMUM AERMOD-DERIVED IMPACTS

Tables 12 and 13 provide the AERMOD-derived impacts for each species and relevant NAAQS metric. Table 12 lists the AERMOD-derived impact without background and Table 13 includes the estimated (CMAQ-derived) background concentration. All metrics were calculated in accordance with the form of the standard for each species. For example the 1-hour NO₂ concentration is based on the 98th percentile (or eight highest) value for each modeled location. The maximum and average of these over all locations is presented in the table. Day-specific background values were obtained from the CMAQ results and paired in space and time with the AERMOD concentrations.

Table 12. Maximum and Average AERMOD-Derived Concentrations: No Background.

Species/ Metric	AERMOD (Max Over All Locations)	AERMOD (Average Over All Locations)	NAAQS
1-Hour NO ₂ (ppb)	47.7	37.3	100
Annual NO ₂ (ppb)	6.7	3.6	53
1-Hour SO ₂ (ppb)	42.5	34.7	75
1-Hour CO (ppb)	241	202	35,000
24-Hour PM ₁₀ (µg/m ³)	31.1	22.3	150

Table 13. Maximum and Average AERMOD-Derived Concentrations: With CMAQ-Derived Background.

Species/ Metric	AERMOD + Background (Max Over All Locations)	AERMOD + Background (Average Over All Locations)	NAAQS
1-Hour NO ₂ (ppb)	67.8	53.6	100
Annual NO ₂ (ppb)	12.8	8.4	53
1-Hour SO ₂ (ppb)	45.1	37.8	75
1-Hour CO (ppb)	972	562	35,000
24-Hour PM ₁₀ (µg/m ³)	47.6	39.0	150

For all species and metrics the resultant AERMOD plus background concentrations are much less than the NAAQS. This indicates that for the range of locations modeled, worst-case near-field (or local) impacts would not result in an exceedance of the NAAQS for any species.

SITE-SPECIFIC RRFs AND FDVs WITH AERMOD-DERIVED IMPACTS

The daily maximum AERMOD-derived impacts were then added to the simulated CMAQ-derived concentrations for each day and used in conjunction with the 2008 current-year modeling results to calculate RRFs and FDVs (for 2015) for monitored locations. The results are presented in Tables 14 through 17 for 1-hour NO₂, 1-hour SO₂, 1-hour CO, and 24-hour PM₁₀. Annual NO₂ and 8-hour CO were not included since the results for 1-hour are expected to be larger than for other averaging periods. Note that the RRFs calculated to reflect the AERMOD-derived impacts (AERMOD plus background) are larger (in some cases much larger) than those calculated using the CMAQ-derived impacts (2015 PMI scenarios, as presented earlier in this memorandum). This is consistent with the interpretation that AERMOD is able to represent the local impacts that may not be captured by CMAQ, especially for primary pollutants.

Table 14. RRFs and Estimated Future-Year 1-Hour NO₂ Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	43.7	0.6846	29.9	0.8281	36.2	6.3
Marion	Crittenden	48.3	0.7986	38.6	0.9764	47.2	8.6

Note: The NAAQS for 1-hour average NO₂ concentration is 100 ppb.

Table 15. RRFs and Estimated Future-Year 1-Hour SO₂ Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	12.3	0.7560	9.4	1.6986	20.0	11.6
El Dorado	Union	26.0	0.8918	23.2	1.5221	39.6	16.4

Note: The NAAQS for 1-hour average SO₂ concentration is 75 ppb.

Table 16. RRFs and Estimated Future-Year 1-Hour CO Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr CO Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	3200	0.5781	1850	0.6022	1927	77

Note: The NAAQS for 1-hour CO concentration is 35,000 ppb.

Table 17. RRFs and Estimated Future-Year 24-Hour PM₁₀ Design Values (µg/m³) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline		AERMOD + Background		Difference in FDV (µg/m ³)
			RRF	FDV (µg/m ³)	RRF	FDV (µg/m ³)	
North Little Rock (Pike Ave)	Pulaski	41.0	0.8434	34.6	0.8992	36.9	2.3

Note: The NAAQS for 24-hour PM₁₀ concentration is 150 µg/m³.

Even with the higher RRFs, the FDVs for all species are less than the NAAQS values. This indicates that for the range of locations modeled, worst-case local impacts would not result in an exceedance of the NAAQS for any species at the monitoring sites. For all species, with the exception of SO₂ the FDVs are lower than the current year values for both the baseline and local impact scenarios.

Key Findings/Conclusions

This analysis utilized two air quality modeling systems (both separately and in combination) as well as a variety of postprocessing and analysis techniques to examine the potential impacts from new minor point sources with emissions increases less than proposed permit thresholds for Arkansas. The emissions were set to the threshold level for all pollutants and the maximum impacts were used in the analysis results and for comparison with the NAAQS for each pollutant. The potential worst-case impacts were applied to every part of the state – including every grid cell based on the 4-km resolution CMAQ modeling domain, all air quality monitoring sites, and specific near-source locations. A variety of modeling and postprocessing techniques was applied in order to ensure the appropriate treatment of primary and secondary pollutants and the resolution of both regional and near-field (or local) impacts. The effects of topography and meteorology on air quality were accounted for in determining the maximum or worst-case impacts.

The regional-scale modeling and impact assessment methodology was designed to examine worst-case impacts from threshold emission increases at each location within the modeling grid. The results indicate:

- Addition of the modeled worst-case impacts (based on 40 tpy of both VOC and NO_x emissions) to the 2015 baseline does not affect attainment or maintenance of the ozone NAAQS for any monitoring site. The worst-case impacts result in estimated 2015 FDVs that are 0.2 to 0.4 ppb higher than the 2015 baseline values. The estimated future-year design values for all sites are below the NAAQS.
- Difference plots show that the addition of the worst-case impacts tends to increase the calculated RRFs and FDVs for ozone by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of ozone-related (VOC or NO_x) emissions, relative to the calculation of 8-hour ozone NAAQS-relevant metrics.
- Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 24-hour or annual PM_{2.5} NAAQS for any monitoring site. The worst-case impacts result in estimated 2015 FDVs for 24-hour PM_{2.5} that are 0.2 to 0.6 µg/m³ higher than the 2015 baseline values and estimated 2015 FDVs for annual average PM_{2.5} that are 0.2 to 0.4 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites and both metrics are below the NAAQS.
- Difference plots show that the addition of the worst-case impacts tends to increase the calculated RRFs and FDVs for PM_{2.5} by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of PM-related (VOC, NO_x, SO₂, and primary PM_{2.5}) emissions, relative to the calculation of PM_{2.5} NAAQS-relevant metrics.

- Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 1-hour NO₂, 1-hour SO₂ or 24-hour PM₁₀ NAAQS for any monitoring site (although the number of monitors for these pollutants is very limited).
- Difference plots show that the addition of the worst-case impacts tends to preferentially increase the calculated RRFs and FDVs in northwestern, western and southwestern Arkansas for NO₂, in northwestern Arkansas for SO₂, and in western and northwestern Arkansas for PM₁₀.

The combined near-field/regional-scale modeling and impact assessment was designed to examine worst-case impacts from threshold emission increases for each AQCR and the maximum impacts were applied for each selected source and each monitoring site location. The results indicate:

- For all species and metrics the resultant AERMOD plus background concentrations are much less than the NAAQS. This indicates that for the range of locations modeled, worst-case near-field (or local) impacts would not result in an exceedance of the NAAQS for any species.
- When applied to the monitoring sites, the modeled, worst-case local impacts increase the FDVs but the resultant values for all species are all less than the NAAQS values.
- For all species, with the exception of SO₂, the FDVs are lower than the current year values for both the baseline and local impact scenarios.

The analysis is based on one source per location (for modeling purposes this was assumed to be one grid cell). Since the modeled impacts occur within or nearby to the source location, cumulative effects from sources in multiple grid cells are expected to be small. Cumulative effects from multiple sources at any given location (or within approximately one grid cell) with emissions totals that sum to greater than the threshold levels should be examined on a case-by-case basis.

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Appendix B

ICF International Criteria Pollutant Modeling Analysis for Arkansas

2014



Criteria Pollutant Modeling Analysis for Arkansas

Final Report

July 28, 2014

Submitted to:

Arkansas Department of Environmental Quality
Air Division – Planning and Air Quality Analysis
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1 Introduction

This document describes an air quality modeling study of future-year air pollutant concentrations for the State of Arkansas. The pollutants of interest are ozone, fine particulate matter (PM_{2.5}), nitrogen dioxide (NO₂) and sulfur dioxide (SO₂). The modeling analysis includes two base years (2005 and 2008) and a future year (2015).

1.1 Objectives

The objectives of the modeling study are to identify areas within potential ozone, PM_{2.5}, SO₂, and NO₂ issues throughout the state, examine the expected changes in these pollutants between the base and future years, and identify areas within the state where additional air quality monitoring may be used to ensure compliance with existing National Ambient Air Quality Standards (NAAQS).

1.2 Overview of the Modeling Study

The air quality modeling was conducted using version 5.0 of the Community Multiscale Air Quality (CMAQ) model. The meteorological and emissions inputs to the model were based on modeling databases available from EPA (adapted for the area of interest).

The modeling focused on two base years, 2005 and 2008, and a future year of 2015. The modeling domain consists of a 36-km resolution outer grid encompassing the U.S. (the CONUS grid), a 12-km resolution grid over the central states, and a high-resolution 4-km grid over the entire state of Arkansas. Two annual simulation periods were simulated.

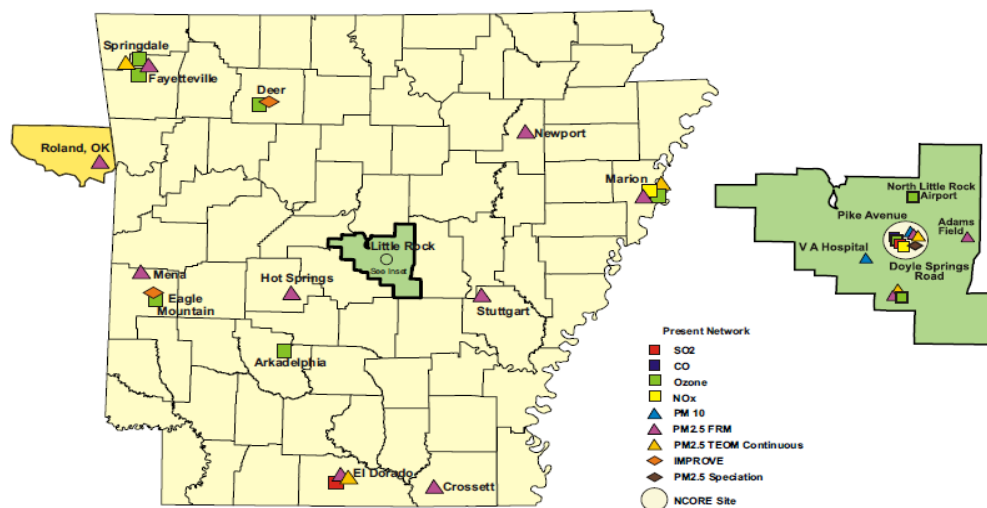
The modeling inventories were processed and prepared for CMAQ using EPA's Sparse-Matrix Operator Kernel Emissions (SMOKE) software (version 3.1).

The modeling analysis included the evaluation of model performance for the two base years. EPA's Modeled Attainment Test Software (MATS) was used in the analysis of the future-year modeling results for monitored and unmonitored areas.

2 Overview of Air Quality in Arkansas

Figure 2-1 depicts the locations of currently operating air quality monitoring sites within Arkansas.

Figure 2-1. Air Quality Monitoring Network for Arkansas



Source: ADEQ (2014)

Current air quality and air quality trends for ozone, $PM_{2.5}$, NO_2 , and SO_2 based on data from the ADEQ monitoring network are summarized in the remainder of this section. Since, all of these pollutants can contribute to visibility impairment, visibility within the two Class I¹ areas in Arkansas is also summarized, based on data from Interagency Monitoring of Protected Visual Environments (IMPROVE) network.

2.1 Air Quality Conditions and Trends

2.1.1 Ozone

Ozone is a secondary pollutant that is not directly emitted into the atmosphere but instead is formed in the lower atmosphere by a series of reactions involving ultra violet (UV) radiation and precursor emissions of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs). NO_x consists of nitric oxide (NO) and nitrogen dioxide (NO_2), which are primarily emitted from anthropogenic sources. VOCs consist of thousands of individual hydrocarbon and oxygenated hydrocarbon species emitted from anthropogenic, biogenic, and geogenic sources. Ozone formation in the troposphere is affected by local weather conditions: winds, temperature, solar radiation, and horizontal and vertical dispersion characteristics, which influence precursor concentrations, reaction rates, formation, transport, and

¹ Class I air quality areas include national parks larger than 6,000 acres and wilderness areas larger than 5,000 acres that existed or were authorized as of August 7, 1977. The two Class I areas in Arkansas are Caney Creek Wilderness and Upper Buffalo Wilderness.

deposition. Because the primary ozone-forming reaction is photochemically driven (i.e., by the sun), ozone concentrations typically peak during the daylight hours and decrease after sunset.

Health effects studies have determined that exposure to ozone can reduce lung function and increase the incidence and severity of respiratory illnesses such as asthma. Repeated exposure to ozone may also damage vegetation and trees. To protect public health, the U.S. EPA established the first NAAQS for ozone in 1971 and has since revised the level and form of the standard several times. The most recent revision occurred in March 2008 and set the 8-hour ozone standard to 75 parts per billion (ppb). Note that the official level of the 8-hour ozone standard is 0.075 parts per million (ppm), equivalent to 75 ppb. To attain this standard, the three-year average of the annual fourth highest daily maximum 8-hour ozone concentration at all sites within a designated area must be less than or equal to 75 ppb. The three-year average, or “design value”, is calculated for each site, and the maximum value over all sites within an area determines the design value for the area. EPA issued attainment/non-attainment designations in April 2012. For most areas, compliance with the new standard was determined using data collected during the period 2008–2010.

Table 2-1 lists the currently operating ozone monitoring sites located within Arkansas and the 8-hour ozone design values for each site for the three three-year periods ending in 2010, 2011, and 2012.

Table 2-1. Ozone Monitoring Sites and 8-Hour Ozone Design Values for the Three-Year Periods Ending in 2010, 2011, and 2012

Site Name	ID	County	2008–2010 8-Hour Ozone Design Value (ppb)	2009–2011 8-Hour Ozone Design Value (ppb)	2010–2012 8-Hour Ozone Design Value (ppb)
North Little Rock (Pike Ave)	051190007	Pulaski	70	73	73
North Little Rock Airport	051191002	Pulaski	70	74	77
Little Rock (Doyle Springs Rd)	051191008	Pulaski	67	70	75
Marion	050350005	Crittenden	74	77	79
Deer	051010002	Newton	66	68	69
Springdale	051430005	Washington	64	68	73
Fayetteville	051430006	Washington	—	—	79 ¹
Mena	051130003	Polk	70	73	73
Arkadelphia (CASTNet) ³	050199991	Clark	—	64 ¹	64 ²

¹ Based on one year of monitoring data.

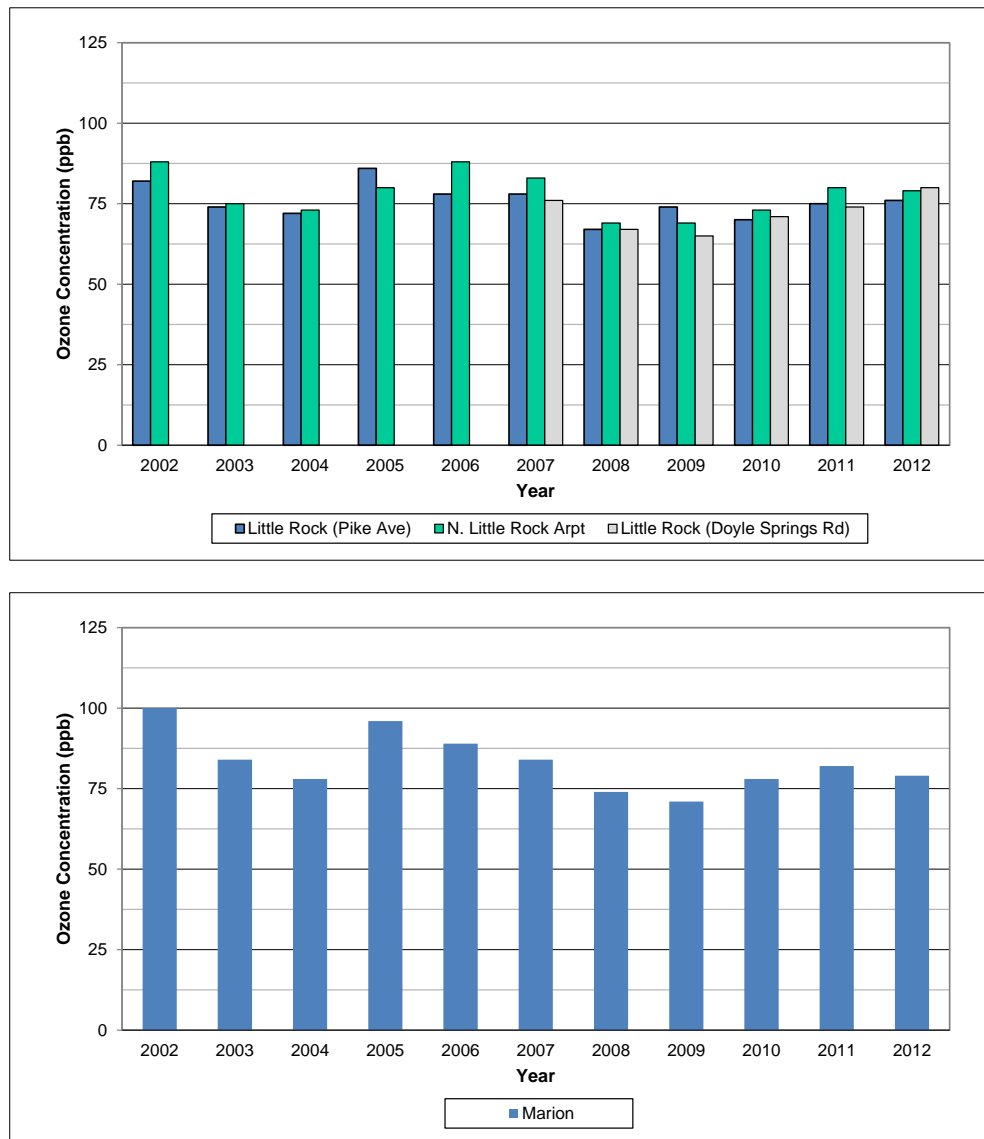
² Based on two years of monitoring data.

³ Clean Air Status and Trends Network.

For the three year period ending in 2012, the 8-hour ozone design values are greater than 75 ppb for the North Little Rock Airport and Marion sites (and thus for the Little Rock and Memphis areas). The estimated design values for the newly established Fayetteville site is also greater than 75 ppb, but the estimate is based on only one year of monitoring data.

Figure 2-2 displays the fourth highest 8-hour average ozone concentrations and Figure 2-3 displays the 8-hour ozone design values for all currently operating monitoring sites with five or more years of data. Data for years with incomplete data and design values based on fewer than three years of data are not included in the displays. As noted earlier, the fourth highest 8-hour average ozone concentration for each year is used to calculate the design value and assess compliance with the ozone NAAQS. Note that the Little Rock sites are grouped together and that the maximum value for any site in the Little Rock area represents the design value for the area.

Figure 2-2. Fourth Highest 8-Hour Average Ozone Concentration (ppb) for Monitoring Sites within Arkansas



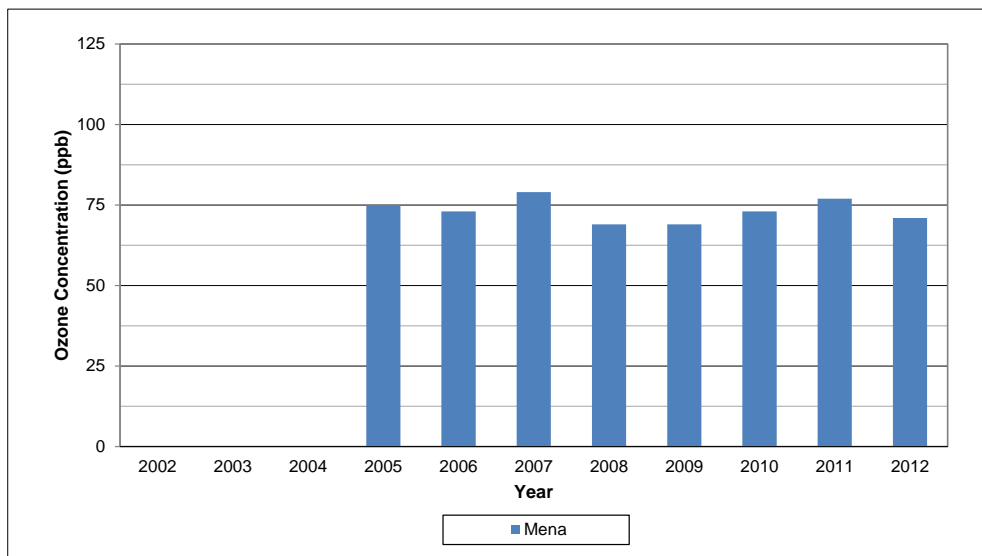
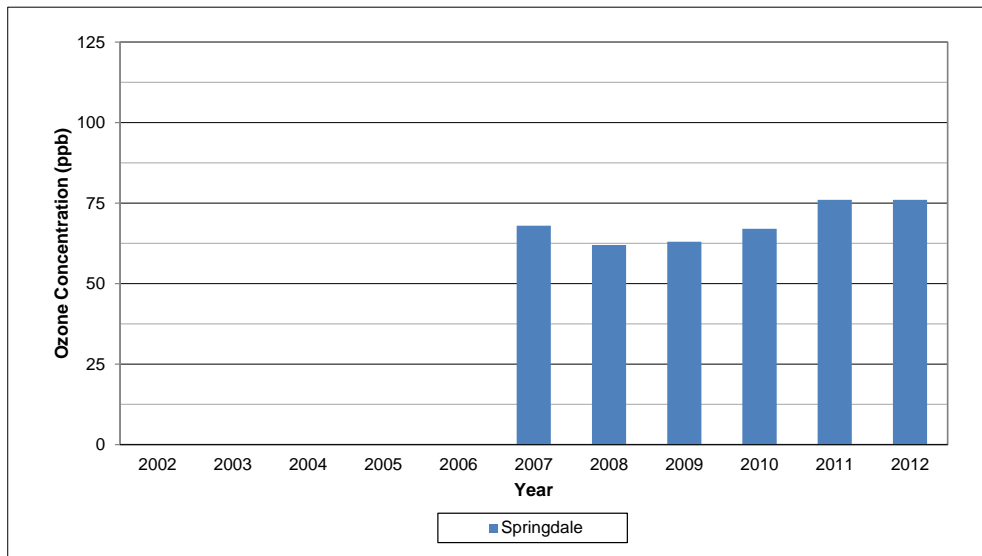
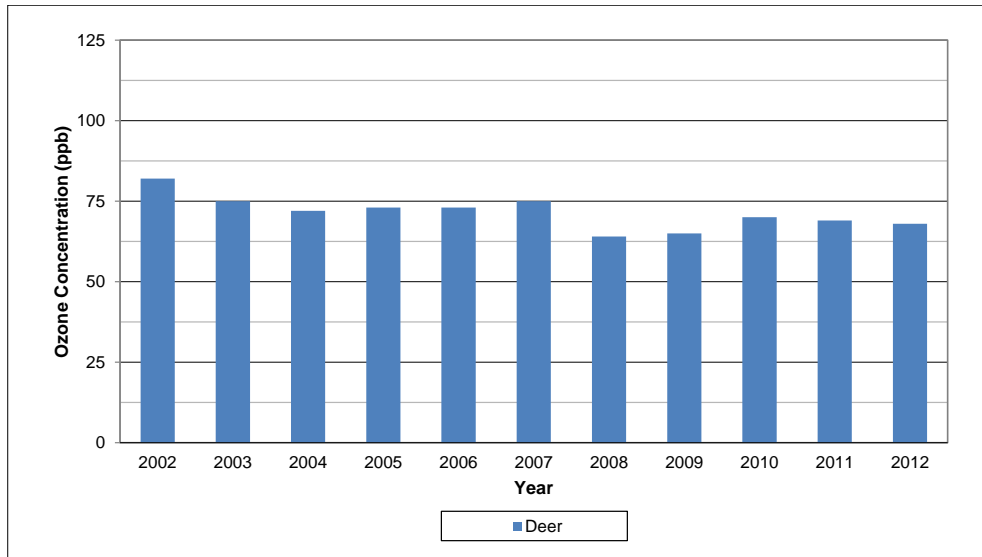
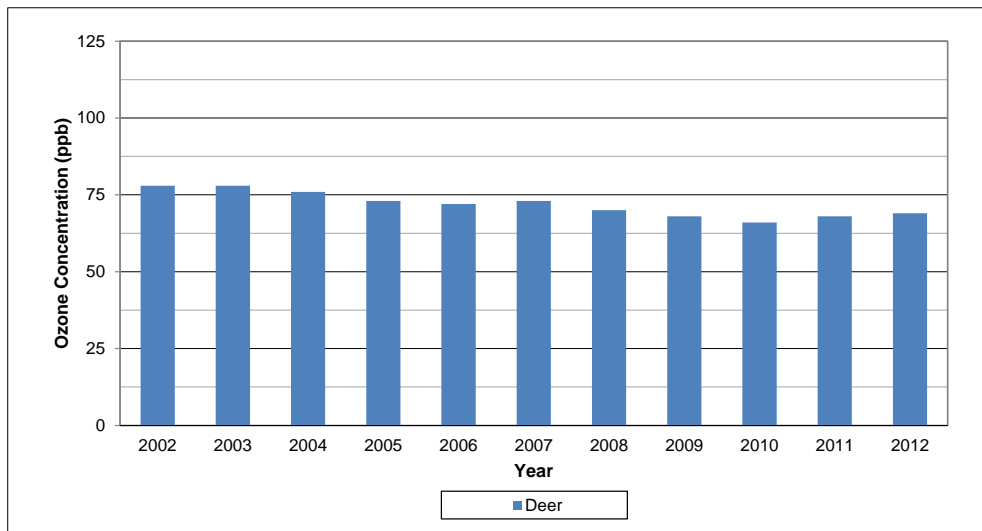
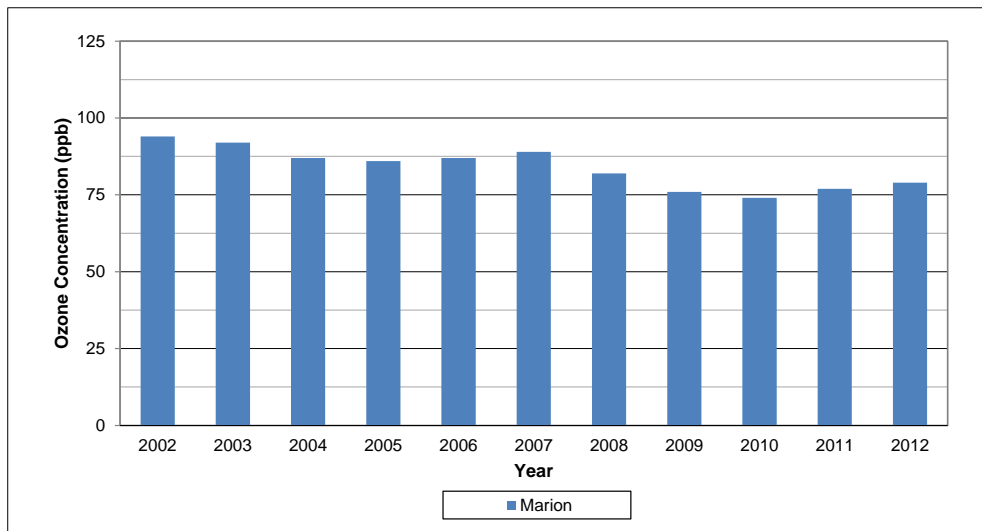
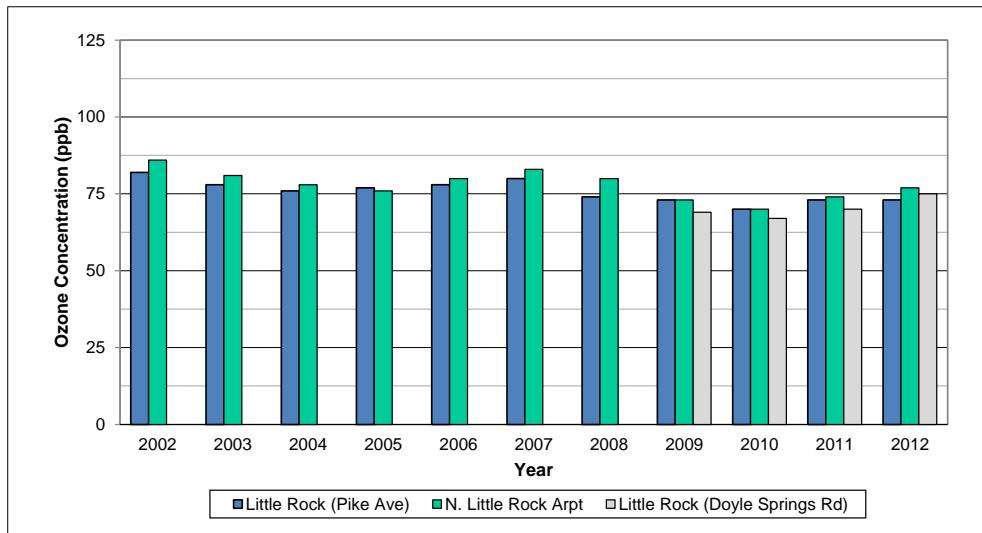
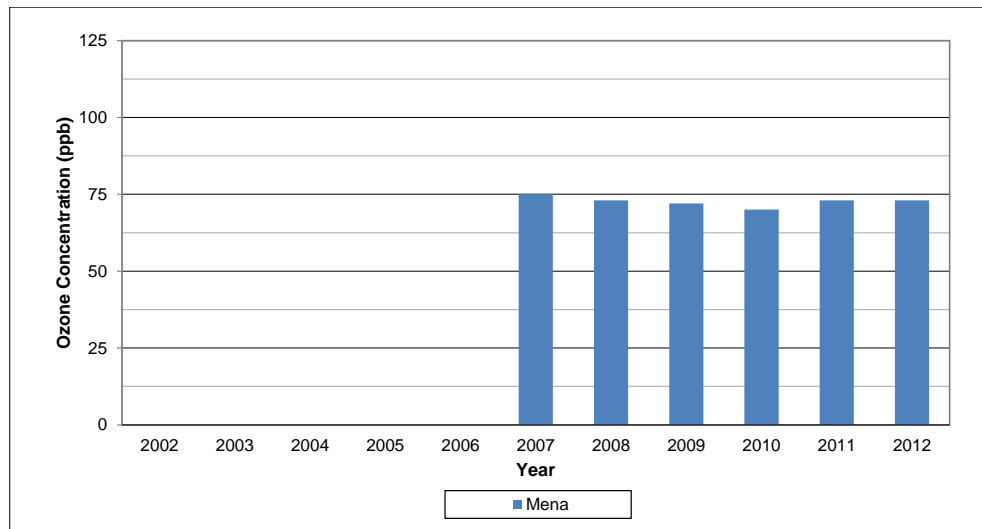
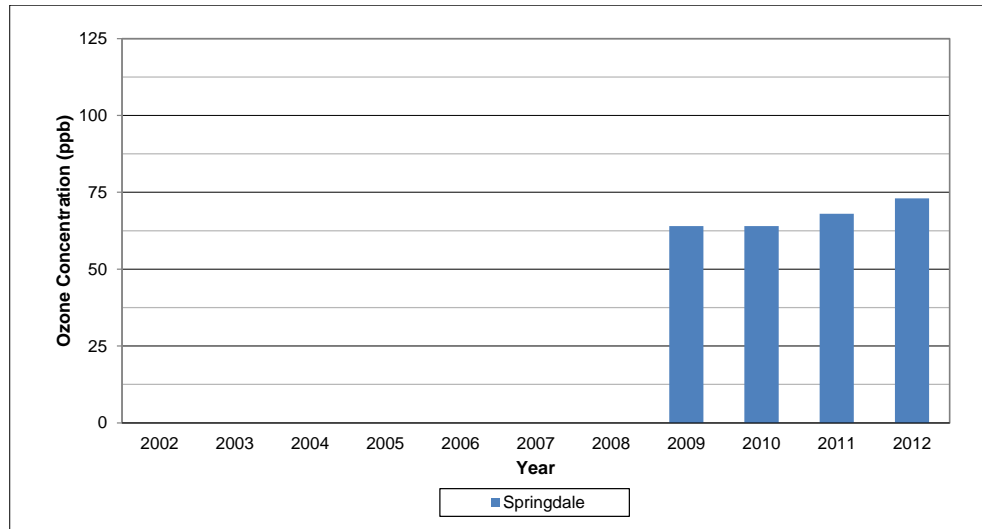


Figure 2-3. 8-Hour Ozone Design Values (ppb) for Monitoring Sites within Arkansas





Note: The NAAQS for 8-hour average ozone concentration is 75 ppb.

The design values displayed in Figure 2-3 are based on three years of data. Overall, the data indicate a downward trend in design value for Marion and Deer, a slight downward trend for Little Rock and Mena, and an upward trend for Springdale.

2.1.2 PM_{2.5}

The recent emphasis on PM_{2.5} as an air pollutant of concern is based primarily on epidemiological studies that have indicated a cause and effect relationship between exposure to fine particles and health effects, including respiratory and cardiovascular disease and premature mortality. Particulates are also a primary constituent of regional haze, which limits visibility and the attainment of visibility goals, and ultimately diminishes the natural beauty of the environment.

Fine particulates in the atmosphere consist of primary particles that are emitted directly from sources and secondary particles that form in the atmosphere through chemical and physical processes.

Pollutants that contribute to the formation of secondary aerosols include SO₂, NO_x, and ammonia (NH₃). Natural sources of fine particulates and precursor pollutants include organic aerosols from vegetation, wind-blown dust, sea salt, and forest fires. Anthropogenic contributors include numerous agricultural, mobile, and industrial sources. Meteorology plays an important role in particulate formation and transport and in determination of the ambient particulate concentration levels.

The U.S. EPA established new standards for fine particulate matter in 1997, and subsequently revised the 24-hour standard in 2006 and the annual standard in 2012. Under these standards, fine particles are defined as those with a diameter of less than 2.5 microns; particles of this size are also referred to as PM_{2.5}. The annual PM_{2.5} NAAQS requires the three-year average annual mean concentration to be less than or equal to 12 micrograms per cubic meter (µg/m³). The daily PM_{2.5} standard requires the three-year average of the 98th percentile daily average concentration to be less than or equal to 35 µg/m³. The averages or “design values” are calculated for each site and then the maximum value over all sites within an area is the design value for the area.

Table 2-2 lists the currently operating PM_{2.5} monitoring sites located within Arkansas and the annual design values for each site for the three three-year periods ending in 2010, 2011, and 2012.

Designations for the annual PM_{2.5} standard are expected to be issued in 2014.

Table 2-2. PM_{2.5} Monitoring Sites and Annual PM_{2.5} Design Values for the Three-Year Periods Ending in 2010, 2011, and 2012

Site Name	ID	County	2008–2010 Annual PM _{2.5} Design Value (µg/m ³)	2009–2011 Annual PM _{2.5} Design Value (µg/m ³)	2010–2012 Annual PM _{2.5} Design Value (µg/m ³)
North Little Rock (Pike Ave)	051190007	Pulaski	11.6	11.7	11.9
Little Rock (Adams Field)	051191004	Pulaski	12.0	11.8	11.7
Little Rock (Doyle Springs Rd)	051191008	Pulaski	12.0	12.1	12.2
Marion	050350005	Crittenden	11.1	11.1	11.2
Stuttgart	050010011	Arkansas	10.9	10.7	10.8
Newport	050670001	Jackson	10.4	10.2	10.3
Springdale	051430005	Washington	10.7	11.0	10.8
Mena	051130002	Polk	10.4	10.8	10.8
Hot Springs	050510003	Garland	10.7	10.8	11.0
El Dorado	051390006	Union	10.9	11.1	11.4
Crossett	050030005	Ashley	10.4	10.6	10.8
Roland	401359021	Sequoyah (OK)	--	11.6 ¹	10.9 ²

¹ Based on one year of monitoring data.

² Based on two years of monitoring data.

The annual PM_{2.5} design values are greater than 12 µg/m³ for Little Rock (Doyle Springs Road) for the periods ending in 2011 and 2012.

Table 2-3 lists 24-hour design values for each site for the three three-year periods ending in 2010, 2011, and 2012.

Table 2-3. PM_{2.5} Monitoring Sites and 24-Hour PM_{2.5} Design Values for the Three-Year Periods Ending in 2010, 2011, and 2012

Site Name	ID	County	2008–2010 24-Hr PM _{2.5} Design Value (µg/m ³)	2009–2011 24-Hr PM _{2.5} Design Value (µg/m ³)	2010–2012 24-Hr PM _{2.5} Design Value (µg/m ³)
North Little Rock (Pike Ave)	051190007	Pulaski	24	23	23
Little Rock (Adams Field)	051191004	Pulaski	25	24	25
Little Rock (Doyle Springs Rd)	051191008	Pulaski	25	25	26
Marion	050350005	Crittenden	24	22	23
Stuttgart	050010011	Arkansas	24	22	21
Newport	050670001	Jackson	23	22	22
Springdale	051430005	Washington	22	23	22
Mena	051130002	Polk	21	22	22
Hot Springs	050510003	Garland	21	21	22
El Dorado	051390006	Union	21	22	23
Crossett	050030005	Ashley	21	22	23
Roland	401359021	Sequoyah (OK)	--	23 ¹	22 ²

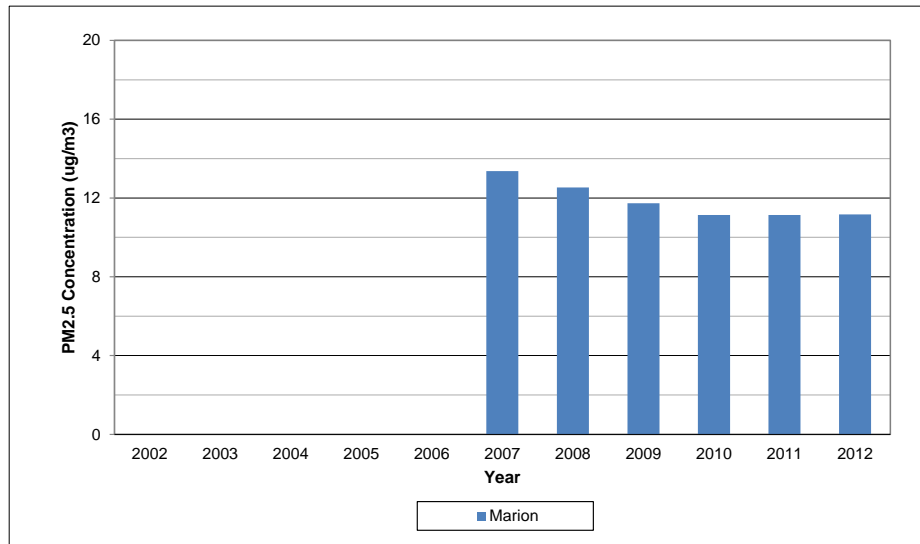
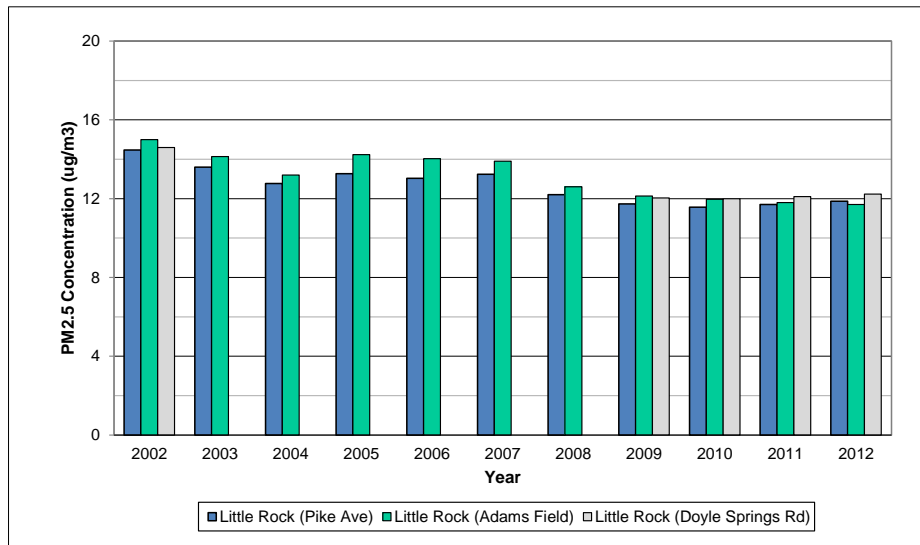
¹ Based on one year of monitoring data.

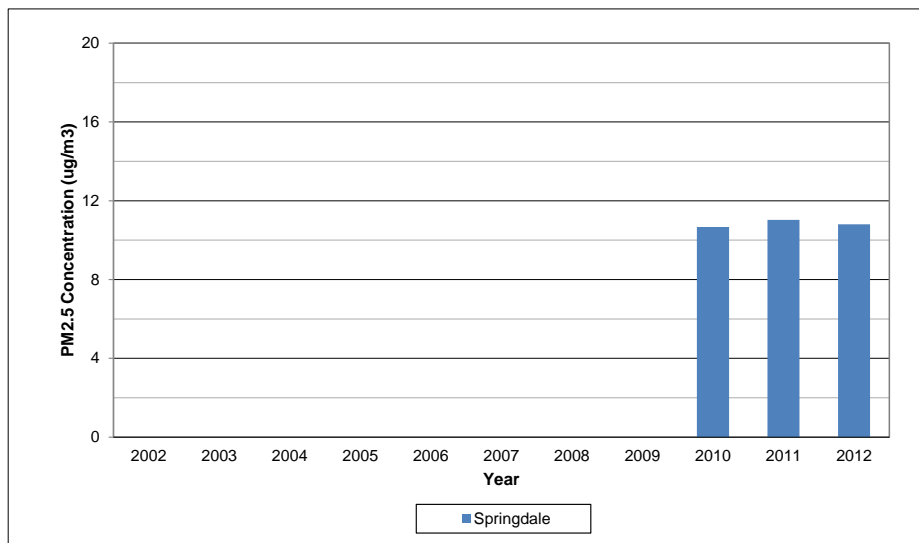
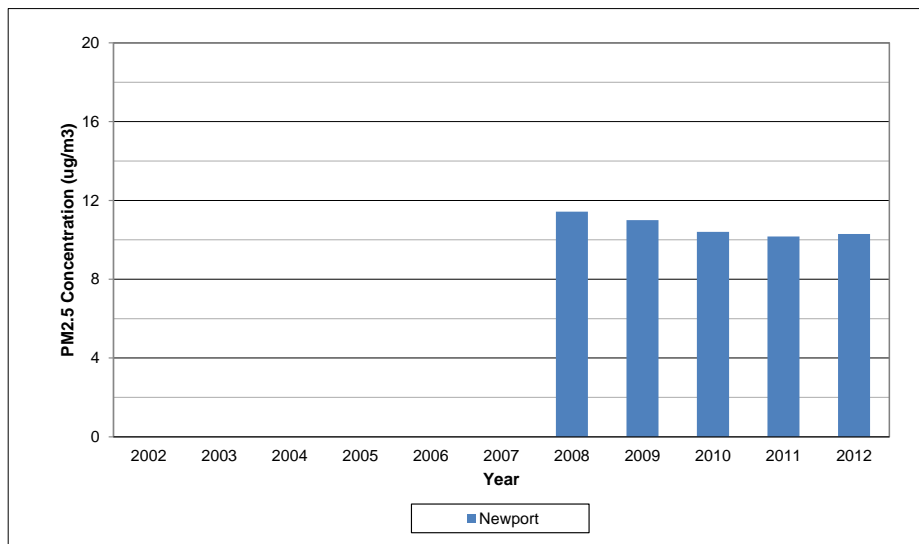
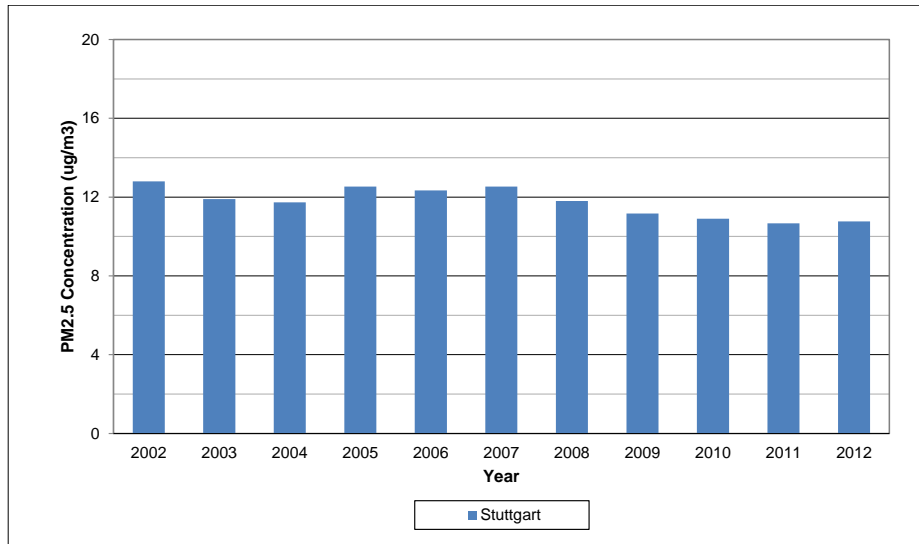
² Based on two years of monitoring data.

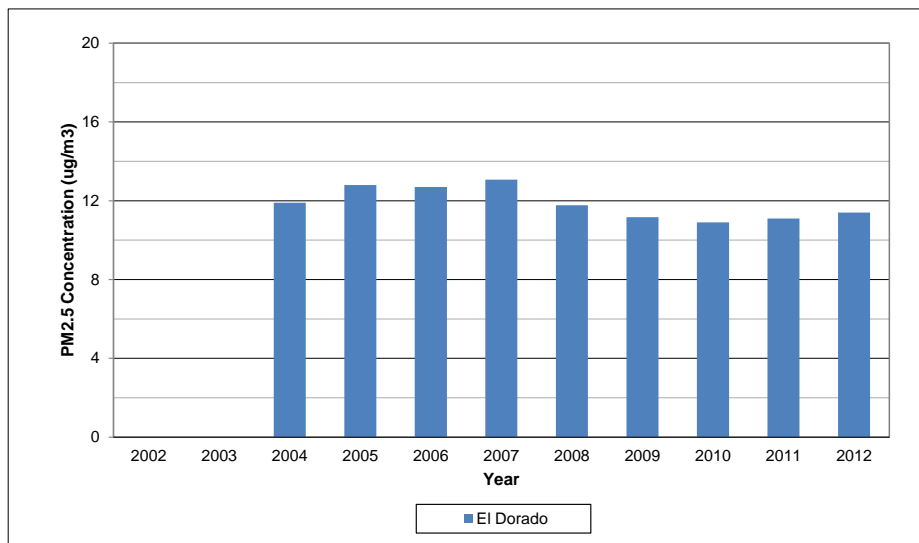
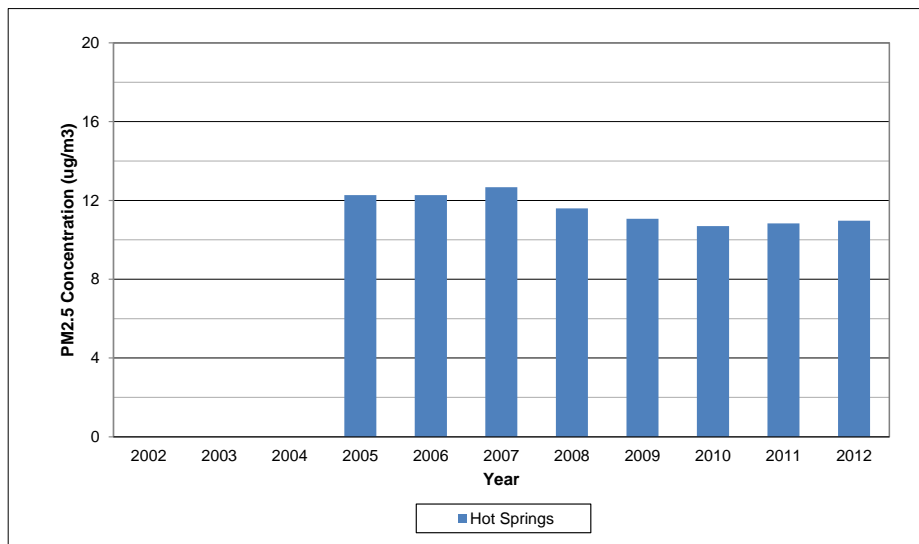
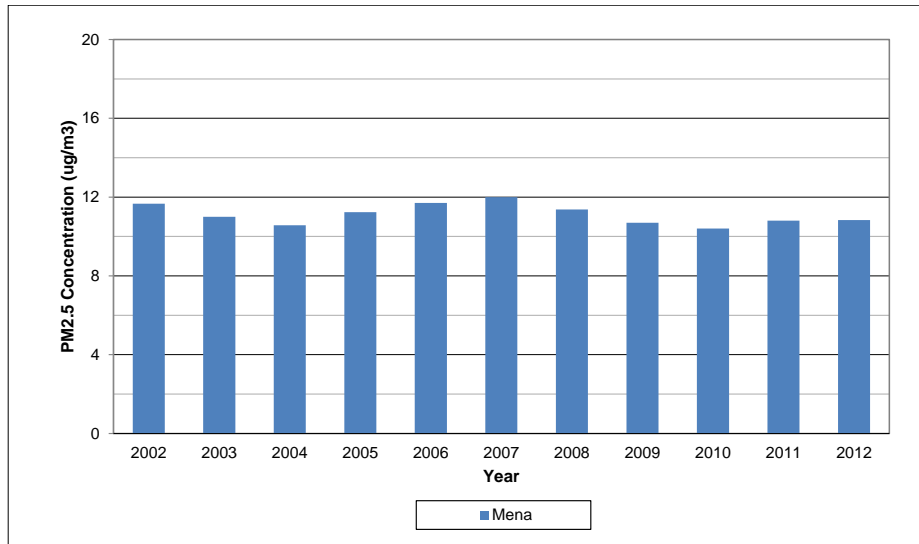
For the three-year period ending in 2012, the annual PM_{2.5} design values are much less than 35 µg/m³ for all sites and all three periods.

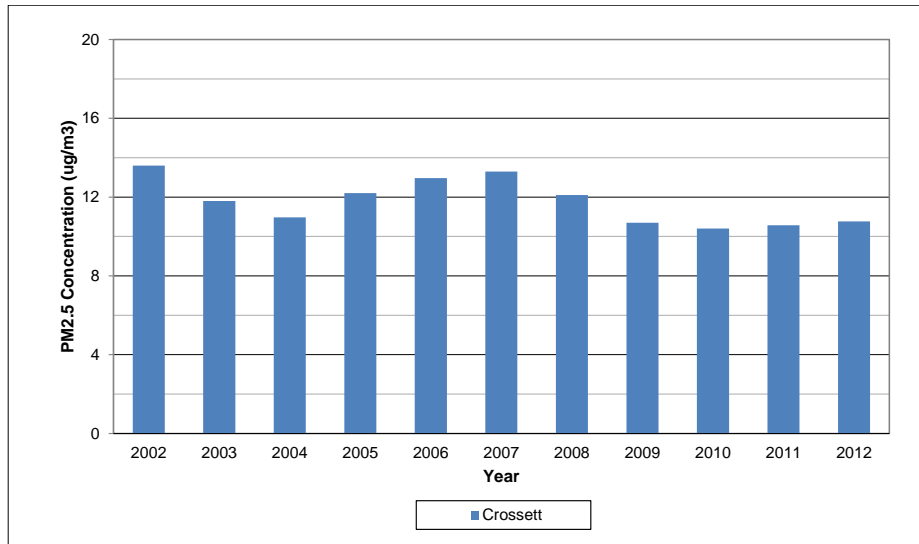
Figure 2-4 displays the annual PM_{2.5} design values and Figure 2-5 displays the 24-hr PM_{2.5} design values for all currently operating monitoring sites with five or more years of data. Data for years with incomplete data and design values based on fewer than three years of data are not included in the displays. Note that the Little Rock sites are grouped together and that the maximum value for any site in the Little Rock area represents the design value for the area.

Figure 2-4. Annual PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas



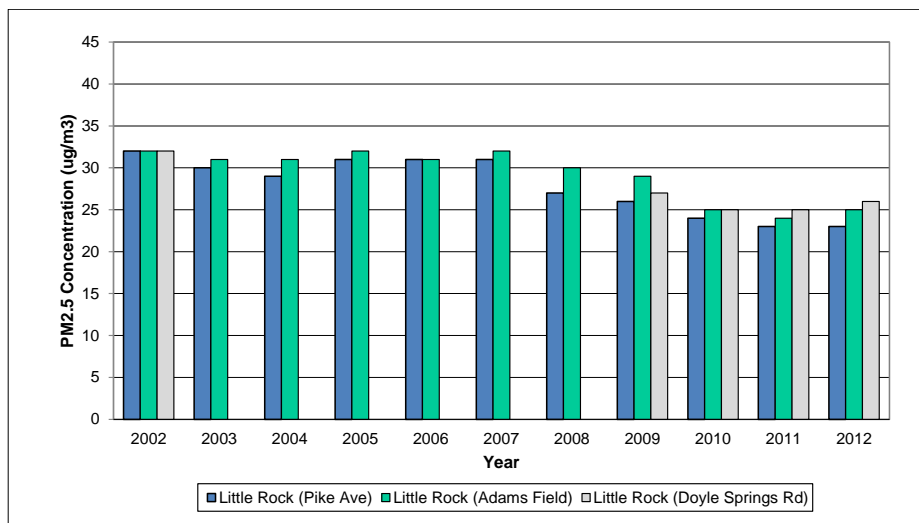


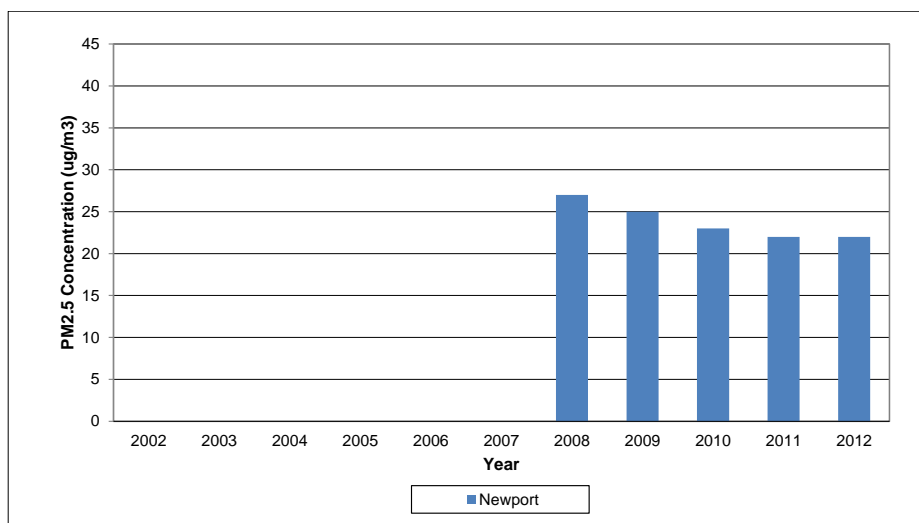
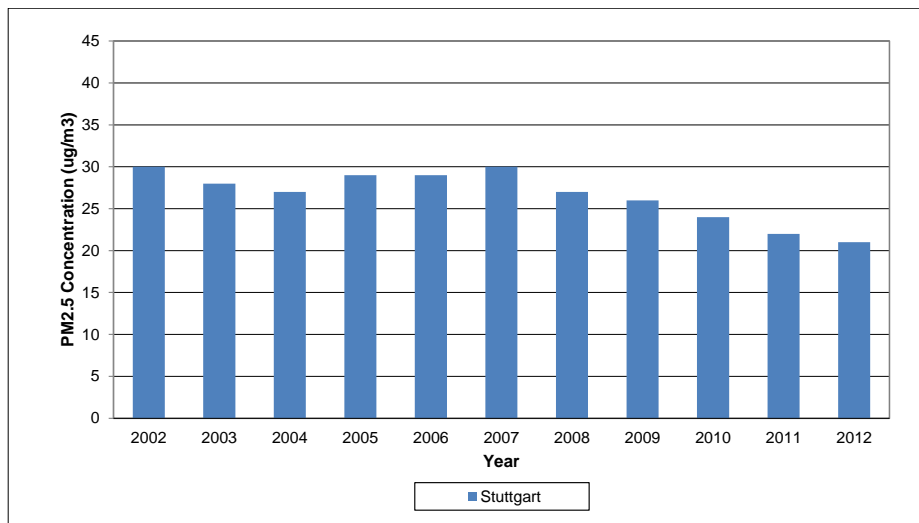
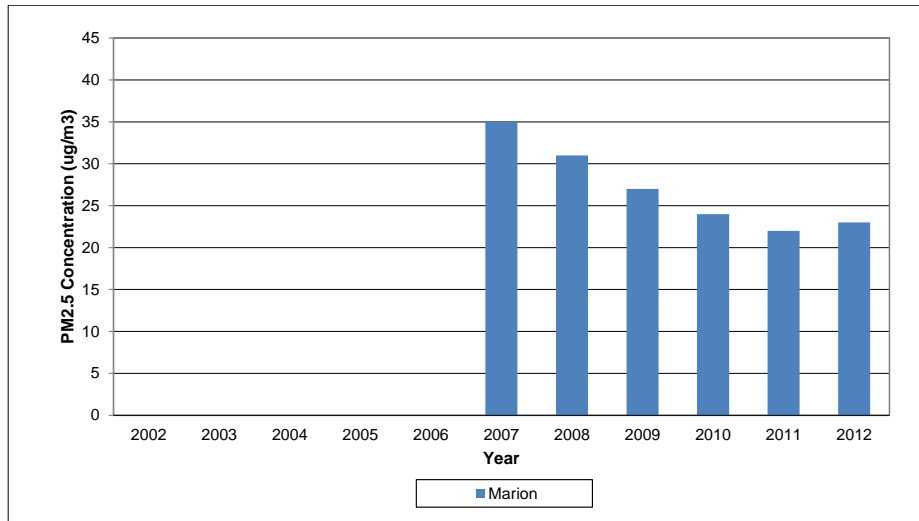


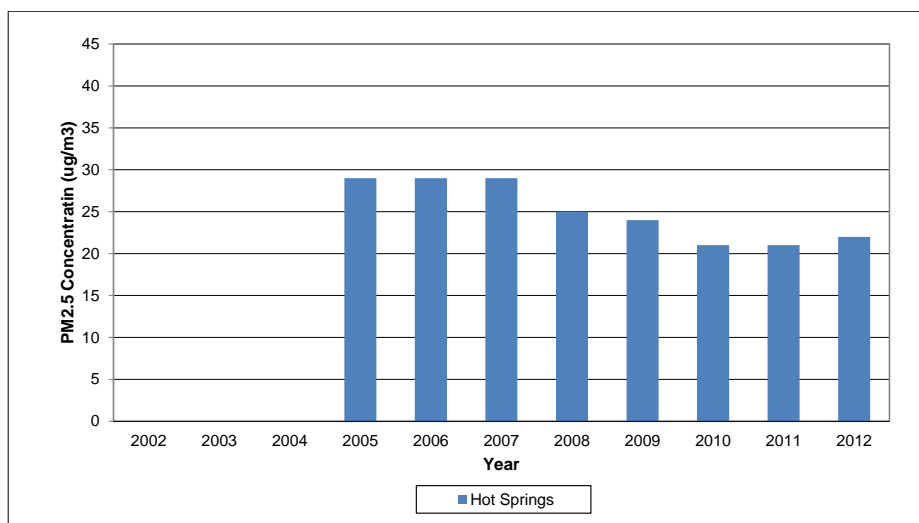
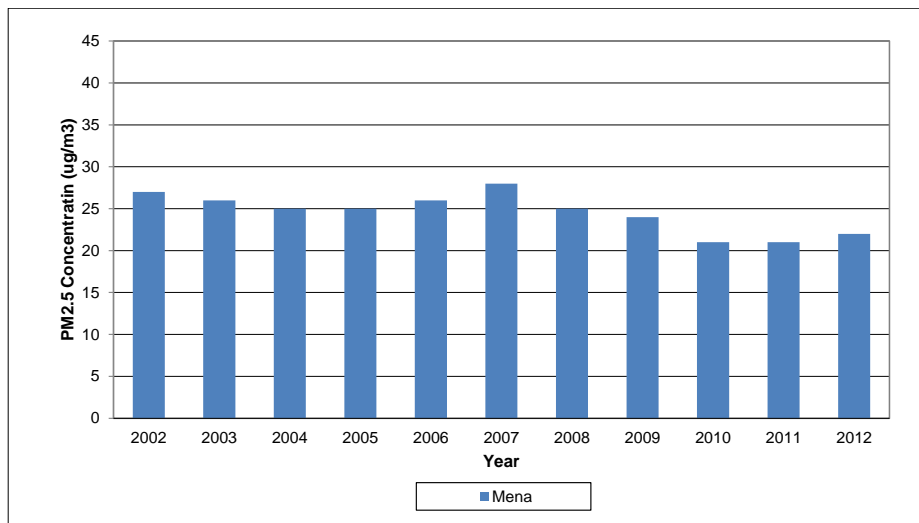
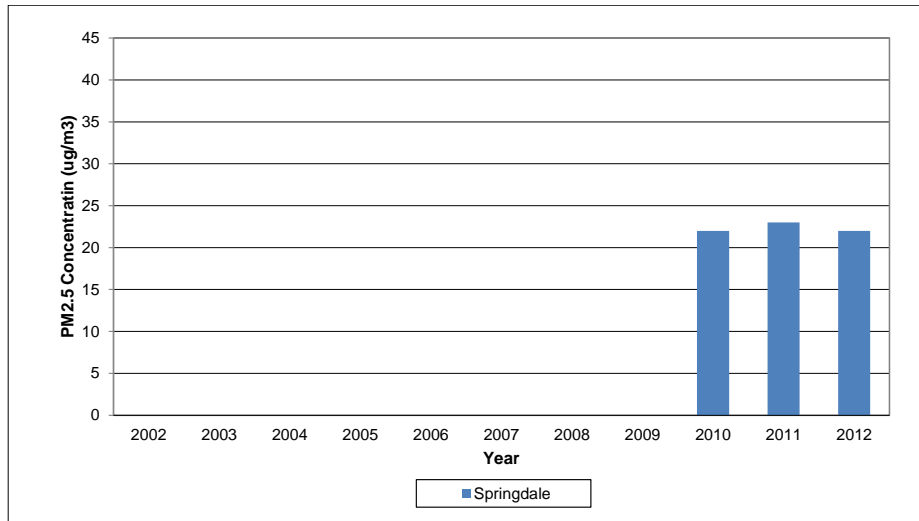


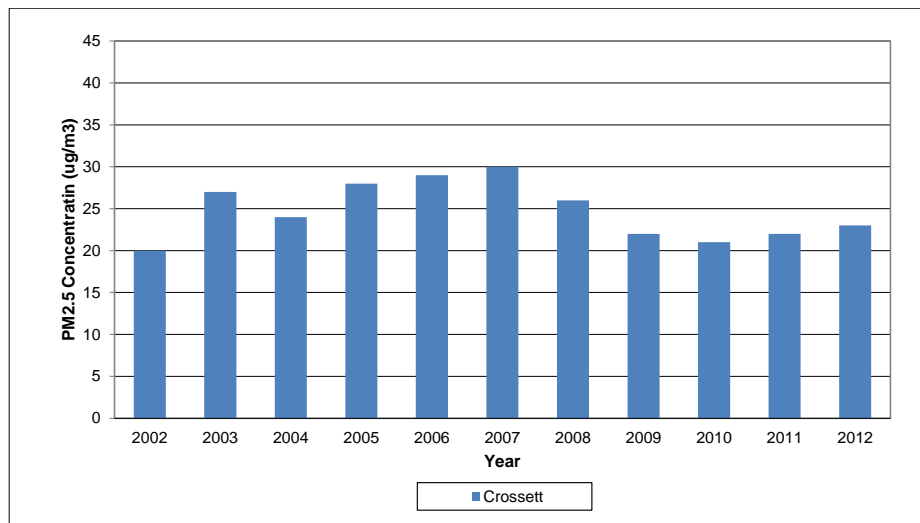
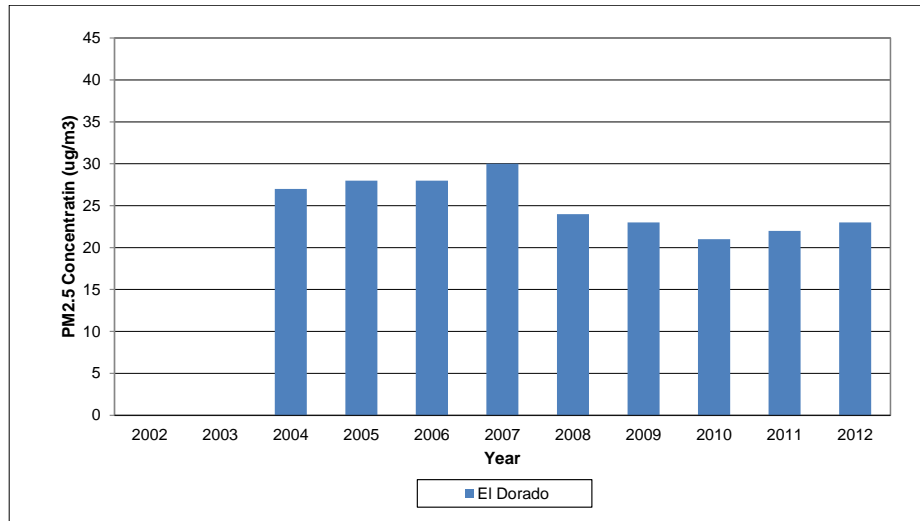
Note: The NAAQS for annual average PM_{2.5} concentration is 12 µg/m³.

Figure 2-5. 24-Hour PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas









Note: The NAAQS for 24-hour average PM_{2.5} concentration is 35 µg/m³.

The design values displayed in Figures 2-4 and 2-5 are based on three years of data. Overall, the data indicate a downward trend in PM_{2.5} concentrations for all sites. However, design values go up and down throughout the eleven-year period. For several of the sites with a full data record, the data indicate a downward trend in design value between 2002 and 2004, an upward trend between 2004 and 2007, and a downward trend between 2007 and 2012. These findings are possibly (even likely) influenced by differences in meteorological and wildfire conditions among the years/periods.

2.1.3 NO₂

NO₂ is a precursor to both ozone and PM_{2.5}. In addition, it reacts with water in the respiratory tract to form nitric acid, which is a corrosive irritant. It impairs lung function and can cause respiratory problems including airway inflammation in healthy people, and increased symptoms in people with asthma. Effective April 2010, the 1-hour NO₂ NAAQS requires the three-year average of the 98th-percentile of the annual distribution of daily maximum NO₂ concentration to be less than or equal to 100 ppb (188

$\mu\text{g}/\text{m}^3$). The annual NO_2 NAAQS requires the annual average concentration to be less than or equal to 53 ppb ($100 \mu\text{g}/\text{m}^3$).

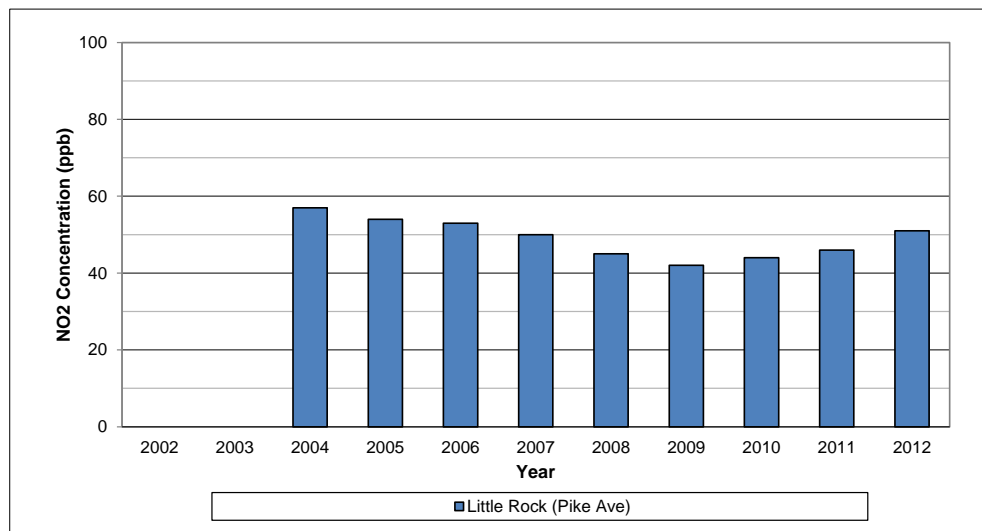
Table 2-4 lists the currently operating NO_2 monitoring sites located within Arkansas and the 1-hour NO_2 design values for each site for the three three-year periods ending in 2010, 2011, and 2012.

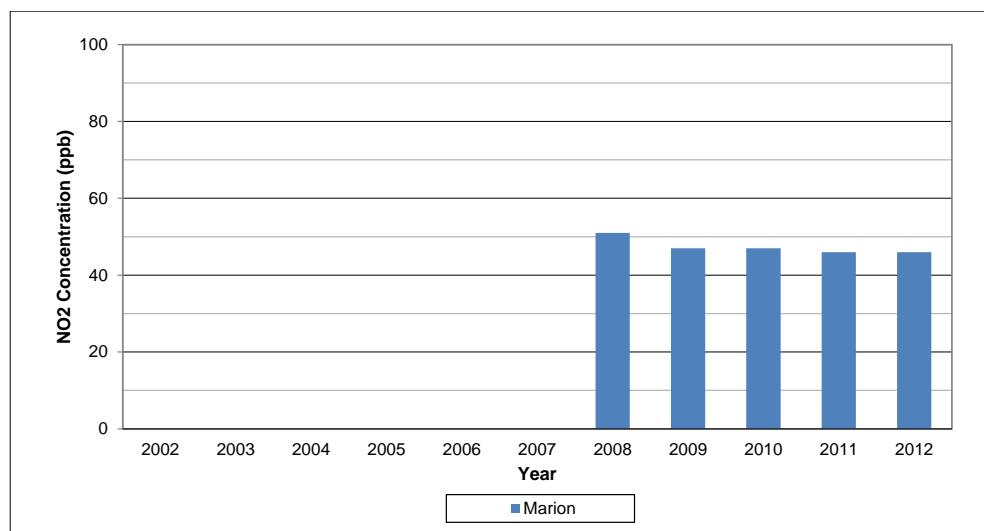
Table 2-4. NO_2 Monitoring Sites and 1-Hour NO_2 Design Values for the Three-Year Periods Ending in 2010, 2011, and 2012

Site Name	ID	County	2008–2010 1-Hour NO_2 Design Value (ppb)	2009–2011 1-Hour NO_2 Design Value (ppb)	2010–2012 1-Hour NO_2 Design Value (ppb)
North Little Rock (Pike Ave)	051190007	Pulaski	44	46	51
Marion	050350005	Crittenden	47	46	46

For all three three-year periods, the 1-hour NO_2 design values are less than 100 ppb for both the North Little Rock (Pike Ave) and Marion sites. The corresponding 98th percentile values for each component year are also less than 100 ppb. Figure 2-6 displays the 1-hour NO_2 design values for these two sites for all years with data beginning with 2002.

Figure 2-6. 1-Hour NO_2 Design Values (ppb) for Monitoring Sites within Arkansas





Note: The NAAQS for 1-hour NO₂ concentration is 100 ppb.

The design values displayed in Figure 2-6 are based on three years of data. For Little Rock, the data indicate a decrease in design value between 2004 and 2009, followed by an increase between 2009 and 2012. The data for Marion show an overall decrease from 2008 to 2009, but a flat trend for the past four design-value periods.

For both sites, the annual average NO₂ values are well below the standard.

2.1.4 SO₂

SO₂ is also a precursor of PM_{2.5} and can contribute to both acid rain and visibility impairment. The primary standard for SO₂ is the 1-hour SO₂ NAAQS which requires the three-year average of the 99th-percentile of the annual distribution of daily maximum SO₂ concentration to be less than or equal to 75 ppb (196 µg/m³).

Table 2-5 lists the currently operating SO₂ monitoring sites located within Arkansas and the 1-hour SO₂ design values for each site for the three three-year periods ending in 2010, 2011, and 2012.

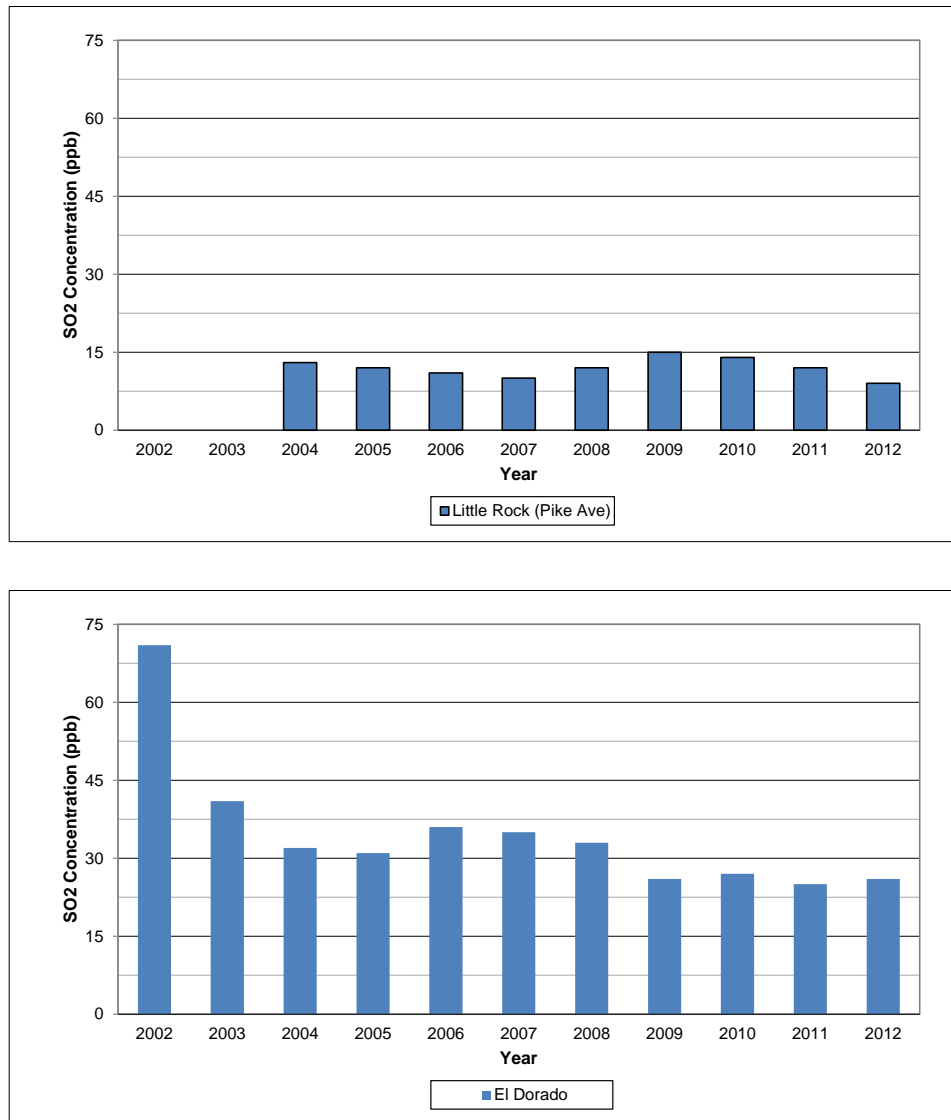
Table 2-5. SO₂ Monitoring Sites and 1-Hour SO₂ Design Values for the Three-Year Periods Ending in 2010, 2011, and 2012

Site Name	ID	County	2008–2010 1-Hour SO ₂ Design Value (ppb)	2009–2011 1-Hour SO ₂ Design Value (ppb)	2010–2012 1-Hour SO ₂ Design Value (ppb)
North Little Rock (Pike Ave)	051190007	Pulaski	14	12	9
El Dorado	051390006	Union	27	25	26

The SO₂ design values are higher for the El Dorado site, compared to the Little Rock site, but much less than 75 ppb for both sites and all three periods. The corresponding 99th percentile values for each component year are also less than 75 ppb.

Figure 2-7 displays the 1-hour SO₂ design values.

Figure 2-7. 1-Hour SO₂ Design Values (ppb) for Monitoring Sites within Arkansas



Note: The NAAQS for 1-hour SO₂ concentration is 75 ppb.

The design values displayed in Figure 2-7 are based on three years of data. For Little Rock, the data indicate a relatively flat tendency between 2004 and 2012. The data for El Dorado show a large drop between 2002 and 2003, followed by a more gradual (and uneven) decrease from 2003 to 2012.

2.1.5 Visibility

Visibility impairment or light extinction can result from the scattering and/or absorption of light by particles in the atmosphere. Coarse and fine particles from both natural and anthropogenic sources can contribute to light extinction. High humidity conditions can also contribute to light extinction and reduced visibility. Visibility is sometimes expressed in terms of deciview units, which vary approximately in proportion to the human response to visibility change. Higher deciview (dv) values correspond to poorer visibility (and a lower visual range).

In 1999, the U.S. EPA promulgated regional haze regulations to prevent “any future, and remedy any existing, impairment of visibility” at 156 designated Class I areas (national parks greater than 6000 acres and wilderness areas greater than 5000 acres). The regional haze rule calls for states to establish “reasonable progress goals” for each Class I area to improve visibility on the 20 percent haziest days and to prevent visibility degradation on the 20 percent clearest days. The national goal is to return visibility to natural background levels by 2064. Using the period 2000 to 2004 as the baseline period, states are to evaluate progress in improving visibility by 2018 and every ten years thereafter. State Implementation Plans (SIPs) for the first phase of the regional haze regulation were due in December 2007. Several Regional Planning Organizations (RPOs) have been developing control strategies to guide states in meeting the regional haze goals.

There are two Class I areas in Arkansas. These are Caney Creek Wilderness and Upper Buffalo Wilderness. Visibility is monitored at these sites as part of the IMPROVE monitoring network. Table 2-6 lists the average visibility (deciviews) for the 20 percent worst visibility days for the periods 2002–2006, 2005–2009, and 2008–2012 for both areas. Deciviews (DV) corresponding to the 2018 goal and estimated natural conditions (EPA, 2003) are also provided.

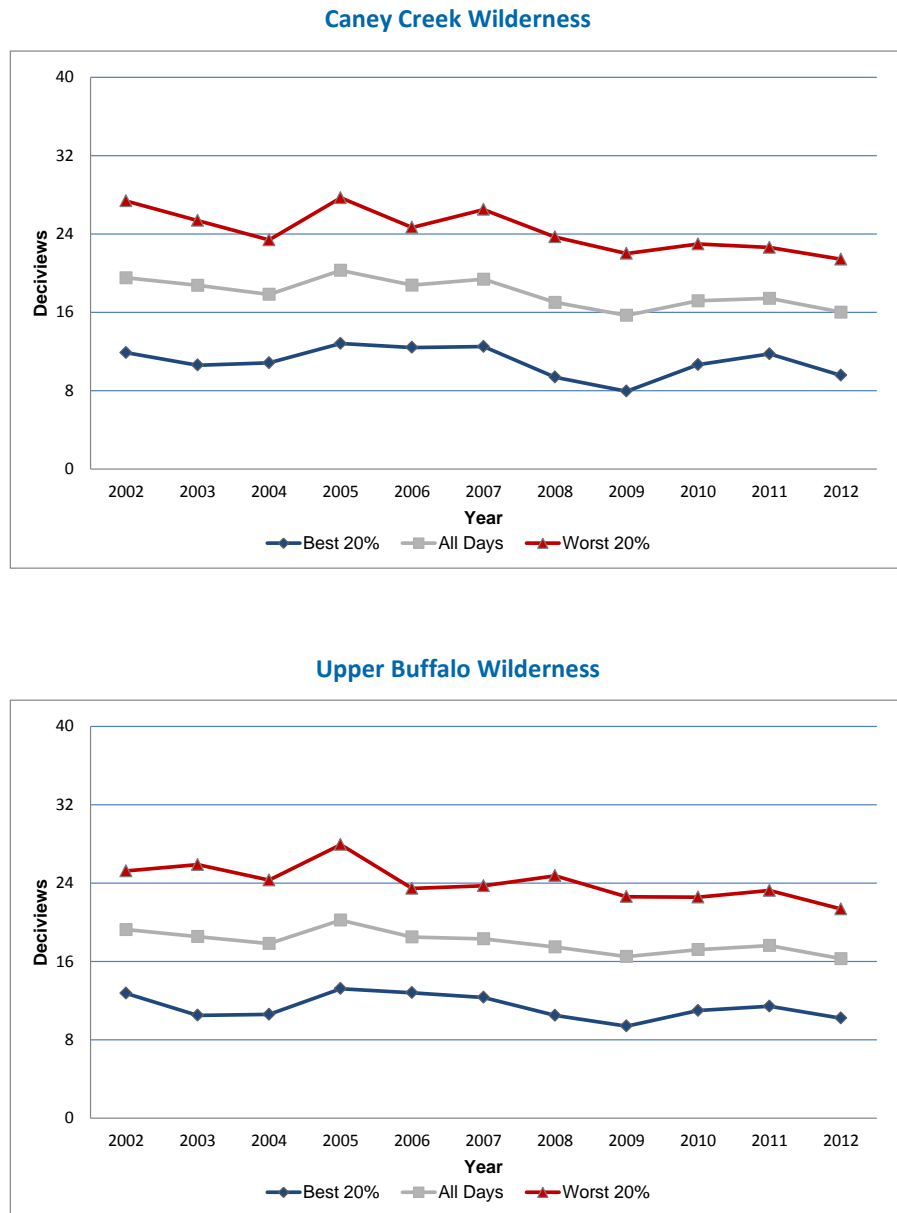
Table 2-6. Average Visibility for the 20 Percent Worst Days for Class I Areas in Arkansas Based on Data for 2002 through 2012

Site Name	ID	County	2002–2006 Average Visibility for 20% Worst Days (dv)	2005–2009 Average Visibility for 20% Worst Days (dv)	2008–2012 Average Visibility for 20% Worst Days (dv)	2018 Glidepath Goal (dv)	Estimated Natural Conditions (dv)
Caney Creek Wilderness	CACR1	Newton	25.7	24.9	22.5	22.9	11.3
Upper Buffalo Wilderness	UPBU1	Union	25.4	24.5	22.9	22.8	11.3

The IMPROVE data indicate that the 2018 goals have been met or nearly met in 2012 and that continued improvement in visibility is needed to achieve the natural condition goals for both areas. As noted above, some measures to reduce regional haze and improve visibility at these and other Class I areas may be under consideration (or being implemented), based on the work conducted by the RPOs.

Figure 2-8 displays annual average visibility in deciviews for the 20 percent best days, 20 percent worst days, and all days for each year during the period 2002-2012 for the two IMPROVE sites.

Figure 2-8. Annual Average Visibility (Deciviews) for IMPROVE Monitoring Sites within Arkansas



The data for both sites show a slight downward trend (toward improved visibility) for all three categories of days.

2.2 Representativeness of the Simulation Periods

The modeling analysis includes two base years, 2005 and 2008. The meteorological conditions that characterize these two years are representative of the eleven year period from 2002 through 2012. Table 2-7 summarizes the meteorological conditions including temperature, precipitation, and wind

information that characterize the Little Rock area, based on meteorological data from the local National Weather Service (NWS) monitoring site for the two years and the multi-year period.

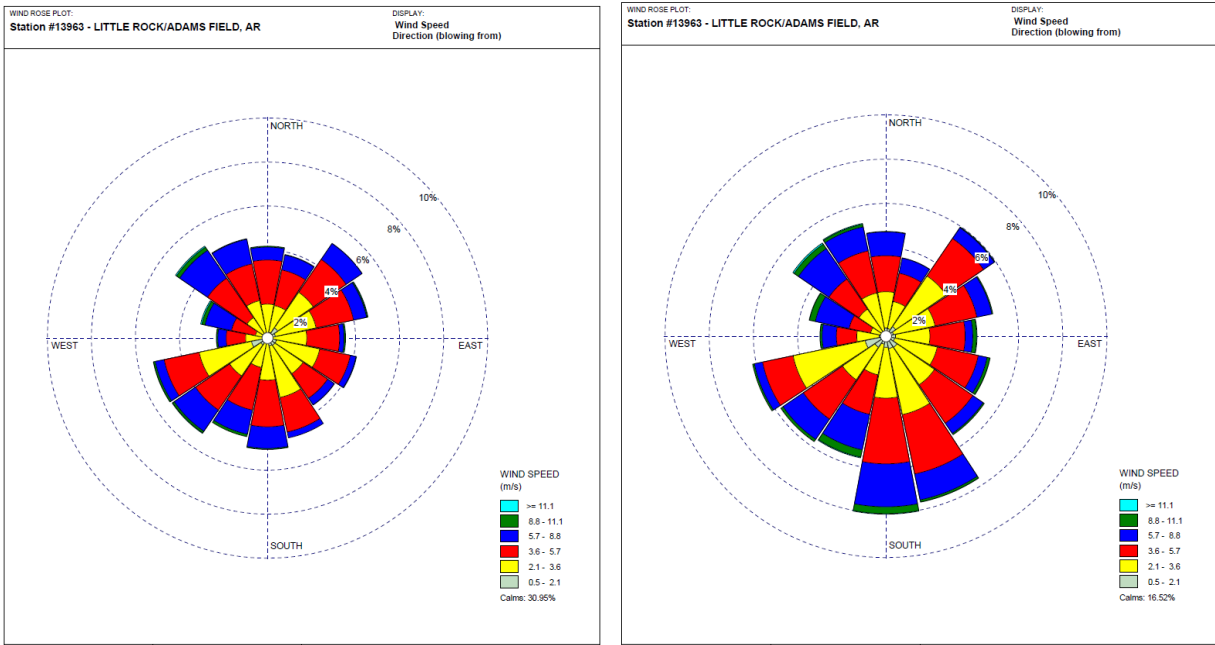
Table 2-7. Summary Meteorological Data for Little Rock for 2005, 2008 and 2002-2012

Metric	2005	2008	2002–2012
Mean annual temperature (degrees Fahrenheit)	64.2	62.1	63.4
Mean annual precipitation (inches)	34.6	58.2	49.8
Mean annual wind speed (meters per second)	2.7	3.4	3.1
Prevailing surface wind direction (indicates direction from which the winds are blowing from)	SW	SSW	S

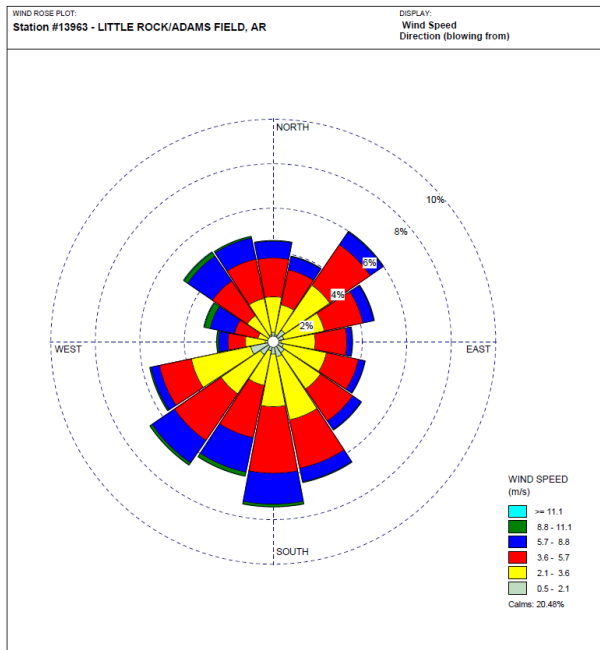
Temperatures were slightly higher than average for 2005 and slightly lower than average for 2008. The total amount of precipitation was lower than average for 2005 and higher than average for 2008. Overall, 2005 was a warmer, dryer year and 2008 was a cooler, wetter year compared to the 2002-2012 multi-year period. Average surface wind speeds were lower than average for 2005 and higher than average for 2008. Predominant wind directions for both 2005 and 2008 include a westerly component and differ slightly from the predominant southerly wind direction that characterizes the multi-year period.

Figure 2-9 illustrates the frequency of observed surface wind speed and wind direction for the Little Rock NWS site for the two years and the multi-year period. In the wind rose diagrams, wind direction is defined as the direction from which the wind is blowing. The length of the bar within that wind-direction sector indicates the frequency of occurrence of a particular wind direction. The shading indicates the distribution of wind speeds.

Figure 2-9. Frequency of Surface Wind Speed and Wind Direction for Little Rock, Arkansas
2005/2008



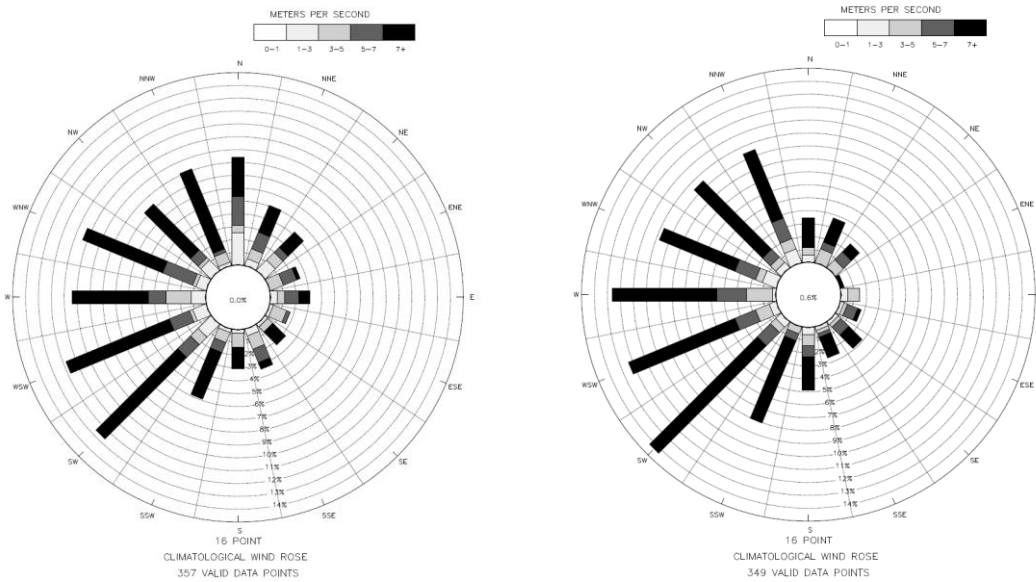
2002-2012



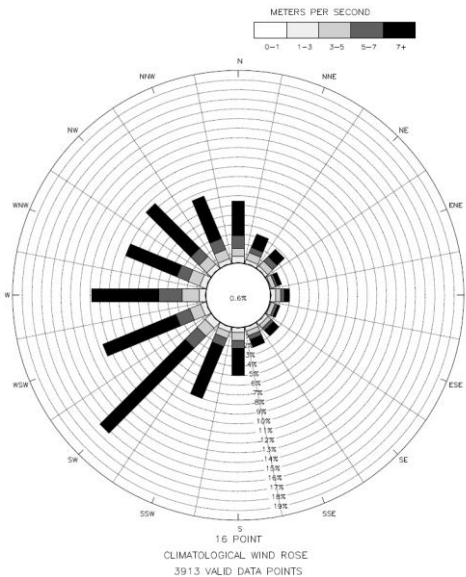
Surface wind directions for both years capture the range of wind directions observed during the full 2002-2012 period. Surface winds for 2005 are characterized by lower wind speeds, a greater incidence of calm winds, and less frequent southerly winds than the full 2002-2012 period. Surface winds for 2008 are characterized by higher wind speeds (and fewer calm periods) than the full period.

Figure 2-10 compares the frequency of observed upper-air wind directions and speeds for the two years and the multi-year period. The upper-air data are for the Little Rock upper-air monitoring site, and are available twice per day, at approximately 0600 and 1800 LST. The plots show data for 850 mb, which is approximately 1500 m above ground level (agl). The upper-air wind data are used here to obtain information about the regional-scale wind directions.

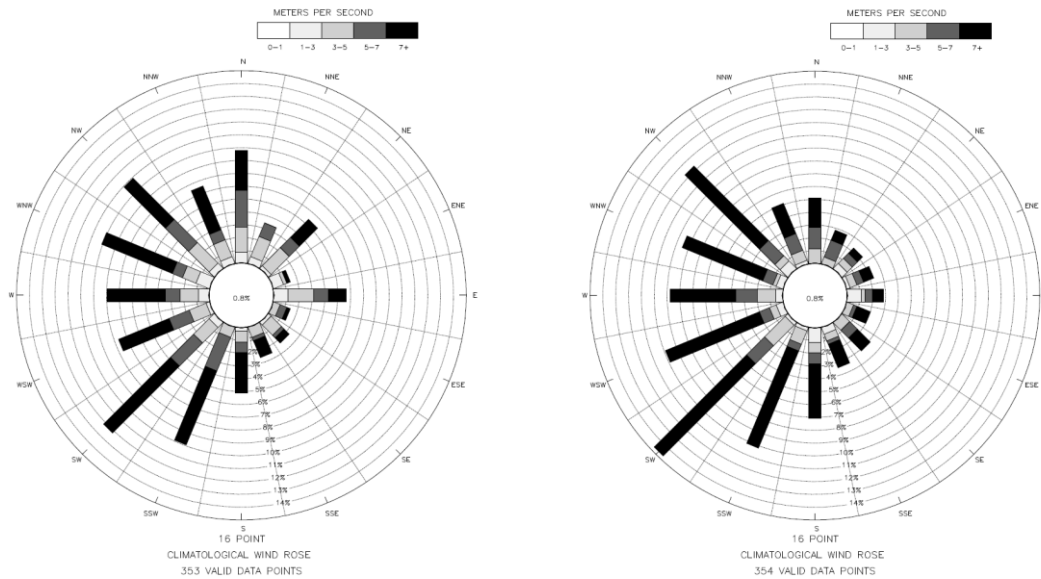
Figure 2-10a. Frequency of 850 mb Wind Speed and Wind Direction for Little Rock, Arkansas: 0600 CST 2005/2008



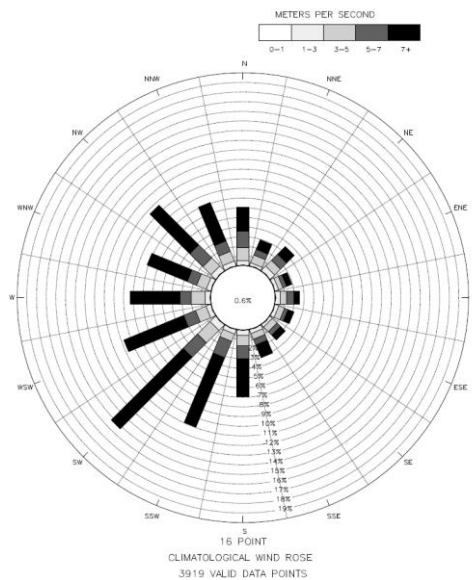
2002–2012



**Figure 2-10b. Frequency of 850 mb Wind Speed and Wind Direction for Little Rock, Arkansas: 1800 CST
2005/2008**



2002-2012



The upper-air wind directions for both 2005 and 2008 are characterized by a greater frequency of winds from the north and the east, compared to the multi-year period. However, the predominant wind directions (southwesterly to northwesterly) are well represented.

The air quality concentrations that characterize the two modeled years appear to span the range of concentrations measured during the eleven year period from 2002 through 2012. Key air quality metrics for ozone, PM_{2.5}, NO₂, and SO₂ for 2005, 2008 and the multi-year period are summarized and compared

in Table 2-8. The summary focuses on Little Rock, using data from the Pike Avenue site. The reader is referred to Section 2.2 for information on other monitoring sites.

Table 2-8. Key Air Quality Metrics for the North Little Rock (Pike Ave) Monitoring Site for 2005, 2008 and 2002-2012

Metric	2005	2008	2002–2012 Min/Max/Average		
Ozone					
4 th Highest 8-Hour Ozone Concentration (ppb)	86	67	67	86	76
Number of Days with Daily Maximum 8-Hour Ozone Concentrations > 75 ppb	16	0	0	16	4
PM_{2.5}					
Annual Average PM _{2.5} Concentration (µg/m ³)	14.7	11.6	10.8	14.7	12.4
98 th Percentile 24-Hour PM _{2.5} Concentration (µg/m ³)	39.3	25.6	22.2	39.3	27.1
NO₂					
Annual Average NO ₂ Concentration (µg/m ³)	22.6	16.9	16.9	28.2	21.7
98 th Percentile 1-Hour NO ₂ Concentration (µg/m ³)	101.5	75.2	75.2	116.6	94.6
SO₂					
99 th Percentile 1-Hour SO ₂ Concentration (µg/m ³)	21.0	36.0	21.0	52.4	31.4

The year 2005 includes the highest overall concentrations for ozone and PM_{2.5}, above average concentrations for NO₂, and the lowest overall concentrations for SO₂. The year 2008 includes the lowest overall concentrations for ozone and NO₂, below average (close to median value) concentrations for PM_{2.5}, and above average concentrations for SO₂. Together 2005 and 2008 appear to capture both best and worst case air quality conditions for Little Rock, especially for ozone and PM_{2.5}.

3 Air Quality Modeling Methodology

Air quality modeling was used to identify areas with potential ozone, PM_{2.5}, SO₂, and NO₂ issues throughout the state, examine the expected changes in these pollutants between the base and future years, and identify areas within the state where additional air quality monitoring may be used to ensure NAAQS compliance. Key components of this modeling analysis included:

- Emission inventory preparation,
- Base-year air quality model application and evaluation (2005 and 2008)
- Future-year air quality model application and assessment (2015).

The primary tools that were used for this assessment include:

- Sparse-Matrix Operator Kernel Emissions (SMOKE) processing tool (version 3.1) for the preparation of model-ready emissions;
- Community Multiscale Air Quality (CMAQ) model (version 5.0) for quantifying the air quality changes for the different scenarios;
- Atmospheric Model Evaluation Tool (AMET) to evaluate the CMAQ modeling results; and
- Modeled Attainment Test Software (MATS) to assess future-year air quality.

These tools are widely used by EPA and others for conducting air quality analysis.

The air quality modeling included an assessment of “current” conditions for two recent historical periods (2005 and 2008). Air quality was then evaluated for the selected future year (2015) by applying the modeling systems using the historical meteorological inputs and estimated emissions for 2015.

The air quality modeling methodology is presented in the remainder of this section. The current- and future-year regional modeling analyses were conducted using emissions data available from EPA and the Arkansas DEQ. Detailed information on the emissions is provided in Section 4 of this document.

3.1 Overview of the CMAQ Modeling System

Version 5.0 of the CMAQ model was used for the statewide modeling analysis. The CMAQ model is a state-of-the-science, regional air quality modeling system that can be used to simulate the physical and chemical processes that govern the formation, transport, and deposition of gaseous and particulate species in the atmosphere (Byun and Ching 1999). The CMAQ tool was designed to improve the understanding of air quality issues (including the physical and chemical processes that influence air quality) and to support the development of effective emission control strategies on both the regional and local scales. The CMAQ model was designed as a “one-atmosphere” model. This concept refers to the ability of the model to dynamically simulate ozone, particulate matter, and other species (such as mercury) in a single simulation. In addition to addressing a variety of pollutants, CMAQ can be applied to a variety of regions (with varying geographical, land-use, and emissions characteristics) and for a range of space and time scales. The latest version of CMAQ includes state-of-the-science advection, dispersion

and deposition algorithms, the latest version of the Carbon Bond (CB) chemical mechanism (CB05), and diagnostic tools for assessing source apportionment.

Numerous recent applications of the model, for both research and regulatory air quality planning purposes, have focused on the simulation of ozone and fine particulate matter (PM_{2.5}). The CMAQ model was used by EPA to support the development of the Clean Air Interstate Rule (CAIR) (EPA, 2005). It was also used by EPA to support the second prospective analysis of the costs and benefits of the Clean Air Act (CAA) (Douglas et al., 2008) and by ADEQ to support the re-establishment of an Economic Development Zone (EDZ) for Crittenden County (ICF, 2013).

The CMAQ model numerically simulates the physical processes that determine the magnitude, temporal variation, and spatial distribution of the concentrations of ozone and particulate species in the atmosphere and the amount, timing, and distribution of their deposition to the earth's surface. The simulation processes include advection, dispersion (or turbulent mixing), chemical transformation, cloud processes, and wet and dry deposition. The CMAQ science algorithms are described in detail by Byun and Ching (1999).

The CMAQ model requires several different types of input files. Gridded, hourly emission inventories characterize the release of anthropogenic, biogenic, and, in some cases, geogenic emissions from sources within the modeling domain. The emissions represent both low-level and elevated sources and a variety of source categories (including, for example, point, on-road mobile, non-road mobile, area, and biogenic). The amount and spatial and temporal distribution of each emitted pollutant or precursor species are key determinants to the resultant simulated air quality values.

The CMAQ model also requires hourly, gridded input fields of several meteorological parameters including wind, temperature, mixing ratio, pressure, solar radiation, fractional cloud cover, cloud depth, and precipitation. A full list of the meteorological input parameters is provided in Byun and Ching (1999). The meteorological input fields are typically prepared using a data-assimilating prognostic meteorological model, the output of which is processed for input to the CMAQ model using the Meteorology-Chemistry Interface Processor (MCIP). The prescribed meteorological conditions influence the transport, vertical mixing, and resulting distribution of the simulated pollutant concentrations. Certain of the meteorological parameters, such as mixing ratio, can also influence the simulated chemical reaction rates. Rainfall and near-surface meteorological characteristics govern the wet and dry deposition, respectively, of the simulated atmospheric constituents.

Initial and boundary condition (IC/BC) files provide information on pollutant concentrations throughout the domain for the first hour of the first day of the 10-day spin-up period for the simulation, and along the lateral boundaries of the domain for each hour of the simulation. Photolysis rates and other chemistry-related input files supply information needed by the gas-phase and particulate chemistry algorithms.

3.2 CMAQ Application Procedures for the Statewide Modeling Analysis

The CMAQ model was used in this study to examine future-year air quality throughout the State of Arkansas. The air quality modeling methodology is presented in this section.

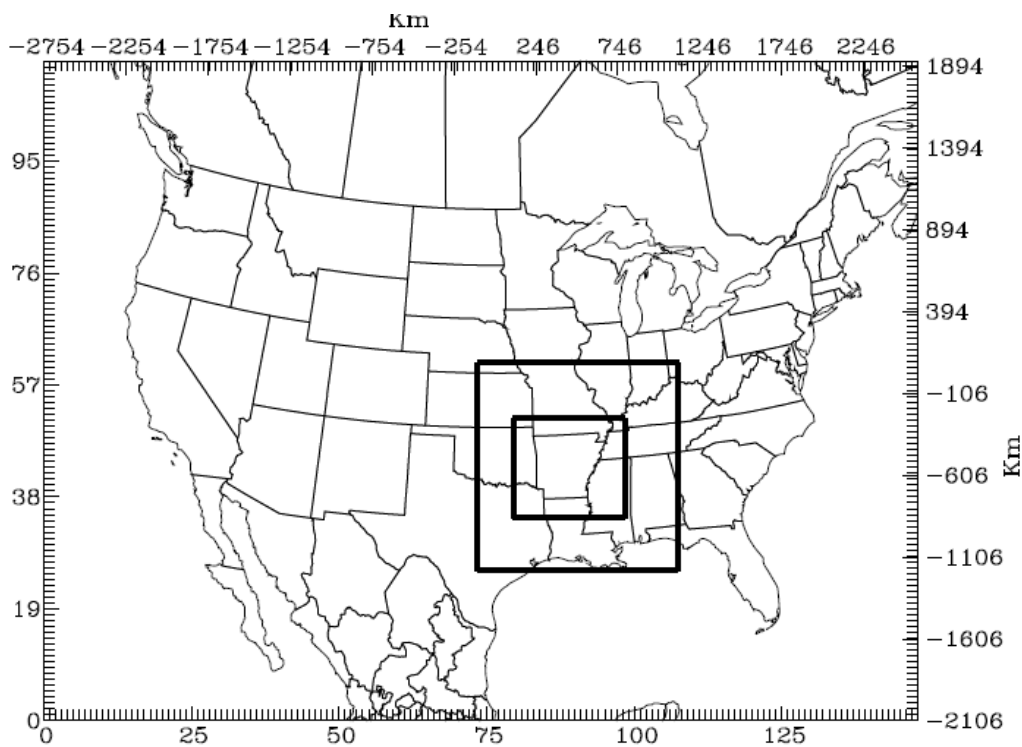
3.3 Modeling Domain

The modeling domain for application of the CMAQ model is presented in Figure 3-1 and includes a 36-km resolution outer grid encompassing the continental U.S.; a 12-km resolution intermediate grid; and a 4-km resolution inner grid encompassing Arkansas.

The regional extent of the modeling domain is intended to provide realistic boundary conditions for the area of interest and thus avoid some of the uncertainty introduced in the modeling results through the incomplete and sometimes arbitrary specification of boundary conditions. The use of 4-km grid resolution is consistent with an urban-scale analysis.

The CMAQ domain is further defined by fourteen vertical layers.

Figure 3-1. CMAQ Modeling Domain for the Arkansas Statewide Criteria Pollutant Air Quality Modeling Analysis



3.4 Simulation Period

The two annual simulation periods are 2005 and 2008. These periods were selected due to the availability of emission data and gridded meteorological inputs from EPA.

In running the model, the simulation periods were divided into two parts covering January through June and July through December, respectively. Each part of each simulation also included an additional five start-up simulation days, which were intended to reduce the influence of uncertainties in the initial conditions on the simulation results.

3.5 Modeling Databases

As discussed in the following section, the input files for the application of the CMAQ model were prepared using data and modeling databases obtained from EPA.

3.6 Input Preparation

3.6.1 Emission Inputs

This section summarizes the data, methods, and procedures followed in preparing modeling emission inventories for use in the air quality modeling analysis. Five core regional-scale emission inventories were prepared as part of this study, including a 2005 base-year emission inventory, a 2008 base-year emission inventory, a 2008 current-year inventory, a 2015 future-year baseline emission inventory using 2005 meteorological conditions, and a 2015 future-year baseline inventory using 2008 meteorological conditions. The resulting emissions are presented and summarized in Section 4.

Emissions Data

The CMAQ model requires as input, hourly, gridded criteria pollutant emissions of both anthropogenic and biogenic sources that have been spatially allocated to the appropriate grid cells and chemically speciated for the applicable chemical mechanism used in the model. The modeling inventories were processed and prepared for CMAQ using EPA's Sparse-Matrix Operator Kernel Emissions (SMOKE) software (Version 3.1), with the inline emissions feature.

The 2005 and 2008 base-year emission inventories were prepared based on EPA's National Emission Inventory (NEI), specifically Version 4.2 of the 2005-based modeling platform (EPA, 2005) and EPA's 2008-based platform (2007v5) (EPA, 2012). The NEI includes emission data for the following sectors:

- Electric Generating Unit (EGU) point sources
- Other point sources (non-EGU point)
- Non-point (area) sources
- On-road motor vehicles
- Non-road motor vehicles
- Average-year wildfires and prescribed fires
- Fugitive dust
- Agriculture
- Locomotives and commercial marine except for Category 3 commercial marine vessels
- Category 3 commercial marine vessels
- Canadian, Mexican and offshore emissions for point, non-point and on-road sectors
- Biogenic sources

- Oceanic gaseous chlorine emissions

The SMOKE input files for 2005 and 2008 were obtained from the EPA ftp site.

The gridded surrogates used for spatially allocating anthropogenic emissions and land-use data for preparation of the biogenic emissions for the 12-km grid were extracted from the EPA platform database and the corresponding 12-km grid covering the eastern U.S. The gridded surrogates for the 4-km grid were prepared using the EPA SRGTOOLS and associated database. Land-use data for preparation of the biogenic emissions for the 4-km grid were prepared based on the BELD3 database.

The modeling inventories include the following pollutants: volatile organic compounds (VOC), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), fine particulates (PM_{2.5}), coarse particulates (PM₁₀), and ammonia (NH₃).

The future-year baseline emission inventories were prepared based on Version 4.2 of the 2005 modeling platform, projected to 2014 (EPA, 2005). The 2014 emissions were used to represent 2015 and no further projection of the emissions was done. The projected EGU emissions were not adjusted for the Cross-State Air Pollution Rule (CSAPR), as this rule was “vacated” in August 2012. Instead, the EGU emissions are consistent with the original Clean Air Interstate Rule (CAIR). In addition, emissions for a new EGU facility (American Electric Power (AEP) Service Corporation’s John W. Turk, Jr. facility) located in southwestern Arkansas were added to the future-year baseline inventory. These data were provided by ADEQ (2012).

Emissions Inventory Preparation Methodology

As noted above, SMOKE version 3.1 was utilized to process the emissions and prepare CMAQ-ready inputs for the base-year (2005 and 2008) and 2015 future-year baseline using source sector files obtained from EPA and updated EGU emissions provided by ADEQ. Emission files were prepared for the 36-, 12- and 4-km resolution grids used in the modeling analysis, and included processing of all source sectors using various SMOKE programs and inputs, and review and quality assurance checks.

The general procedures followed in preparing the modeling inventories, using various programs included with SMOKE, were the following:

- Perform chemical speciation to transform input criteria pollutants into the CB-05 chemical mechanism species, as required by CMAQ.
- Perform temporal distribution to distribute the input annual/monthly emissions into hourly emissions.
- Perform spatial distribution of input emissions to the 36-, 12- and 4-km resolution modeling grids.
- Merge emissions from all source categories into the CMAQ model-ready files.

Quality Assurance Procedures

The emissions inventory processing quality assurance (QA) procedures included the preparation and examination of tabular emissions summaries and graphical display products.

Tabular summaries were used to examine emissions totals for various steps of the emissions processing. Summaries for input emissions are based on the input inventory data: monthly emissions for the on-road and non-road sectors, and annual emissions for other sectors for criteria pollutants. Summaries for the emissions are based on the SMOKE output reports which include daily emissions for each CB-05 species for each sector. The output daily emissions are summed over all days in the year and the CB-05 species are summed for the criteria pollutants. The emissions summaries were made for each scenario by state and sector, and comparisons were made between the input emissions and output emissions for each sector to assure consistency.

In addition to the tabular summaries, various graphical displays were prepared for one day of each month to examine the spatial distribution and temporal variation for each sector and the final merged emissions using a graphical plotting package.

3.6.2 Meteorological Inputs

The 36- and 12-km resolution meteorological input files for the 2005 and 2008 annual simulation periods were originally prepared by EPA using the Pennsylvania State University/National Center for Atmospheric Research (PSU/NCAR) Fifth Generation Mesoscale Model (MM5, version 3.7.4) (EPA, 2009). The model was applied for a 36-km resolution grid covering all of the lower 48 states and major portions of Canada and Mexico and for two 12-km resolution grids covering the eastern and western U.S. (EPA 2009). For the performance evaluation, temperature, wind speed, wind direction, and moisture data were obtained from NOAA's Meteorological Assimilation Data Ingest System (MADIS) and rainfall data were obtained from the National Weather Service's Climate Prediction Center.

The MM5 outputs were postprocessed by EPA for input to CMAQ using the MCIP program. The meteorological fields for the 12-km study domain were extracted from the larger 12-km domain for the eastern U.S. used by EPA. The 12-km meteorological inputs were also used as the basis for the 4-km meteorological fields. Interpolation and reanalysis methods were used to adapt the input files to the 4-km grid. The 12-km fields were interpolated to the 4-km grid. For most parameters, objective analysis (based on bi-linear interpolation) was used to combine the interpolated fields with available observations and thus adjust the 12-km fields to the 4-km grid. Certain parameters such as radiation, rainfall, and land-use-based quantities, which are not expected to exhibit smooth variations in space, were not interpolated and the values used for the 4-km sub-cells were the same as for the encompassing 12-km grid cell.

3.6.3 Other Inputs

All other input files for the application of the CMAQ model were obtained from EPA.

3.7 Model Performance Evaluation

An integral component of all modeling studies is the evaluation of model performance for the base-year (or base-case) simulation. For this study, the CMAQ modeling results were compared with observed data, using a variety of graphical and statistical analysis products.

3.7.1 Air Quality Data

Air quality data for the evaluation of model performance were obtained from EPA's Air Quality System (AQS) database. Ozone, PM₁₀, PM_{2.5}, NO₂, SO₂ and CO data for all monitoring sites within the 12- and 4-km grids were obtained and processed for use by AMET. The model performance statistics were calculated using a variety of hourly concentrations, daily maximum 1-hour concentrations, daily maximum 8-hour average concentrations, and 24-hour average concentrations. For consistency with the NAAQS, the evaluation focuses on daily maximum 1-hour concentration for NO₂ and SO₂, daily maximum 8-hour average concentration for ozone, and 24-hour average concentration for PM_{2.5}.

3.7.2 Model Performance Evaluation Methodology

The overall objective of a model performance evaluation is to establish that the modeling system can be used reliably to predict the effects of changes in emissions on future-year air quality. This was primarily accomplished by comparing the modeling results with observed data, using a variety of graphical and statistical analysis products. EPA guidance (EPA, 2007) stresses the need to evaluate the model relative to how it will be used in the air quality assessment; that is in simulating the response to changes in emissions. To examine the response of the model to differences in the inputs, the ability of the model to simulate month-to-month differences in concentration levels and patterns, the ability of the model to simulate the concentrations (or at least the frequency distribution of concentrations) associated with different types of meteorological conditions; and the ability of the model to perform consistently and reasonably across a range of concentrations were also examined.

The evaluation focused on the 12- and 4-km resolution grids. Analysis of results for the 12-km resolution grid emphasized representation of the regional-scale concentration levels and patterns, as well as month-to-month variations in regional-scale ozone air quality. A more detailed analysis of the results was performed for the innermost, high-resolution (4-km) grid. This included the analysis of the magnitude and timing of site-specific concentrations and a statistical evaluation. Statistical model performance evaluation focused on ozone, PM_{2.5}, NO₂ and SO₂ and statistics were calculated using hourly concentrations, daily maximum 1-hour concentrations, daily maximum 8-hour average concentrations, and 24-hour average concentrations, as appropriate. For extraction of the model output and matching with the station values, concentration information was taken from the grid cell in which the monitoring site is located.

Graphical Analysis to Support Model Performance Evaluation

AMET generates a wide variety of graphical analysis products to facilitate the evaluation of CMAQ model performance. Plots and graphics were used to assess the reasonableness of the results. The graphical analysis included the following:

- Spatial plots of the simulated values were used to qualitatively assess the ability of the model to provide reasonable concentration patterns, consistent with the emissions and seasonal and day-to-day variations in meteorology.
- Bias and error plots were used to graphically display statistical measures of model performance and to identify any spatial patterns or trends in the model performance statistics.

- Concentration time-series plots comparing simulated and observed values at selected monitoring sites were used to determine whether the timing and magnitude of the simulated values match the observations.
- Scatter plots were used to graphically compare the simulated and observed concentrations.

Statistical Analysis to Support Model Performance Evaluation

AMET also calculates a variety of statistical measures to facilitate the evaluation of CMAQ model performance. Table 3-1 summarizes key statistical measures that were used to provide insight into model performance.

Table 3-1. Statistical Measures Used for the CMAQ Model Performance Evaluation for the Statewide Modeling Analysis

Metric	Definition
# of data pairs	The number of observation/simulation data pairs
Mean observation value	The average observed concentration
Mean simulation value	The average simulated concentration
Mean bias	$\left(\frac{1}{N}\right)\sum_{l=1}^N(S_l - O_l)$ <p>where N is the number of data pairs, and S_l and O_l are the simulated and observed values at site l, respectively, over a given time interval.</p>
Normalized bias	$\left(\frac{1}{N}\right)\sum_{l=1}^N(S_l - O_l)/O_l \cdot 100\%$
Normalized mean bias	$\sum_{l=1}^N(S_l - O_l) / \sum_{l=1}^N O_l \cdot 100\%$
Fractional bias	$\left(\frac{1}{N}\right)\sum_{l=1}^N(S_l - O_l)/0.5(S_l + O_l) \cdot 100\%$
Mean error	$\left(\frac{1}{N}\right)\sum_{l=1}^N S_l - O_l $
Normalized error	$\left(\frac{1}{N}\right)\sum_{l=1}^N S_l - O_l /O_l \cdot 100\%$
Normalized mean error	$\sum_{l=1}^N S_l - O_l / \sum_{l=1}^N O_l \cdot 100\%$
Fractional error	$\left(\frac{1}{N}\right)\sum_{l=1}^N S_l - O_l /0.5(S_l + O_l) \cdot 100\%$
Correlation	$(N(\sum S O) - (\sum S)(\sum O)) / \sqrt{(N\sum S^2 - (\sum S)^2)(N\sum O^2 - (\sum O)^2)}$
Index of agreement	A measure of how well the model represents the pattern of perturbation about the mean value; ranges from 0 to 1.

In calculating the statistical measures, AMET pairs the CMAQ model output with the observed data for the appropriate locations and time intervals.

Model Performance Criteria

In keeping with current EPA guidance on model performance evaluation for ozone, a “weight-of-evidence” approach was employed to determine whether model performance is good enough for use in future-year modeling and air quality assessment. In other words, an integrated assessment of the above information was used to document and qualitatively and quantitatively assess whether an acceptable base-case simulation has been achieved.

To the extent practicable, the statistical measures for certain of the pollutants were compared with model performance goals and criteria used for prior studies, as suggested in EPA guidance (EPA, 2007). For ozone, these include recommended ranges for the normalized bias and normalized error from prior (ca. 1990) EPA guidance (these are still widely used for urban- and regional-scale model performance evaluation).

3.7.3 Criteria Pollutant Assessment

The key objectives of this modeling study were to identify potential ozone, PM_{2.5}, SO₂, and NO₂ issues throughout the State of Arkansas, examine the expected changes in these pollutants between the base and future years, and identify areas within the state where additional air quality monitoring may be used to ensure compliance with existing NAAQS.

This was accomplished by first examining the changes in simulated concentration between the future year and base or current year in order to examine the magnitude and extent of the simulated decreases in concentration and to identify any areas with increases in concentration. The difference plots reference the form of the standard and averaging period(s) (e.g., 1-hour NO₂ and SO₂, 8-hour average ozone, and 24-hour and annual average PM_{2.5}) appropriate for each pollutant. Tabular summaries of the concentrations and differences for monitoring sites and any grid locations with an increase in concentration of any of the pollutants between the base and future years were also prepared.

Note that, for consistency with the 2015 emissions, the 2008 simulation was first rerun with “current-year” emissions, in which the anthropogenic emissions were consistent with 2005 and 2015 in terms of methodology, but the biogenic emissions were consistent with the 2008 meteorological conditions. The “current year” modeling results were used as the basis for the criteria pollutant assessment for 2008.

Next, the procedures outlined in EPA guidance on the use of models for attainment demonstration purposes (EPA, 2007) were applied. The guidance specifically addresses ozone and PM_{2.5}, but the same procedures were applied for all of the criteria pollutants considered in the analysis. This methodology is based on relative (rather than absolute) use of the modeling results, and relies on the ability of the air quality modeling system to simulate the change in concentration due to changes in emissions, but not necessarily its ability to simulate exact values for future-year concentrations. For each air quality metric, a future-year estimated design value (FDV) is calculated using the “current-year” design value and the future-year and base-year modeling results.

The current-year design value for each pollutant and monitoring site within Arkansas was calculated in accordance with the form of the standard for that pollutant. For this analysis (which is not an attainment

demonstration) the current-year design values were based on data for 2005 through 2008. This was done to represent the emissions base year (2005), the meteorological base years (2005 and 2008), and to allow a direct comparison of the projected future-year design values for the two simulation pairs. Calculation of the current year design values differs among the pollutants and the procedures outlined in the guidance document were followed. Additional detail for each pollutant is provided in Section 6.

The current-year design value for each site was then multiplied by a relative response factor (RRF), which is defined as ratio of the future-year to base-year simulated concentration in the vicinity of the monitoring site. The resulting value is referred to as the future-year design value or FDV. The methodology has additional layers of complexity for multi-species pollutants such as $PM_{2.5}$; these are carefully outlined in the guidance document and were accounted for this in this analysis. The resulting values were compared with the NAAQS. The analysis was conducted for both base-year/future-year simulation pairs. For ozone and $PM_{2.5}$, the MATS software was used to estimate the FDVs for 2015. For NO_2 and SO_2 , which are not accommodated in MATS, the same procedures were applied using custom software. Tabular summaries comparing the DVs and FDVs and assessing compliance relative to the NAAQS were prepared.

This analysis also examined future-year attainment for locations without monitoring sites. The current-year design value for the unmonitored area was set equal to the value for the nearest monitoring site or to an interpolated value based on several neighboring sites. Additional detail for each site and pollutant is provided in Section 6.

4 Emission Inventories

The modeling emission inventories for the base-year (2005 and 2008) and future-year baseline (2015) are summarized in this section.

Tables 4-1 through 4-4 summarize the base-year (2005 and 2008) and future-year (2015) emissions used for the CMAQ modeling. These tables summarize anthropogenic emissions by source sector and pollutant for the 36-km grid, the 12-km grid, the 4-km grid, and the State of Arkansas. Emissions totals are provided for the following species: VOC, NO_x, SO₂, CO, and PM_{2.5}. The units are thousand tons per year (thousand tpy).

Table 4-1. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions for the Arkansas Statewide Criteria Pollutant Modeling Analysis: 36-km Grid

Source Sector	2005 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	45	3,726	10,372	603	496
Non-EGU Point	1,292	2,218	2,077	3,209	431
Non-Point (Area)	8,959	1,885	1,248	16,054	2,793
Non-Road	3,497	3,881	420	19,979	253
On-Road Mobile	6,144	8,841	172	43,350	297
Total	19,938	20,552	14,289	83,195	4,270

Source Sector	2008 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	42	3,363	9,152	705	330
Non-EGU Point	1,048	2,078	1,589	2,940	410
Non-Point (Area)	8,638	1,453	524	20,310	2,659
Non-Road	2,494	3,349	256	18,046	232
On-Road Mobile	3,202	7,430	39	37,278	283
Total	15,424	17,672	11,559	79,279	3,915

Source Sector	2015 Future-Year Baseline				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	45	2,089	7,155	717	423
Non-EGU Point	1,152	2,014	1,639	3,025	409
Non-Point (Area)	8,506	1,818	1,157	15,637	2,745
Non-Road	2,325	2,896	74	14,340	175
On-Road Mobile	2,283	4,808	26	28,133	166
Total	14,311	13,625	10,051	61,852	3,917

Table 4-2. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions for the Arkansas Statewide Criteria Pollutant Modeling Analysis: 12-km Grid

Source Sector	2005 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	18	1,254	3,809	327	158
Non-EGU Point	506	736	717	926	162
Non-Point (Area)	1,919	435	355	3,465	729
Non-Road	694	1,149	107	4,245	65
On-Road Mobile	1,364	2,214	47	9,881	73
Total	4,500	5,788	5,035	18,844	1,186

Source Sector	2008 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	18	1,185	3,422	374	89
Non-EGU Point	390	658	544	781	151
Non-Point (Area)	2,336	408	111	5,171	736
Non-Road	665	867	61	3,917	54
On-Road Mobile	770	1,901	11	8,895	68
Total	4,179	5,019	4,149	19,137	1,098

Source Sector	2015 Future-Year Baseline				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	17	711	3,387	225	171
Non-EGU Point	458	673	563	885	145
Non-Point (Area)	1,567	367	273	3,009	672
Non-Road	451	863	16	2,881	44
On-Road Mobile	504	1,150	6	6,037	36
Total	2,997	3,764	4,245	13,036	1,078

Table 4-3. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions for the Arkansas Statewide Criteria Pollutant Modeling Analysis: 4-km Grid

Source Sector	2005 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	3	241	499	185	15
Non-EGU Point	116	137	73	196	33
Non-Point (Area)	402	94	61	818	169
Non-Road	156	212	17	792	12
On-Road Mobile	247	403	8	1,845	13
Total	924	1,087	658	3,837	242

Source Sector	2008 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	4	220	471	172	11
Non-EGU Point	80	133	52	146	21
Non-Point (Area)	482	81	25	1,530	197
Non-Road	152	154	7	733	10
On-Road Mobile	148	361	2	1,742	12
Total	866	949	557	4,323	252

Source Sector	2015 Future-Year Baseline				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	4	169	482	56	17
Non-EGU Point	100	122	67	188	32
Non-Point (Area)	379	90	60	793	166
Non-Road	103	158	1	555	8
On-Road Mobile	92	217	1	1,110	6
Total	679	756	610	2,703	230

Table 4-4. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions for the Arkansas Statewide Criteria Pollutant Modeling Analysis: State of Arkansas

Source Sector	2005 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	0	35	66	4	2
Non-EGU Point	35	36	13	65	11
Non-Point (Area)	125	24	28	298	45
Non-Road	37	63	6	227	4
On-Road Mobile	44	106	2	510	3
Total	242	265	115	1,105	65

Source Sector	2008 Base Year				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	1	38	72	4	1
Non-EGU Point	27	37	14	40	6
Non-Point (Area)	153	21	5	619	75
Non-Road	35	49	2	208	3
On-Road Mobile	47	94	1	521	3
Total	264	240	95	1,392	89

Source Sector	2015 Future-Year Baseline				
	VOC (thousand tpy)	NO _x (thousand tpy)	SO ₂ (thousand tpy)	CO (thousand tpy)	PM _{2.5} (thousand tpy)
EGU Point	1	38	102	13	4
Non-EGU Point	32	32	12	63	11
Non-Point (Area)	120	23	27	296	45
Non-Road	26	45	0	179	3
On-Road Mobile	24	57	0	331	2
Total	202	195	142	882	63

Total base-year (2005 and 2008) and future-year baseline anthropogenic emissions for the 4-km grid and State of Arkansas, excluding CO, are graphically displayed and compared in Figure 4-1 and Figure 4-2, respectively.

Figure 4-1. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions Totals for the Arkansas Statewide Criteria Pollutant Modeling Analysis: 4-km Grid

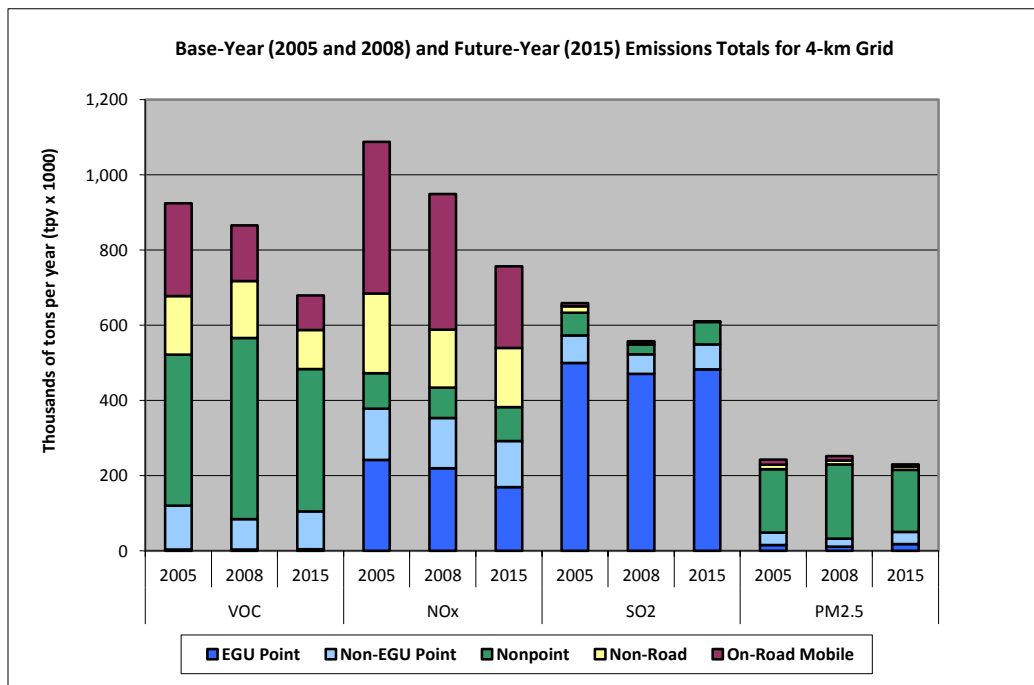
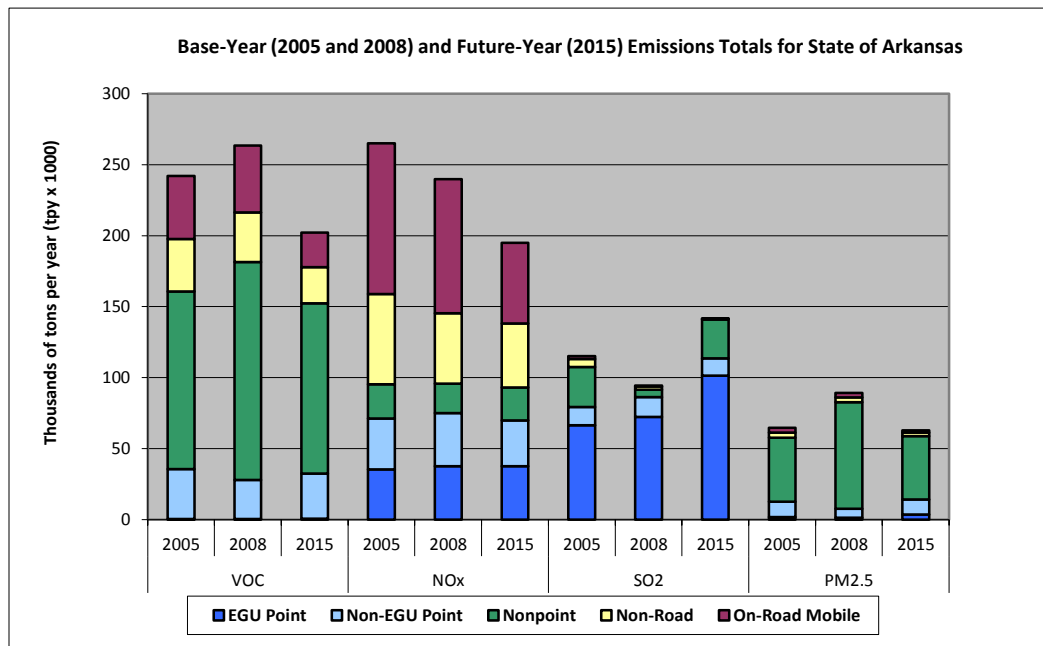


Figure 4-2. Base-Year (2005 and 2008) and Future-Year Baseline (2015) Emissions Totals for the Arkansas Statewide Criteria Pollutant Modeling Analysis: State of Arkansas



For the 4-km grid, overall anthropogenic VOC emissions are 27 percent lower, and both NO_x and CO emissions are 30 percent lower for 2015 compared to 2005. These changes reflect expected future emission reductions due to on-road mobile fleet turnover and the use of cleaner fuels; the introduction and use of cleaner non-road engines, fuel, and other equipment; and the mandated reductions in EGU emissions. For SO₂ in the 4-km grid, the emissions 2015 emissions are slightly lower than the 2005 emissions, but for the State of Arkansas, SO₂ emissions are higher in 2015 compared to 2005, mainly due to large increases in emissions from EGU's. The 2008 reflect some decreases compared to 2005, but also some increases. Note that these are not directly comparable, due to differences in fire emissions (this mostly affects primary PM_{2.5}) and other emissions that are affected by meteorology. There are also some methodological changes in the way EPA estimated the emissions between 2005 and 2008. As discussed in Section 6, the 2008 emissions were used for the base-year model performance for that period, but "current-year" emissions, consistent with 2005, were used for the future-year projections.

Table 4-5 presents a summary of EGU emissions for 2005 and 2015 for State of Arkansas sources. The emissions for the large power plants reflect expected growth in electricity demand as well as controls imposed by the CAIR legislation. For example, there are a few new sources that have come on line since 2005 and there are a number of small "generic units" in 2015 that have been added to the Arkansas inventory, reflecting expected future demands in electricity throughout the state. The NO_x emissions for most of the existing sources increase slightly, but there is a decrease in emissions at the Entergy White Bluff plant, likely reflecting CAIR controls. Because Arkansas is identified as one of the states that CAIR imposes NO_x controls only on, to reduce ozone concentrations, no controls are imposed on SO₂ emissions, and there is a significant increase in SO₂ emissions estimated for 2015 for the larger EGU's.

Table 4-5. Base-Year (2005) and Future-Year Baseline (2015) EGU Emissions for the Arkansas Statewide Criteria Pollutant Modeling Analysis: State of Arkansas

County	Facility Name	2005 Base Case				
		VOC (tpy)	NO _x (tpy)	SO ₂ (tpy)	CO (tpy)	PM _{2.5} (tpy)
Benton	SWEPCO-Flint Creek Power Plant	63	4,628	8,228	529	253
Craighead	City Water Light Plant City of Jonesboro	7	27	21	11	5
Franklin	Thomas B Fitzhugh Generating Station	8	147	185	48	3
Hempstead	CTI-Arkansas Electric Cooperative	1	5	0	0	0
Hot Spring	KGen-Hot Spring LLC	1	34	1	47	0
Hot Spring	Lake Catherine	8	204	1	29	0
Independence	Entergy Ark-Independence	179	13,174	22,367	1,487	695
Jefferson	Entergy Ark-White Bluff	178	16,263	34,890	1,481	682
Jefferson	Pine Bluff Entergy Center	3	250	4	21	30
Lafayette	Entergy Ark-Couch	3	112	0	40	0
Ouachita	John L McClellan Generating Station	3	212	461	12	1
Phillips	Entergy Ark-Ritchie	0	1	0	1	0
Pulaski	Entergy Ark-Lynch	0	0	0	0	0
Pulaski	Entergy Ark-Mabelvale	0	0	0	0	0
Union	Union Power Station-El Dorado	21	211	6	427	1
Woodruff	Carl Bailey	5	138	220	40	18
Total		480	35,408	66,385	4,173	1,688

County	Facility Name	2015 Future-Year Baseline				
		VOC (tpy)	NO _x (tpy)	SO ₂ (tpy)	CO (tpy)	PM _{2.5} (tpy)
Arkansas	STEC-S LLC	3	96	28	119	4
Benton	Generic Unit	0	1	0	4	0
Benton	SWEPCO-Flint Creek Power Plant	72	5,446	16,287	599	422
Bradley	Potlatch Southern Wood Products	5	138	40	171	6
Clay	Generic Unit	0	1	0	5	0
Clay	Municipal Light	0	5	0	0	0
Craighead	City Water Light Plant City of Jonesboro	2	92	0	70	0
Franklin	Thomas B Fitzhugh Generating Station	2	138	0	99	0
Greene	Paragould Reciprocating	0	37	0	1	0
Greene	Paragould Turbine	0	0	0	0	0
Hempstead	CTI-Arkansas Electric Cooperative	0	9	0	15	0
Hempstead	John W. Turk Jr.	23	1,334	2,103	3,950	615
Hot Spring	Hot Spring Power Project	1	6	0	42	0
Hot Spring	KGen-Hot Spring LLC	4	19	0	144	0
Independence	Entergy Ark-Independence	222	14,189	32,958	2,609	1,163
Jefferson	Entergy Ark-White Bluff	206	14,090	48,351	2,420	1,067
Jefferson	Pine Bluff Entergy Center	8	172	0	303	1
Mississippi	Dell Power Station	3	56	0	128	0
Mississippi	Plum Point Energy	76	1,091	1,746	636	256
Phillips	Entergy Ark-Ritchie	0	2	0	0	0
Pulaski	Wrightsville Power Facility	9	306	0	349	1
Union	Union Power Station-El Dorado	26	450	0	1,026	2
Washington	Harry D Mattison Power Plant	0	3	0	6	0
Total		662	37,681	101,513	12,695	3,537

As noted earlier, a key component of the emission processing is the spatial allocation of the emissions to each grid cell or point-source location in the modeling domain. To illustrate the spatial distribution of emissions throughout the modeling domain, spatial plots of low-level anthropogenic VOC and NO_x emissions and biogenic VOC emissions for the 4-km grid for 15 July (representing a typical summer day) are displayed in Figure 4-3 through Figure 4-5. The anthropogenic emissions are for the 2015 future-year baseline. The spatial distribution of emissions for the base years (not shown) is similar to that for the future-year baseline.

The anthropogenic VOC emissions are associated mainly with population centers scattered throughout the domain, with the highest emissions occurring in the Memphis, Little Rock and Jackson areas. The

NO_x emissions are similarly associated with population centers, but reflect emissions associated with the various transportation modes and corridors that are running through the area including the Interstate highways, state highways, railways, and waterways. The biogenic VOC emissions are associated with the various types of vegetation growing in the region including hardwood and softwood forests and agricultural crops located in eastern Arkansas and along the Mississippi River delta.

Figure 4-3. Spatial Distribution of Future-Year Baseline (2015) Low-Level Anthropogenic Emissions for the 4-km Modeling Grid for the Arkansas Statewide Criteria Pollutant Modeling Analysis: VOC

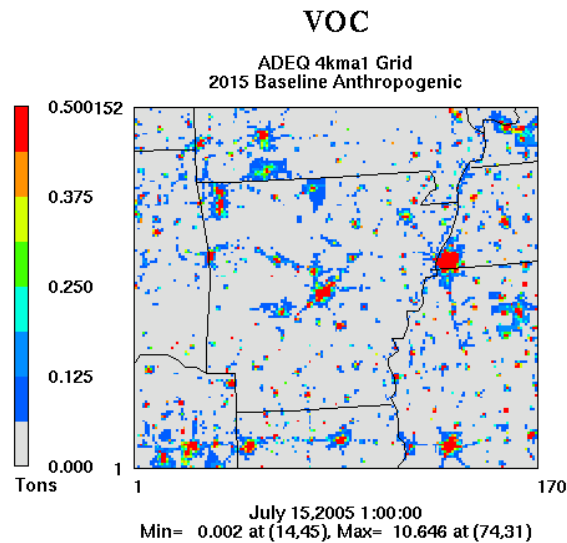


Figure 4-4. Spatial Distribution of Future-Year Baseline (2015) Low-Level Anthropogenic Emissions for the 4-km Modeling Grid for the Arkansas Statewide Criteria Pollutant Modeling Analysis: NO_x

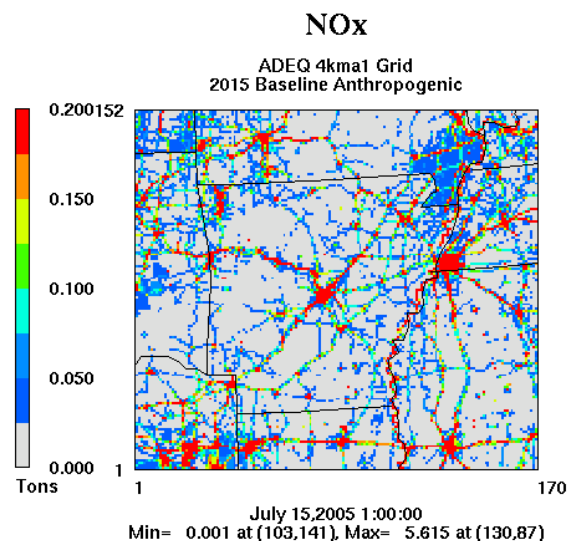
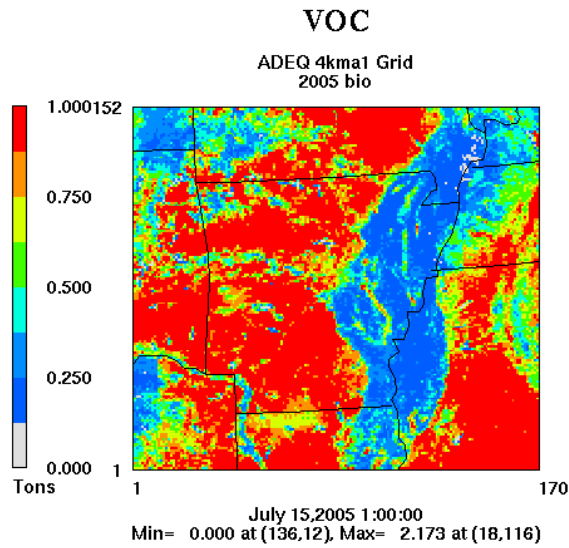


Figure 4-5. Spatial Distribution of Biogenic Emissions for the 4-km Modeling Grid for the Arkansas Statewide Criteria Pollutant Modeling Analysis: VOC



5 Base-Year Modeling Results

The base-year modeling effort included the application of CMAQ for the 2005 and 2008 annual simulation periods and the evaluation of model performance.

5.1 2005 Simulation Period

CMAQ model performance for the base-year simulation for 2005 is summarized in the remainder of this section.

5.1.1 Summary of Model Performance for Ozone

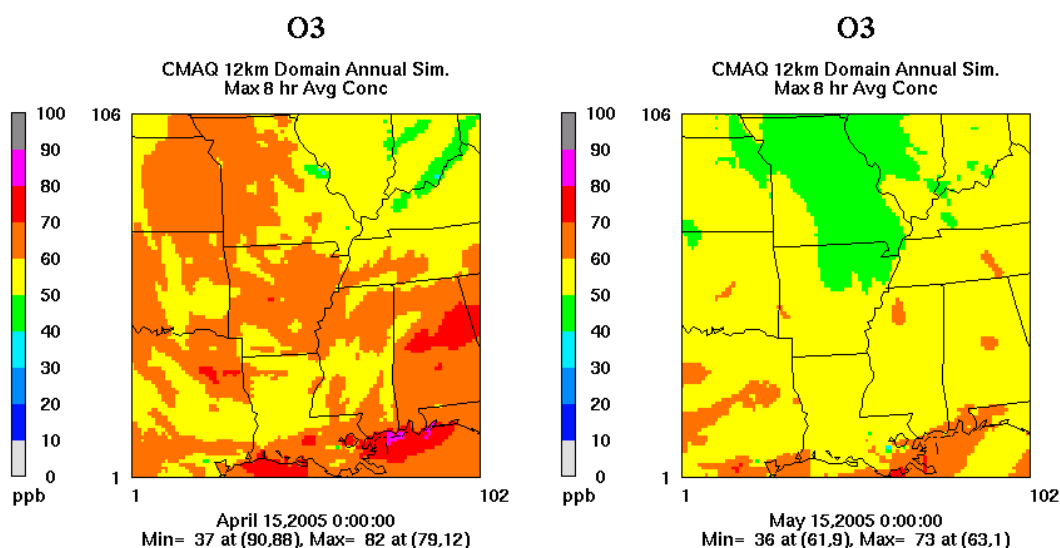
CMAQ model performance for ozone focused on the typical ozone season months of April through October and is summarized in the remainder of this section.

12-km Grid

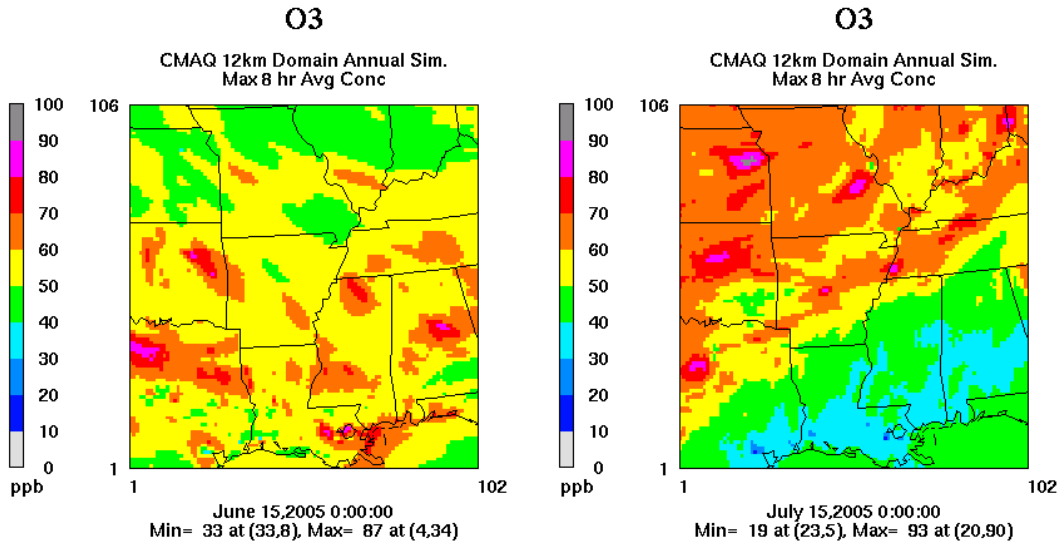
Spatial Concentration Patterns

Spatial plots of the simulated ozone concentration patterns for the 12-km grid for selected days throughout the simulation period were plotted and examined. Figure 5-1 illustrates the simulated ozone concentration patterns for the 15th of each month (April – October). Consistent with the NAAQS for ozone, daily maximum 8-hour average ozone concentration is displayed. The units are parts per billion (ppb).

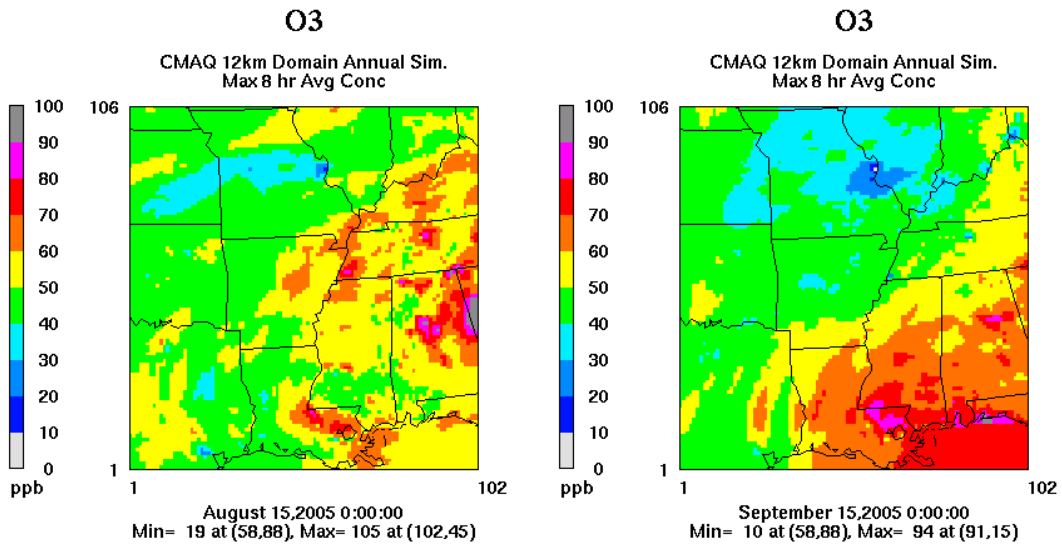
Figure 5-1. Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 12-km Grid
April 15/May 15



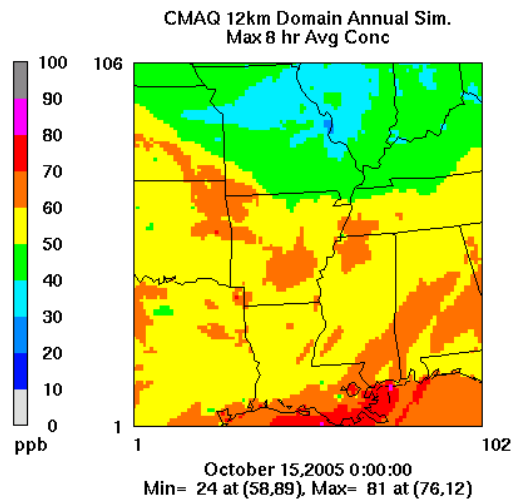
June 15/July 15



August 15/September 15



October 15

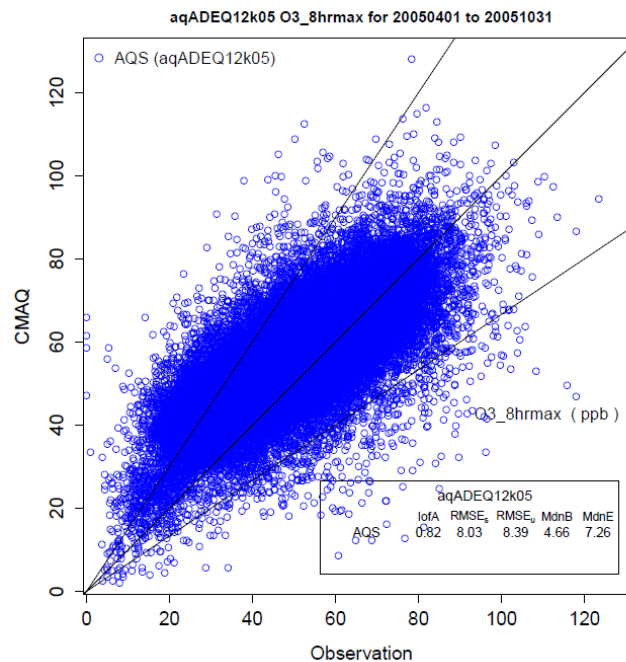
O₃

The plots depict a wide range of ozone concentration patterns for the selected days and illustrate the regional nature of ozone. Among the selected days, the simulated 8-hour average ozone concentrations are highest over Arkansas for the middle days of April, July, and October, exceeding 80 ppb on July 15. Maximum 8-hour average concentrations for the 12-km grid range from 73 to 105 ppb for the selected days.

Comparison of Simulated and Observed Concentrations

A scatter plot comparing simulated and observed daily maximum 8-hour ozone concentrations for the 12-km grid for April through October is presented in Figure 5-2. The scatter plot provides a visual representation of how well the simulated values match the observations, and can reveal biases toward over- or underestimation of the observed values. Also included on the scatter plot is some statistical information further summarizing model performance. Note that these statistical measures are calculated using the 8-hour average ozone concentrations. The solid lines on the plot are for visual reference and are drawn with slopes of 1:1 (center), 1.5:1 (upper), and 1:1.5 (lower).

Figure 5-2. Comparison of Simulated and Observed Daily Maximum 8-Hour Average Ozone Concentration (ppb) for the 12-km Grid (April through October)



There is a general tendency for CMAQ to overestimate the 8-hour average ozone concentrations, especially for observed values within the range of 20 to 60 ppb. However, the higher concentrations are well simulated and there is good correlation overall as indicated by an index of agreement of 0.82.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using hourly ozone concentrations for the 12-km grid are presented in Table 5-1. The recommended ranges for the normalized bias and normalized error shown in this table are no longer a part of current EPA guidance but are still widely used for urban- and regional-scale model performance evaluations (EPA, 2007). A lower bound of 40 ppb was used in calculating the normalized bias and error statistics.

Table 5-1. Summary Model Performance Statistics for Ozone for the 12-km Modeling Grid

Metric	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr–Oct	Goal
Number of Data Pairs	85,545	91,156	80,095	68,630	66,587	61,934	38,690	492,931	
Mean Observed (ppb)	51.9	54.1	57.1	55.2	55.3	56.9	52.1	54.7	
Mean Simulated (ppb)	48	50.2	53.9	54.9	56.1	56.0	49.3	52.5	
Mean Bias (ppb)	-3.9	-3.8	-3.2	-0.3	0.9	-1.0	-2.7	-2.2	
Normalized Bias (%)	-7.0	-6.4	-4.9	0.7	3.1	-1.0	-4.6	-3.2	± 15
Normalized Mean Bias (%)	-7.5	-7.1	-5.6	-0.5	1.5	-1.7	-5.3	-4.0	
Fractional Bias (%)	-11.2	-10.8	-9.5	-3.4	-2.1	-5.7	-9.4	-7.7	
Mean Error (ppb)	8.7	9.4	10.4	10.4	11.8	10.9	10.1	10.2	

Normalized Error (%)	17.1	18.0	19.1	19.8	22.4	20.1	20.0	19.3	≤ 35
Normalized Mean Error (%)	16.7	17.4	18.3	18.9	21.4	19.1	19.5	18.6	
Fractional Error (%)	20.5	21.3	22.0	21.0	23.8	22.3	23.0	21.8	
Correlation (unitless)	0.51	0.52	0.59	0.51	0.46	0.57	0.49	0.54	
Index of Agreement (unitless)	0.66	0.68	0.74	0.70	0.66	0.73	0.66	0.70	

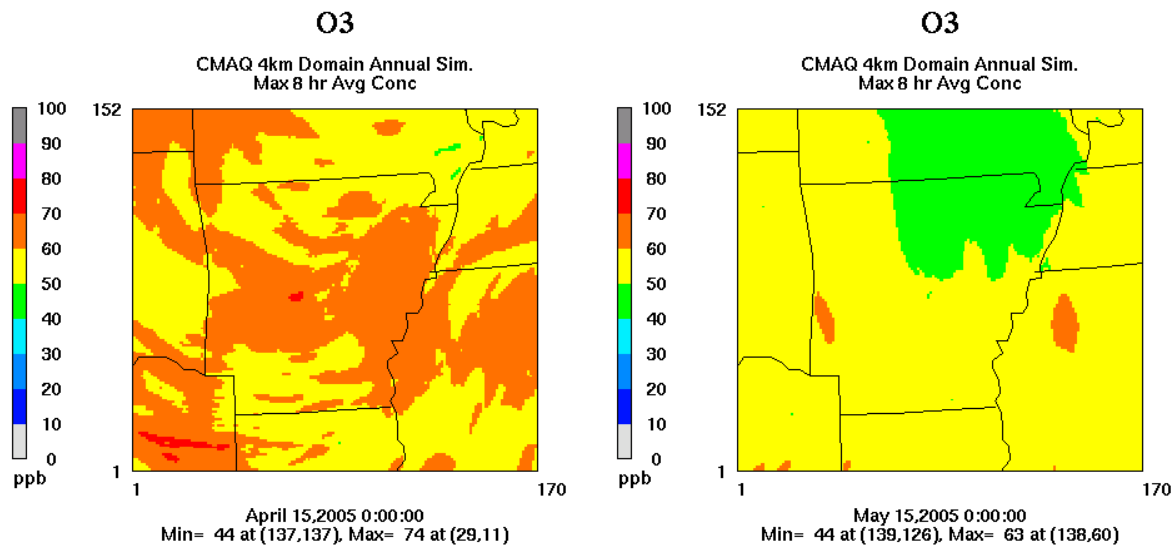
The statistical measures indicate very good agreement, on average, between the simulated and observed concentrations for all months. The normalized bias is within ±15 percent and the normalized error is well within 35 percent for all months. Using a lower bound value of 60 ppb for the calculation of the statistics, the normalized mean bias for the multi-month period (April- October) is -7.6 percent and the normalized mean error is 14.6 percent, indicating some underestimation of the higher ozone values but also very good model performance.

Ozone Model Performance for the 4-km Grid

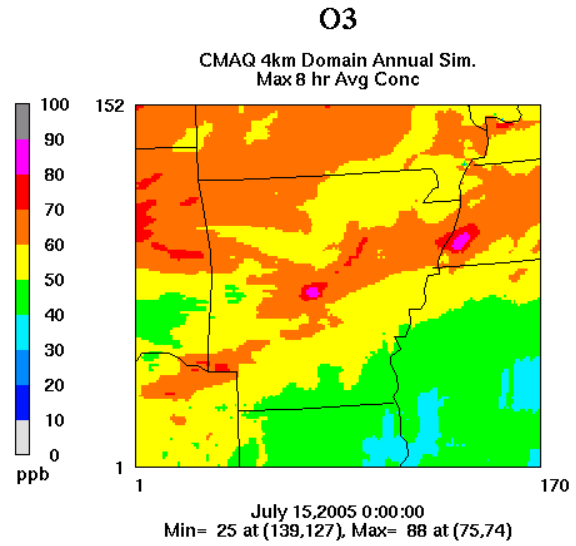
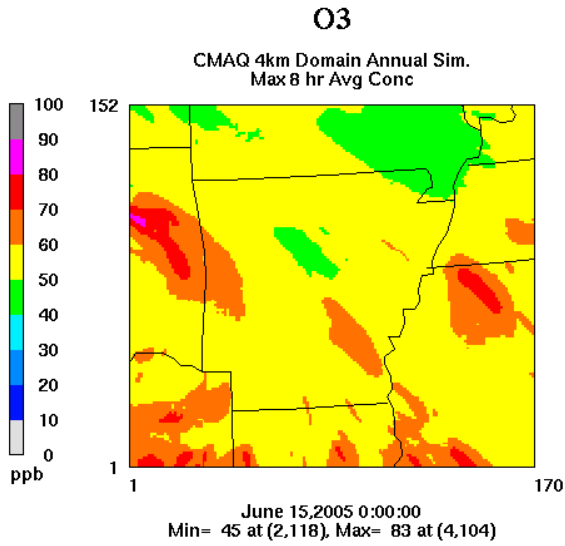
Spatial Concentration Patterns

Spatial plots of the simulated ozone concentration patterns for the 4-km grid for selected days throughout the simulation period were plotted and examined. Figure 5-3 illustrates the daily maximum 8-hour average ozone concentration patterns for the 15th of each month (April – October). Units are parts per billion (ppb).

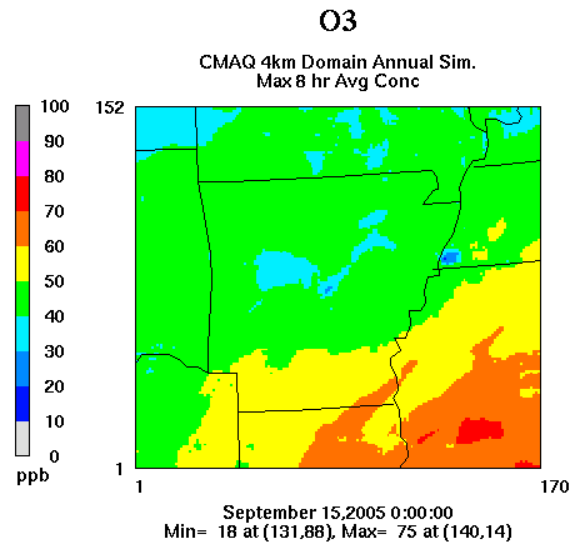
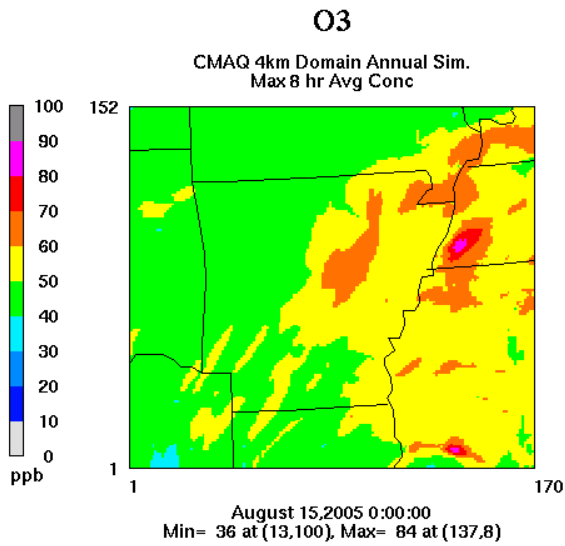
**Figure 5-3. Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 4-km Grid
April 15/May 15**



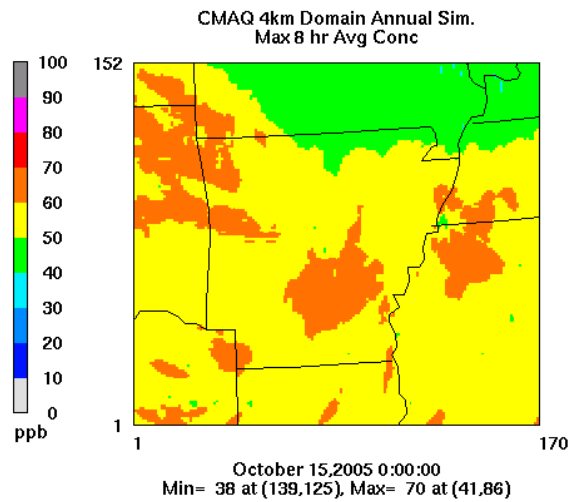
June 15/July 15



August 15/September 15



October 15

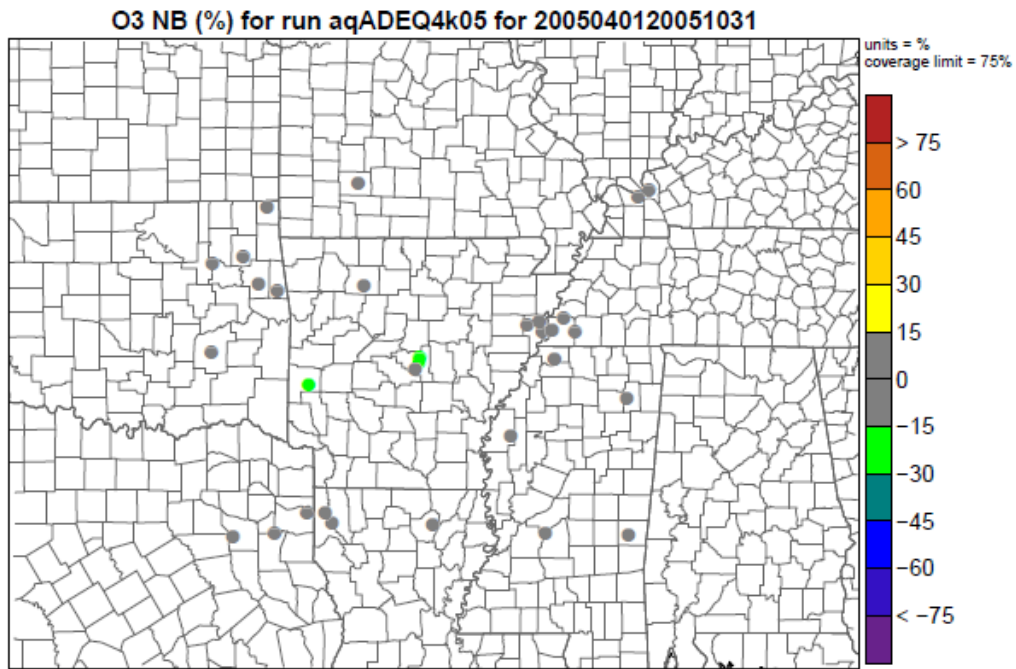
O₃

For many of the selected days, the simulated ozone concentration patterns indicate moderate to high ozone concentrations over at least a portion of Arkansas. Higher concentrations are more widespread across the state on April 15 and July 15. Among the selected days, the highest simulated concentration occurs near Little Rock on July 15. On this day the simulated daily maximum 8-hour ozone concentration is 88 ppb.

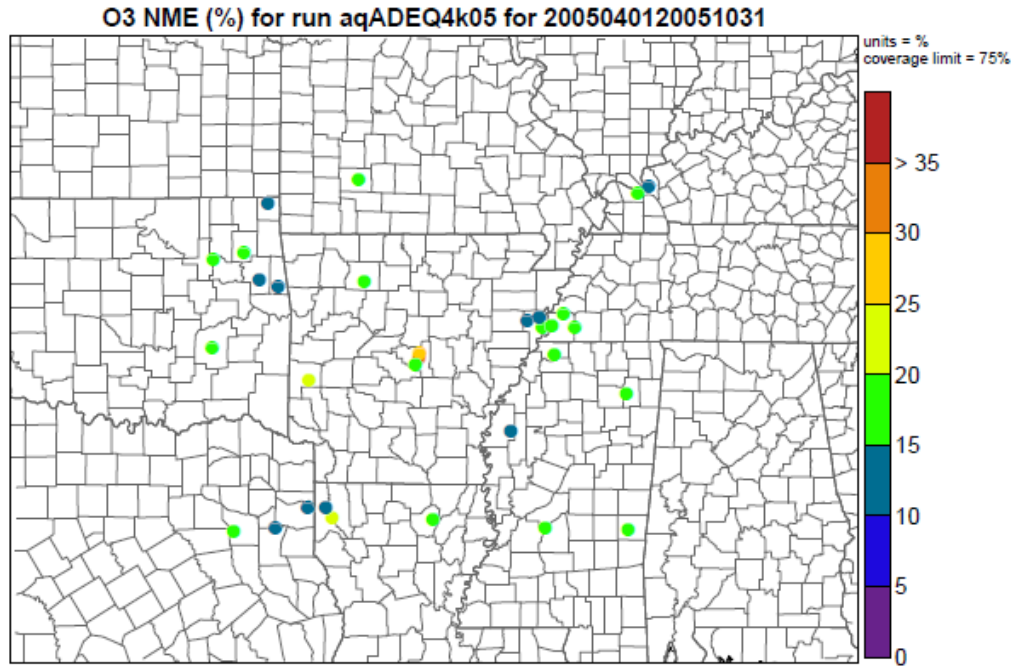
Figure 5-4 depicts the average bias and error for all sites in the 4-km modeling grid, based on daily maximum 8-hour ozone concentrations for the ozone season months (April through October). For the normalized bias, gray shaded circles indicate that the bias is within ± 15 percent; blue and green shading indicates underestimation of the observed concentrations and yellow, orange, and red shading indicates overestimation. For the normalized mean error, blue and green shading represent the smaller errors, while red indicates an error greater than 35 percent. A lower bound of 40 ppb was used in calculating the normalized bias and error statistics. Note that the plotted area is slightly larger than the 4-km grid, but that information is presented only for sites within the 4-km grid.

Figure 5-4. Normalized Bias (%) and Normalized Mean Error (%) Based on Daily Maximum 8-Hour Average Simulated and Observed Ozone Concentrations for April through October for the CMAQ 4-km Grid

Normalized Bias



Normalized Mean Error

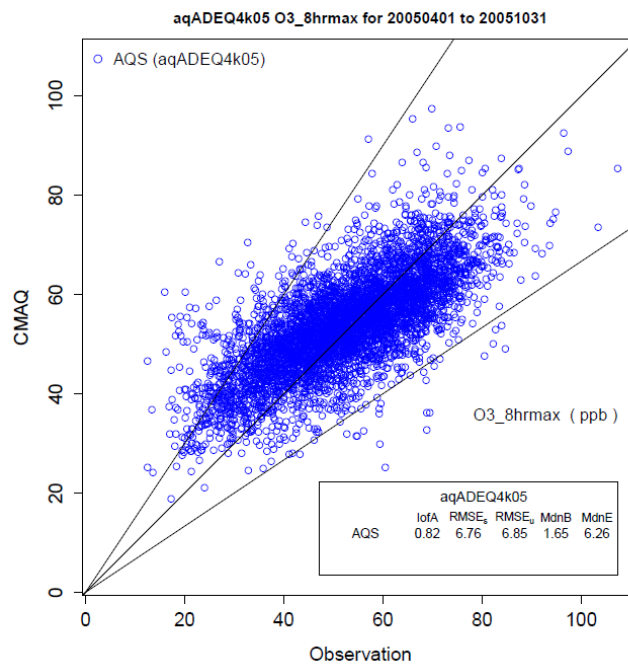


Model performance is consistent throughout the 4-km grid (i.e., there do not appear to be any distinct differences in model performance within the region covered by the grid). For most monitoring sites, the normalized bias is within ± 15 percent (as indicated by the gray shading). The normalized mean error is less than 35 percent for all sites and months.

Comparison of Simulated and Observed Concentrations

A scatter plot comparing simulated and observed daily maximum 8-hour ozone concentrations for the 4-km grid for April through October is presented in Figure 5-5. Again, note that the statistical measures given on the plot are calculated using the 8-hour average ozone concentrations.

Figure 5-5. Comparison of Simulated and Observed Daily Maximum 8-Hour Average Ozone Concentration (ppb) for the 4-km Grid (April through October)



There is a slight tendency for CMAQ to overestimate the lower concentrations and underestimate the higher concentrations, but there is good correlation overall as indicated by an index of agreement of 0.82.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using hourly ozone concentrations for the 4-km grid are presented in Table 5-2. A lower bound of 40 ppb was used in calculating the normalized bias and error statistics.

Table 5-2. Summary Model Performance Statistics for Ozone for the 4-km Modeling Grid

Metric	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr-Oct	Goal
Number of Data Pairs	9,580	10,931	10,031	8,982	8,994	8,580	5,937	63,035	
Mean Observed (ppb)	51.5	54.0	57.6	54.0	54.4	57.2	52.4	54.5	
Mean Simulated (ppb)	47.3	49.2	52.0	52.0	53.6	52.8	47.5	50.7	
Mean Bias (ppb)	-4.1	-4.8	-5.6	-2.0	-0.7	-4.4	-4.9	-3.8	
Normalized Bias (%)	-7.2	-8.3	-8.9	-2.7	0.0	-7.2	-8.7	-6.1	± 15
Normalized Mean Bias (%)	-8.0	-8.9	-9.7	-3.7	-1.3	-7.7	-9.3	-7.0	
Fractional Bias (%)	-10.6	-11.6	-12.8	-6.6	-3.9	-10.8	-12.4	-9.8	
Mean Error (ppb)	8.1	8.9	9.7	9.9	10.3	9.6	9.3	9.4	
Normalized Error (%)	15.9	16.5	17.2	18.9	19.6	17.4	17.9	17.6	≤ 35
Normalized Mean Error (%)	15.7	16.1	16.9	18.4	18.9	16.9	17.7	17.2	
Fractional Error (%)	18.6	19.2	20.4	20.7	21.0	20.0	20.7	20.0	
Correlation (unitless)	0.49	0.56	0.63	0.47	0.45	0.61	0.54	0.55	
Index of Agreement (unitless)	0.65	0.70	0.75	0.65	0.65	0.74	0.68	0.70	

The statistical measures for the 4-km grid also show underestimation of ozone for most months. The normalized bias is within ±15 percent and the normalized error is well within 35 percent for all months and for the ozone season. Using a lower-bound value of 60 ppb, the normalized mean bias for the multi-month period (April- October) is -11.1 percent and the normalized mean error is 15.4 percent, also within the model performance goals.

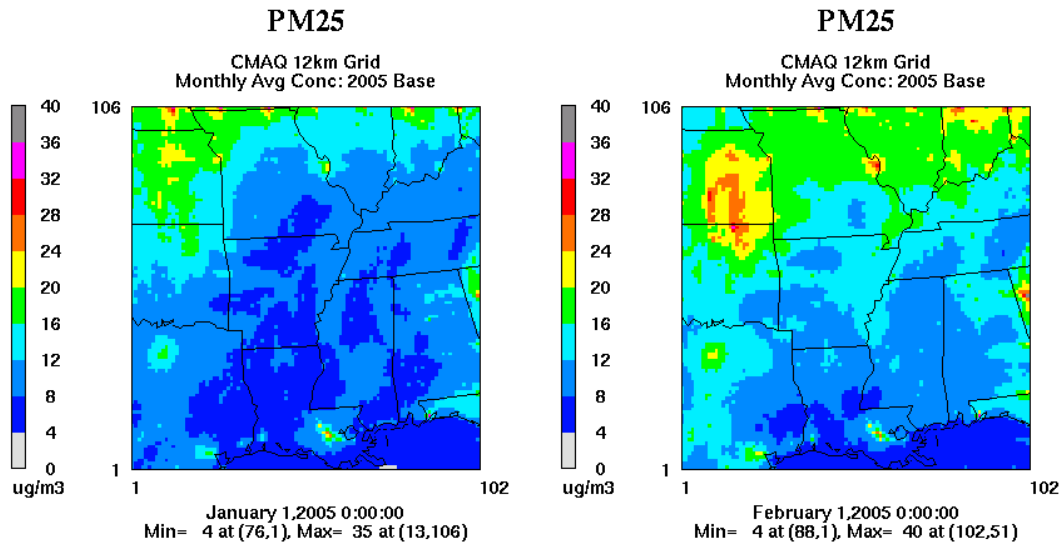
5.1.2 Summary of Model Performance for PM_{2.5}

12-km Grid

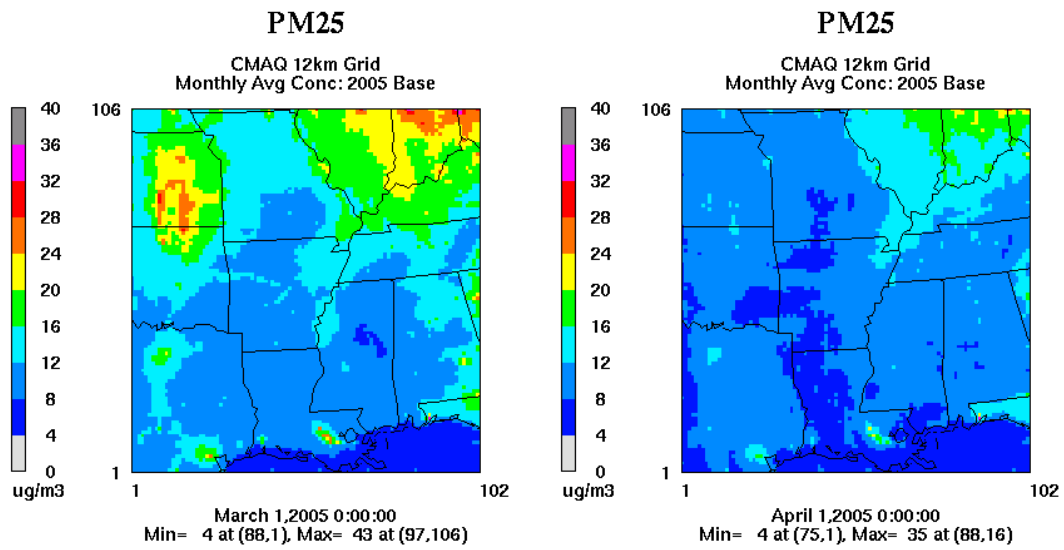
Spatial Concentration Patterns

Spatial plots of the monthly average simulated PM_{2.5} concentration patterns for the 12-km grid are illustrated in Figure 5-6. The units are micrograms per cubic meter (µg/m³).

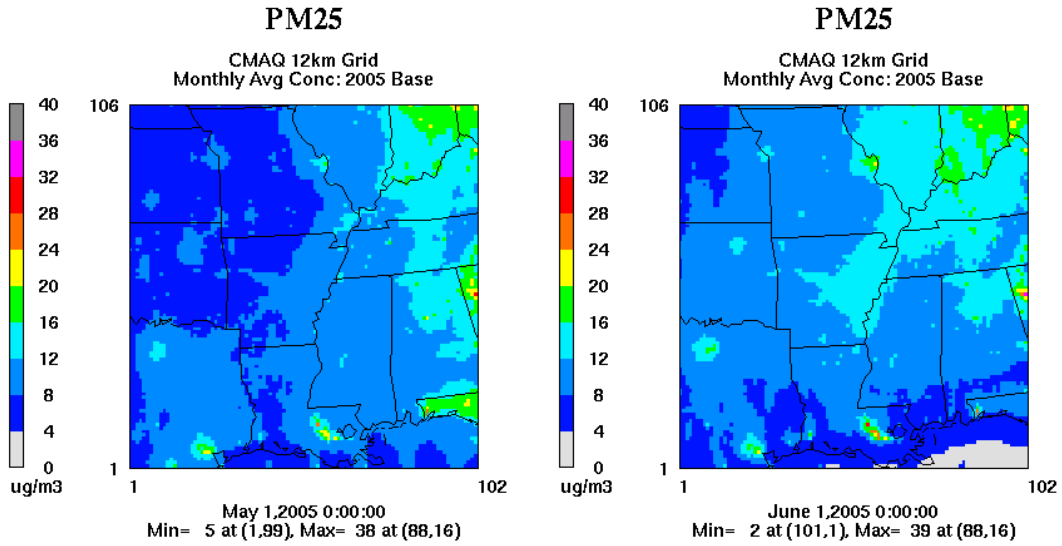
Figure 5-6. Simulated Monthly Average PM_{2.5} Concentration (µg/m³) for the CMAQ 12-km Grid
January/February



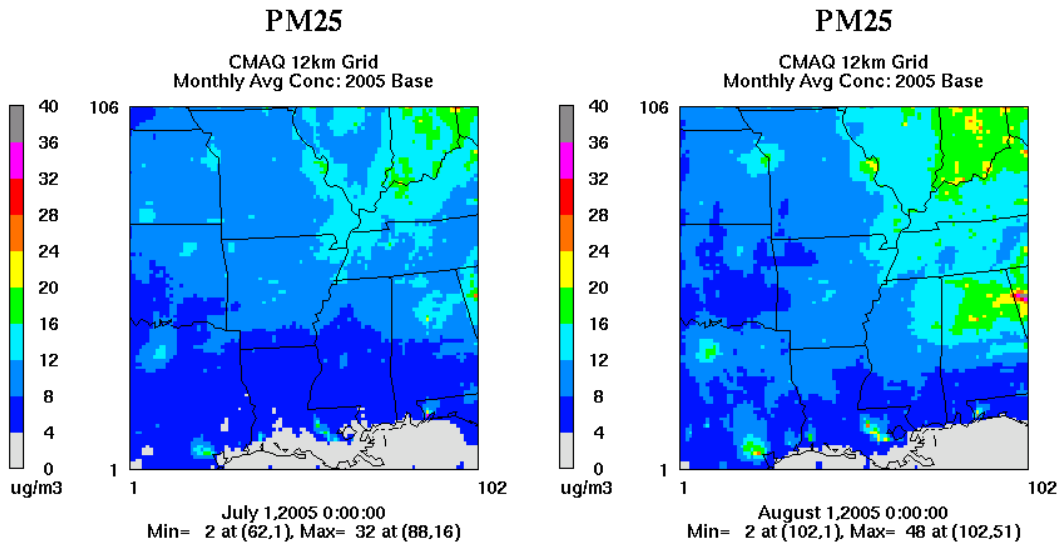
March/April



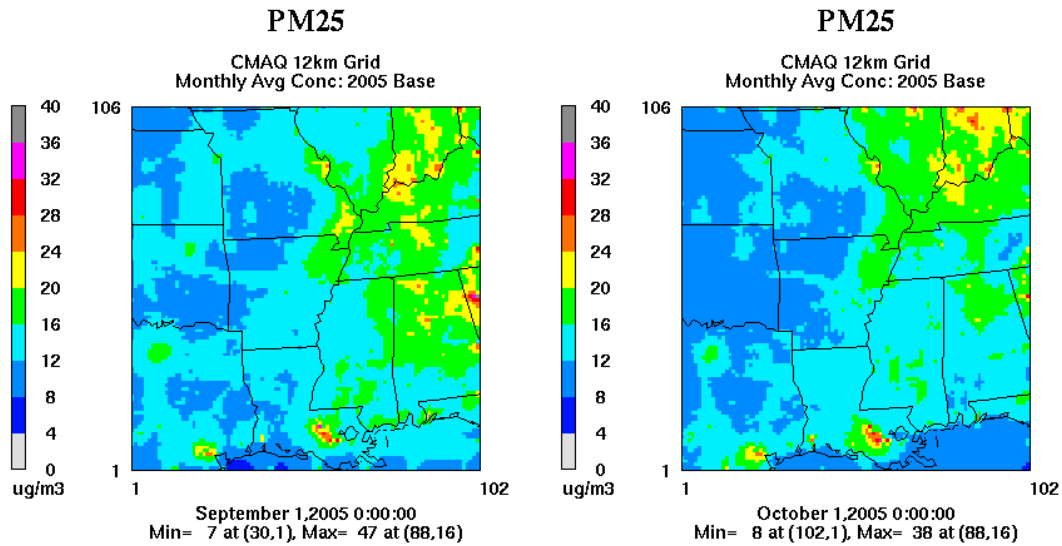
May/June



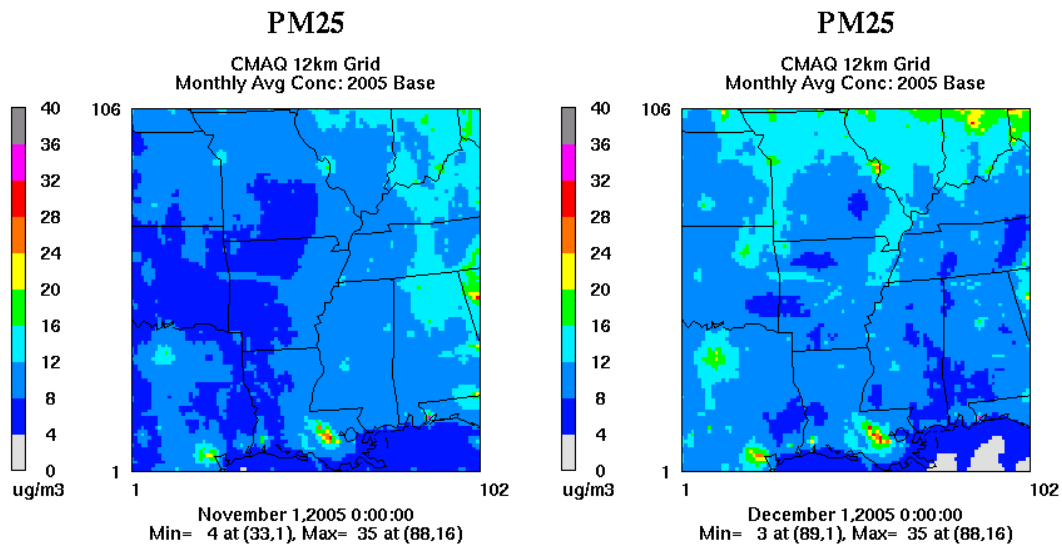
July/August



September/October

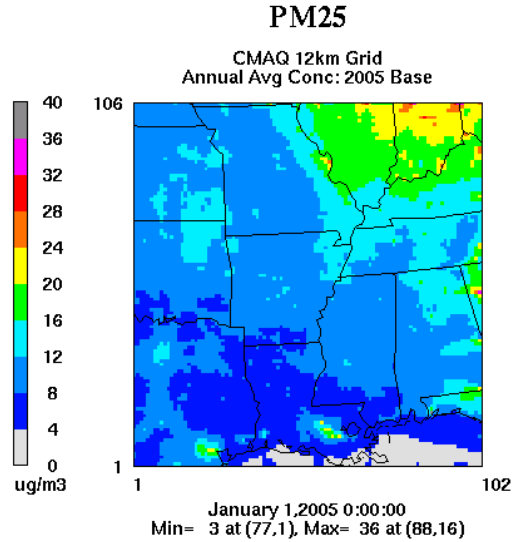


November/December



For most months, the simulated monthly average PM_{2.5} concentrations over Arkansas are within the range of 4 to 16 µg/m³. For September and October, the model results indicate localized areas of higher PM_{2.5} (in the 16 to 20 µg/m³ range) over the northwest portion of the state.

Figure 5-7 displays the annual average simulated PM_{2.5} concentration pattern for the 12-km grid.

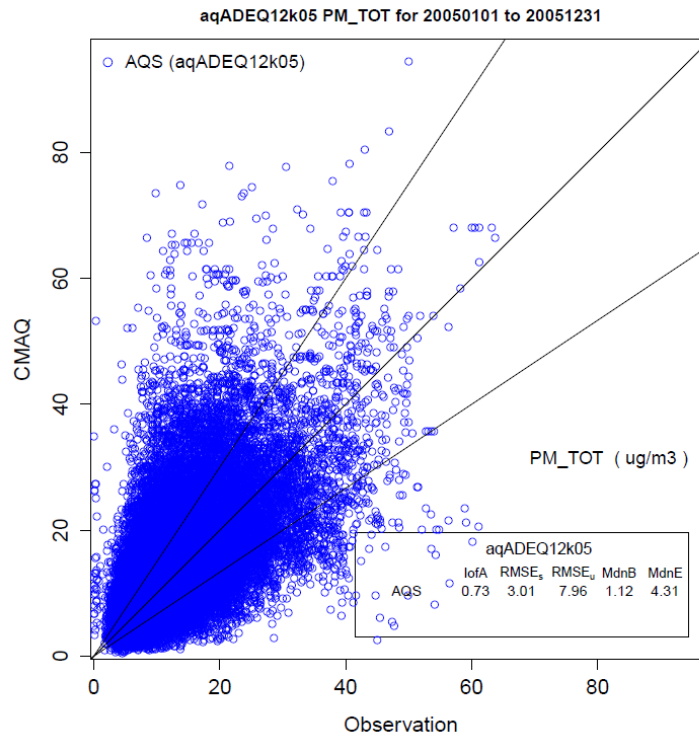
Figure 5-7. Simulated Annual Average PM_{2.5} Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 12-km Grid

The simulated annual average concentrations range from about 4 to 16 ppb over Arkansas and across most of the 12-km grid, with higher PM_{2.5} concentrations (greater than 16 $\mu\text{g}/\text{m}^3$) over Kentucky, Illinois, Indiana, Ohio, and several other isolated areas. The maximum simulated annual average PM_{2.5} concentration is 36 $\mu\text{g}/\text{m}^3$ and is located along the Gulf Coast (near Pensacola).

Comparison of Simulated and Observed Concentrations

Scatter plots comparing simulated and observed 24-hour PM_{2.5} concentrations for AQS sites within the 12-km grid for the annual simulation period are presented in Figure 5-8.

Figure 5-8. Comparison of Simulated and Observed 24-Hour Average $PM_{2.5}$ Concentration ($\mu\text{g}/\text{m}^3$) for the 12-km Grid (All Months)



The scatter plot indicates an overall tendency for the model to overestimate observed annual average $PM_{2.5}$ concentrations within the 12-km grid.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using 24-hr $PM_{2.5}$ concentrations for the 12-km grid are presented in Table 5-3. The recommended ranges for the fractional bias and fractional error are based on Boylan (2005) and are widely used for regional-scale model performance evaluation for $PM_{2.5}$. No lower bound was applied in calculating the statistics.

Table 5-3. Summary Model Performance Statistics for PM_{2.5} for the 12-km Modeling Grid

Metric	Jan–Mar	Apr–Jun	Jul–Sep	Oct–Dec	Annual	Goal
Number of Data Pairs	7,685	7,867	7,202	6,964	29,718	
Mean Observed (ppb)	12.3	14.1	17.6	12.5	14.1	
Mean Simulated (ppb)	17.1	14.3	16.2	16.7	16.0	
Mean Bias (ppb)	4.8	0.1	1.4	4.1	1.9	
Fractional Bias (%)	25.8	-0.4	-13.9	24.8	9.0	± 60
Mean Error (ppb)	7.0	5.2	5.9	6.0	6.0	
Fractional Error (%)	45.9	36.1	38.7	40.7	40.3	≤ 75
Correlation (unitless)	0.60	0.57	0.65	0.61	0.57	
Index of Agreement (unitless)	0.67	0.75	0.80	0.69	0.73	

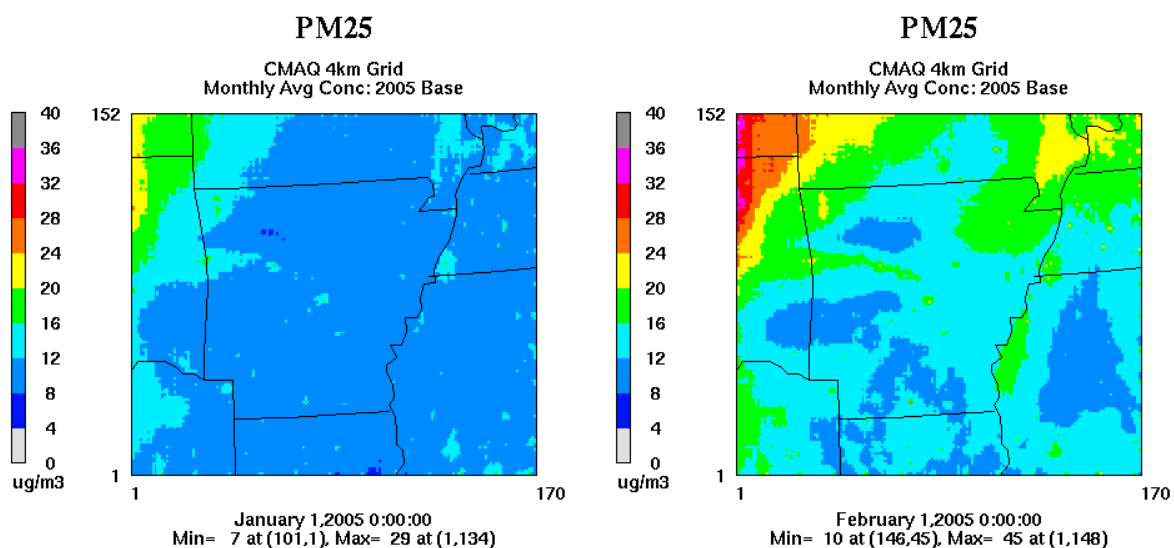
On average, PM_{2.5} concentrations are overestimated for the first and fourth quarters (the cooler months of the year), slightly overestimated for the second quarter, and underestimated for third quarter. On an annual basis, this results in a slight to moderate overestimation and overall better model performance for the warmer months when observed PM_{2.5} concentrations are relatively high. The statistical measures for fractional bias and fractional error are well within the model performance goals for all periods.

4-km Grid

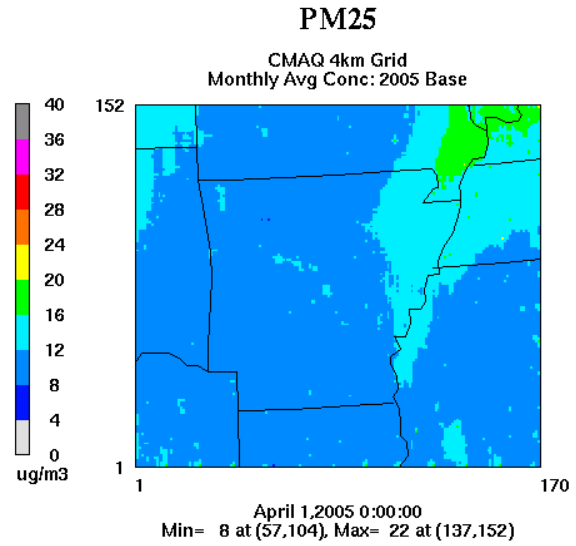
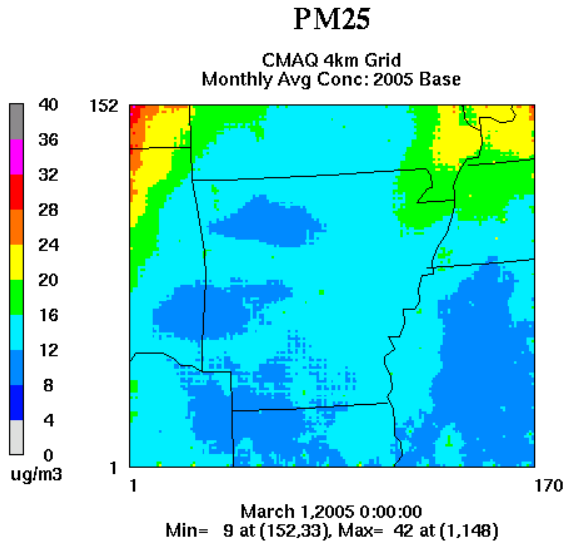
Spatial Concentration Patterns

Spatial plots of the monthly average simulated PM_{2.5} concentration patterns for the 4-km grid are illustrated in Figure 5-9. The units are micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

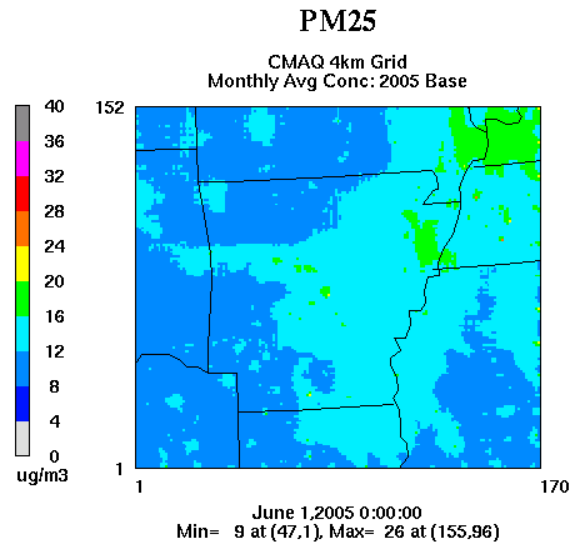
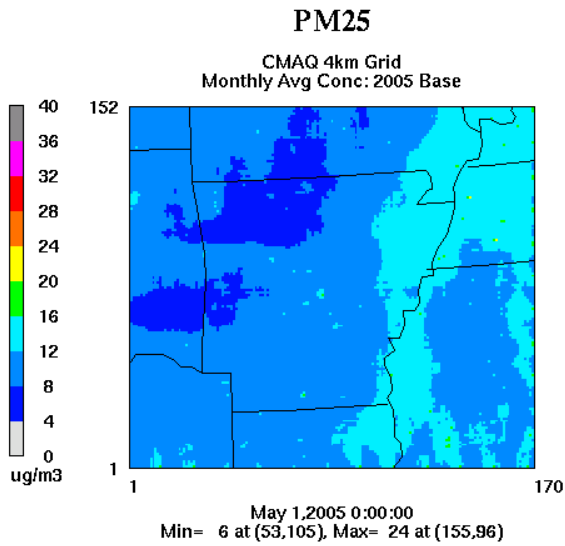
Figure 5-9. Simulated Monthly Average PM_{2.5} Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 4-km Grid
January/February



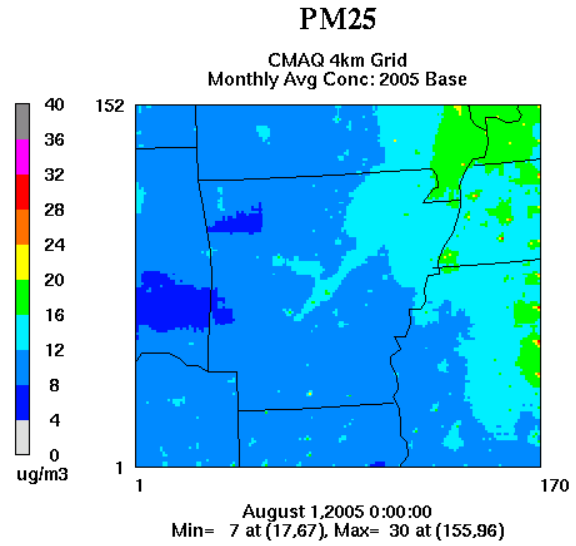
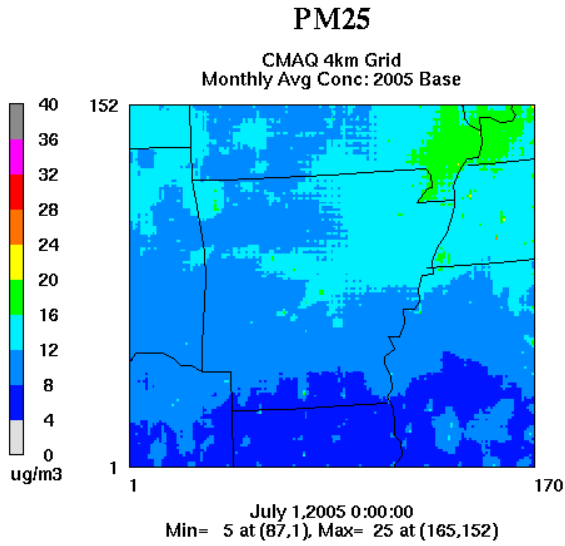
March/April



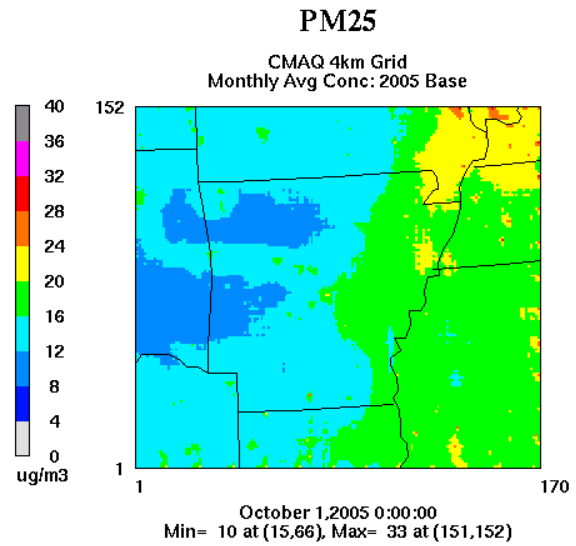
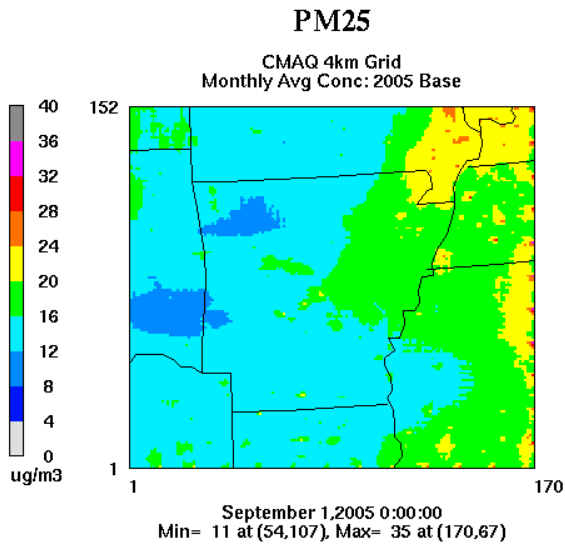
May/June



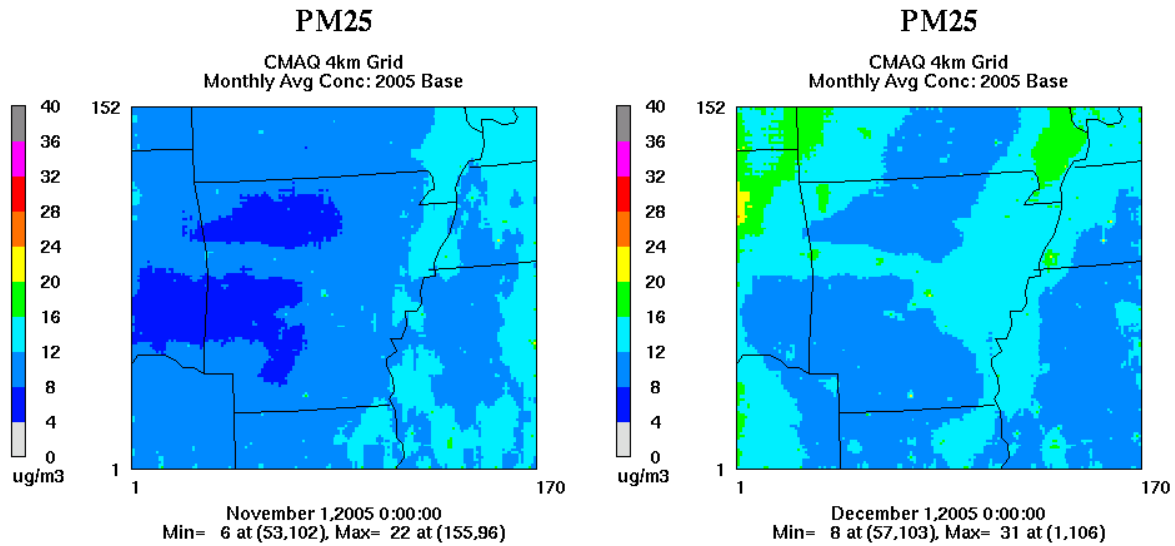
July/August



September/October



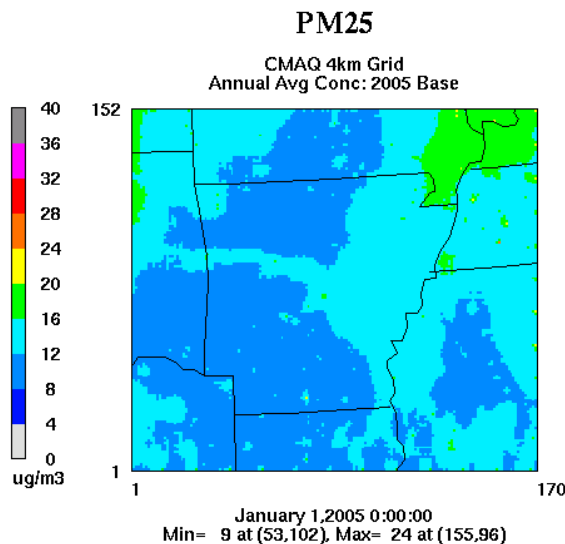
November/December



For most months, the simulated monthly average PM_{2.5} concentrations over Arkansas are generally within the range of 4 to 16 $\mu\text{g}/\text{m}^3$. Somewhat higher concentrations (in the 16 to 24 $\mu\text{g}/\text{m}^3$ range) are simulated in the northern part of the state for February, in the northeastern part of the state for September, in the eastern part of the state for October.

Figure 5-10 displays the annual average simulated PM_{2.5} concentration pattern for the 4-km grid.

Figure 5-10. Simulated Annual Average PM_{2.5} Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 4-km Grid

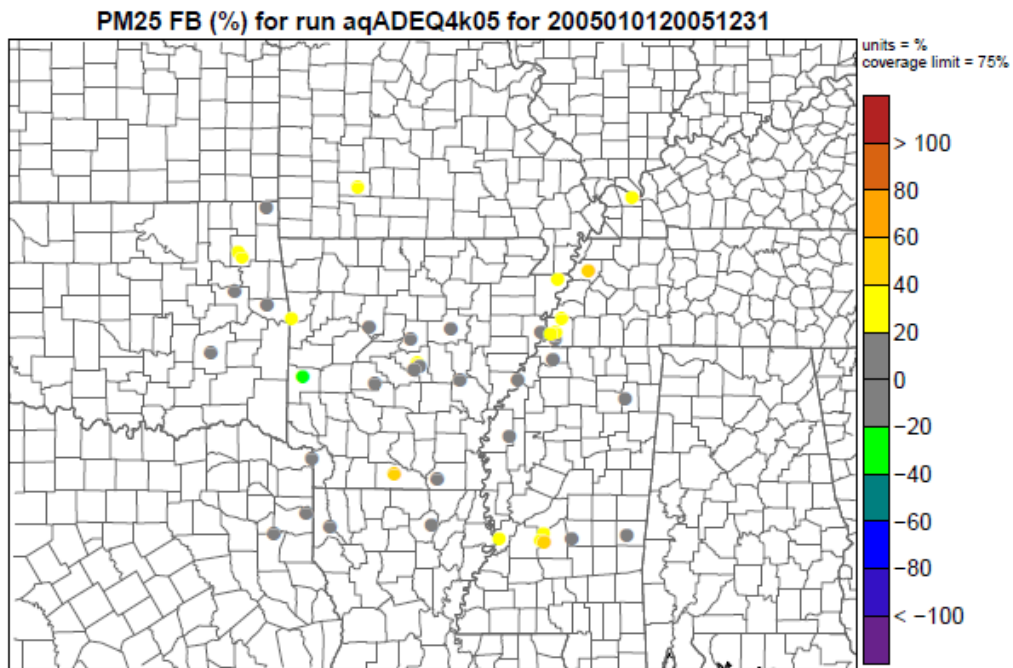


The simulated annual average PM_{2.5} concentrations are less than 16 $\mu\text{g}/\text{m}^3$ throughout the state, with the exception of a few localized areas, including Little Rock.

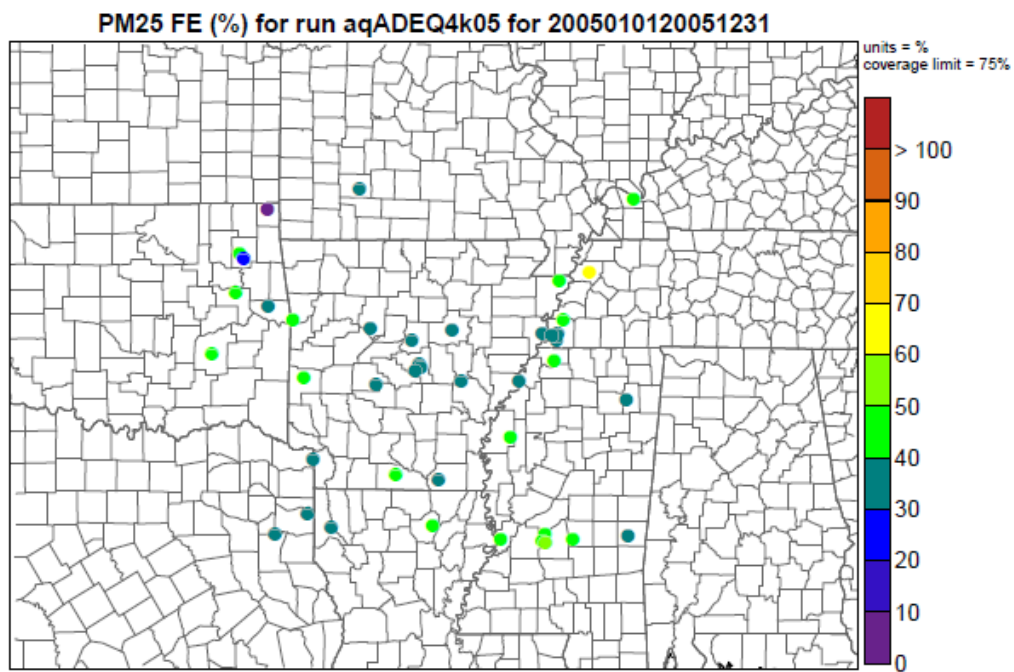
Because the observed $PM_{2.5}$ concentrations can be quite small and there is no accepted minimum threshold, fractional bias and error are better suited to characterizing model performance. To illustrate the agreement between the simulated and observed values, Figure 5-11 depicts the fractional bias and fractional error statistics for the 4-km modeling domain. The statistics are calculated using 24-hour average $PM_{2.5}$ concentrations and are calculated using data for the annual simulation period. Again, each monitoring site is represented by a circle and the shading of the circle provides information about how well the 24-hour observed $PM_{2.5}$ concentrations are represented by the simulation results, on average. For the fractional bias, gray shaded circles indicate that the fraction bias is within ± 20 percent and, in general, values within ± 60 percent (lighter colors) correspond to acceptable model performance. Blue and green shading indicates underestimation of the observed concentrations and yellow, orange, and red shading indicates overestimation. For the fractional error, blue and green shading represent the smaller errors, while red indicates an error greater than 100 percent. Values less than 75 percent are considered to represent reasonable model performance for $PM_{2.5}$.

Figure 5-11. Fractional Bias (%) and Fractional Error (%) Based on 24-Hour Average Simulated and Observed PM_{2.5} Concentrations for CMAQ 4-km Grid (All Months)

Fractional Bias



Fractional Error

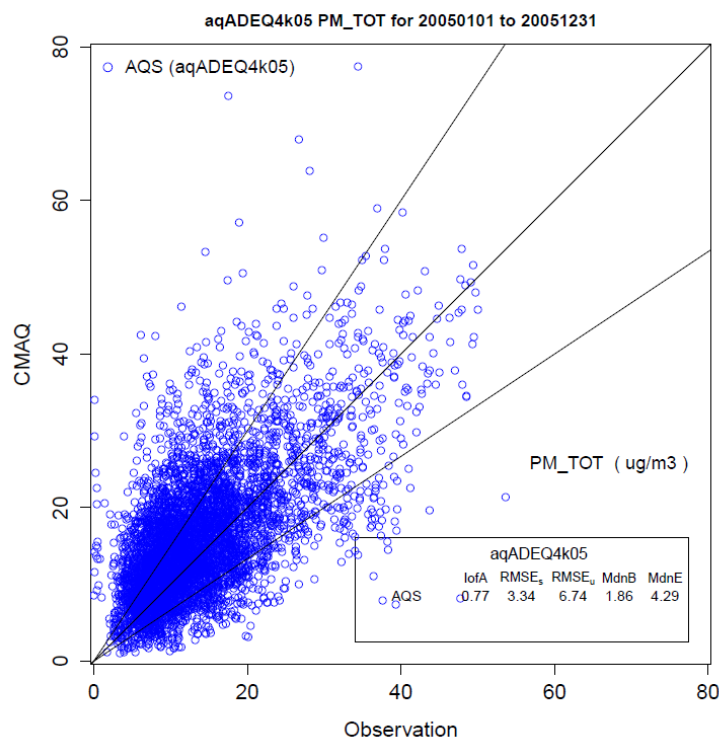


The fractional bias is within the range of -40 to 60 percent for all sites located within the 4-km grid (as indicated by the green, gray, and yellow, and orange shading) and within the range of -40 to 40 percent for all but three sites (in orange). The three sites with a greater amount of overestimation are located in northwestern Tennessee, southern Arkansas, and central Mississippi; thus no regional overestimation patterns are evident. The fractional error is less than 70 percent for all sites. Some of the best performance (teal shading) is over Arkansas.

Comparison of Simulated and Observed Concentrations

Scatter plots comparing simulated and observed 24-hour $PM_{2.5}$ concentrations for AQS sites within the 4-km grid for the annual simulation period are presented in Figure 5-12.

Figure 5-12. Comparison of Simulated and Observed 24-Hour Average $PM_{2.5}$ Concentration ($\mu\text{g}/\text{m}^3$) for the 4-km Grid (All Months)



The scatter plot shows fairly good agreement between the simulated and observed $PM_{2.5}$ concentrations and a slight tendency for overestimation.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using 24-hr $PM_{2.5}$ concentrations for the 4-km grid are presented in Table 5-4. The recommended ranges for the fractional bias and fractional error are based on Boylan (2005) and are widely used for regional-scale model performance evaluation for $PM_{2.5}$. No lower bound was applied in calculating the statistics.

Table 5-4. Summary Model Performance Statistics for PM_{2.5} for the 4-km Modeling Grid

Metric	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Annual	Goal
Number of Data Pairs	1,307	1,341	1,282	1,312	5,242	
Mean Observed (ppb)	10.6	14.5	18.1	12.5	13.9	
Mean Simulated (ppb)	16.6	14.9	16.5	16.7	16.2	
Mean Bias (ppb)	6.0	0.5	-1.6	4.2	2.3	
Fractional Bias (%)	40.0	4.1	-13.9	28.1	14.7	± 60
Mean Error (ppb)	7.3	4.4	4.9	5.7	5.6	
Fractional Error (%)	52.5	30.3	32.3	40.4	38.8	≤ 75
Correlation (unitless)	0.51	0.74	0.76	0.64	0.62	
Index of Agreement (unitless)	0.56	0.86	0.86	0.72	0.77	

Performance is similar to that for the 12-km grid. On average, PM_{2.5} concentrations are overestimated for the first and fourth quarters, slightly overestimated for the second quarter, and underestimated for third quarter. On an annual basis, this results in a slight to moderate overestimation. Model performance is best for the warmer months when observed PM_{2.5} concentrations are relatively high. The statistical measures for fractional bias and fractional error are well within the model performance goals for all periods.

5.1.3 Summary of Model Performance for PM₁₀, NO_x, SO₂ and CO

Model performance for PM₁₀, NO_x, SO₂ and CO was examined with emphasis on quarterly and annual average concentrations. Observed concentrations of these criteria pollutants are generally expected to represent local rather than regional scale concentrations. This is due to the fact that these pollutants are directly emitted into the atmosphere and also because the monitoring sites are typically located in urban areas and near roadways. A grid-based model like CMAQ may not be able to capture the sub grid-scale variations in concentration reflected in the data that are due to local emissions sources and thus may not agree with the observed data unless the data are representative of the area encompassed by a grid cell. Thus, model performance for these species was examined only for the 4-km grid.

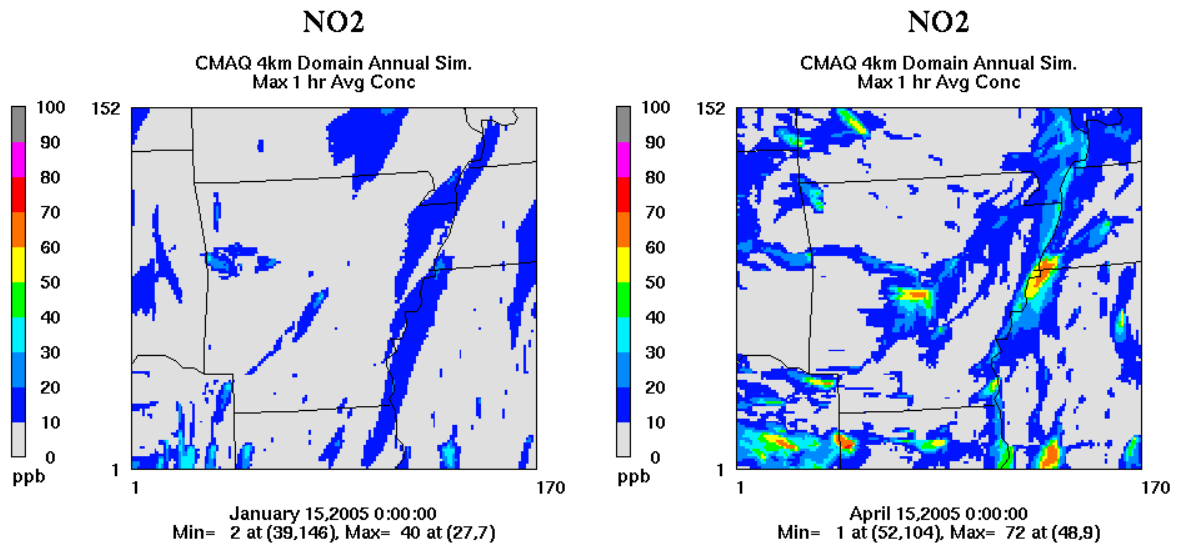
4-km Grid

Spatial Concentration Patterns for NO₂ and SO₂

Spatial plots of the simulated NO₂ and SO₂ concentration patterns for the 4-km grid for selected days throughout the simulation period were plotted and examined. Figures 5-13 and 5-14 illustrate the daily maximum 1-hour average NO₂ concentration patterns and daily maximum 1-hour average SO₂ concentration patterns, respectively, for the 15th of January, April, July, and October (one day per quarter). These are provided primarily as a point of reference for the difference plots presented in Section 6. Units are parts per billion (ppb).

Figure 5-13. Simulated Daily Maximum 1-NO₂ Concentration (ppb) for Selected Days for the CMAQ 4-km Grid

January 15/April 15



July 15/October 15

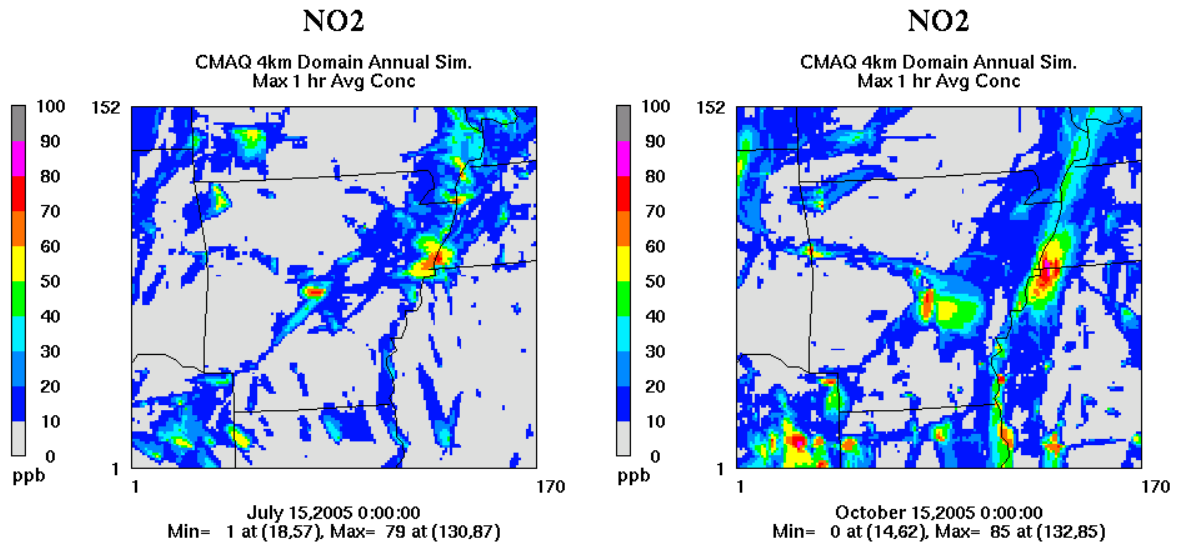
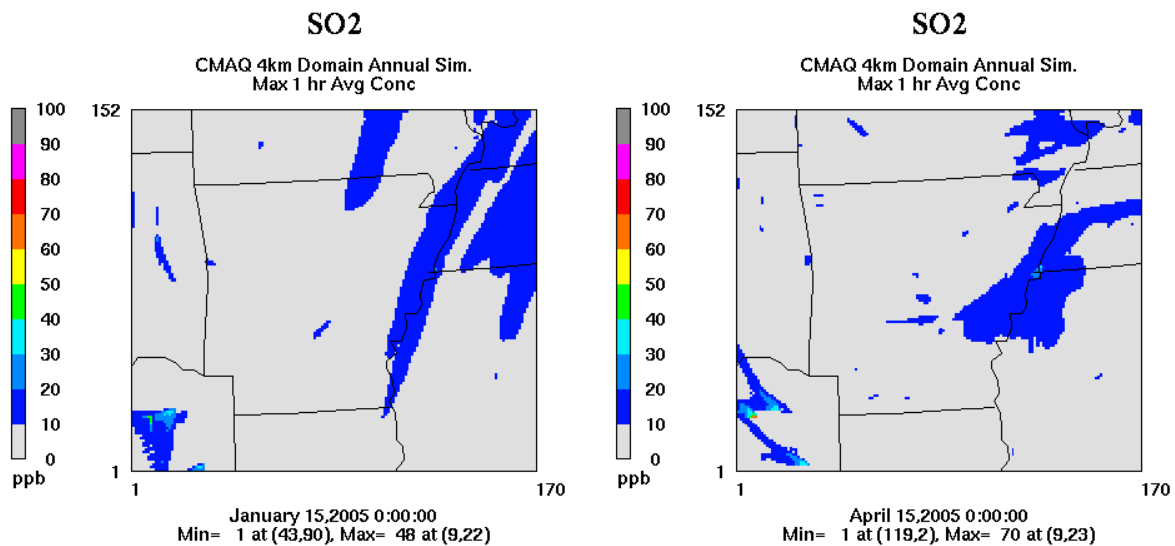
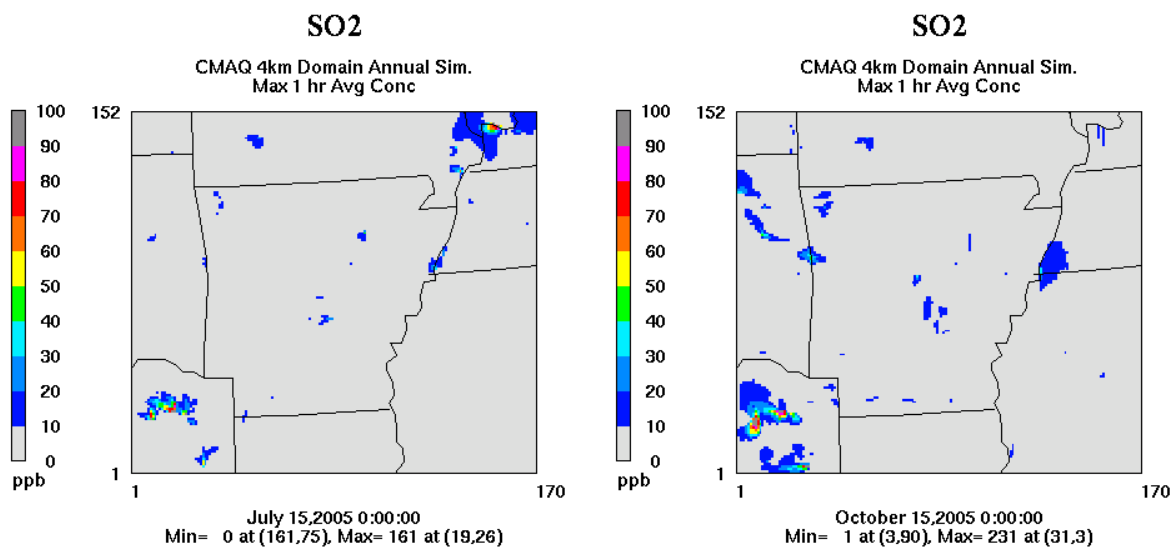


Figure 5-14. Simulated Daily Maximum 1-SO₂ Concentration (ppb) for Selected Days for the CMAQ 4-km Grid

January 15/April 15



July 15/October 15

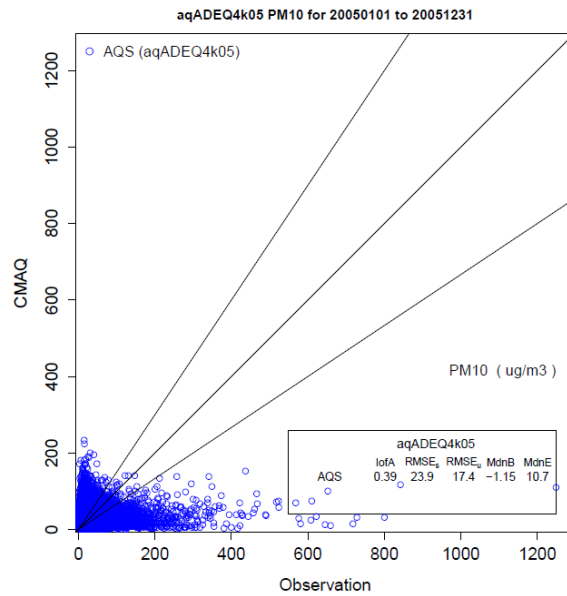


Simulated NO₂ concentrations are highest over and downwind of Memphis, Little Rock, and other urban areas. SO₂ concentrations are low throughout Arkansas, with some areas of high SO₂ in southern Illinois and northeastern Texas.

Comparison of Simulated and Observed Concentrations

Scatter plots comparing simulated and observed 24-hour PM₁₀ concentrations for AQS sites within the 4-km grid for the annual simulation period are presented in Figure 5-15. Units for PM₁₀ are µg/m³.

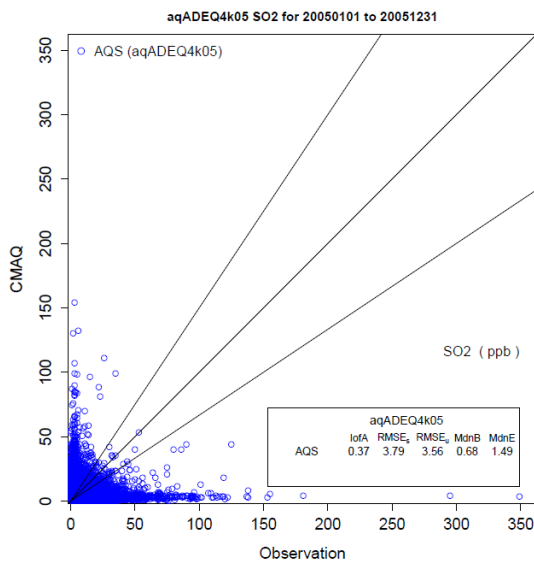
Figure 5-15. Comparison of Simulated and Observed 24-Hour Average PM₁₀ Concentration (µg/m³) for the 4-km Grid (All Months)

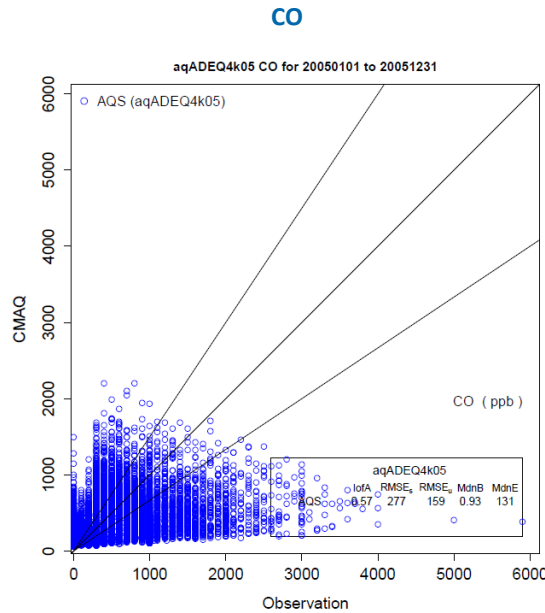


Scatter plots comparing simulated and observed hourly NO_x, SO₂, and CO concentrations for AQ5 sites within the 4-km grid for the annual simulation period are presented in Figure 5-16. Units for the gaseous species are ppb.

Figure 5-16. Comparison of Simulated and Observed Hourly Average NO₂, SO₂, and CO Concentrations (ppb) for the 4-km Grid (All Months)

NO₂/SO₂





As expected, agreement between the simulated and observed values is not very good. PM₁₀ concentrations are mostly underestimated, but there is a lot of scatter about the 1:1 line. High observed values tend to be underestimated while the low observed values are both under- and overestimated. Model performance for 1-hour NO₂, SO₂, and CO concentrations is characterized by a good deal of scatter about the 1:1 line and a tendency for overestimation of NO₂, and underestimation of CO.

Statistical Measures of Model Performance

Summary metrics and statistical measures for all months for PM₁₀, NO_x, and SO₂ for the 4-km grid are presented in Table 5-5. No lower bound was applied in calculating the statistics; fractional bias and error are emphasized.

Table 5-5. Summary Model Performance Statistics for PM₁₀, NO₂, SO₂ and CO for the 4-km Modeling Grid

Metric	PM ₁₀ (µg/m ³)	NO ₂ (ppb)	SO ₂ (ppb)	CO (ppb)
Number of Data Pairs	3,758	82,062	180,525	55,333
Mean Observed (ppb)	23	8.0	2.4	308
Mean Simulated (ppb)	24.7	10.0	3.2	254
Mean Bias (ppb)	1.7	2.0	0.8	-53.5
Fractional Bias (%)	9.3	-4.4	4.8	-8.8
Mean Error (ppb)	14.3	5.7	2.6	205
Fractional Error (%)	55.8	63.8	75.2	65.6

The statistics suggest better model performance than the scatter plots. A fractional bias within ±67 percent indicates that the simulated values are, on average, within a factor of two of the observed

values. This is achieved for all four pollutants. However, as indicated by the scatter plots and confirmed by the larger errors, the relatively low bias values for PM₁₀, NO₂, SO₂, and CO are due to a mix of under and overestimation and not necessarily to good model performance. The fractional error values are nonetheless within the goals established for PM_{2.5}.

5.2 2008 Simulation Period

CMAQ model performance for the base-year simulation for 2008 is summarized in the remainder of this section.

5.2.1 Summary of Model Performance for Ozone

CMAQ model performance for ozone focused on the typical ozone season months of April through October and is summarized in the remainder of this section.

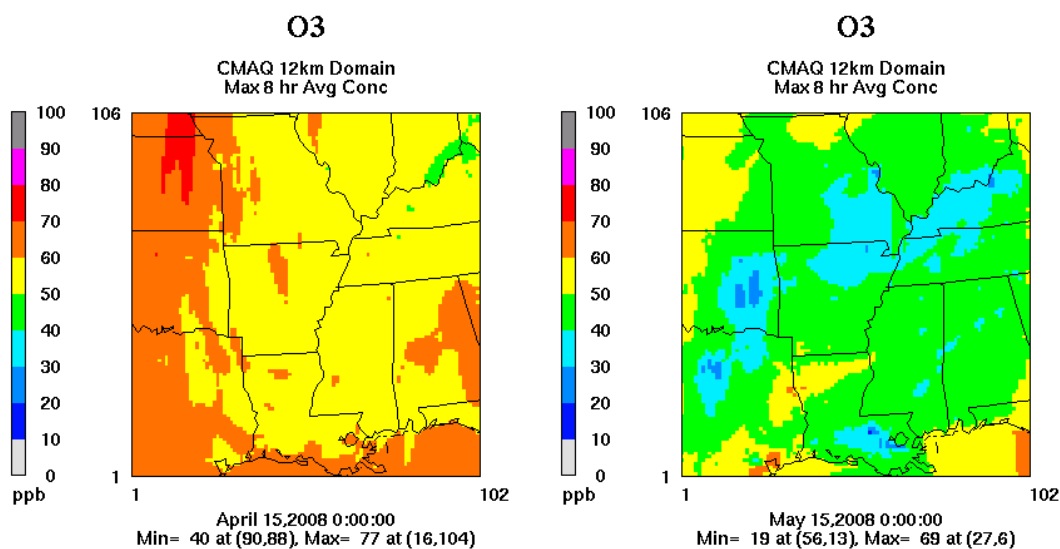
12-km Grid

Spatial Concentration Patterns

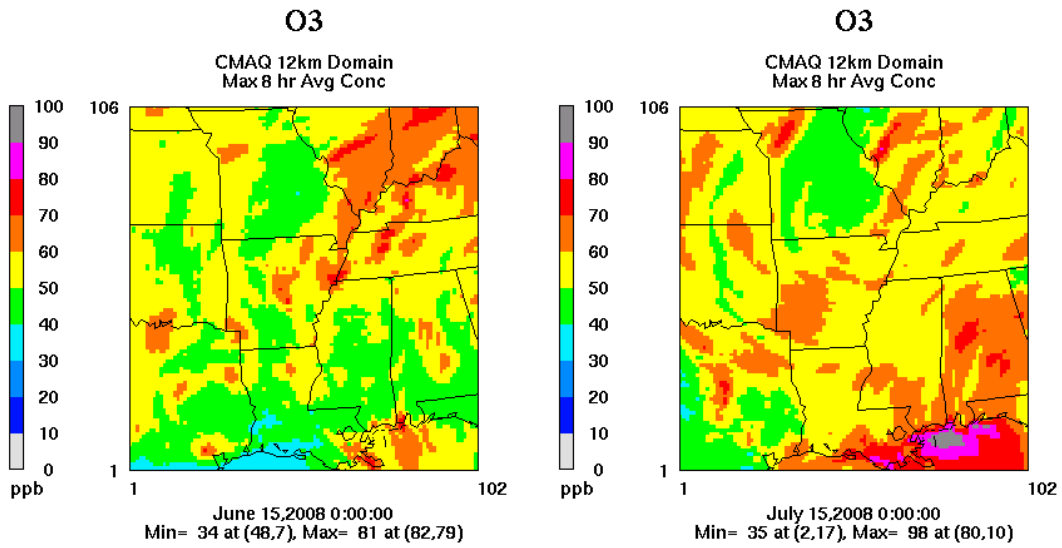
Spatial plots of the simulated ozone concentration patterns for the 12-km grid for selected days throughout the simulation period were plotted and examined. Figure 5-17 illustrates the simulated ozone concentration patterns for the 15th of each month (April – October). Consistent with the NAAQS for ozone, daily maximum 8-hour average ozone concentration is displayed. The units are parts per billion (ppb).

Figure 5-17. Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 12-km Grid

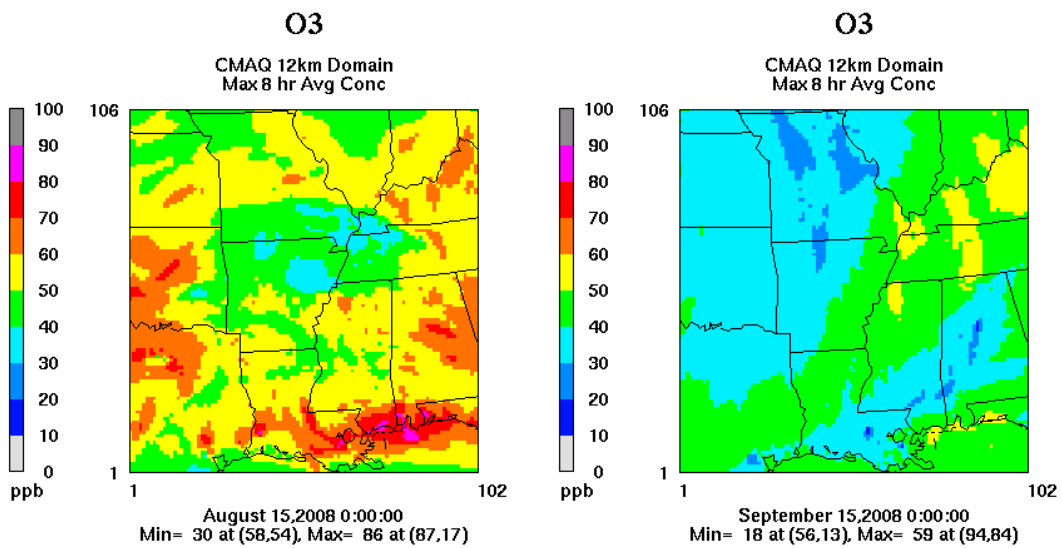
April 15/May 15

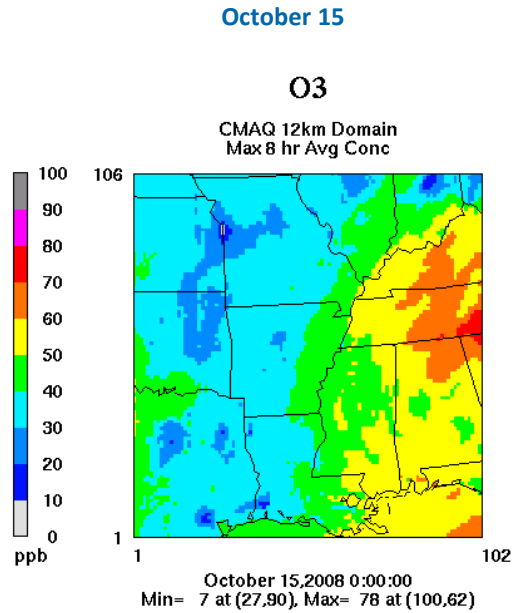


June 15/July 15



August 15/September 15



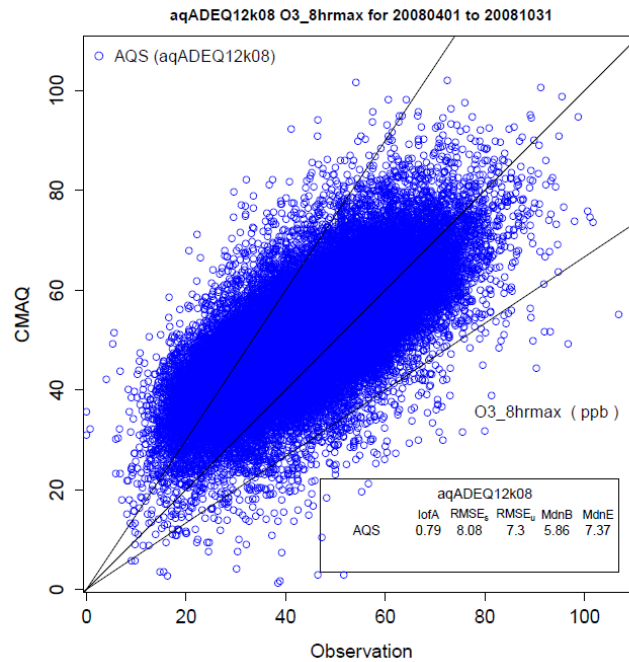


The plots depict a wide range of ozone concentration patterns for the selected days and illustrate the regional nature of ozone and potential transport patterns. Among the selected days, the simulated 8-hour average ozone concentrations are highest over Arkansas for the middle days of April, June, and July. Maximum 8-hour average concentrations for the 12-km grid range from 59 to 98 ppb for the selected days, overall slightly lower than for the 2005 annual simulation period.

Comparison of Simulated and Observed Concentrations

A scatter plot comparing simulated and observed daily maximum 8-hour ozone concentrations for the 12-km grid for April through October is presented in Figure 5-18. The scatter plot provides a visual representation of how well the simulated values match the observations, and can reveal biases toward over- or underestimation of the observed values. Also included on the scatter plot is some statistical information further summarizing model performance. Note that these statistical measures are calculated using the 8-hour average ozone concentrations.

Figure 5-18. Comparison of Simulated and Observed Daily Maximum 8-Hour Average Ozone Concentration (ppb) for the 12-km Grid (April through October)



There is a general tendency for CMAQ to overestimate the 8-hour average ozone concentrations, especially for observed values within the range of 20 to 40 ppb. Higher concentrations are well simulated and there is good correlation overall as indicated by an index of agreement of 0.79.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using hourly ozone concentrations for the 12-km grid are presented in Table 5-6. The recommended ranges for the normalized bias and normalized error shown in this table are no longer a part of current EPA guidance but are still widely used for urban- and regional-scale model performance evaluations (EPA, 2007). A lower bound of 40 ppb was used in calculating the normalized bias and error statistics.

Table 5-6. Summary Model Performance Statistics for Ozone for the 12-km Modeling Grid

Metric	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr-Oct	Goal
Number of Data Pairs	71,699	76,484	53,128	60,778	56,356	40,801	34,978	394,224	
Mean Observed (ppb)	50.7	50.6	51.7	53.0	51.7	52.0	49.6	51.4	
Mean Simulated (ppb)	48.9	46.7	49.5	52.9	53.4	53.1	48.6	50.2	
Mean Bias (ppb)	-1.8	-3.9	-2.2	-0.1	1.7	1.5	-1.1	-1.1	
Normalized Bias (%)	-2.7	-7.2	-3.7	0.6	4.1	2.7	-1.6	-1.6	± 15
Normalized Mean Bias (%)	-3.5	-7.7	-4.3	-0.3	3.2	2.2	-2.2	-2.2	
Fractional Bias (%)	-5.6	-10.7	-7.6	-3.3	0.0	-0.9	-4.6	-5.1	
Mean Error (ppb)	7.8	8.6	9.3	9.9	10.4	9.3	7.9	9.0	
Normalized Error (%)	15.7	17.3	18.6	19.5	20.8	18.7	16.2	18.1	≤ 35
Normalized Mean Error (%)	15.3	16.9	18.0	18.7	20.1	17.9	15.9	17.5	
Fractional Error (%)	17.3	19.7	20.6	20.8	21.6	19.9	17.8	19.7	
Correlation (unitless)	0.49	0.49	0.52	0.52	0.47	0.55	0.49	0.51	
Index of Agreement (unitless)	0.67	0.64	0.68	0.69	0.65	0.70	0.66	0.68	

The statistical measures indicate very good agreement, on average, between the simulated and observed concentrations for all months. The normalized bias is well within ± 15 percent and the normalized error is well within 35 percent for all months. Using a lower bound value of 60 ppb for the calculation of the statistics, the normalized mean bias for the multi-month period (April- October) is -7.3 percent and the normalized mean error is 13.6 percent, indicating some underestimation of the higher ozone values but also very good model performance.

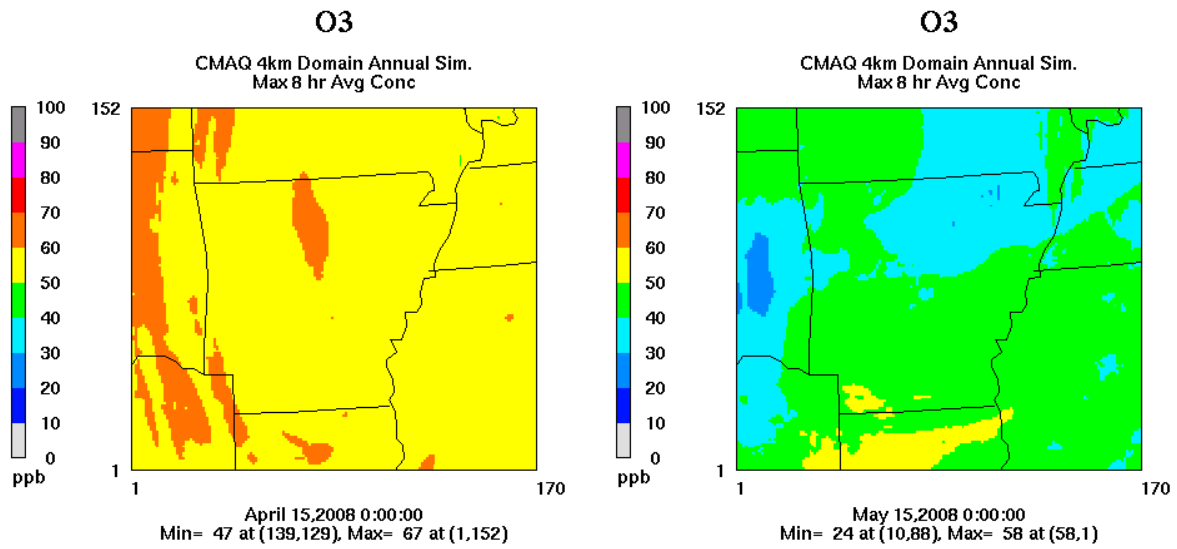
Ozone Model Performance for the 4-km Grid

Spatial Concentration Patterns

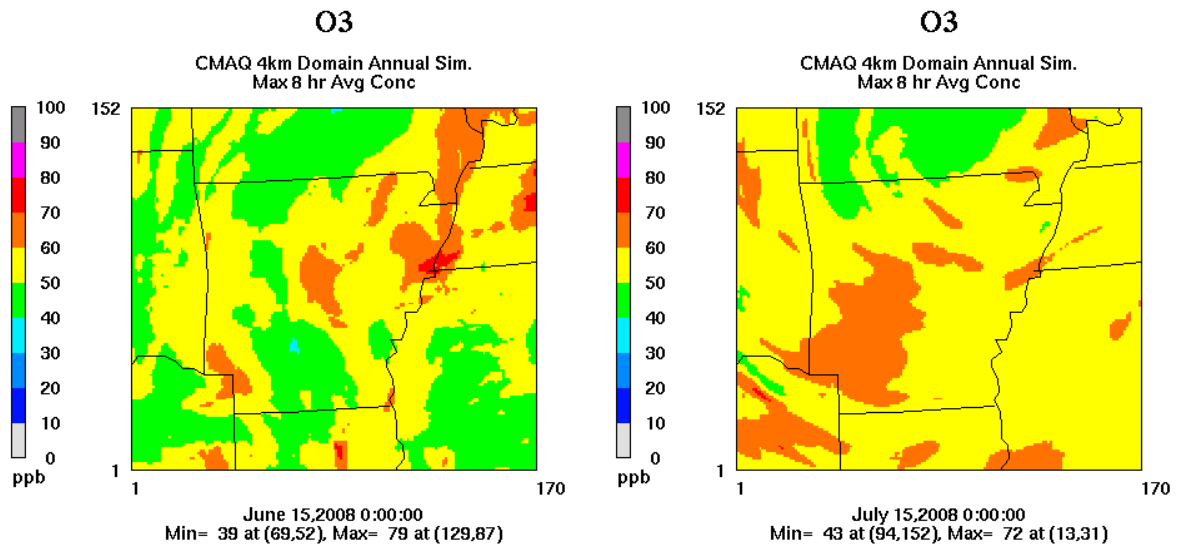
Spatial plots of the simulated ozone concentration patterns for the 4-km grid for selected days throughout the simulation period were plotted and examined. Figure 5-19 illustrates the daily maximum 8-hour average ozone concentration patterns for the 15th of each month (April – October). Units are parts per billion (ppb).

Figure 5-19. Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 4-km Grid

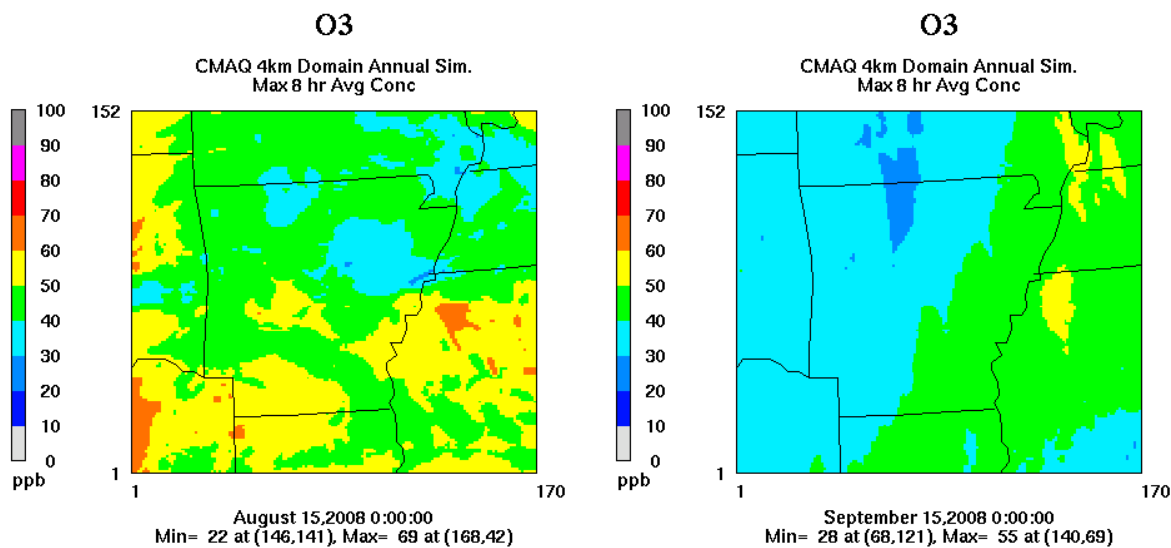
April 15/May 15



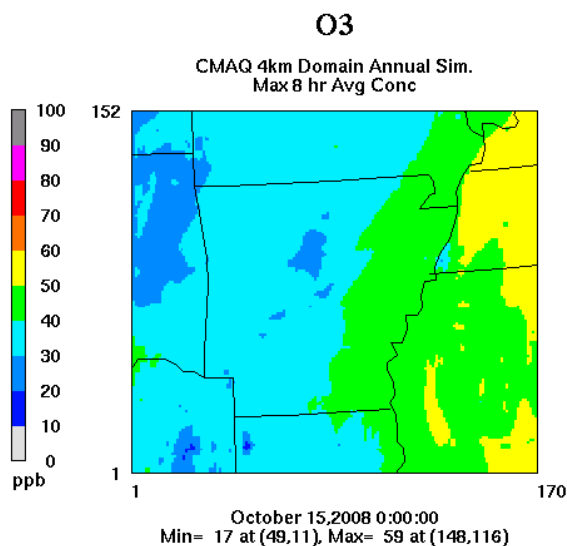
June 15/July 15



August 15/September 15



October 15

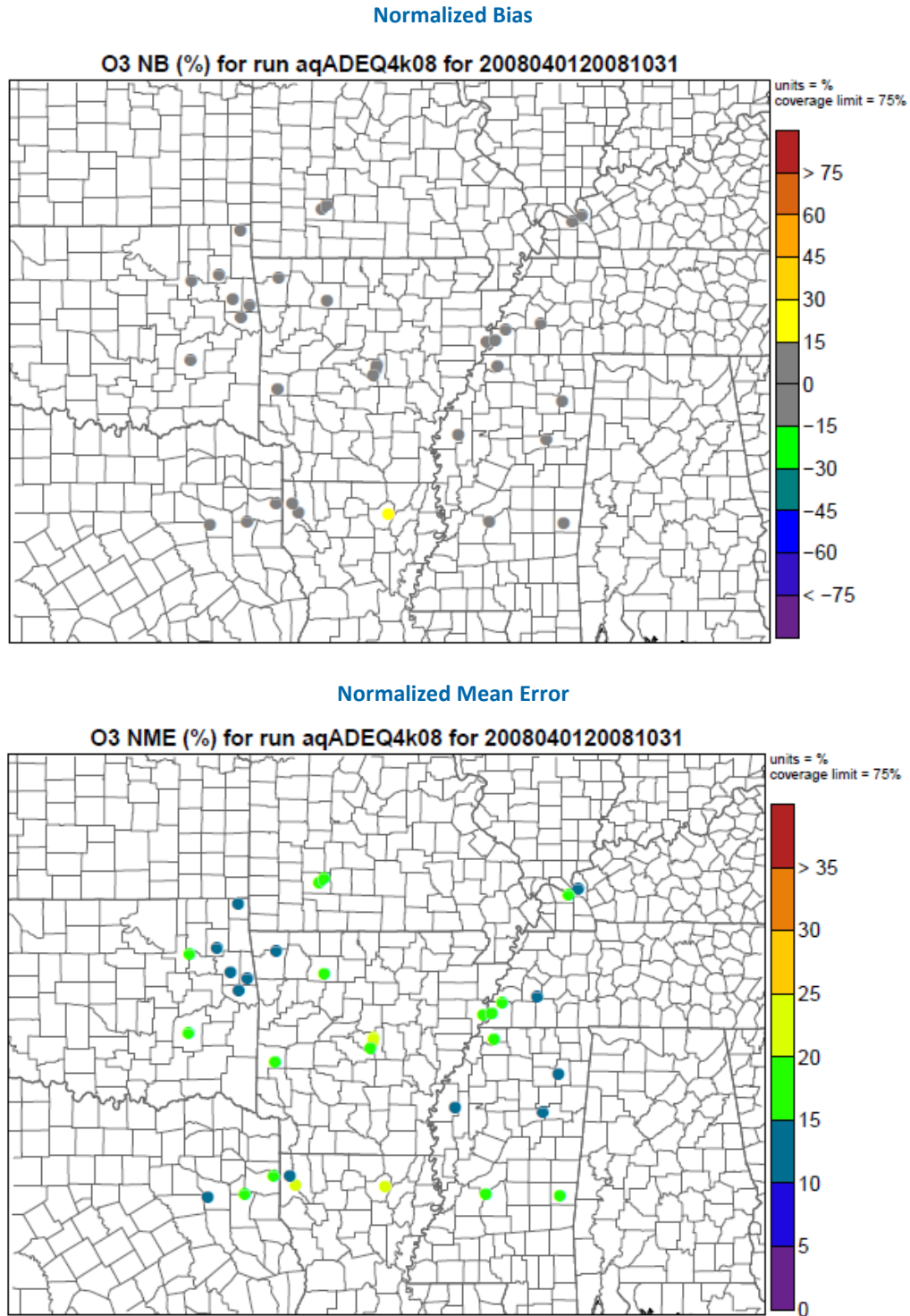


Simulated ozone concentrations over Arkansas for the selected days are mostly in the low to moderate range (40 to 60 ppb). Among the selected days, the highest simulated concentration (79 ppb) occurs near Memphis (Crittenden County) on July 15. Overall, the plots reflect the relatively low ozone concentrations that characterized the 2008 simulation period.

Figure 5-20 depicts the average bias and error for all sites in the 4-km modeling grid, based on daily maximum 8-hour ozone concentrations for the ozone season months (April through October). For the normalized bias, gray shaded circles indicate that the bias is within ± 15 percent; blue and green shading indicates underestimation of the observed concentrations and yellow, orange, and red shading indicates overestimation. For the normalized mean error, blue and green shading represent the smaller errors, while red indicates an error greater than 35 percent. A lower bound of 40 ppb was used in calculating

the normalized bias and error statistics. Note that the plotted area is slightly larger than the 4-km grid, but that information is presented only for sites within the 4-km grid.

Figure 5-20. Normalized Bias (%) and Normalized Mean Error (%) Based on Daily Maximum 8-Hour Average Simulated and Observed Ozone Concentrations for April through October for the CMAQ 4-km Grid

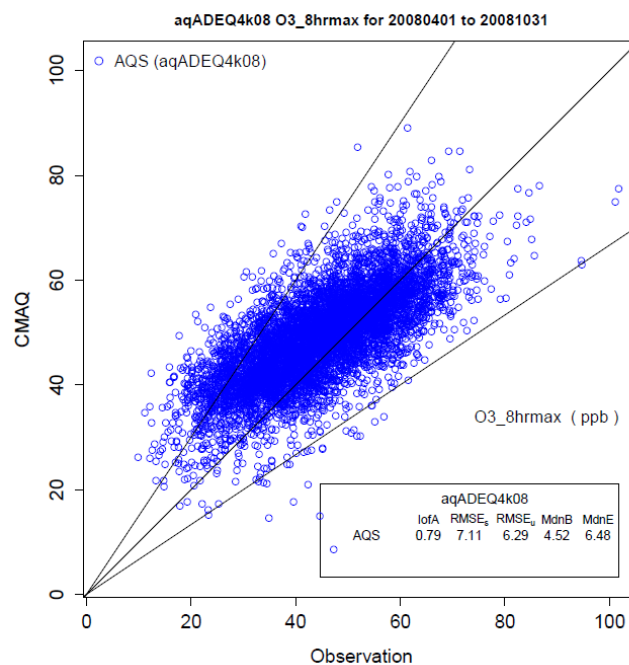


Model performance is consistently good throughout the 4-km grid and no distinct spatial patterns emerge. For all but one monitoring site, the normalized bias is within ± 15 percent (as indicated by the gray shading). The normalized mean error is less than 35 percent (actually less than 25 percent) for all sites and months.

Comparison of Simulated and Observed Concentrations

A scatter plot comparing simulated and observed daily maximum 8-hour ozone concentrations for the 4-km grid for April through October is presented in Figure 5-21. Again, note that the statistical measures given on the plot are calculated using the 8-hour average ozone concentrations.

Figure 5-21. Comparison of Simulated and Observed Daily Maximum 8-Hour Average Ozone Concentration (ppb) for the 4-km Grid (April through October)



There is a slight tendency for CMAQ to overestimate the lower concentrations and underestimate the highest concentrations, but there is good agreement overall as indicated by an index of agreement of 0.79.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using hourly ozone concentrations for the 4-km grid are presented in Table 5-7. A lower bound of 40 ppb was used in calculating the normalized bias and error statistics.

Table 5-7. Summary Model Performance Statistics for Ozone for the 4-km Modeling Grid

Metric	Apr	May	Jun	Jul	Aug	Sep	Oct	Apr-Oct	Goal
Number of Data Pairs	9,527	9,099	5,747	8,406	7,148	4,451	5,125	49,503	
Mean Observed (ppb)	49.7	50.1	50.5	52.6	50.3	5.2	48.6	50.5	
Mean Simulated (ppb)	47.9	45.6	47.2	51.1	50.3	51.2	46.0	48.4	
Mean Bias (ppb)	-1.8	-4.5	-3.3	-1.6	0.0	0.0	-2.6	-2.1	
Normalized Bias (%)	-2.9	-8.2	-5.6	-2.1	0.5	0.8	-5.1	-3.5	± 15
Normalized Mean Bias (%)	-3.6	-8.9	-6.5	-3.0	0.1	0.0	-5.4	-4.1	
Fractional Bias (%)	-5.0	-11.1	-8.7	-5.3	-3.5	-1.6	-7.5	-6.4	
Mean Error (ppb)	7.0	6.4	8.6	9.1	9.6	7.8	6.8	8.2	
Normalized Error (%)	14.2	16.5	17.1	17.8	19.7	15.8	14.1	16.5	≤ 35
Normalized Mean Error (%)	14.0	16.4	17.0	17.2	19.1	15.3	13.9	16.2	
Fractional Error (%)	15.3	18.7	19.0	19.2	21.3	16.5	15.8	18.1	
Correlation (unitless)	0.48	0.42	0.49	0.49	0.47	0.51	0.51	0.48	
Index of Agreement (unitless)	0.67	0.60	0.66	0.68	0.63	0.70	0.66	0.66	

The statistical measures for the 4-km grid show underestimation of ozone for most months, with the exception of August and September. The normalized bias is well within ±15 percent and the normalized error is well within 35 percent for all months and for the ozone season. Using a lower-bound value of 60 ppb, the normalized mean bias for the multi-month period (April- October) is -10.7 percent and the normalized mean error is 14.4 percent, also within the model performance goals.

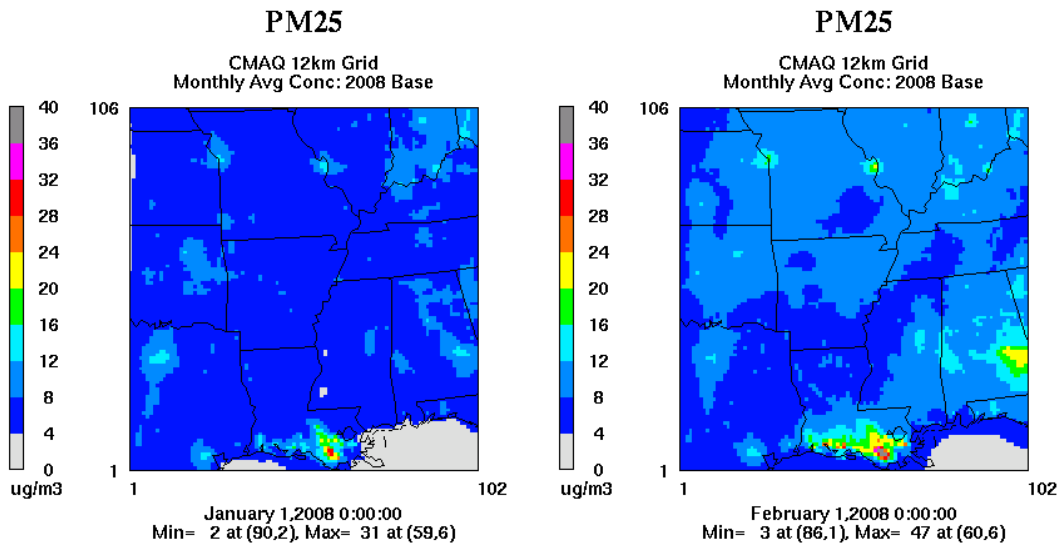
5.2.2 Summary of Model Performance for PM_{2.5}

12-km Grid

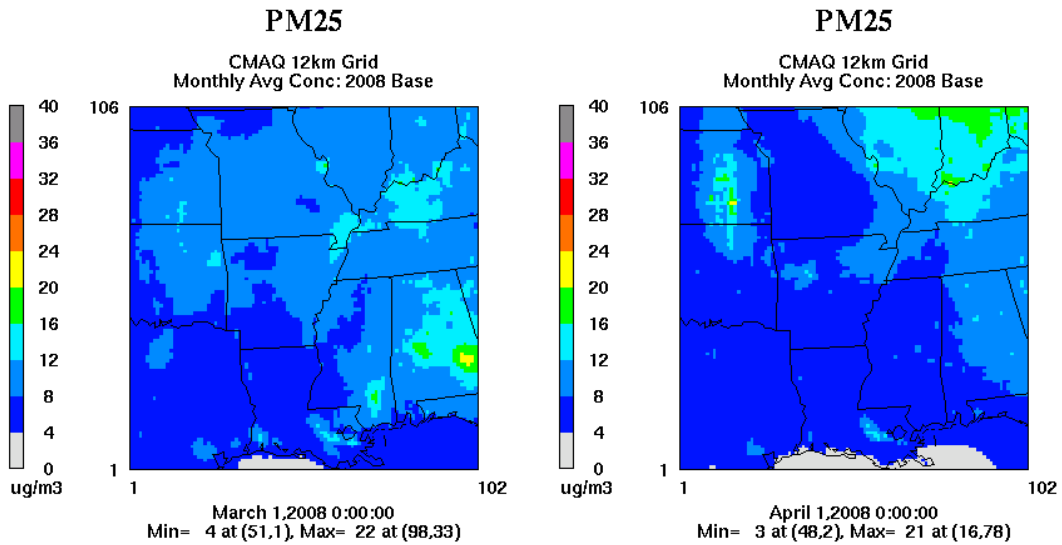
Spatial Concentration Patterns

Spatial plots of the monthly average simulated PM_{2.5} concentration patterns for the 12-km grid are illustrated in Figure 5-22. The units are micrograms per cubic meter (µg/m³).

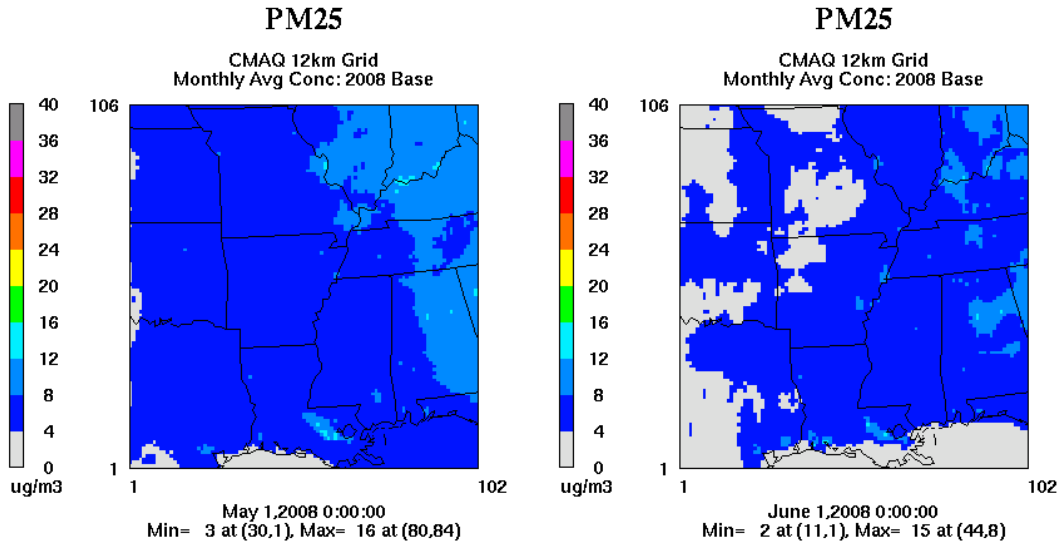
Figure 5-22. Simulated Monthly Average PM_{2.5} Concentration (µg/m³) for the CMAQ 12-km Grid
 January/February



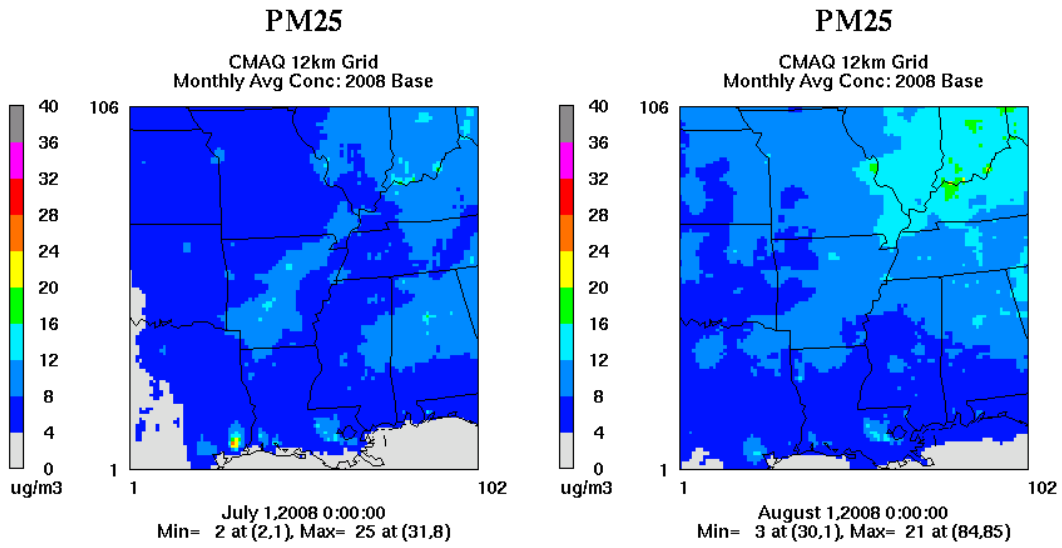
March/April



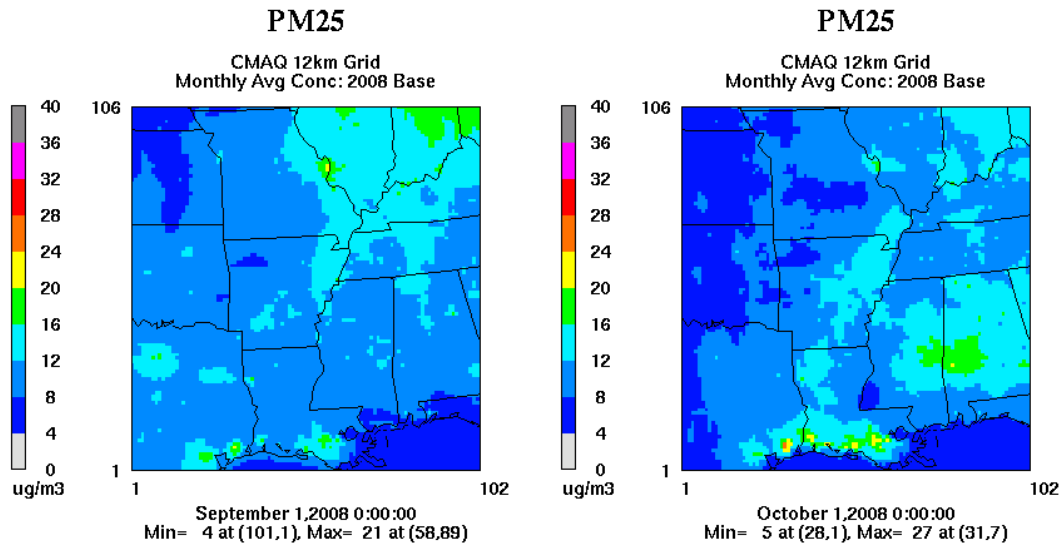
May/June



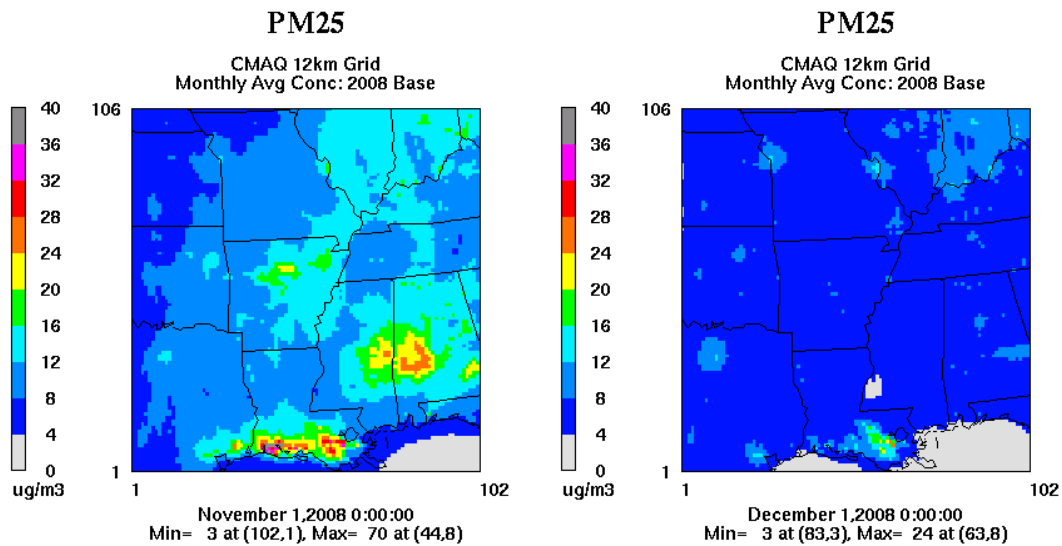
July/August



September/October

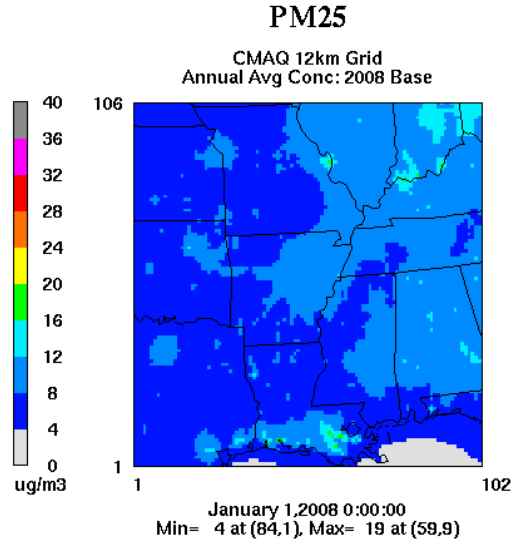


November/December



For most months, the simulated monthly average PM_{2.5} concentrations over Arkansas are low – in some cases less than 8 µg/m³ and in most cases less than 12 µg/m³. The simulated concentrations are highest for September, October and November. For November, concentrations greater than 20 µg/m³ occur over the north-central and northeastern portions of the state.

Figure 5-23 displays the annual average simulated PM_{2.5} concentration pattern for the 12-km grid.

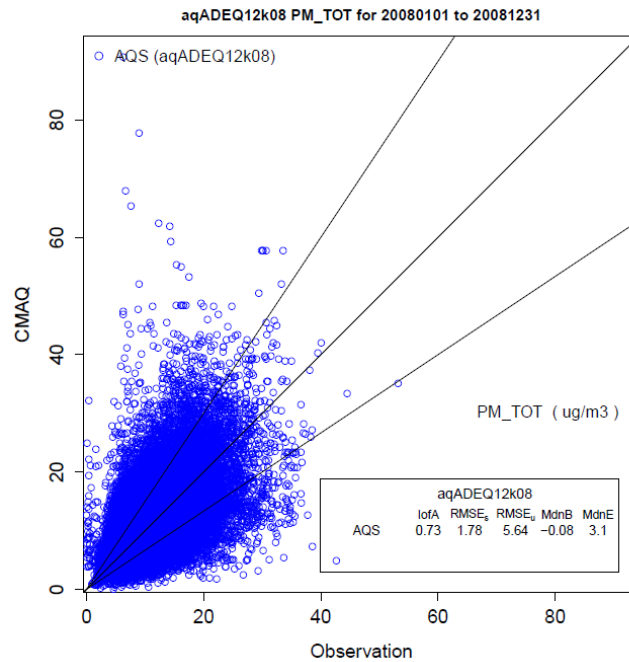
Figure 5-23. Simulated Annual Average PM_{2.5} Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 12-km Grid

The simulated annual average concentrations range from about 4 to 12 $\mu\text{g}/\text{m}^3$ over Arkansas and across most of the 12-km grid. The maximum simulated annual average PM_{2.5} concentration is only 19 $\mu\text{g}/\text{m}^3$ and is located along the coast of Louisiana.

Comparison of Simulated and Observed Concentrations

Scatter plots comparing simulated and observed 24-hour PM_{2.5} concentrations for AQS sites within the 12-km grid for the annual simulation period are presented in Figure 5-24.

Figure 5-24. Comparison of Simulated and Observed 24-Hour Average PM_{2.5} Concentration ($\mu\text{g}/\text{m}^3$) for the 12-km Grid (All Months)



The scatter plot indicates both over and underestimation of the observed annual average PM_{2.5} concentrations within the 12-km grid, but overall good correlation as indicated by an index of agreement of 0.73.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using 24-hr PM_{2.5} concentrations for the 12-km grid are presented in Table 5-8. The recommended ranges for the fractional bias and fractional error are based on Boylan (2005) and are widely used for regional-scale model performance evaluation for PM_{2.5}. No lower bound was applied in calculating the statistics.

Table 5-8. Summary Model Performance Statistics for PM_{2.5} for the 12-km Modeling Grid

Metric	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Annual	Goal
Number of Data Pairs	6,717	6,363	6,526	6,511	26,135	
Mean Observed (ppb)	10.7	11.0	14.6	10.3	11.6	
Mean Simulated (ppb)	11.6	10.0	12.5	13.4	11.9	
Mean Bias (ppb)	0.9	-1.0	-2.1	3.0	0.2	
Fractional Bias (%)	3.7	-13.9	-18.7	21.2	-1.8	± 60
Mean Error (ppb)	4.0	3.8	4.8	4.4	4.3	
Fractional Error (%)	35.1	36.8	37.7	36.2	36.4	≤ 75
Correlation (unitless)	0.55	0.50	0.58	0.70	0.56	
Index of Agreement (unitless)	0.71	0.69	0.74	0.75	0.73	

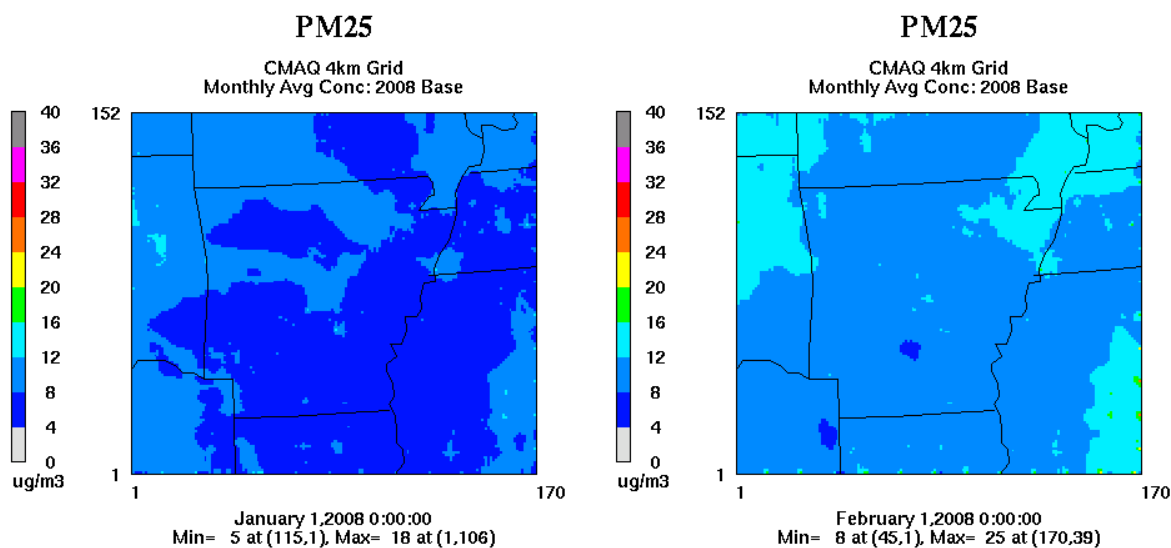
On average, PM_{2.5} concentrations are overestimated for first and fourth quarters and underestimated for the second and third quarters. The lowest bias and error values and thus the best model performance are achieved for the first quarter, when observed PM_{2.5} concentrations are relatively low. The statistical measures for fractional bias and fractional error are well within the model performance goals for all periods.

4-km Grid

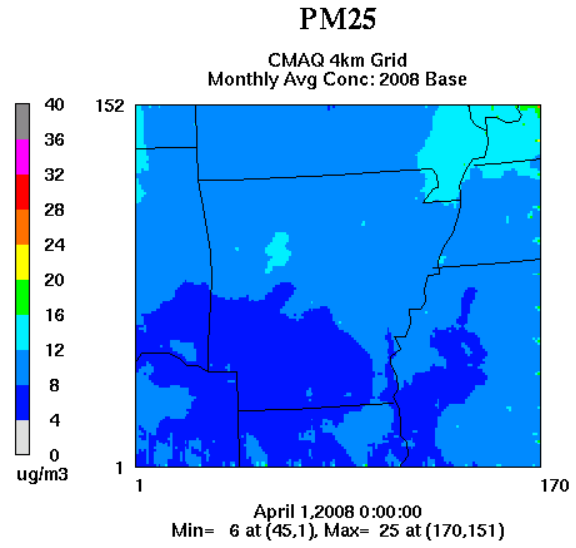
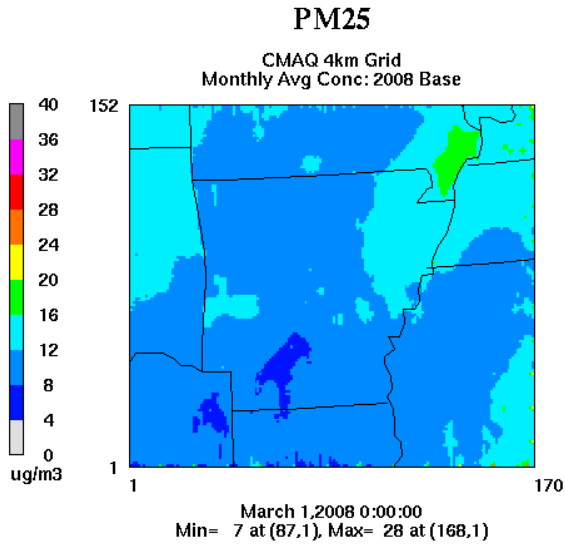
Spatial Concentration Patterns

Spatial plots of the monthly average simulated PM_{2.5} concentration patterns for the 4-km grid are illustrated in Figure 5-25. The units are micrograms per cubic meter (µg/m³).

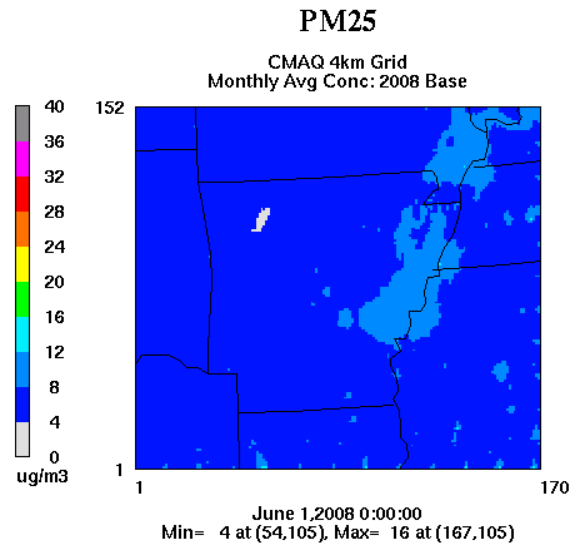
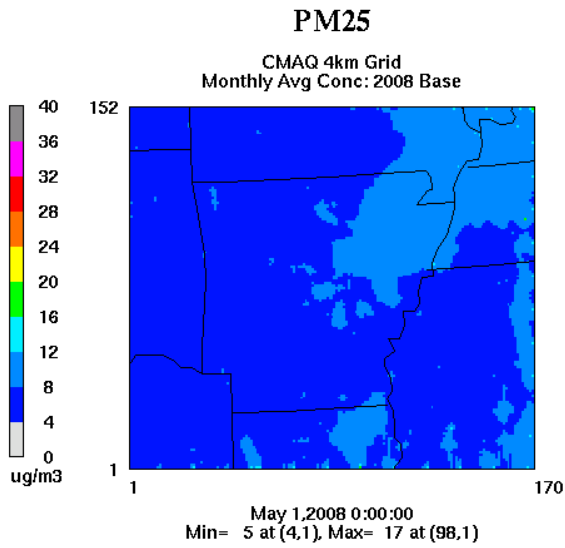
Figure 5-25. Simulated Monthly Average PM_{2.5} Concentration (µg/m³) for the CMAQ 4-km Grid
January/February



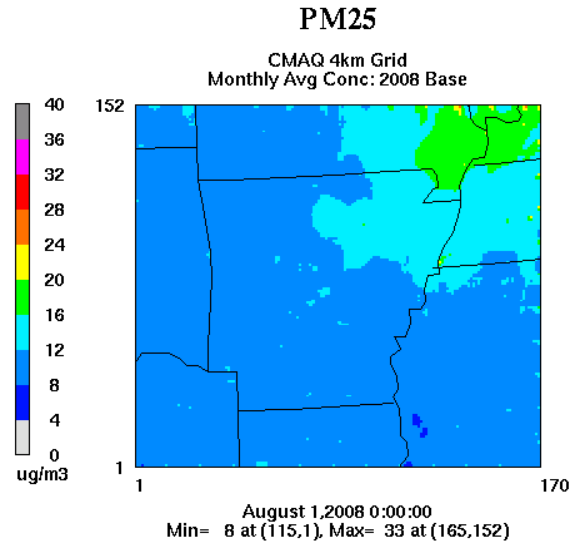
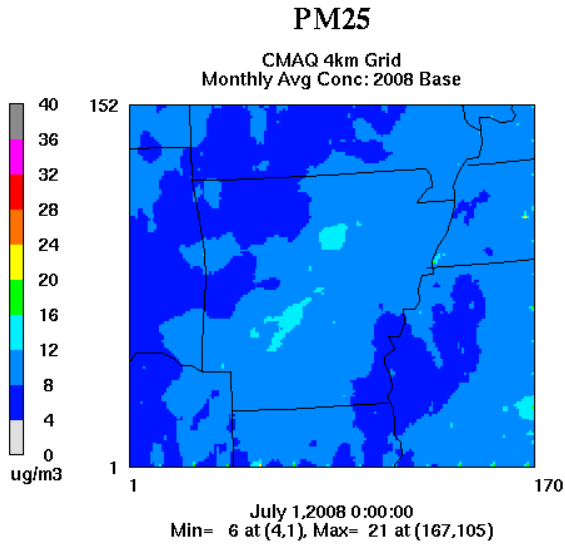
March/April



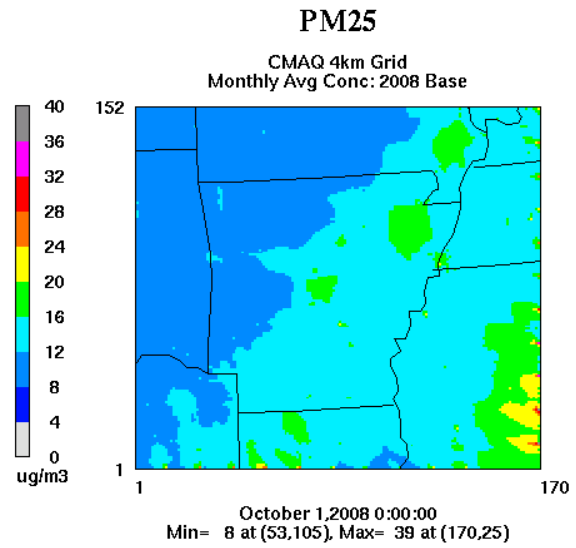
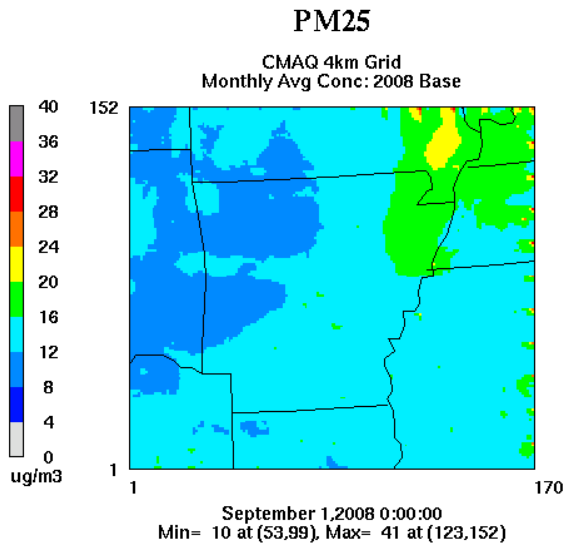
May/June



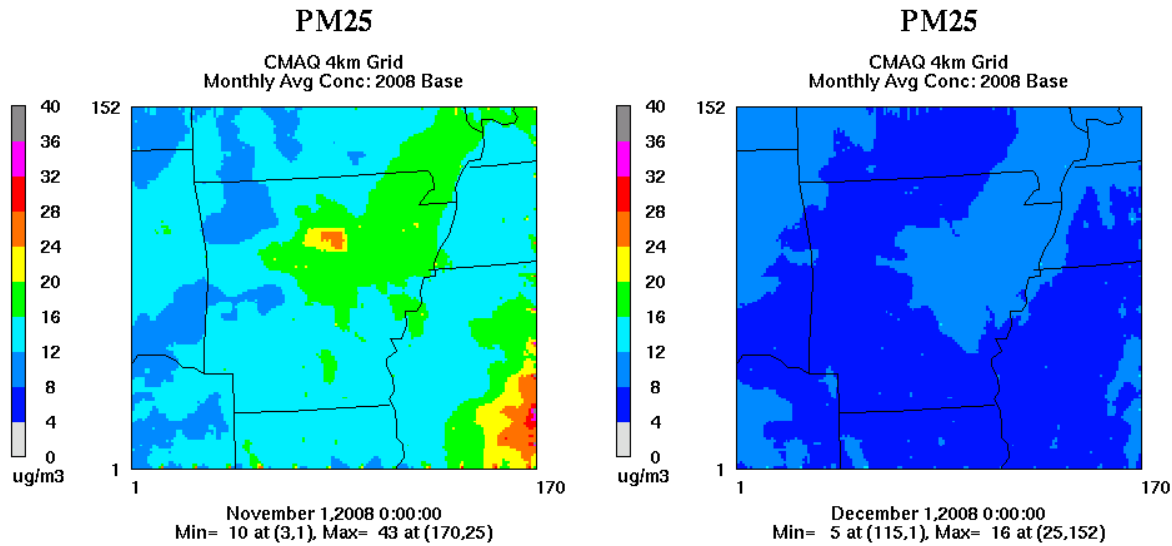
July/August



September/October



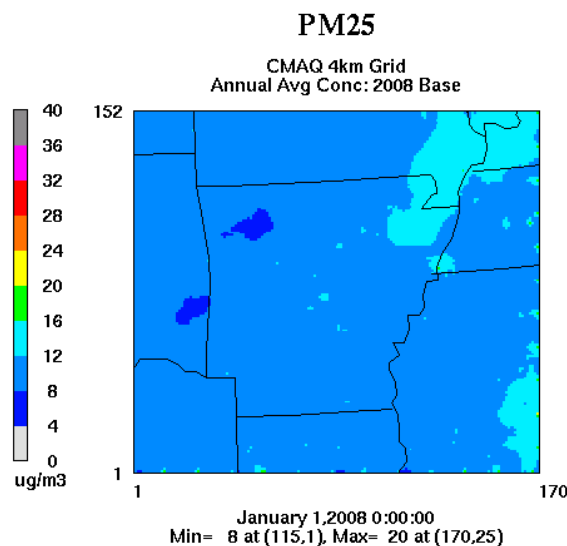
November/December



For most months, the simulated monthly average PM_{2.5} concentrations over Arkansas are generally within the range of 4 to 16 µg/m³. A few months (May, June, and December) are characterized by lower concentrations. September, October, and November have somewhat higher concentrations (with maximum values in the 16 to 28 µg/m³ range).

Figure 5-26 displays the annual average simulated PM_{2.5} concentration pattern for the 4-km grid.

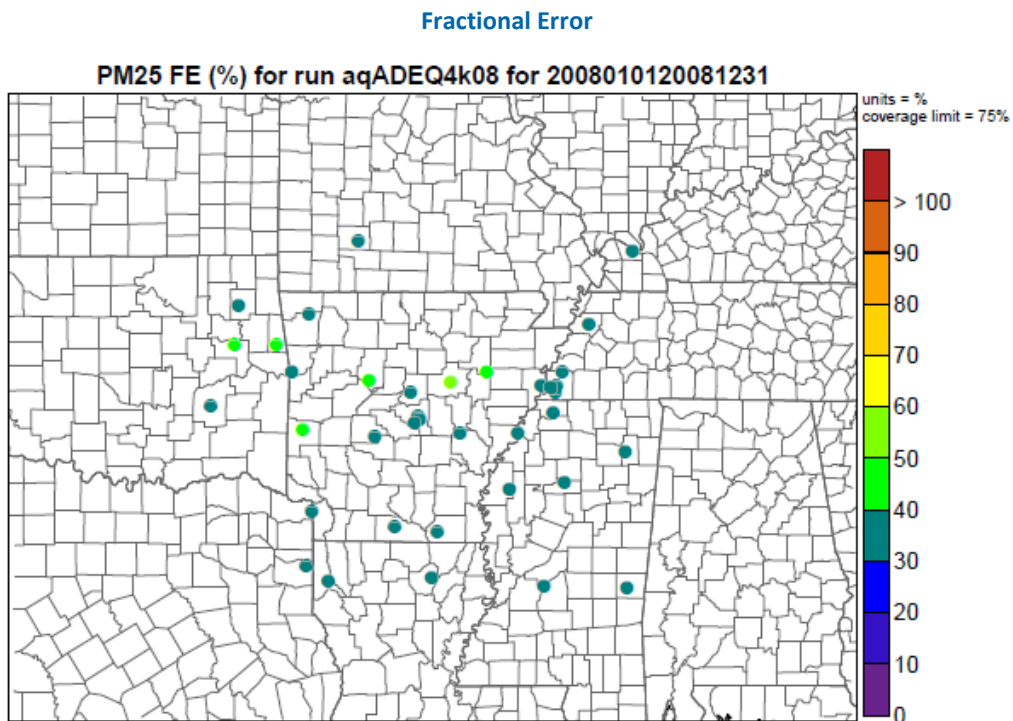
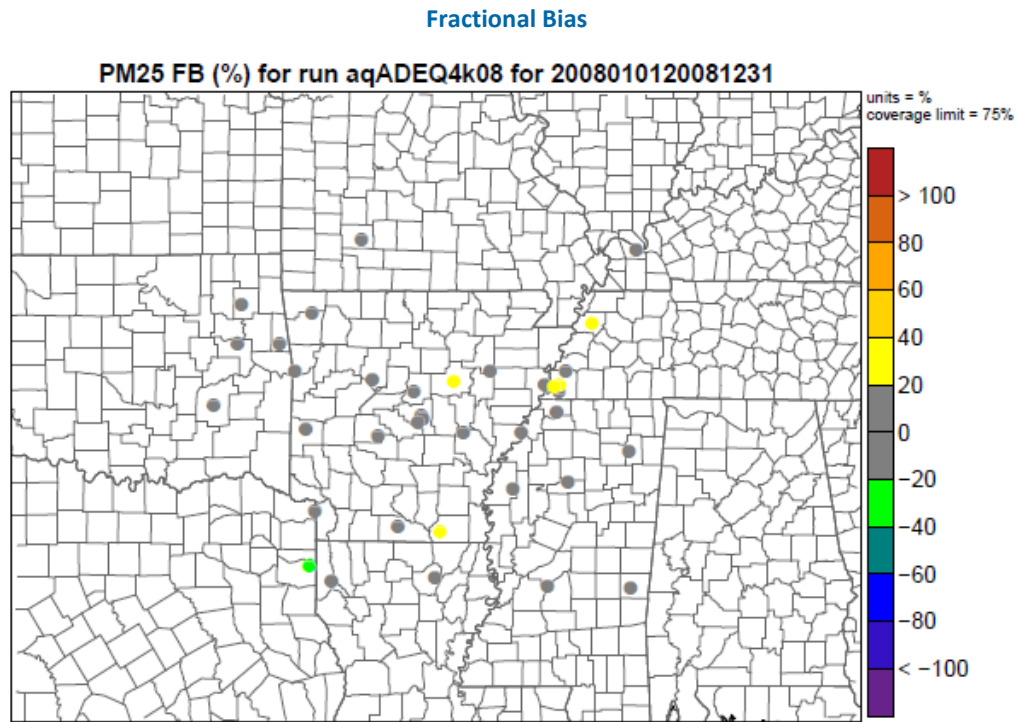
Figure 5-26. Simulated Annual Average PM_{2.5} Concentration (µg/m³) for the CMAQ 4-km Grid



The simulated annual average PM_{2.5} concentrations for 2008 are less than 16 µg/m³ throughout the state of Arkansas. The highest concentrations occur near Little Rock and Memphis, and in the northeast portion of the state.

To illustrate the agreement between the simulated and observed values, Figure 5-27 depicts the fractional bias and fractional error statistics for the 4-km modeling domain. The statistics are calculated using 24-hour average PM_{2.5} concentrations and are calculated using data for the annual simulation period. Again, each monitoring site is represented by a circle and the shading of the circle provides information about how well the 24-hour observed PM_{2.5} concentrations are represented by the simulation results, on average. For the fractional bias, gray shaded circles indicate that the fractional bias is within ± 20 percent and, in general, values within ± 60 percent (lighter colors) correspond to acceptable model performance. Blue and green shading indicates underestimation of the observed concentrations and yellow, orange, and red shading indicates overestimation. For the fractional error, blue and green shading represent the smaller errors, while red indicates an error greater than 100 percent. Values less than 75 percent are considered to represent reasonable model performance for PM_{2.5}.

Figure 5-27. Fractional Bias (%) and Fractional Error (%) Based on 24-Hour Average Simulated and Observed PM_{2.5} Concentrations for CMAQ 4-km Grid (All Months)

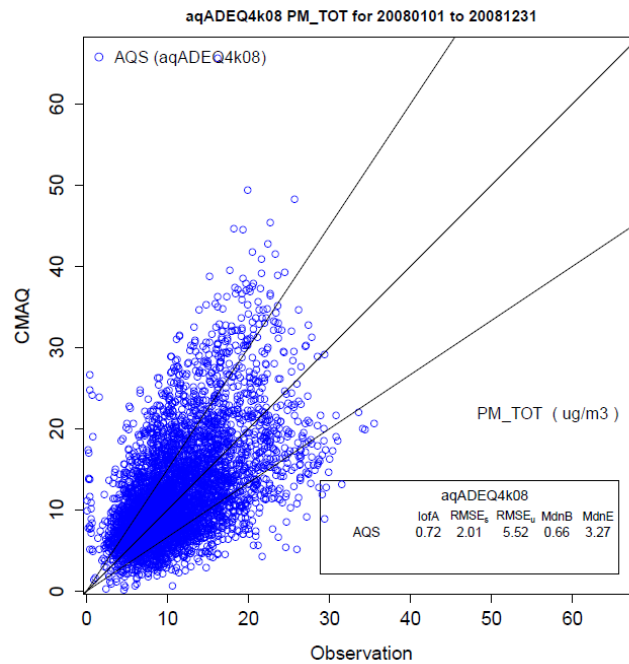


The fractional bias is within the range of -40 to 40 percent (as indicated by the green, gray and yellow shading) and the fractional error is less than 60 percent for all sites.

Comparison of Simulated and Observed Concentrations

Scatter plots comparing simulated and observed 24-hour PM_{2.5} concentrations for AQS sites within the 4-km grid for the annual simulation period are presented in Figure 5-28.

Figure 5-28. Comparison of Simulated and Observed 24-Hour Average PM_{2.5} Concentration (µg/m³) for the 4-km Grid (All Months)



The scatter plot shows a tendency for overestimation but otherwise fairly good agreement between the simulated and observed PM_{2.5} concentrations.

Statistical Measures of Model Performance

Summary metrics and statistical measures calculated using 24-hr PM_{2.5} concentrations for the 4-km grid are presented in Table 5-9. The recommended ranges for the fractional bias and fractional error are based on Boylan (2005) and are widely used for regional-scale model performance evaluation for PM_{2.5}. No lower bound was applied in calculating the statistics.

Table 5-9. Summary Model Performance Statistics for PM_{2.5} for the 4-km Modeling Grid

Metric	Jan–Mar	Apr–Jun	Jul–Sep	Oct–Dec	Annual	Goal
Number of Data Pairs	1,258	1,161	1,201	1,174	4,794	
Mean Observed (ppb)	9.5	10.4	14.8	10.5	11.3	
Mean Simulated (ppb)	11.6	9.4	13.3	14.8	12.3	
Mean Bias (ppb)	2.2	-1.0	-1.5	4.2	1.0	
Fractional Bias (%)	19.9	-11.0	-16.0	31.4	6.2	± 60
Mean Error (ppb)	3.9	3.1	5.1	5.4	4.4	
Fractional Error (%)	36.7	32.9	38.2	42.5	37.6	≤ 75
Correlation (unitless)	0.51	0.51	0.55	0.67	0.54	
Index of Agreement (unitless)	0.66	0.70	0.72	0.71	0.72	

On average, PM_{2.5} concentrations are overestimated for the 4-km grid for the first and fourth quarters and underestimated for the second and third quarters. Thus, model performance is a bit inconsistent throughout the simulation period. Overestimation during the winter months was also noted for the 2005 simulation period. The fractional bias and error values are well within the model performance goals for all periods.

5.2.3 Summary of Model Performance for PM₁₀, NO_x, SO₂ and CO

Model performance for PM₁₀, NO_x, SO₂ and CO was examined with emphasis on quarterly and annual average concentrations. Observed concentrations of these criteria pollutants are generally expected to represent local rather than regional scale concentrations. This is due to the fact that these pollutants are directly emitted into the atmosphere and also because the monitoring sites are typically located in urban areas and near roadways. A grid-based model like CMAQ may not be able to capture the sub grid-scale variations in concentration reflected in the data that are due to local emissions sources and thus may not agree with the observed data unless the data are representative of area encompassed by a grid cell. Thus, model performance for these species was examined only for the 4-km grid.

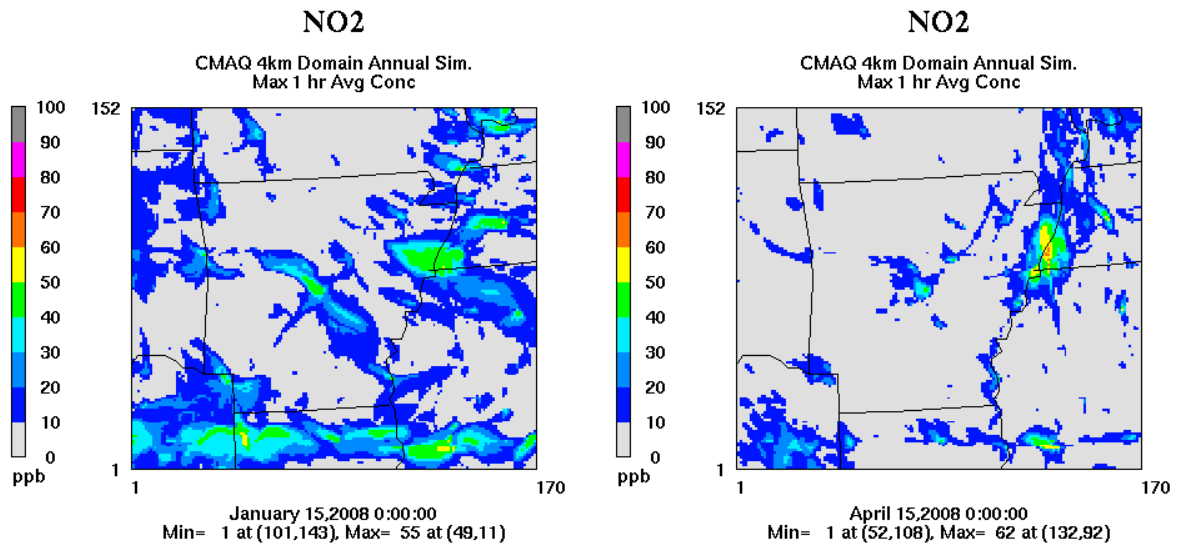
4-km Grid

Spatial Concentration Patterns for NO₂ and SO₂

Spatial plots of the simulated NO₂ and SO₂ concentration patterns for the 4-km grid for selected days throughout the simulation period were plotted and examined. Figures 5-29 and 5-30 illustrate the daily maximum 1-hour average NO₂ concentration patterns and daily maximum 1-hour average SO₂ concentration patterns, respectively, for the 15th of January, April, July, and October (one day per quarter). These are provided primarily as a point of reference for the difference plots presented in Section 6. Units are parts per billion (ppb).

Figure 5-29. Simulated Daily Maximum 1-NO₂ Concentration (ppb) for Selected Days for the CMAQ 4-km Grid

January 15/April 15



July 15/October 15

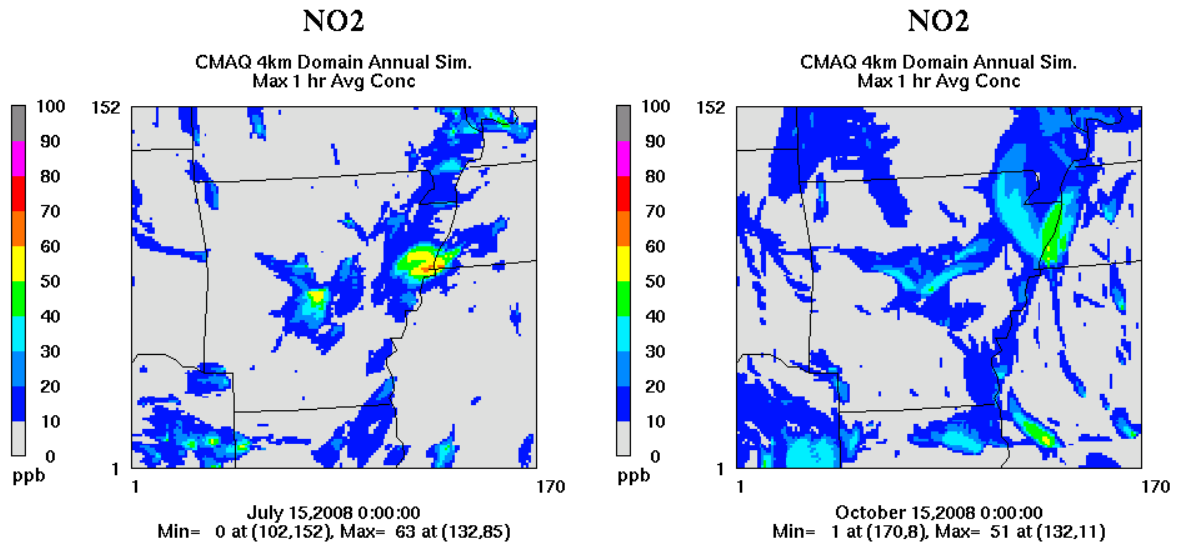
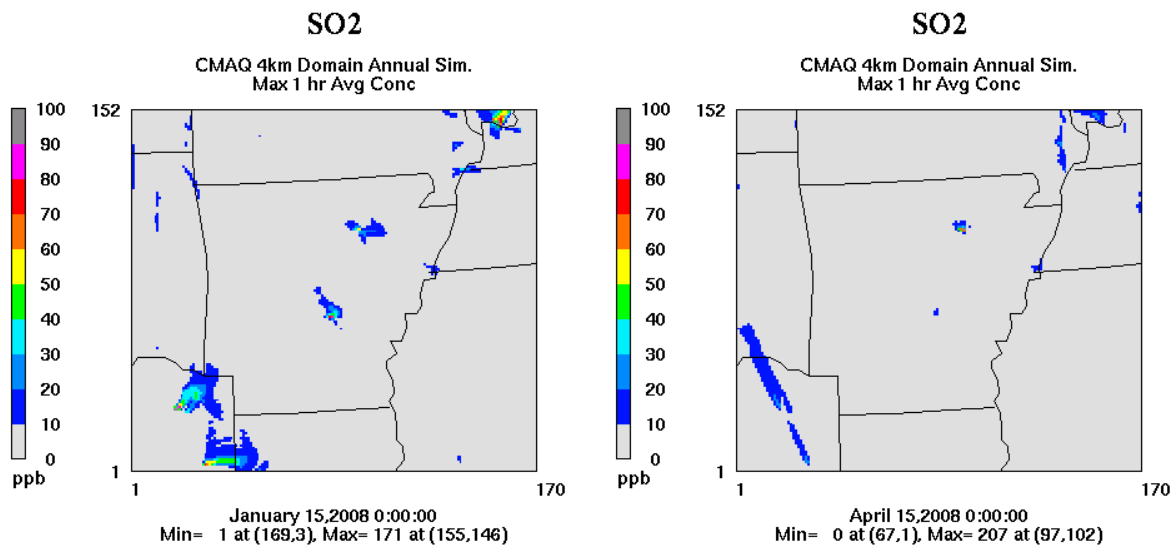
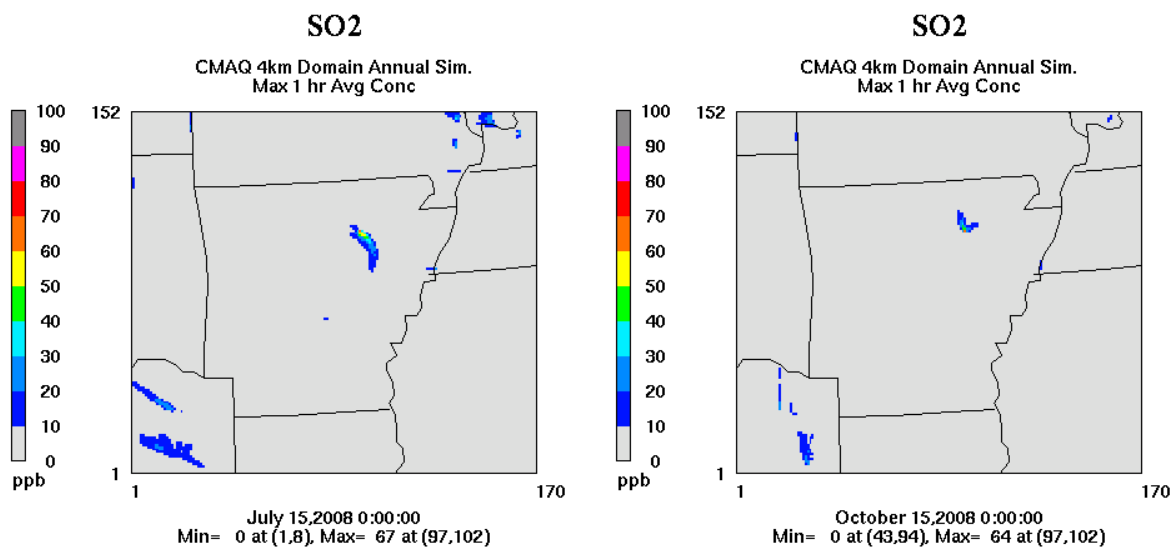


Figure 5-30. Simulated Daily Maximum 1-SO₂ Concentration (ppb) for Selected Days for the CMAQ 4-km Grid

January 15/April 15



July 15/October 15

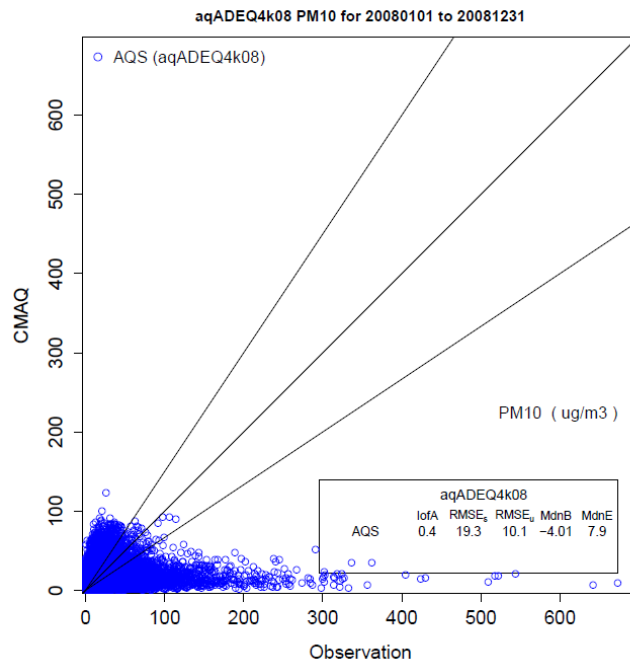


As for 2005, the simulated NO₂ concentrations for 2008 are highest over and downwind of Memphis, Little Rock, and (in some cases) other urban areas. There are a couple of areas of high SO₂ concentrations within Arkansas, as well as in southern Illinois and northeastern Texas. The majority of these areas are located downwind of various EGUs or other large industrial sources. For example, the high SO₂ “plumes” in northeastern Arkansas (near Batesville), depicted in the monthly plots, are from the FutureFuel Chemical Co. source, the former Eastman Chemical Co. facility. The FutureFuel facility started operations in 2006 and for 2008 was the largest non-EGU SO₂ source in the state with SO₂ emission levels of 2,881 tons per year.

Comparison of Simulated and Observed Concentrations

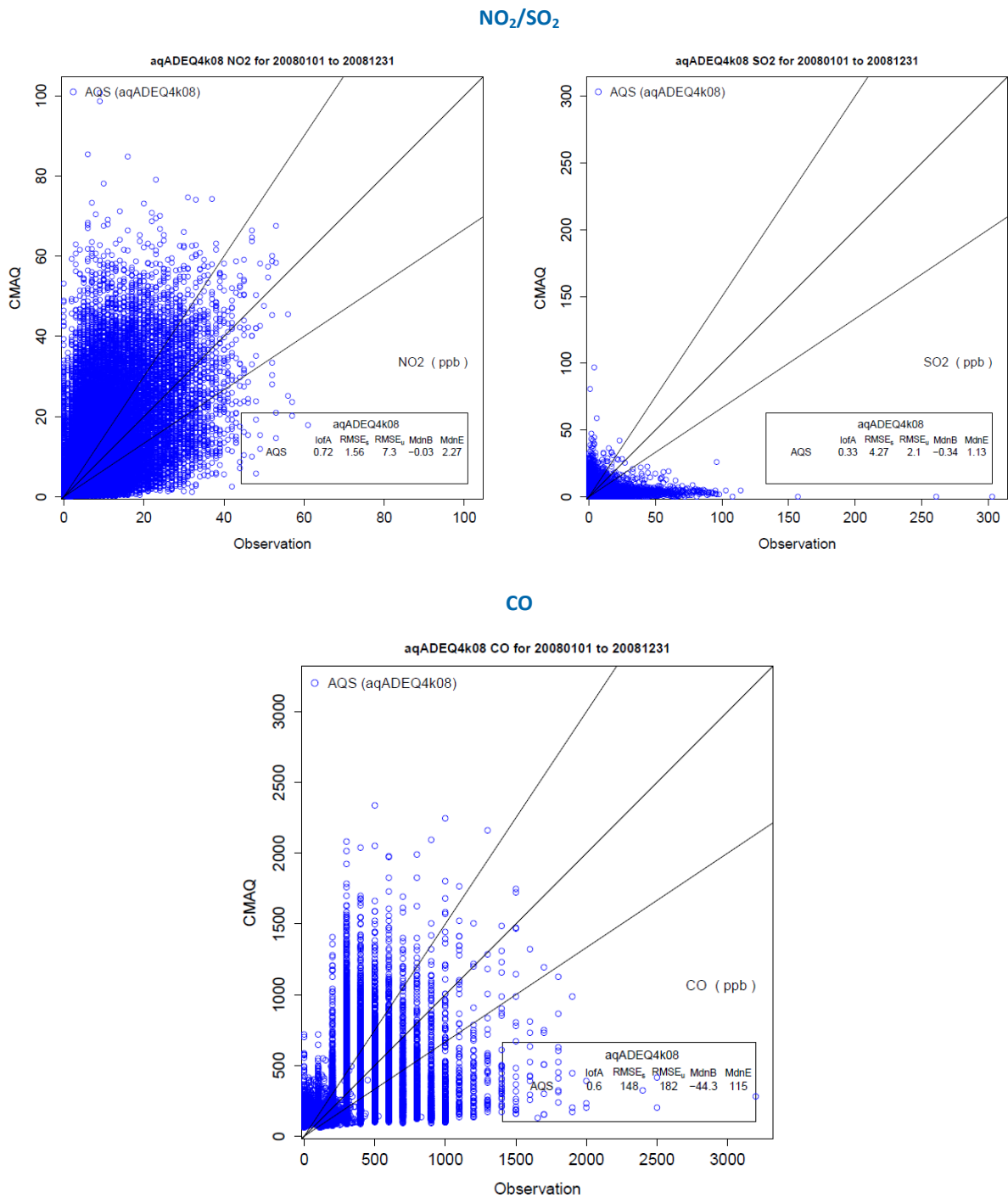
Scatter plots comparing simulated and observed 24-hour PM₁₀ concentrations for AQS sites within the 4-km grid for the annual simulation period are presented in Figure 5-31. Units for PM₁₀ are µg/m³.

Figure 5-31. Comparison of Simulated and Observed 24-Hour Average PM₁₀ Concentration (µg/m³) for the 4-km Grid (All Months)



Scatter plots comparing simulated and observed hourly NO_x, SO₂, and CO concentrations for AQS sites within the 4-km grid for the annual simulation period are presented in Figure 5-32. Units for the gaseous species are ppb.

Figure 5-32. Comparison of Simulated and Observed Hourly Average NO₂, SO₂, and CO Concentrations (ppb) for the 4-km Grid (All Months)



PM₁₀ concentrations are mostly underestimated, but there is a lot of scatter about the 1:1 line. The higher PM₁₀ concentrations are consistently underestimated while the low observed values are both under- and overestimated. Model performance for 1-hour NO₂, SO₂, and CO concentrations is

characterized by a good deal of scatter about the 1:1 line and a tendency for overestimation of NO₂, and underestimation of SO₂ and CO.

Statistical Measures of Model Performance

Summary metrics and statistical measures for PM₁₀, NO_x, and SO₂ for the 4-km grid are presented in Table 5-10. No lower bound was applied in calculating the statistics; fractional bias and error are emphasized.

Table 5-10. Summary Model Performance Statistics for PM₁₀, NO₂, SO₂ and CO for the 4-km Modeling Grid

Metric	PM ₁₀ (µg/m ³)	NO ₂ (ppb)	SO ₂ (ppb)	CO (ppb)
Number of Data Pairs	3,148	83,448	130,236	34,383
Mean Observed (ppb)	18.6	6.4	3.6	309
Mean Simulated (ppb)	15.1	7.8	1.6	264
Mean Bias (ppb)	-3.6	1.4	-0.9	-45.3
Fractional Bias (%)	-19.7	-3.2	-54.2	-8.1
Mean Error (ppb)	10.1	4.5	2.3	162
Fractional Error (%)	57.9	62.2	91.0	58.3

Overall, the errors for these pollutants are somewhat worse than for the 2005 simulation period. For all pollutants, the simulated values are, on average, within a factor of two of the observed values. The fractional error values are large and do not indicate a great deal of skill in replicating the observed concentrations.

6 Future-Year Modeling Results

The future-year modeling and criteria pollutant assessment results are presented in this section. The following summary of the future-year modeling results is based on the modeling results for the 4-km grid and focuses on changes in pollutant concentrations throughout the State of Arkansas and design values and design-value-related metrics at monitoring sites and unmonitored areas throughout the state.

Note that, for consistency with the 2015 emissions, the 2008 simulation was first rerun with “current-year” emissions, in which the anthropogenic emissions were consistent with 2005 and 2015 in terms of methodology, but the biogenic emissions were consistent with the 2008 meteorological conditions. The “current year” modeling results were used as the basis for the criteria pollutant assessment for 2008, as presented in the remainder of this section.

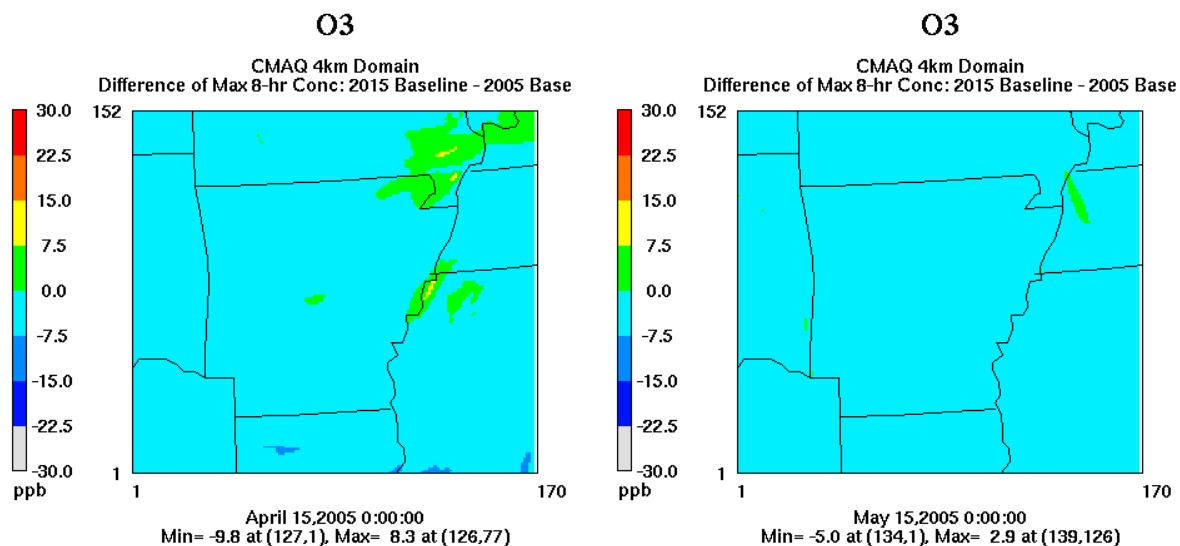
6.1 Overview of Future-Year Modeling Results

6.1.1 Ozone

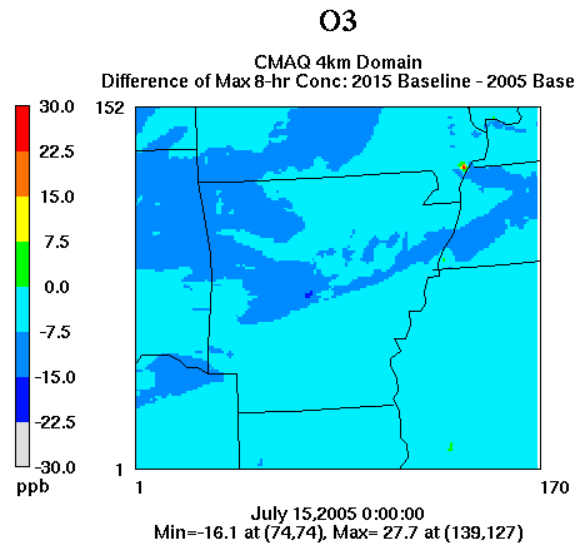
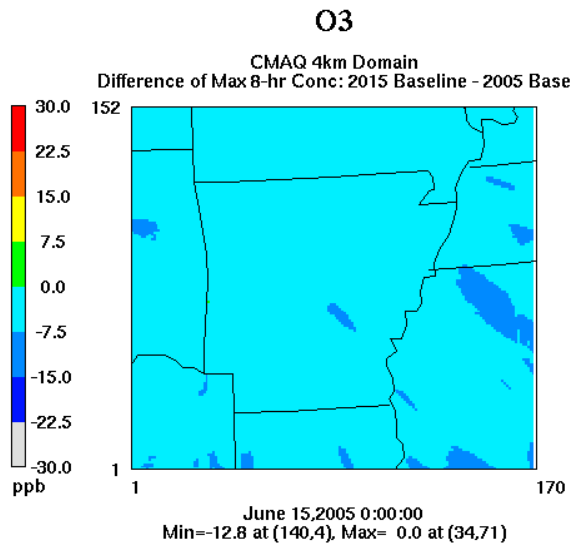
Figures 6-1 and 6-2 illustrate the difference in daily maximum 8-hour average ozone concentration for the 4-km grid and the 15th of each month (April – October) for the 2005/2015 and 2008/2015 simulation pairs. The differences are calculated as future year minus base year, specifically 2015 minus 2005 in Figure 6-1 and 2015 minus 2008 in Figure 6-2. The units are ppb. The date and time given on these and all subsequent difference plots refer to the meteorological base year and start hour for the selected day or averaging period. The minimum and maximum difference values for any location within the domain are also provided, along with their grid cell (x,y) locations.

Figure 6-1. Difference in Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 4-km Grid: 2015 - 2005

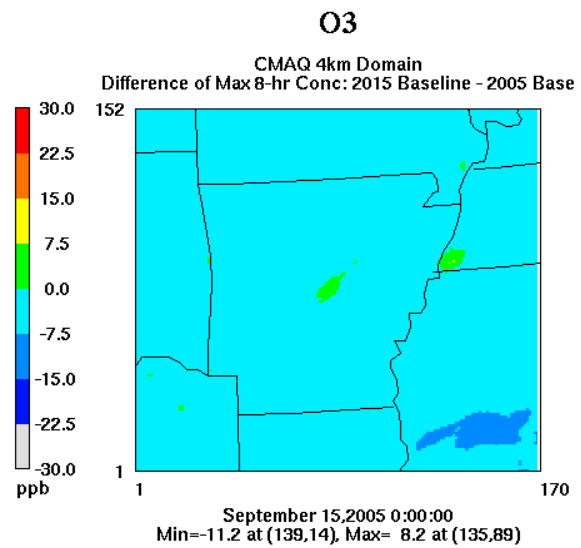
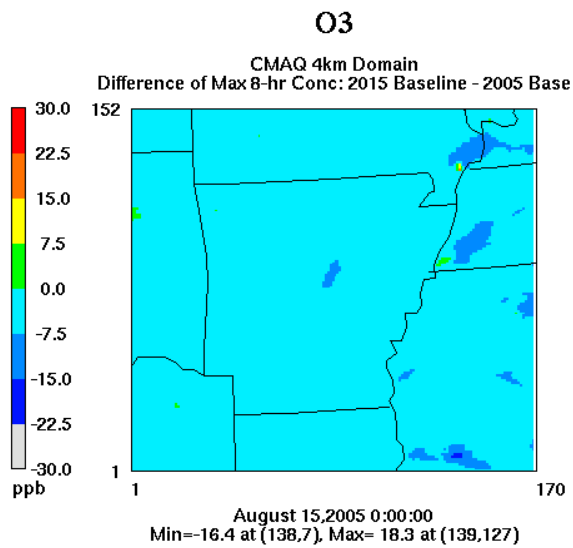
April 15/May 15



June 15/July 15



August 15/September 15



October 15

O3

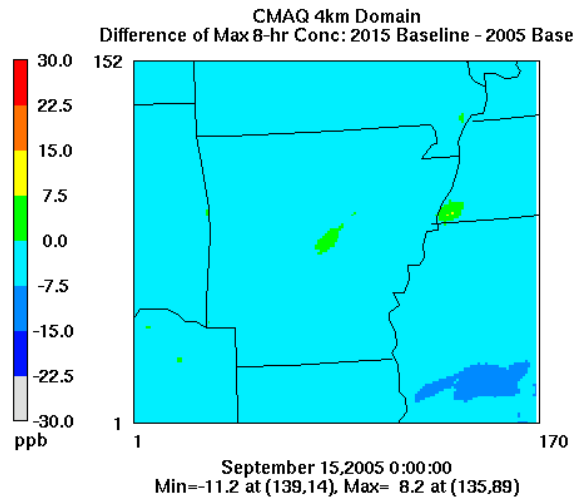
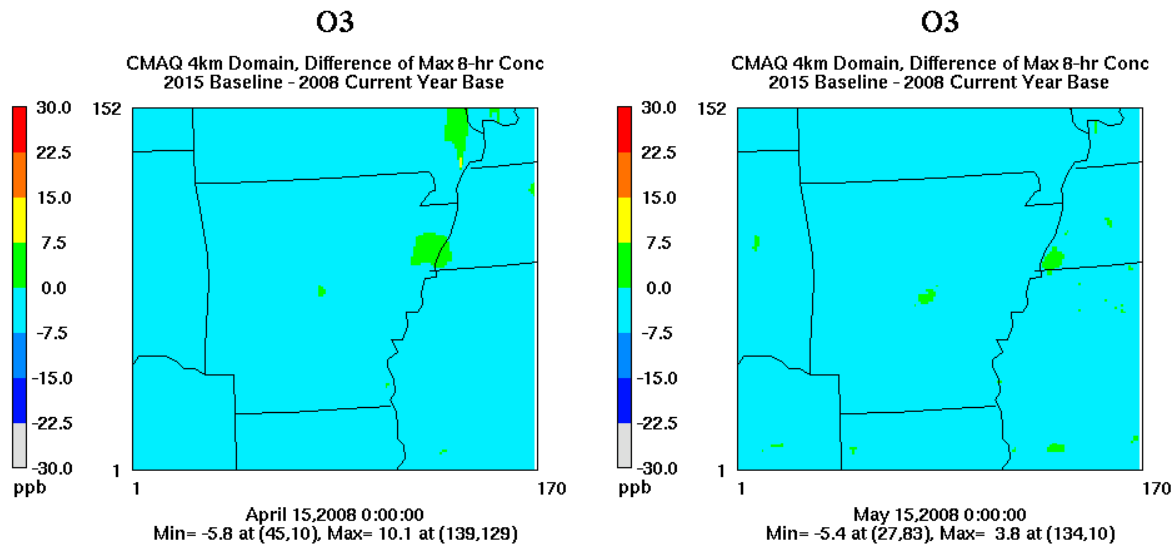
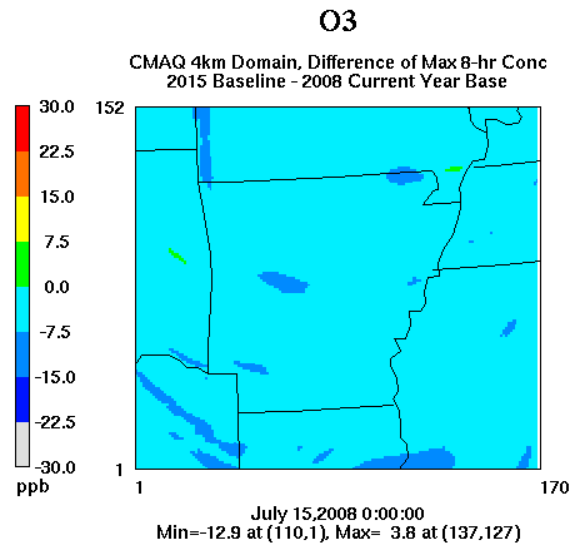
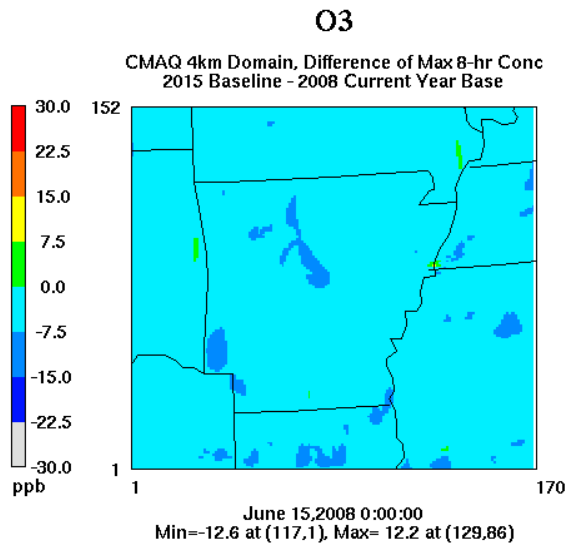


Figure 6-2. Difference in Simulated Daily Maximum 8-Hour Ozone Concentration (ppb) for Selected Days for the CMAQ 4-km Grid: 2015 - 2008

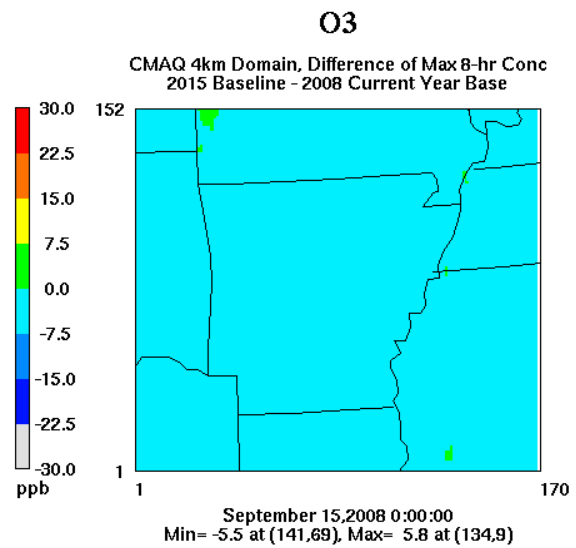
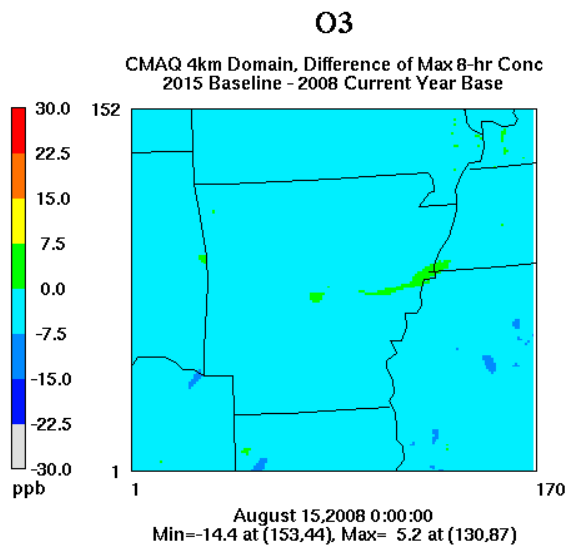
April 15/May 15



June 15/July 15

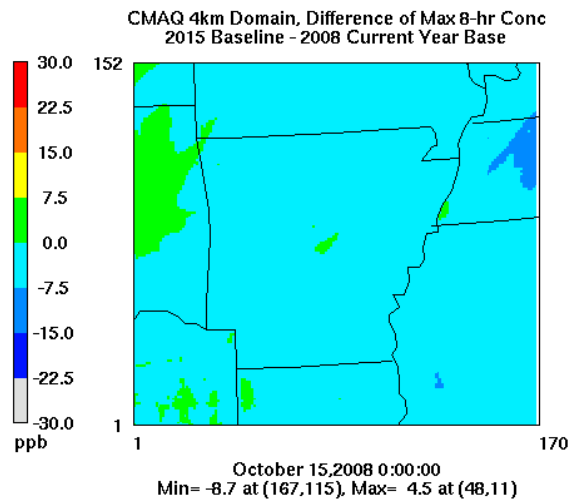


August 15/September 15



October 15

O3



The plots show a mix of small increases and decreases in daily maximum 8-hour ozone concentrations for the selected days. The largest decreases for the selected days range from -5.0 to -16.4 ppb for the 2005/2015 simulation pair, and from -5.4 to -14.4 ppb for the 2008/2015 simulation pair. There are a few days (for example, July 15, 2005) for which the decreases over Arkansas are as much as 15 ppb.

Based on the CMAQ results, Table 6-1 summarizes the 4th high 8-hour ozone concentration (a key NAAQS related metric) for the base- and future-year simulations. Included in the table are the simulated concentrations and differences in simulated concentration for current ozone monitoring sites and any grid locations with an increase in the value of a key NAAQS metric (for any criteria pollutant) between the base and future year. The three unmonitored locations listed in Table 6-1 represent grid cells where the NAAQS-relevant concentration of any criteria pollutant (in this case SO₂) is higher for 2015 compared to both base years.

Table 6-1. Simulated 4th High Daily Maximum 8-Hour Ozone Concentration (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 4 th High 8-Hr Ozone (ppb)			2008/2015 4 th High 8-Hr Ozone (ppb)		
		2005 Base Year	2015 Future Year	Diff-erence	2008 Current Year	2015 Future Year	Diff-erence
North Little Rock (Pike Ave)	Pulaski	76.3	65.7	-10.5	70.9	64.0	-6.9
North Little Rock Airport	Pulaski	74.3	66.0	-8.3	79.2	68.1	-11.2
Little Rock (Doyle Springs Rd)	Pulaski	80.3	69.3	-11.0	70.9	64.9	-6.0
Marion	Crittenden	89.8	75.4	-14.4	70.3	62.9	-7.4
Deer	Newton	66.4	59.1	-7.3	64.2	57.6	-6.6
Springdale	Washington	72.7	63.8	-8.9	69.6	59.7	-9.9
Fayetteville	Washington	74.8	65.2	-9.6	65.5	58.1	-7.4
Mena	Polk	65.8	59.7	-6.2	64.2	58.9	-5.3
Arkadelphia	Clark	75.7	65.7	-9.9	70.2	62.5	-7.7
Unmonitored 1	Benton	69.7	61.9	-7.7	71.3	65.2	-6.0
Unmonitored 2	Jefferson	70.4	62.4	-8.0	69.3	62.0	-7.3
Unmonitored 3	Independence	72.8	63.9	-8.9	66.3	58.1	-8.3

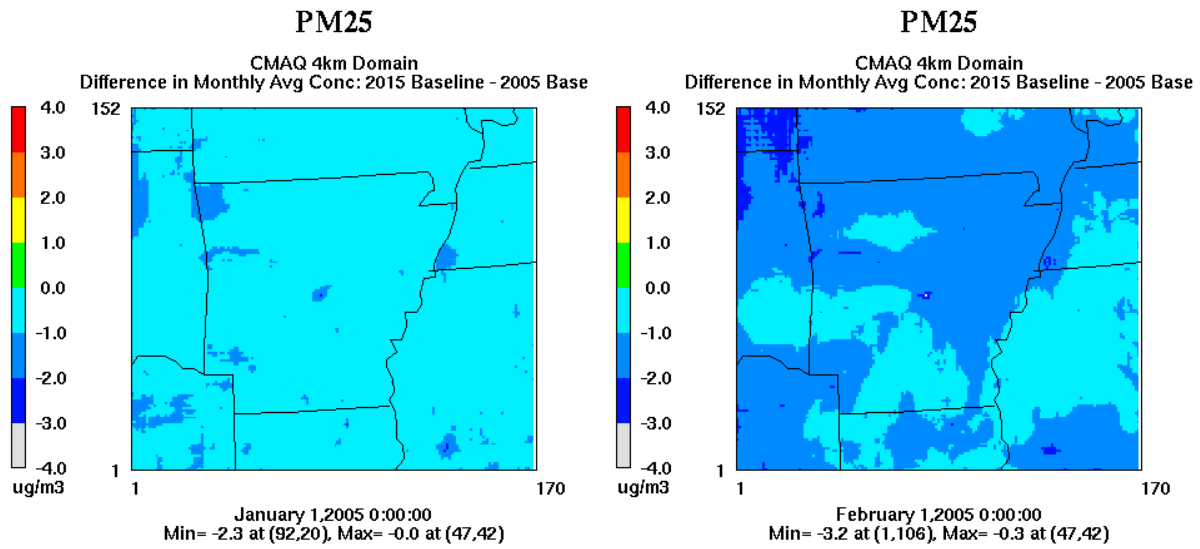
For the 2005/2015 simulation pair, the simulated 4th high 8-hour ozone concentration is lower for 2015 for all ozone monitoring sites and all locations in the 4 km grid. The average decrease is 9.2 ppb (9.6 ppb when only actual monitoring sites are included). Similarly, for the 2008/2015 simulation pair the simulated 4th high 8-hour ozone concentration is lower for 2015 for all ozone monitoring sites and all locations in the 4 km grid. The average decrease is 7.5 ppb (7.6 ppb when only actual monitoring sites are included).

6.1.2 PM_{2.5}

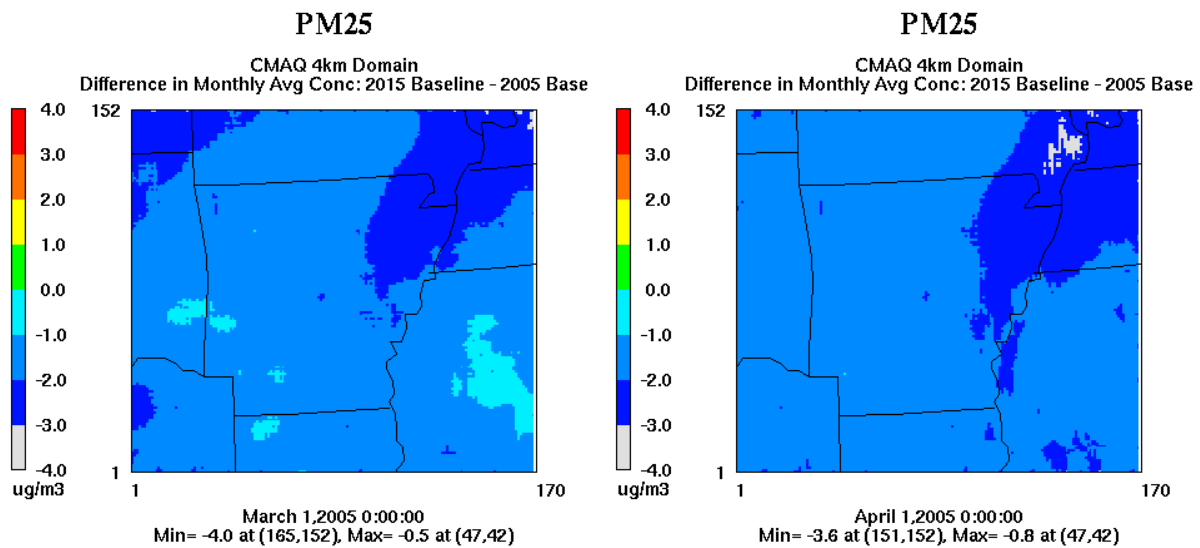
Figures 6-3 and 6-4 illustrate the difference in monthly average simulated PM_{2.5} concentration for the 4-km grid for the 2005/2015 and 2008/2015 simulation pairs. The differences are calculated as future year minus base year, specifically 2015 minus 2005 in Figure 6-3 and 2015 minus 2008 in Figure 6-4. The units are µg/m³.

Figure 6-3. Difference in Simulated Monthly Average 24-Hour PM_{2.5} Concentration (µg/m³) for the CMAQ 4-km Grid: 2015 - 2005

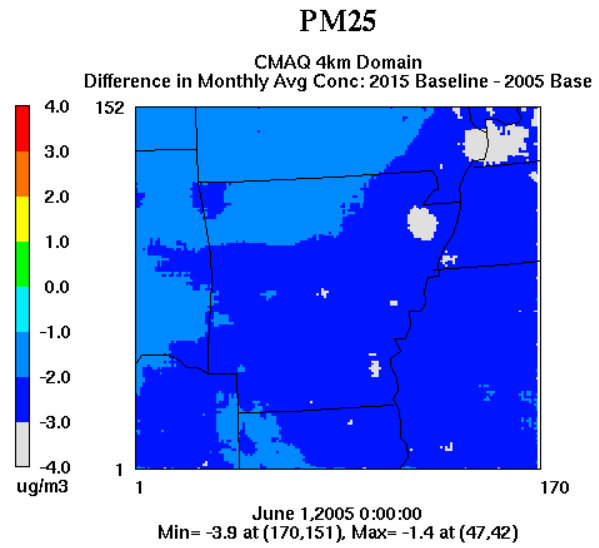
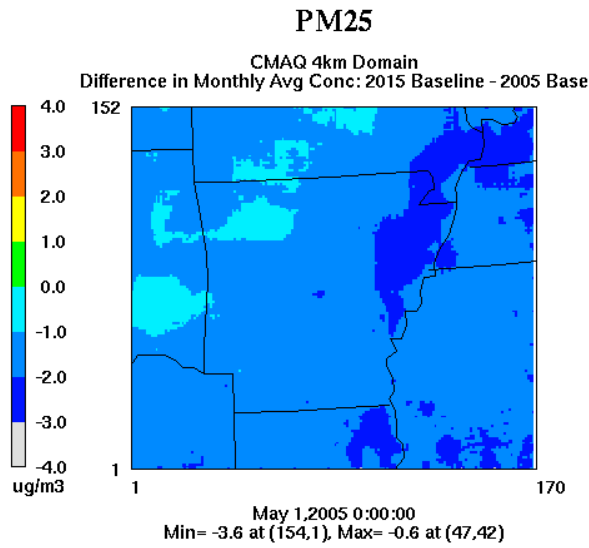
January/February



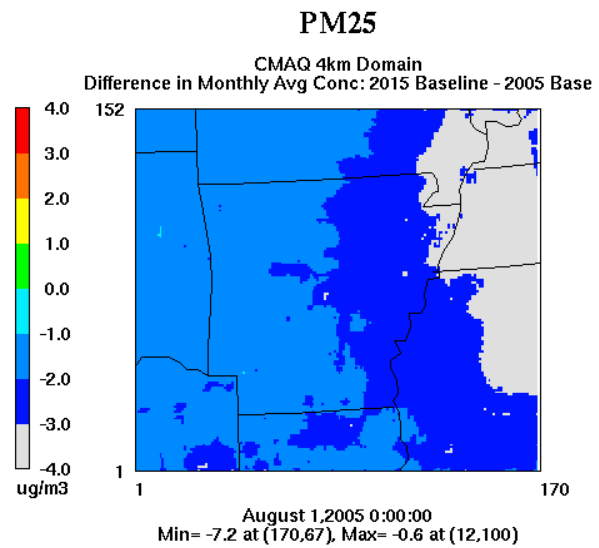
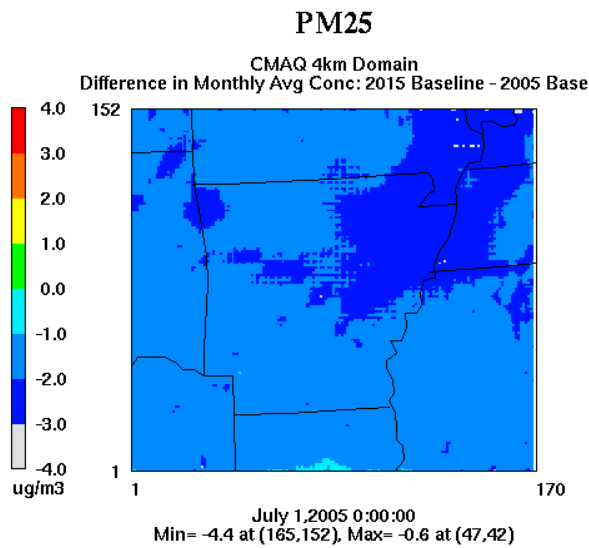
March/April



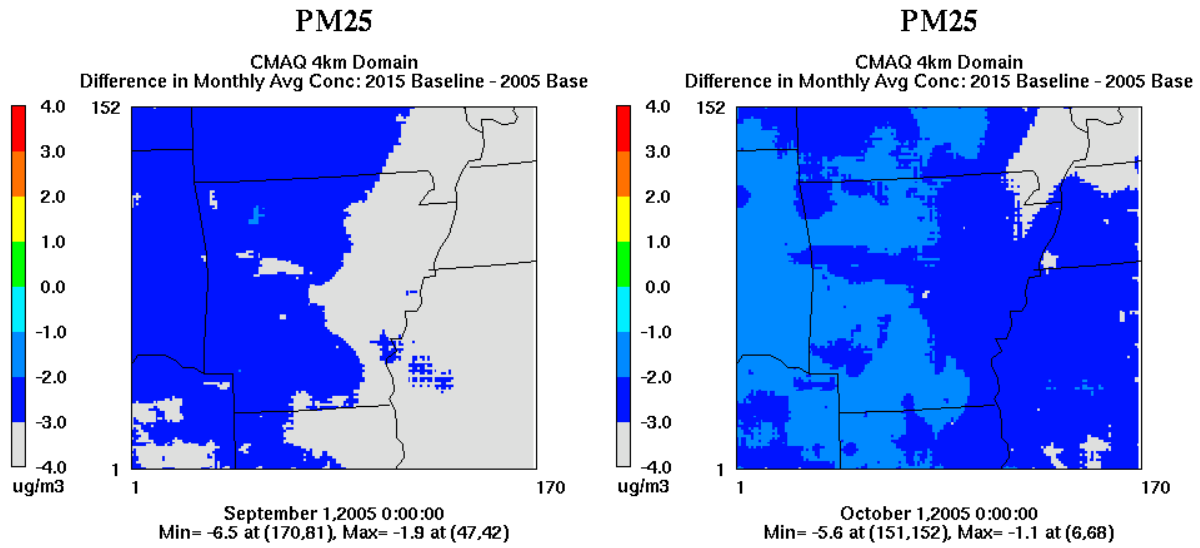
May/June



July/August



September/October



November/December

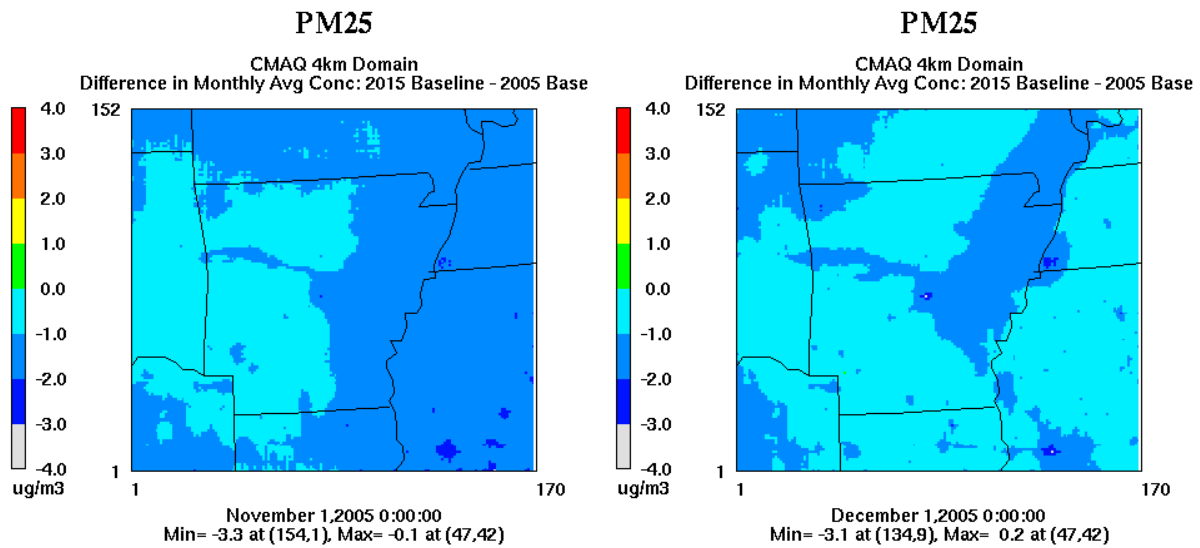
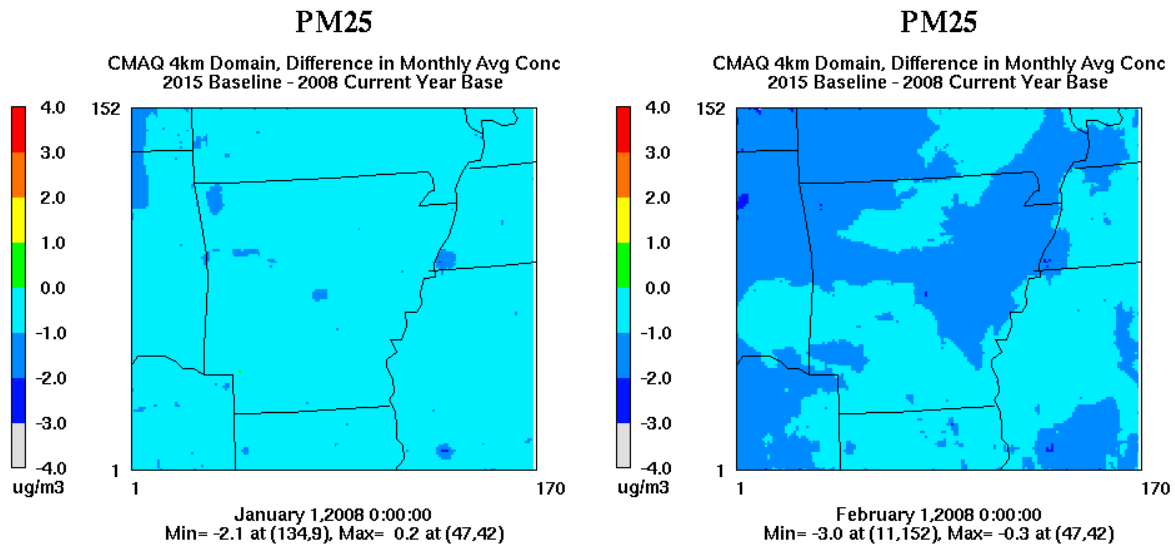
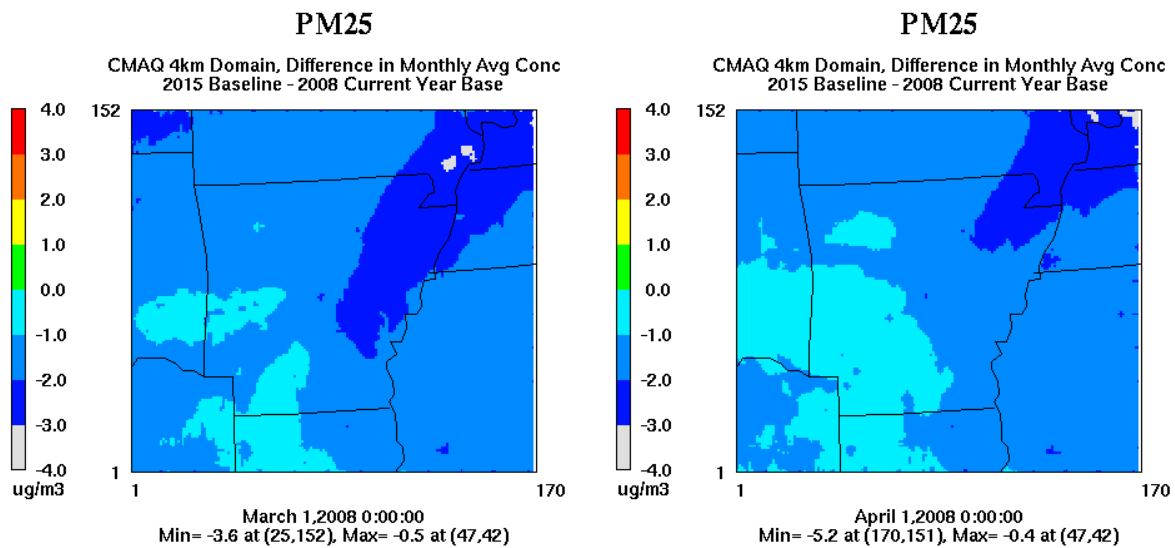


Figure 6-4. Difference in Simulated Monthly Average 24-Hour PM_{2.5} Concentration (µg/m³) for the CMAQ 4-km Grid: 2015 - 2005

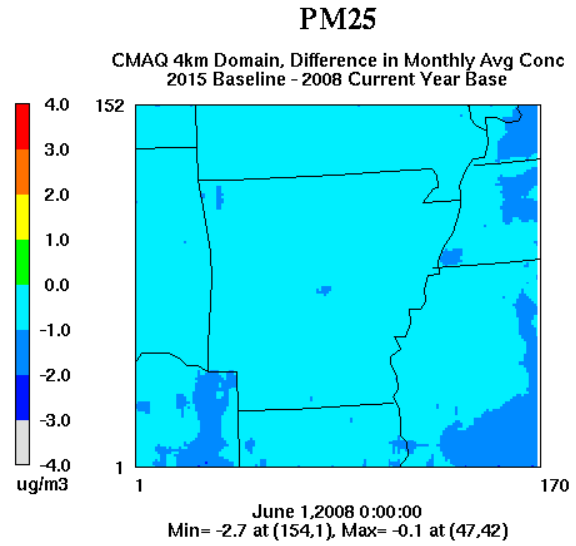
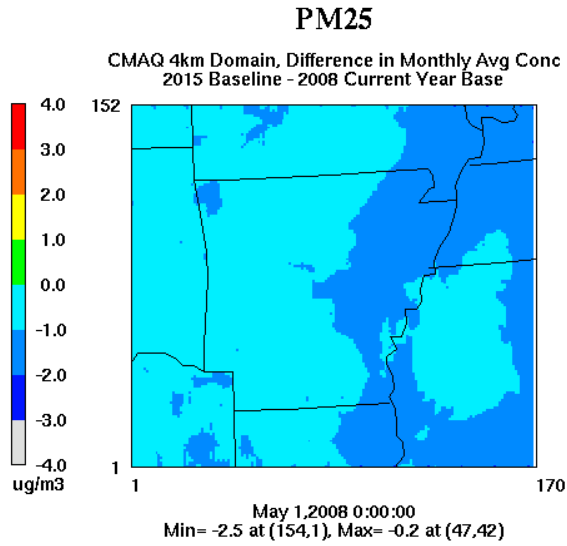
January/February



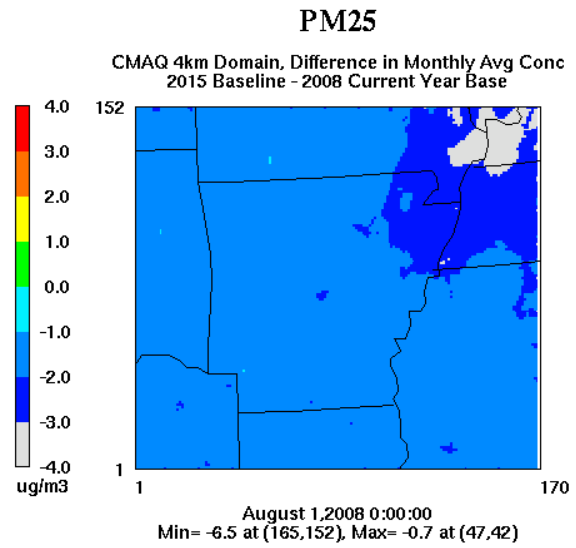
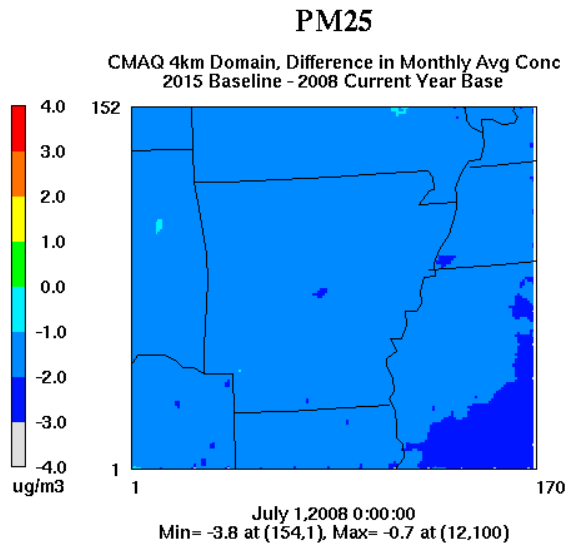
March/April



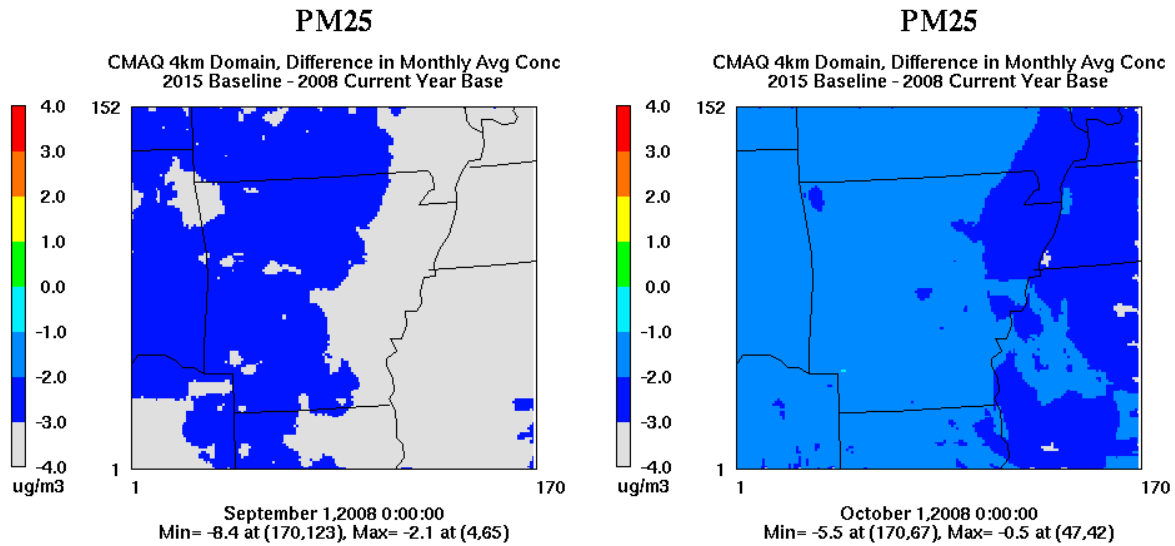
May/June



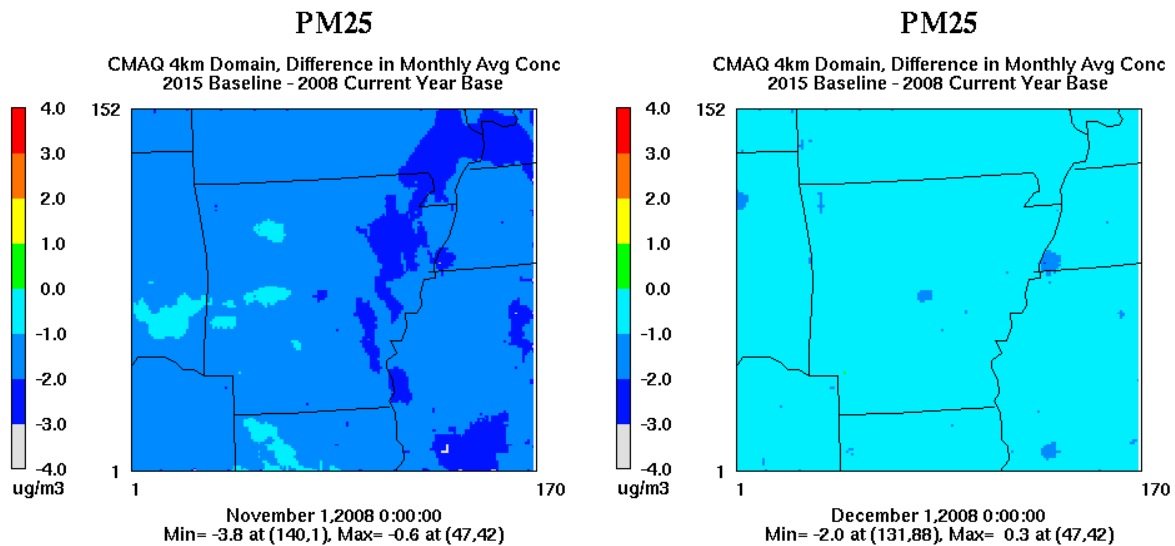
July/August



September/October



November/December



The plots show consistent decreases in $PM_{2.5}$ between 2005 and 2015 and 2008 and 2015 for the selected days. The largest decreases for the selected days range from -2.3 to $-7.2 \mu\text{g}/\text{m}^3$ for the 2005/2015 simulation pair, and from -2.0 to -8.4 for the 2008/2015 simulation pair.

Table 6-2 summarizes the 8th high 24-hour $PM_{2.5}$ concentration (one of the two key NAAQS related metrics for $PM_{2.5}$) for the base- and future-year simulations. Included in the table are the simulated concentrations and differences in simulated concentration for current $PM_{2.5}$ monitoring sites and any grid locations with an increase in the value of a key NAAQS metric between the base and future year. The three unmonitored locations listed in Table 6-2 represent grid cells where the NAAQS-relevant concentration of any pollutant (in this case SO_2) is higher for 2015 than the base years.

Table 6-2. Simulated 8th High 24-Hour PM_{2.5} Concentration (µg/m³) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 8 th High 24-Hr PM _{2.5} (µg/m ³)			2008/2015 8 th High 24-Hr PM _{2.5} (µg/m ³)		
		2005 Base Year	2015 Future Year	Diff-erence	2008 Current Year	2015 Future Year	Diff-erence
North Little Rock (Pike Ave)	Pulaski	37.6	30.2	-7.4	31.1	25.1	-6.0
Little Rock (Adams Field)	Pulaski	33.5	28.4	-5.1	29.0	23.6	-5.4
Little Rock (Doyle Springs Rd)	Pulaski	41.0	33.4	-7.6	34.1	27.0	-7.1
Marion	Crittenden	37.6	31.8	-5.8	32.3	25.6	-6.7
Stuttgart	Arkansas	35.5	29.9	-5.6	31.8	25.7	-6.1
Newport	Jackson	36.2	29.8	-6.4	33.9	27.7	-6.2
Springdale	Washington	33.1	30.1	-3.0	27.5	24.8	-2.7
Mena	Polk	26.0	21.7	-4.3	22.8	19.0	-3.8
Hot Springs	Garland	27.3	23.6	-3.7	24.8	19.9	-4.9
El Dorado	Union	28.8	24.7	-4.1	26.8	22.6	-4.2
Crossett	Ashley	27.3	23.6	-3.7	24.8	19.9	-4.9
Roland	Sequoyah (OK)	33.6	30.1	-3.5	26.7	23.8	-2.9
Unmonitored 1	Benton	32.6	27.5	-5.1	26.5	23.0	-3.5
Unmonitored 2	Jefferson	38.3	32.7	-5.6	31.3	26.4	-4.9
Unmonitored 3	Independence	36.3	30.5	-5.8	32.8	26.3	-6.5

For the 2005/2015 simulation pair, the simulated 98th percentile 24-hr PM_{2.5} concentration is lower for all PM_{2.5} monitoring sites and all locations. The average decrease is 5.1 µg/m³ (5.0 µg/m³ when only actual monitoring sites are included). Similarly, for the 2008/2015 simulation pair, this metric is lower for all monitoring sites and all locations. The average decrease is 5.1 µg/m³ (both with and without the pseudo sites).

Figures 6-5 and 6-6 illustrate the difference in annual average simulated PM_{2.5} concentration for the 4-km grid for the 2005/2015 and 2008/2015 simulation pairs. The units are µg/m³.

Figure 6-5. Difference in Simulated Annual Average $PM_{2.5}$ Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 4-km Grid: 2015 - 2005

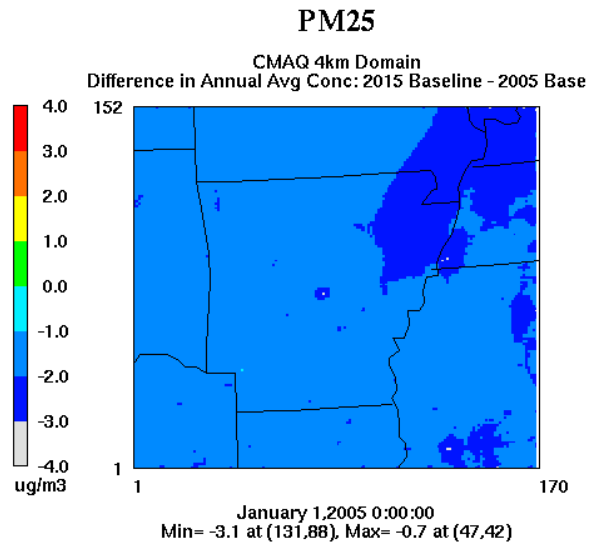
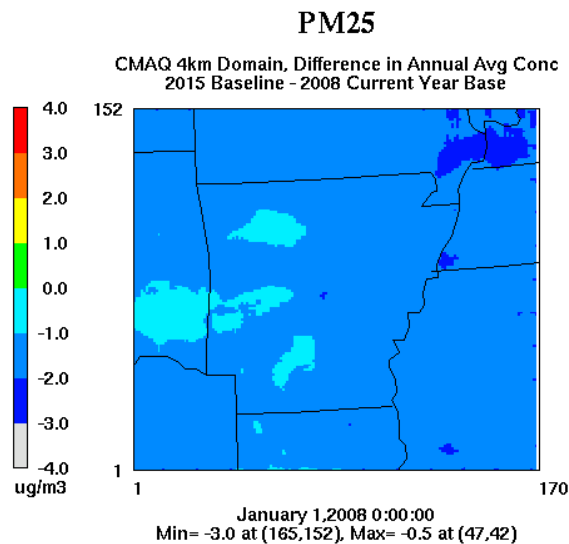


Figure 6-6. Difference in Simulated Annual Average $PM_{2.5}$ Concentration ($\mu\text{g}/\text{m}^3$) for the CMAQ 4-km Grid: 2015 - 2008



The annual difference plots also show a regional decrease in $PM_{2.5}$ between the base/current and future years, averaged over all simulation days. The magnitude of the decreases is similar (-0.7 to -3.2 ppb for the 2005/2015 simulation pair and -0.5 to -3.0 ppb for the 2008/2015 simulation pair), but the difference patterns are different for the two years. Decreases of 1 ppb or more are more widespread for the 2005/2015 simulation pair.

Table 6-3 summarizes the annual average $PM_{2.5}$ concentration for the base-/current- and future-year simulations. Included in the table are the simulated concentrations and differences in simulated concentration for current $PM_{2.5}$ monitoring sites and any grid locations with an increase in the value of

this metric between the base and future year. The three unmonitored locations listed in Table 6-3 represent grid cells where the NAAQS-relevant concentration of any pollutant (in this case SO₂) is higher for 2015, compared to both base years.

Table 6-3. Simulated Annual Average PM_{2.5} Concentration (µg/m³) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 Annual Average PM _{2.5} (µg/m ³)			2008/2015 Annual Average PM _{2.5} (µg/m ³)		
		2005 Base Year	2015 Future Year	Diff-erence	2008 Current Year	2015 Future Year	Diff-erence
North Little Rock (Pike Ave)	Pulaski	15.5	12.8	-2.7	13.1	11.0	-2.1
Little Rock (Adams Field)	Pulaski	13.4	11.5	-1.9	11.3	9.8	-1.5
Little Rock (Doyle Springs Rd)	Pulaski	16.7	14.1	-2.6	13.7	11.7	-2.0
Marion	Crittenden	14.8	12.6	-2.2	13.0	11.3	-1.7
Stuttgart	Arkansas	13.2	11.2	-2.0	11.7	10.1	-1.6
Newport	Jackson	14.2	12.1	-2.1	12.4	10.7	-1.7
Springdale	Washington	13.1	11.4	-1.7	11.1	9.6	-1.5
Mena	Polk	10.1	8.8	-1.3	8.7	7.6	-1.1
Hot Springs	Garland	11.2	9.7	-1.5	9.4	8.2	-1.2
El Dorado	Union	12.3	10.7	-1.6	10.5	9.2	-1.3
Crossett	Ashley	11.2	9.7	-1.5	9.4	8.2	-1.2
Roland	Sequoyah (OK)	13.5	11.9	-1.6	11.1	9.8	-1.3
Unmonitored 1	Benton	13.7	12.0	-1.7	11.8	10.2	-1.6
Unmonitored 2	Jefferson	14.8	12.8	-2.0	12.2	10.7	-1.5
Unmonitored 3	Independence	14.4	12.4	-2.0	12.3	10.7	-1.6

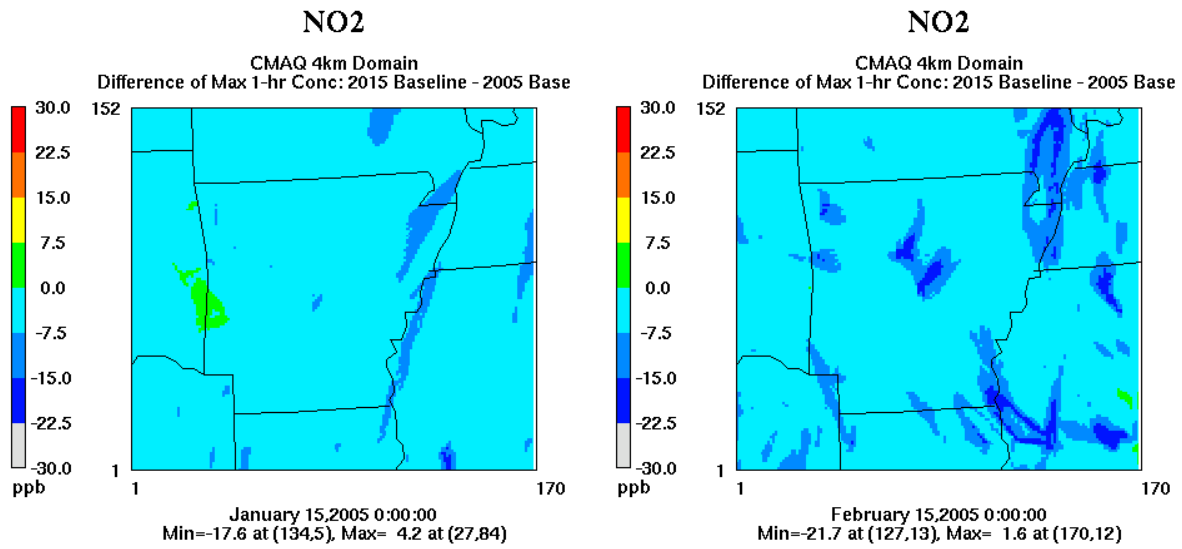
For the 2005/2015 simulation pair, the simulated annual average PM_{2.5} concentration is lower for all PM_{2.5} monitoring sites and all locations. The average decrease is 1.9 µg/m³ (both with and without the pseudo sites). Similarly, this metric is lower for the 2008/2015 simulation pair for all monitoring sites and all locations. The average decrease is 1.5 µg/m³ (both with and without the pseudo sites).

6.1.3 NO₂

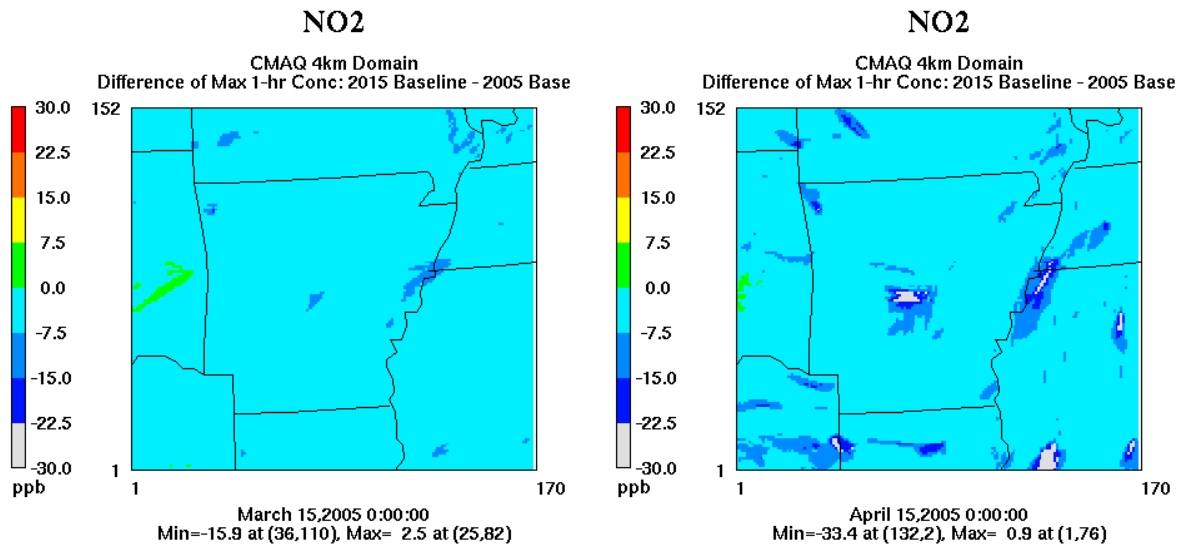
Figures 6-7 and 6-8 illustrate the difference in daily maximum 1-hour average NO₂ concentration for the 4-km grid and the 15th of each month for the 2005/2015 and 2008/2015 simulation pairs. The units are ppb.

Figure 6-7. Difference in Simulated Monthly Average 1-Hour NO₂ Concentration (ppb) for the CMAQ 4-km Grid: 2015 - 2005

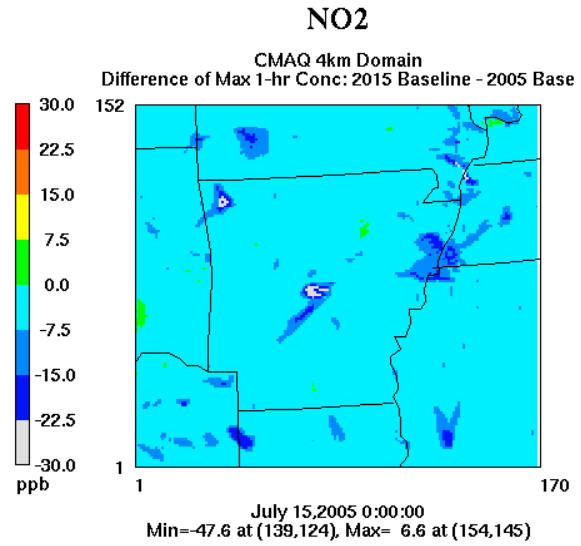
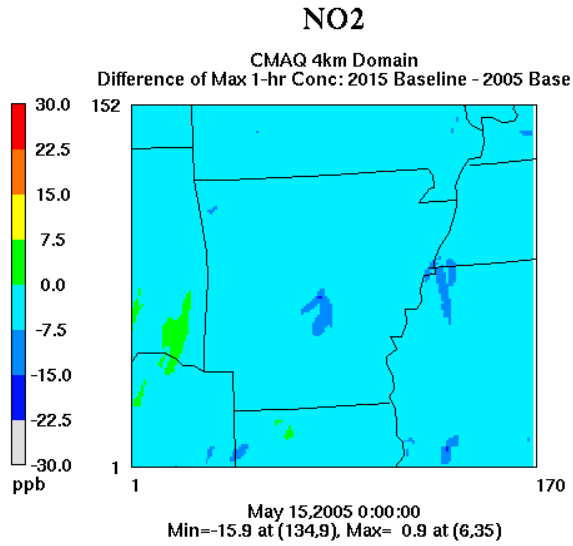
January/February



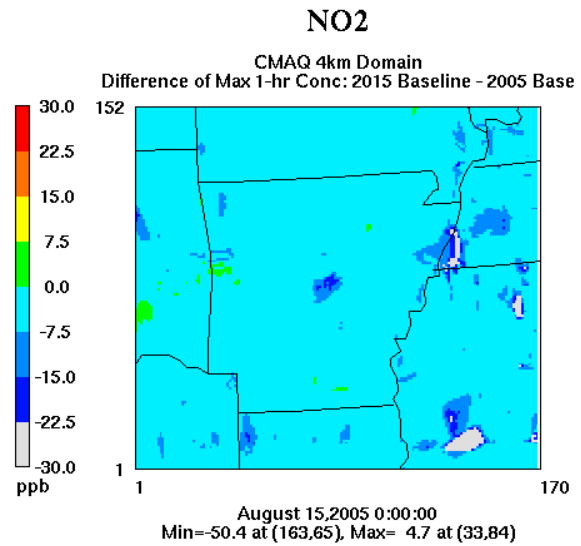
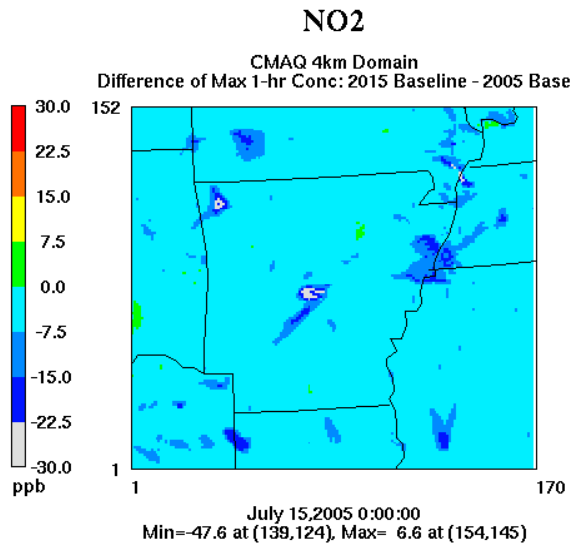
March/April



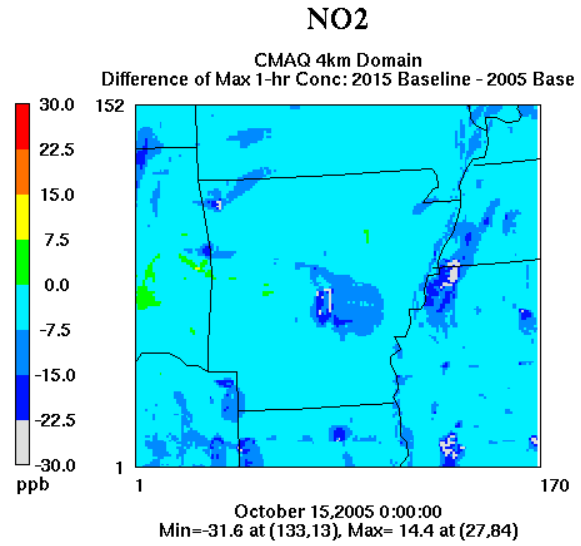
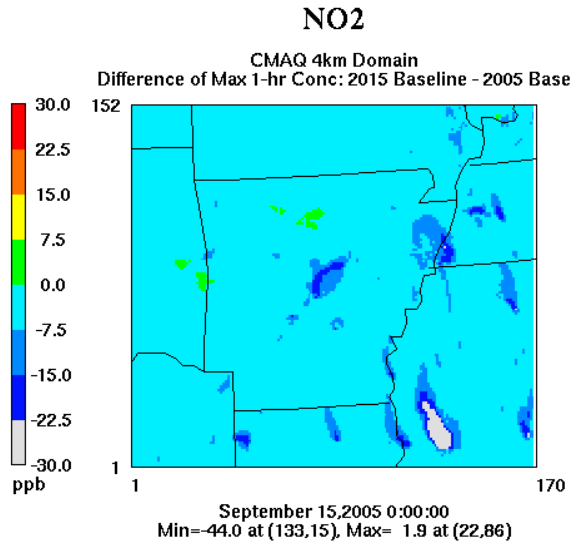
May/June



July/August



September/October



November/December

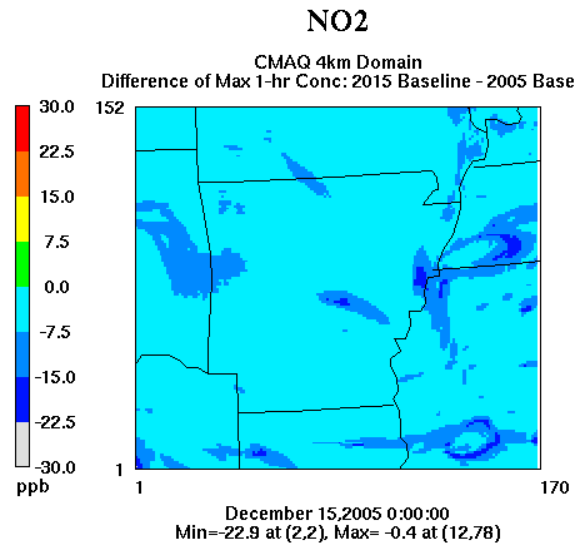
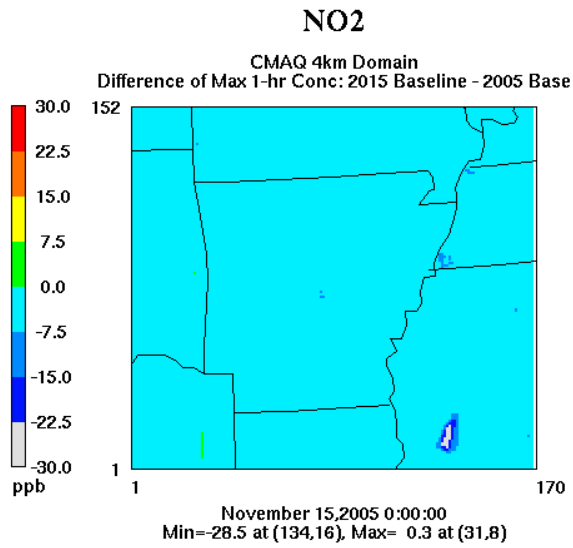
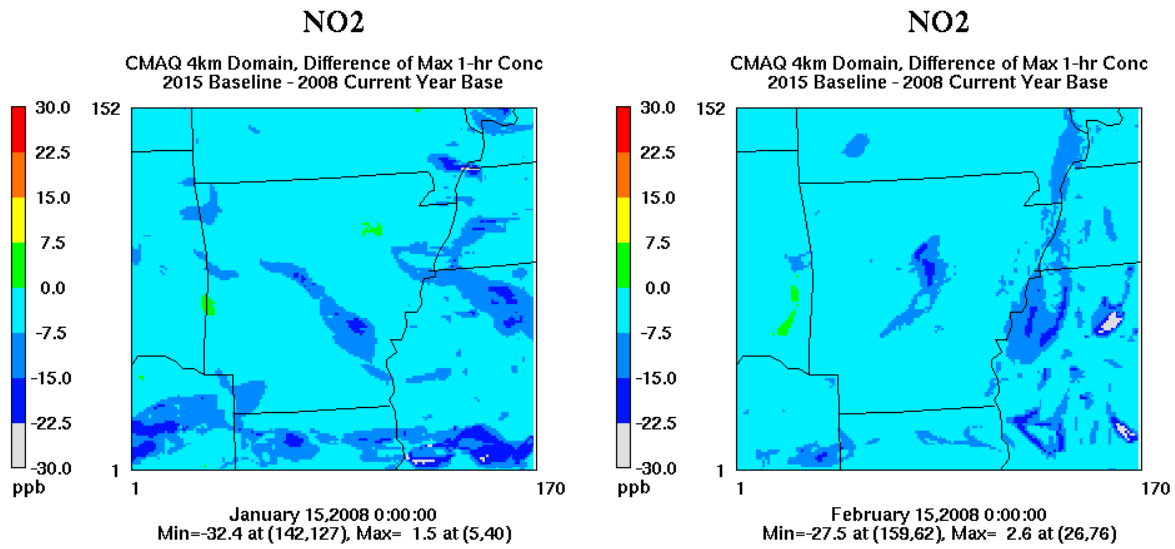
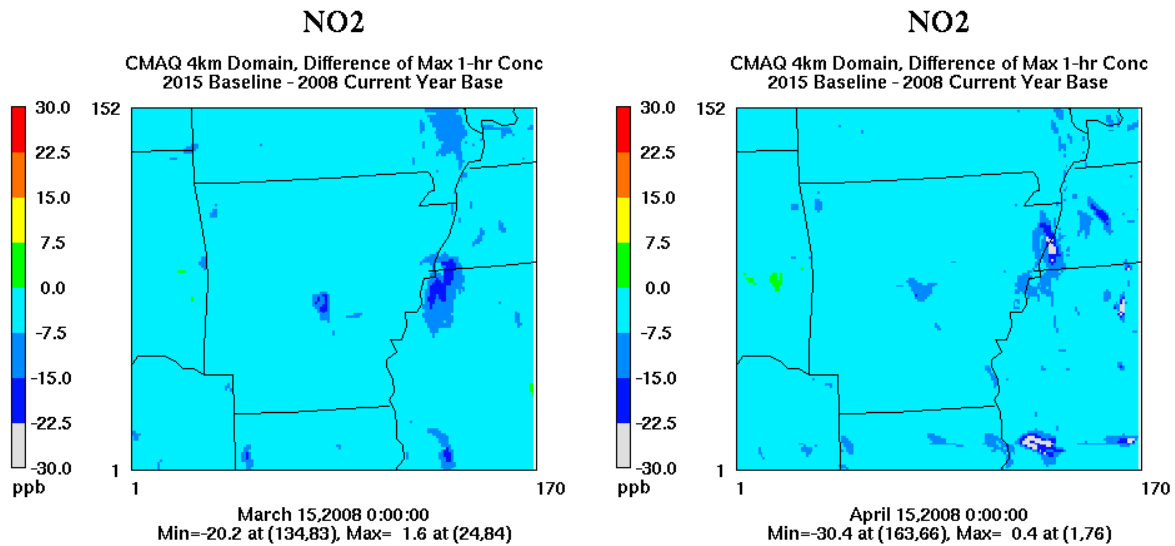


Figure 6-8. Difference in Simulated Monthly Average 1-Hour NO₂ Concentration (ppb) for the CMAQ 4-km Grid: 2015 - 2008

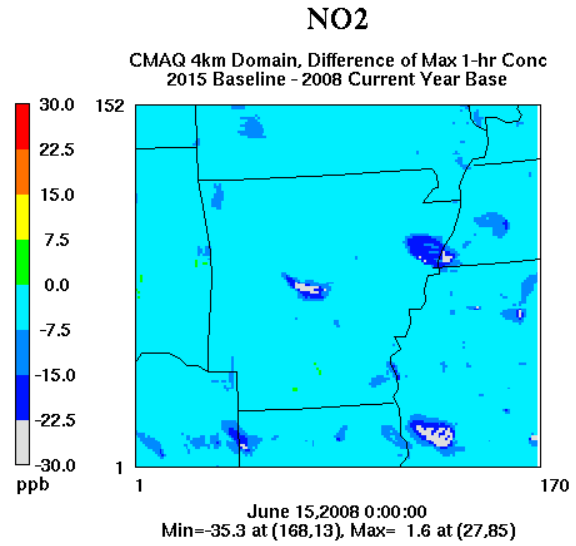
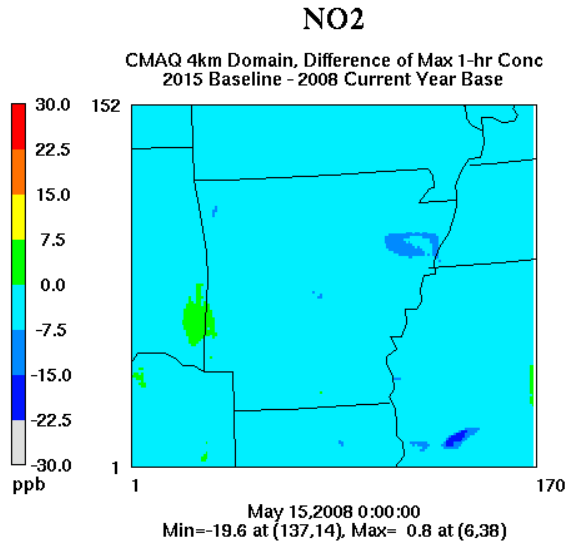
January/February



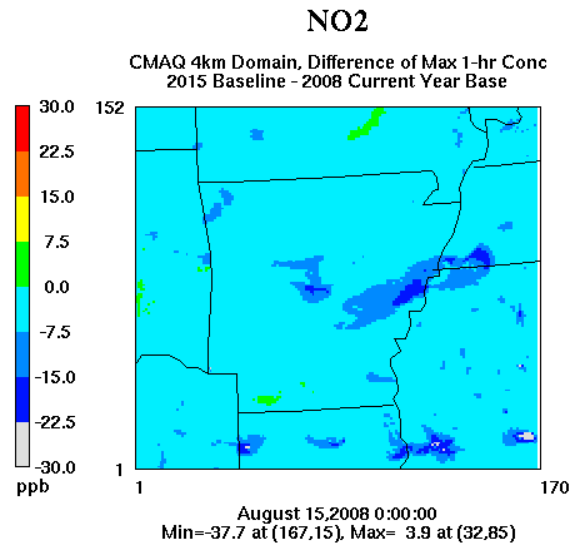
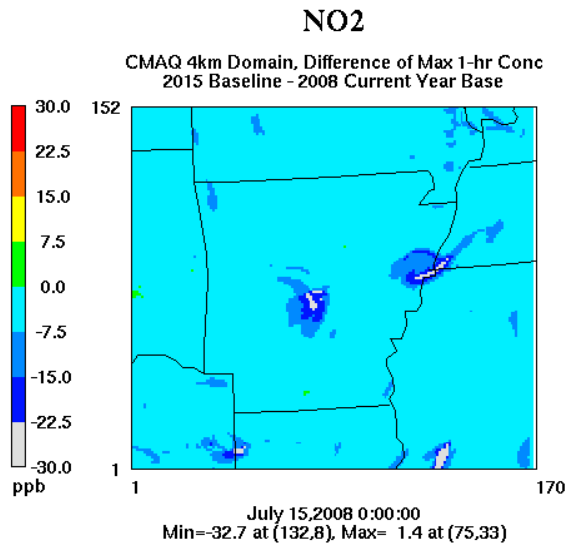
March/April



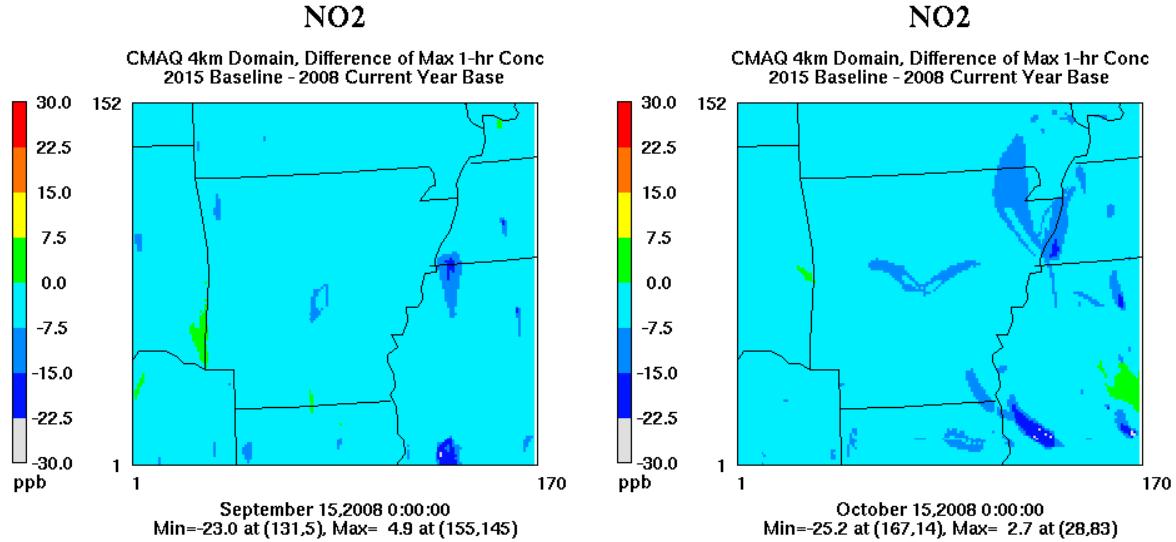
May/June



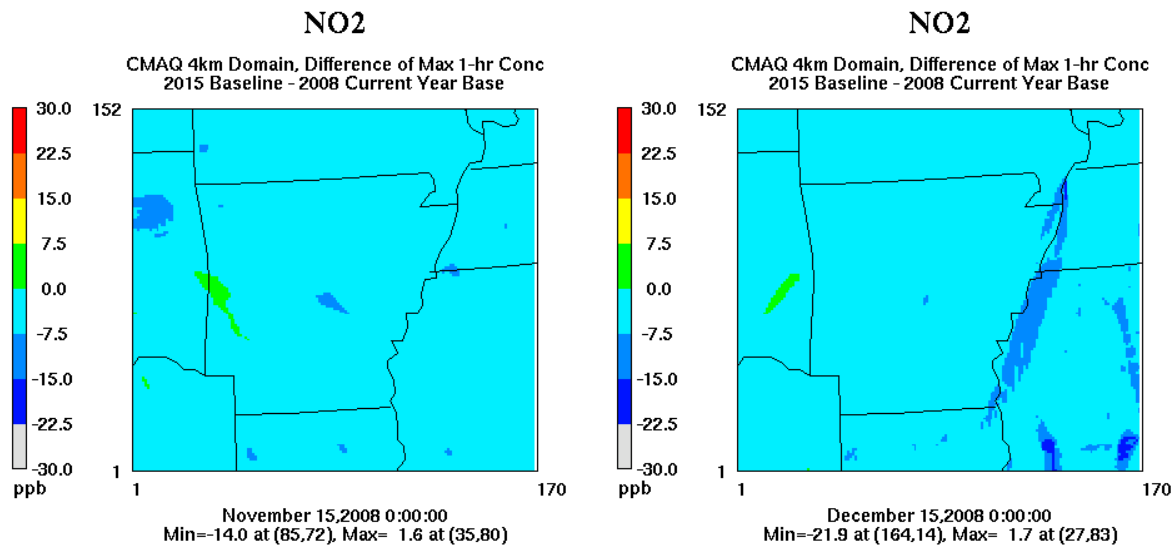
July/August



September/October



November/December



For NO_2 , the plots show a mix of increases and decreases between both simulation pairs. The decreases are greater in magnitude and more widespread than the increases.

Table 6-4 summarizes the 8th high daily maximum 1-hour NO_2 concentration (equivalent to the 98th percentile value as used in the NAAQS) for the base- and future-year simulations. Included in the table are the simulated concentrations and differences in simulated concentration for current NO_2 monitoring sites and any grid locations with an increase in the value of this metric between the base and future year. The three unmonitored locations listed in Table 6-4 represent grid cells where the NAAQS-relevant concentration of any pollutant (in this case SO_2) is higher for 2015, compared to both base years.

Table 6-4. Simulated 8th High Daily Maximum 1-Hour NO₂ Concentration (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 8 th High 1-Hr NO ₂ (ppb)			2008/2015 8 th High 1-Hr NO ₂ (ppb)		
		2005 Base Year	2015 Future Year	Diff-erence	2008 Current Year	2015 Future Year	Diff-erence
North Little Rock (Pike Ave)	Pulaski	66.0	50.3	-15.7	72.5	57.4	-19.4
Marion	Crittenden	71.8	55.8	-16.0	73.1	58.1	-15.0
Unmonitored 1	Benton	32.8	22.3	-10.5	27.4	18.8	-8.6
Unmonitored 2	Jefferson	49.0	42.7	-6.3	43.4	28.7	-14.7
Unmonitored 3	Independence	30.5	28.4	-2.1	26.3	19.5	-6.8

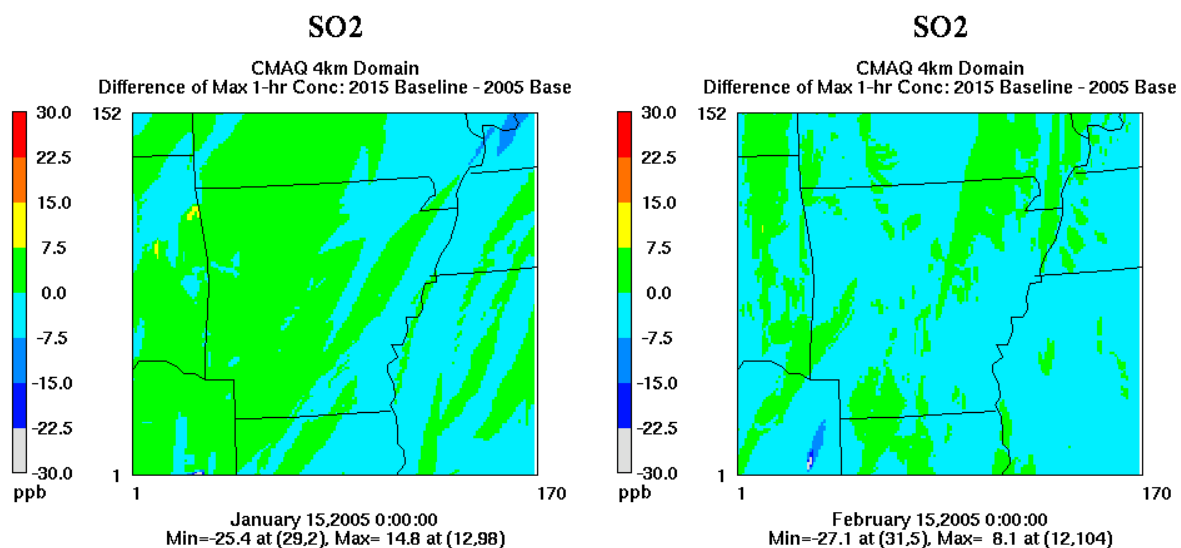
For the 2005/2015 simulation pair, the 8th high daily maximum 1-hour NO₂ concentration is lower for all monitoring sites. The average decrease is 10.1 ppb (15.9 ppb when only actual monitoring sites are included). This metric is also lower for the 2008/2015 simulation pair for all monitoring sites. The average decrease is 12.9 ppb (17.2 ppb when only actual monitoring sites are included).

6.1.4 SO₂

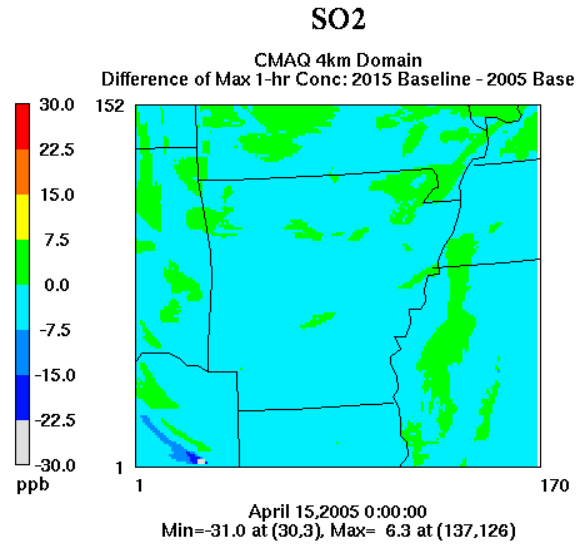
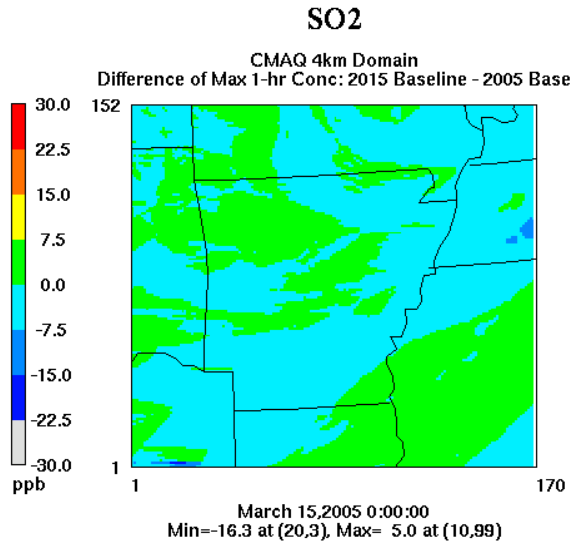
Figures 6-9 and 6-10 illustrate the difference in daily maximum 1-hour average SO₂ concentration for the 4-km grid and the 15th of each month for the 2005/2015 and 2008/2015 simulation pairs. The units are ppb.

Figure 6-9. Difference in Simulated Monthly Average 1-Hour SO₂ Concentration (ppb) for the CMAQ 4-km Grid: 2015 - 2005

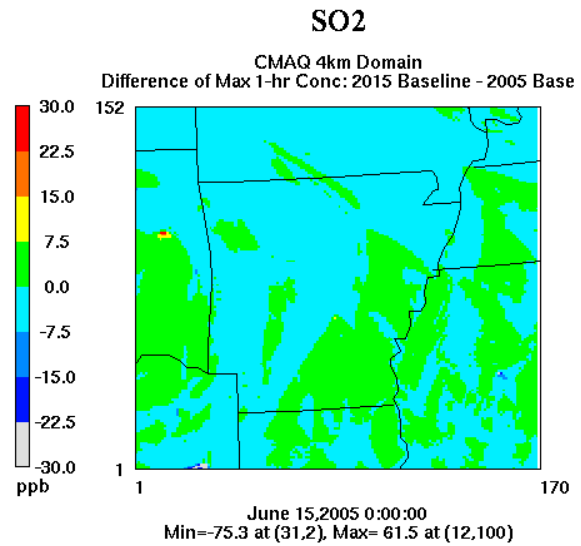
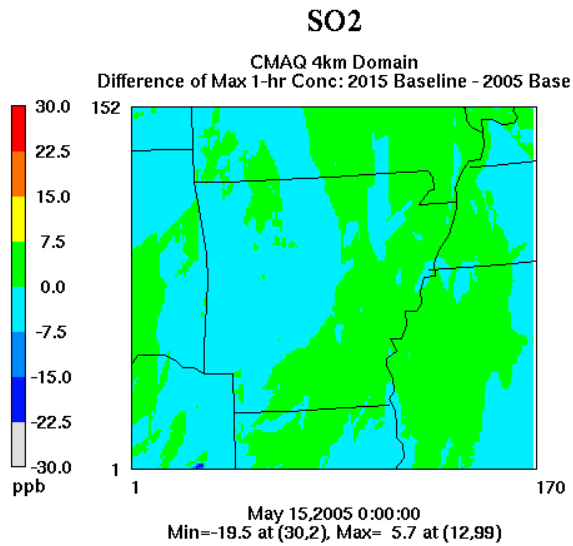
January/February



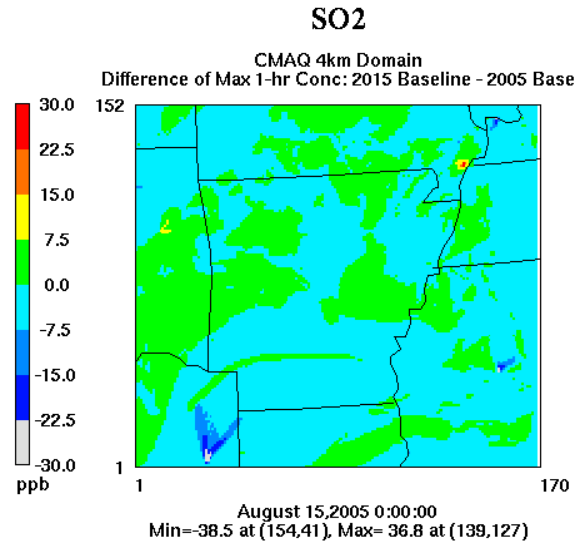
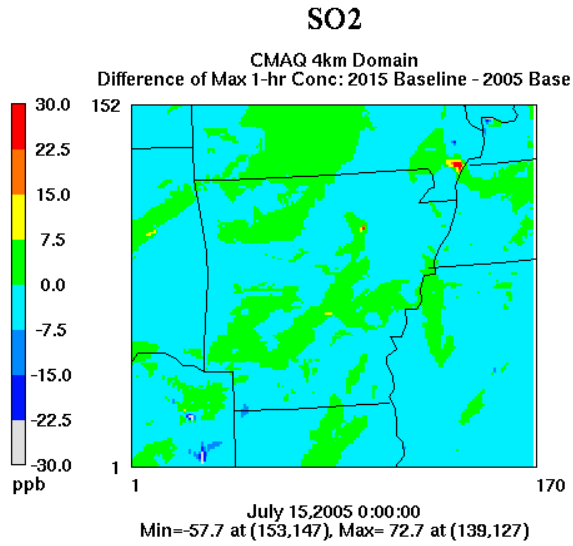
March/April



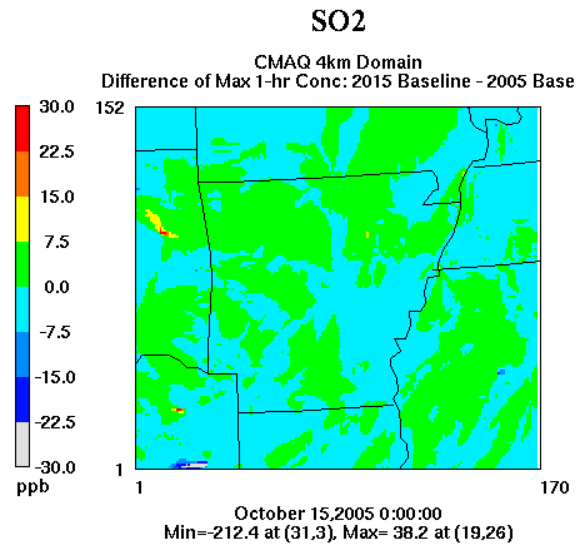
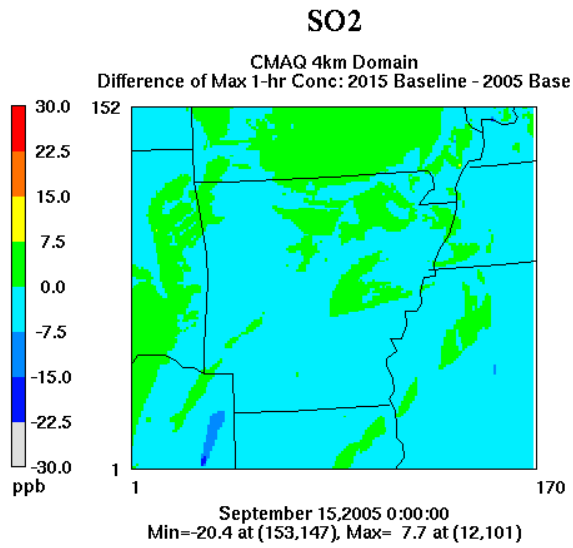
May/June



July/August



September/October



November/December

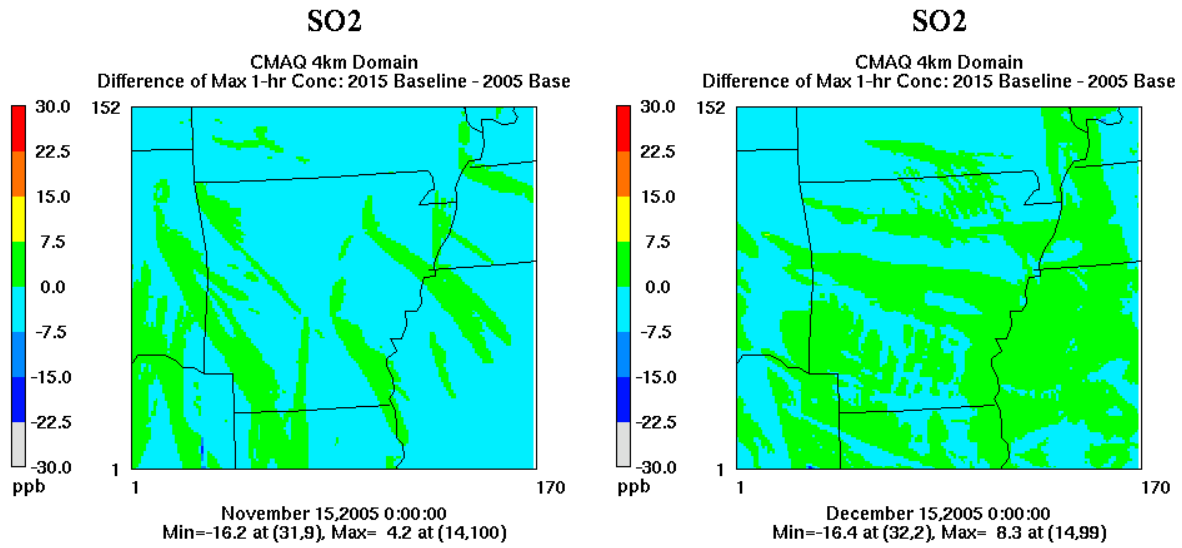
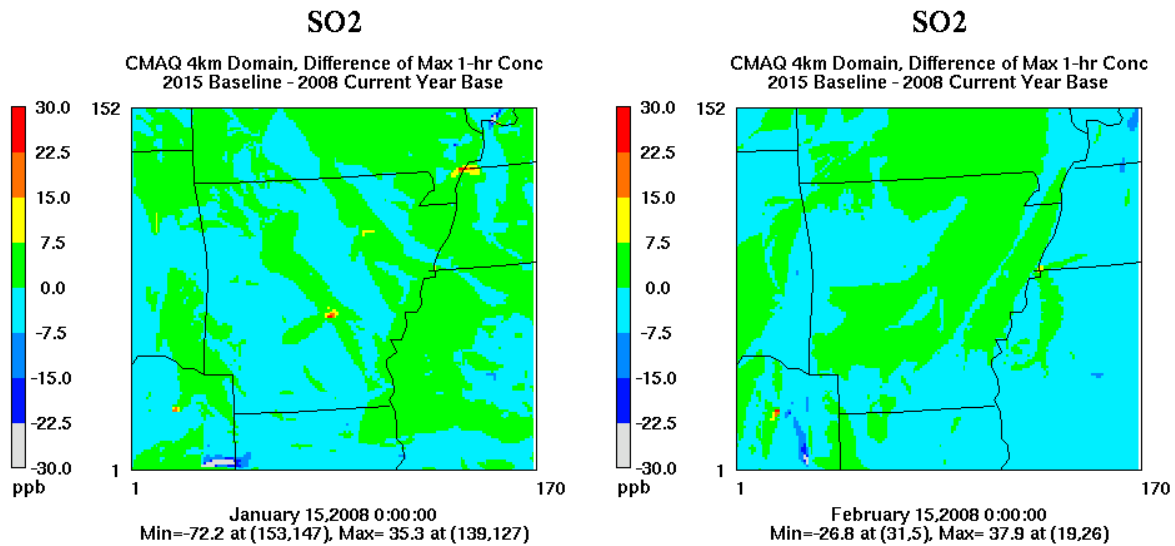
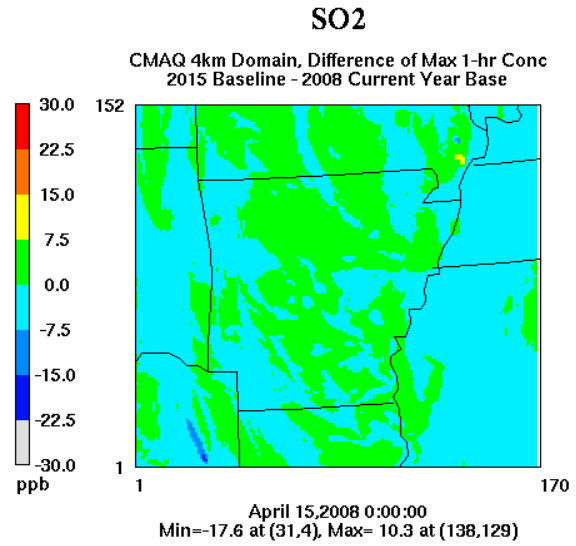
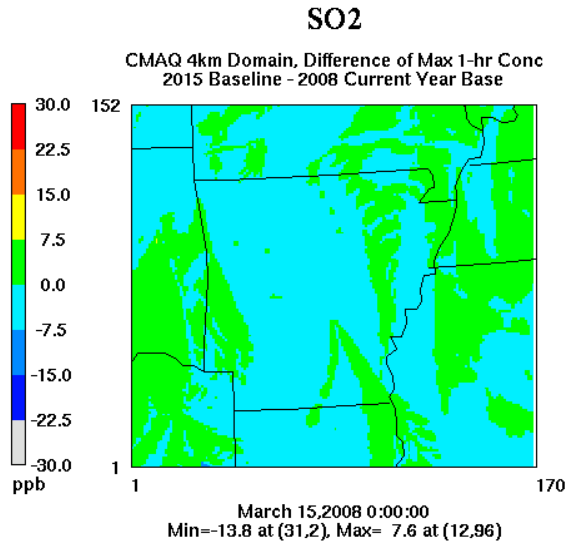


Figure 6-10. Difference in Simulated Monthly Average 1-Hour SO₂ Concentration (ppb) for the CMAQ 4-km Grid: 2015 - 2008

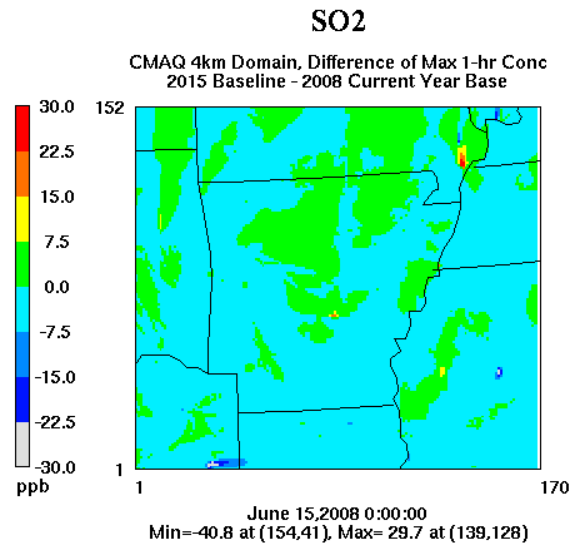
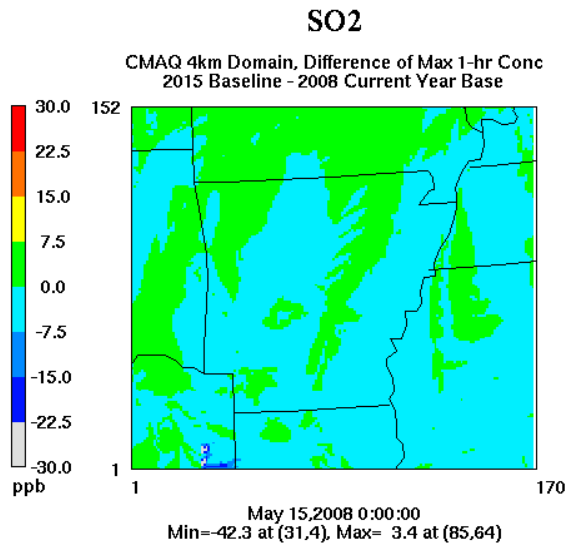
January/February



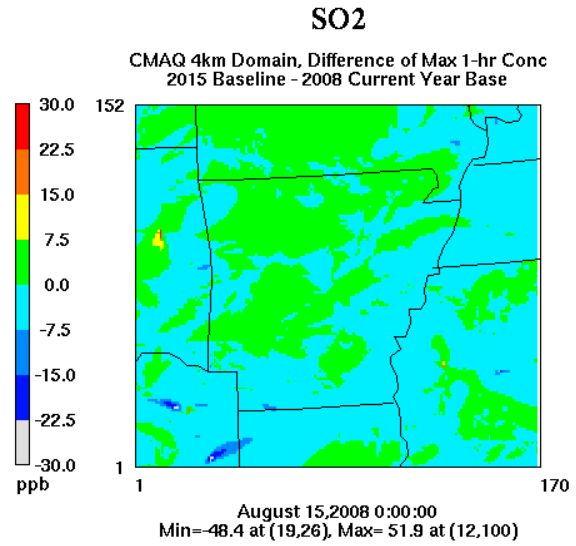
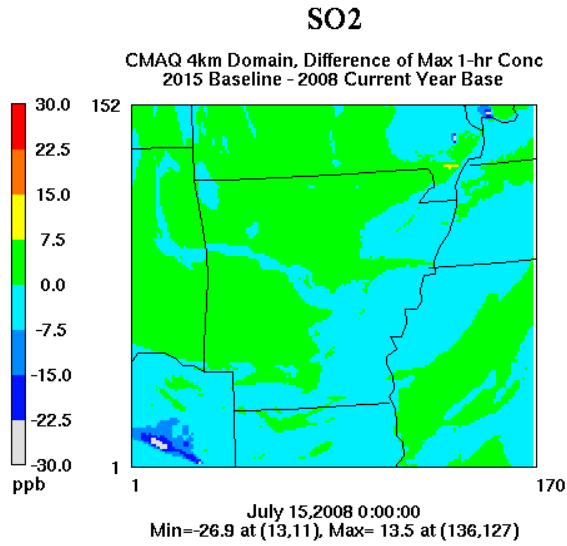
March/April



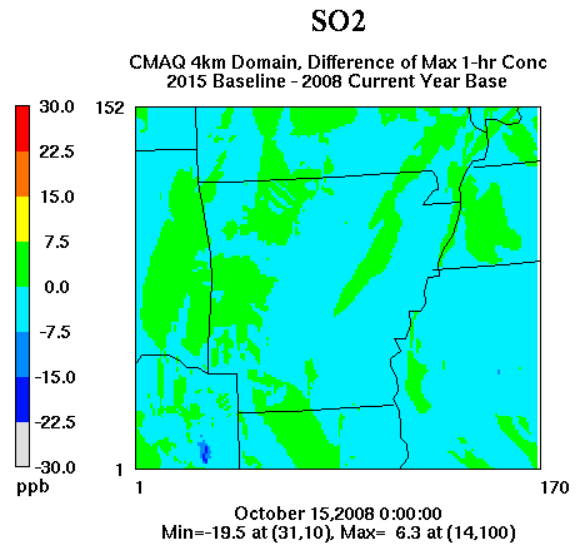
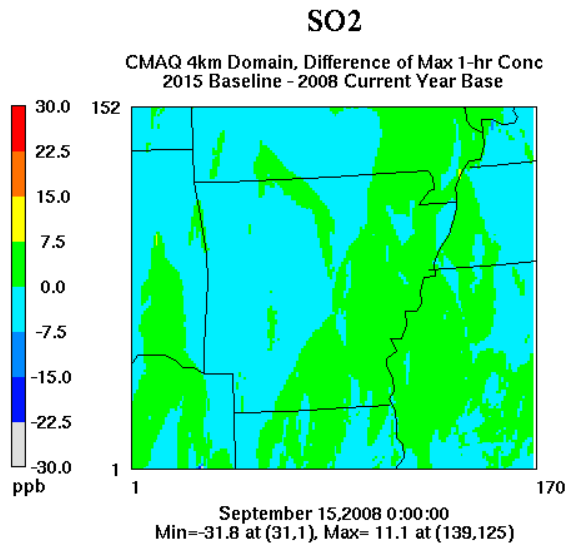
May/June



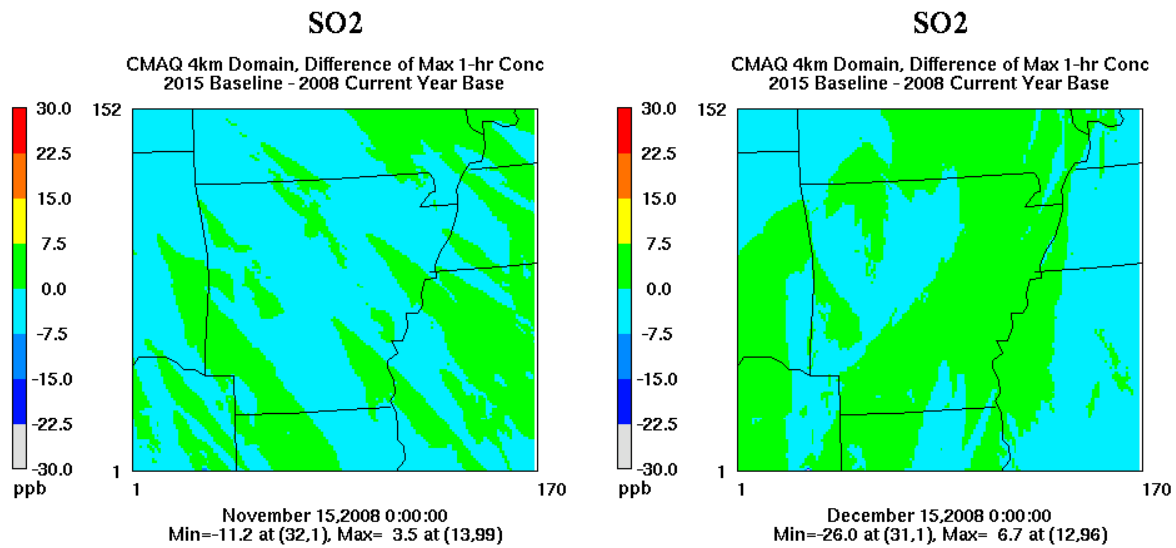
July/August



September/October



November/December



For SO₂, the difference plots show a mix of increases and decreases between 2005 and 2015 and between 2008 and 2015. For most of the selected days, the decreases are larger in magnitude than the increases, but the increases tend to be more widespread.

Table 6-5 summarizes the 4th high daily maximum 1-hour SO₂ concentration (equivalent to the 99th percentile value as used in the NAAQS) for the base- and future-year simulations. Included in the table are the simulated concentrations and differences in simulated concentration for current monitoring sites and any grid locations with an increase in the value of this metric between the base and future year. There are three primary areas of increase within the state and the unmonitored locations represent the grid cells with the maximum increase for each of these areas.

Table 6-5. Simulated 4th High Daily Maximum 1-Hour SO₂ Concentration (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 4 th High 1-Hour SO ₂ (ppb)			2008/2015 4 th High 1-Hour SO ₂ (ppb)		
		2005 Base Year	2015 Future Year	Diff-erence	2008 Current Year	2015 Future Year	Diff-erence
North Little Rock (Pike Ave)	Pulaski	18.6	15.4	-3.2	15.3	13.6	-1.7
Marion	Crittenden	16.4	19.8	3.4	21.3	24.0	2.7
El Dorado	Union	13.5	12.3	-1.2	10.2	9.6	-0.6
Unmonitored 1	Benton	26.8	43.6	16.8	31.7	46.8	15.1
Unmonitored 2	Jefferson	77.1	109.0	31.9	59.3	84.0	24.7
Unmonitored 3	Independence	55.3	77.7	22.4	38.1	54.1	16.0

For both simulation pairs, the 4th high daily maximum 1-hour SO₂ concentration is lower for 2015 for the current SO₂ monitoring site locations but higher for 2015 for a number of grid cells including one non-SO₂ monitoring site (Marion). The greatest increases are 31.7 ppb for 2005/2015 and 24.7 ppb for 2008/2015 and occur at the Jefferson County pseudo site location.

6.2 Criteria Pollutant Assessment

To complete the criteria pollutant assessment, the MATS software was applied using the base-/current-year and future-year modeling results and was used to estimate future-year design values at both monitored and unmonitored locations throughout the state. The MATS input parameters were set to the EPA-recommended default values. “Monitored” data (current year design values) for both new monitoring sites (that were not operational during the base year period) and the unmonitored locations relied on data for the nearest monitoring site or were estimated using inverse-distance-weighted interpolation of the data from multiple nearby monitoring sites.

6.2.1 Ozone

Table 6-6 summarizes the modeled attainment test results for 8-hour ozone. The current-year design values used for this summary were calculated as the average of the design values for the two overlapping three-year periods that include the modeled years (2005-2007 and 2006-2008). This is not an attainment demonstration and the data for these years were used in order to represent the emissions base year (2005) and the meteorological base years (2005 and 2008), and to allow a direct comparison of the projected future-year design values for the two simulation pairs. The current-year design values are based on the data contained with the MATS database and are calculated within MATS.

Table 6-6. Estimated Future-Year 8-Hour Ozone Design Values (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 8-Hr Ozone Design Values (ppb)			2008/2015 8-Hr Ozone Design Values (ppb)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
North Little Rock (Pike Ave)	Pulaski	77	66	-11	77	68	-9
North Little Rock Airport	Pulaski	81	70	-11	81	71	-10
Little Rock (Doyle Springs Rd)	Pulaski	71	61	-10	71	62	-9
Marion	Crittenden	85	74	-11	85	77	-8
Deer	Newton	71	62	-9	71	63	-8
Springdale	Washington	61*	53	-8	61*	54	-7
Fayetteville	Washington	66	57	-9	66	57	-9
Mena	Polk	74	66	-8	74	67	-7
Arkadelphia	Clark	64*	56	-8	64*	57	-7
Unmonitored 1	Benton	61*	55	-6	61*	55	-6
Unmonitored 2	Jefferson	77*	68	-9	77*	69	-8
Unmonitored 3	Independence	76*	67	-9	76*	67	-9

Note: The NAAQS for 8-hour average ozone concentration is 75 ppb.

* Current Year DV is estimated.

Ozone design values for 2015 are estimated to be 6 to 11 ppb lower than the current-year value for the 2005/2015 simulation pair, and 6 to 10 ppb lower for the 2008/2015 simulation pair. The average reduction is 9 ppb for the 2005/2015 simulation pair and 8 ppb for the 2008/2015 simulation pair. Although the current-year design values are the same, there are differences in the estimated future-year design values for many of the sites. For Marion, for example, the estimated future-year design value is 74 ppb for the 2005/2015 simulation pair and 77 ppb for the 2008/2015 simulation pair. One could interpret these results to mean that the 8-hour ozone design value for 2015 for the Marion site is estimated to be in the range of 74 to 77 ppb. For reference, the 2010-2012 design value is 79 ppb and the 2011-2013 design value is currently expected to be 75 ppb (although the data for 2013 have not been finalized). The differences in the results reflect the difference in the response of the model to changes in emissions under different meteorological conditions. The estimated future-year design values for the remaining sites are all well below the NAAQS and range from 53 to 70 ppb for the 2005/2015 simulation pair and from 54 to 71 for the 2008/2015 simulation pair.

6.2.2 PM_{2.5}

Table 6-7 summarizes the modeled attainment test results for 24-hour PM_{2.5}. The current-year design values used for this summary are calculated as the average of the design values for the two overlapping three-year periods that include the modeled years (2005-2007 and 2006-2008). For each three-year period, the design value is calculated as the three-year average of the 98th percentile 24-hour PM_{2.5}

concentration for each of the years. The current-year design values are based on the data contained with the MATS database and are calculated within MATS.

Table 6-7. Estimated Future-Year 24-Hour PM_{2.5} Design Values (µg/m³) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 24-Hr PM _{2.5} Design Values (µg/m ³)			2008/2015 24-Hr PM _{2.5} Design Values (µg/m ³)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
North Little Rock (Pike Ave)	Pulaski	29.1	24.7	-4.4	29.1	25.3	-3.8
Little Rock (Adams Field)	Pulaski	30.9	26.1	-4.8	30.9	26.3	-4.6
Little Rock (Doyle Springs Rd)	Pulaski	29.5	24.9	-4.6	29.5	25.1	-4.4
Marion	Crittenden	32.8	25.7	-7.1	32.8	27.0	-5.8
Stuttgart	Arkansas	28.1	23.0	-5.1	28.1	24.0	-4.1
Newport	Jackson	30.5	25.1	-5.4	30.5	24.5	-6.0
Springdale	Washington	26.7	23.6	-3.1	26.7	21.5	-5.2
Mena	Polk	26.3	21.9	-4.4	26.3	22.6	-3.7
Hot Springs	Garland	27.2	22.3	-4.9	27.2	22.8	-4.4
El Dorado	Union	27.0	22.5	-4.5	27.0	23.3	-3.7
Crossett	Ashley	27.7	23.5	-4.2	27.7	24.1	-3.6
Roland	Sequoyah (OK)	26.5	23.0	-3.5	26.5	21.4	-5.1
Unmonitored 1	Benton	26.7	23.0	-3.7	26.7	20.9	-5.8
Unmonitored 2	Jefferson	29.5	24.9	-4.6	29.5	24.5	-5.0
Unmonitored 3	Independence	30.0	25.1	-4.9	30.0	24.2	-5.8

Note: The NAAQS for 24-hour average PM_{2.5} is 35 µg/m³.

* Current Year DV is estimated.

Estimated daily PM_{2.5} design values are lower than the current-year values by approximately 3 to 7 µg/m³ for the 2005/2015 simulation pair and approximately 3.5 to 6 µg/m³ for the 2008/2015 simulation pair. Again, the differences in the results reflect the difference in the response of the model to changes in emissions under different meteorological conditions. In both cases, the greatest reduction is simulated to occur at the Marion site in Crittenden County. The resulting future-year design values are all lower than the NAAQS.

Table 6-8 summarizes the modeled attainment test results for annual PM_{2.5}. The current-year design values used for this summary are calculated as the average of the design values for the two overlapping three-year periods that include the modeled years (2005-2007 and 2006-2008). For each three-year period, the design value is calculated as the three-year average of the annual average PM_{2.5} concentration for each of the three years. The current-year design values are based on the data contained with the MATS database and calculated within MATS.

Table 6-8. Estimated Future-Year Annual Average PM_{2.5} Design Values (µg/m³) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 Annual PM _{2.5} Design Values (µg/m ³)			2008/2015 Annual PM _{2.5} Design Values (µg/m ³)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
North Little Rock (Pike Ave)	Pulaski	12.7	11.0	-1.7	12.7	11.1	-1.6
Little Rock (Adams Field)	Pulaski	13.2	11.5	-1.7	13.2	11.7	-1.5
Little Rock (Doyle Springs Rd)	Pulaski	13.2	11.5	-1.7	13.2	11.7	-1.5
Marion	Crittenden	12.9	11.1	-1.8	12.9	11.3	-1.6
Stuttgart	Arkansas	12.2	10.7	-1.5	12.2	10.9	-1.3
Newport	Jackson	12.6	10.7	-1.9	12.6	10.9	-1.7
Springdale	Washington	11.9	10.3	-1.6	11.9	10.3	-1.6
Mena	Polk	11.7	10.4	-1.3	11.7	10.5	-1.2
Hot Springs	Garland	12.1	10.8	-1.3	12.1	11.0	-1.1
El Dorado	Union	12.4	10.9	-1.5	12.4	11.1	-1.3
Crossett	Ashley	12.7	11.2	-1.5	12.7	11.4	-1.3
Roland	Sequoyah (OK)	11.8	10.3	-1.5	11.8	10.4	-1.4
Unmonitored 1	Benton	11.9	10.3	-1.6	11.9	10.3	-1.6
Unmonitored 2	Jefferson	12.9	11.2	-1.7	12.9	11.3	-1.6
Unmonitored 3	Independence	12.8	11.1	-1.7	12.8	11.1	-1.7

Note: The NAAQS for annual average PM_{2.5} is 12 µg/m³.

* Current Year DV is estimated.

Estimated annual PM_{2.5} design values are lower than the current-year values by approximately 1 to 2 µg/m³ for both simulation pairs. In both cases, the greatest reductions are simulated to occur at the Newport site in Jackson County. The resulting future-year design values are all lower than the NAAQS.

6.2.3 NO₂

MATS does not accommodate NO₂. The results presented in this section were calculated using the MATS procedures, but in this case the procedures were applied manually within spreadsheets containing the model output for NO₂.

Table 6-9 summarizes the modeled attainment test results for 1-hour NO₂. For this summary, the current-year design value is calculated as the average design value for the two periods 2005-2007 and 2006-2008, where the design value for each of these periods is the three-year average of the of 98th percentile daily maximum 1-hour NO₂ concentration for each of the three years. The current-year design values were calculated manually, based on observed data.

Table 6-9. Estimated Future-Year 1-Hour NO₂ Design Values (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 1-Hr NO ₂ Design Values (ppb)			2008/2015 1-Hr NO ₂ Design Values (ppb)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
North Little Rock (Pike Ave)	Pulaski	47.5	35.5	-12.0	47.5	38.4	-9.1
Marion	Crittenden	52.0	38.6	-13.4	52.0	42.6	-9.4
Unmonitored 1	Benton	52.0	30.8	-21.2	52.0	34.0	-18.0
Unmonitored 2	Jefferson	52.0	42.0	-10.0	52.0	37.7	-14.3
Unmonitored 3	Independence	52.0	41.4	-10.6	52.0	35.7	-16.3

Note: The NAAQS for 1-hour average NO₂ is 100 ppb.

* Current Year DV is estimated.

Future-year NO₂ design values are estimated to be lower than the current-year values by approximately 12 to 13 ppb at the monitoring sites and by approximately 10 to 20 ppb at the unmonitored locations for the 2005/2015 simulation pair. The differences are approximately 9 ppb at the monitoring sites and 14 to 18 ppb at the unmonitored locations for the 2008/2015 simulation pair. The estimated future-year design values for all locations range from about 30 to 40 ppb (well below the NAAQS).

6.2.4 SO₂

MATS also does not accommodate SO₂. The results presented in this section were calculated using the MATS procedures, but in this case the procedures were applied manually within spreadsheets containing the model output for SO₂.

Table 6-10 summarizes the modeled attainment test results for 1-hour SO₂. For this summary, the current-year design value is the average design value for the two periods 2005-2007 and 2006-2008, where the design value for each of these periods is the three-year average of the of 99th percentile daily maximum 1-hour SO₂ concentration for each of the three years. The current-year design values were calculated manually, based on observed data.

Table 6-10. Estimated Future-Year 1-Hour SO₂ Design Values (ppb) for Monitoring Sites and Selected Unmonitored Locations within Arkansas

Site/Location	County	2005/2015 1-Hr SO ₂ Design Values (ppb)			2008/2015 1-Hr SO ₂ Design Values (ppb)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
North Little Rock (Pike Ave)	Pulaski	11.0	8.5	-2.5	11.0	9.9	-1.1
Marion	Crittenden	20.2*	24.4	4.2	20.2*	26.1	5.9
El Dorado	Union	34.0	29.7	-4.3	34.0	32.0	-2.0
Unmonitored 1	Benton	20.9*	35.9	15.0	20.9*	33.3	12.4
Unmonitored 2	Jefferson	16.3*	23.2	6.9	16.3*	22.7	6.4
Unmonitored 3	Independence	18.1*	26.0	7.9	18.1*	25.6	7.5

Note: The NAAQS for 1-hour average SO₂ is 75 ppb.

* Current Year DV is estimated.

For both simulation pairs, SO₂ design values are estimated to be lower than the current-year values at the actual monitoring sites and higher at the unmonitored locations. Despite the increases all estimated future-year design values are below the NAAQS.

6.2.5 Visibility

MATS was also applied for visibility, focusing on the two Class I areas in Arkansas. Table 6-11 summarizes the modeled attainment test results for visibility – first for the 20 percent best visibility days and then for the 20 percent worst visibility days. The current year design values are based on the best and worst visibility days for the four-year period 2005-2008. The units are deciviews (dV).

Table 6-11a. Estimated Future-Year Visibility (dV) for IMPROVE Monitoring Sites within Arkansas: 20 Percent Best Days

Site/Location	County	2005/2015 Visibility Values (dV)			2008/2015 Visibility Values (dV)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
Caney Creek Wilderness	Newton	12.2	11.7	-0.5	12.2	11.6	-0.6
Upper Buffalo Wilderness	Union	12.3	11.6	-0.7	12.3	11.7	-0.6

Table 6-11b. Estimated Future-Year Visibility (dV) for IMPROVE Monitoring Sites within Arkansas: 20 Percent Worst Days

Site/Location	County	2005/2015 Visibility Values (dV)			2008/2015 Visibility Values (dV)		
		Current Year DV	Future Year DV	Diff-erence	Current Year DV	Future Year DV	Diff-erence
Caney Creek Wilderness	Newton	26.3	23.9	-2.4	26.3	24.0	-2.3
Upper Buffalo Wilderness	Union	26.7	24.5	-2.2	26.7	24.6	-2.1

The CMAQ/MATS modeling results indicate an improvement in visibility at the two Class I sites, on both the 20 percent best and worst days between the current-year period and 2015.

7 References

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Appendix D

Air Quality Modeling Analysis of Minor Source
Permit Thresholds



MEMORANDUM

To: Mark McCorkle and David Clark, Arkansas Department of Environmental Quality (ADEQ)
From: Sharon Douglas, Jay Haney, Belle Hudischewskyj, Yihua Wei and Tom Myers, ICF
Date: September 30, 2015
Re: Air Quality Modeling Analysis of Minor Source Permit Thresholds

Introduction

This memorandum summarizes the methods and results of an air quality modeling exercise designed to inform minor source permit applications and future-year attainment of the National Ambient Air Quality Standards (NAAQS) for the State of Arkansas. Air quality modeling was used to demonstrate that sources permitted under the Minor New Source Review (NSR) program with emissions increases less than proposed permit thresholds will not cause or contribute to a violation of the NAAQS or interfere with the maintenance of the NAAQS.

In a February 17, 2015 letter "EPA Comments on Proposed Revisions to the Arkansas Plan of Implementation for Air Pollution Control - Regulation No. 19 (Docket No. 14-010-R)," EPA states that one of the requirements for approval of Reg. 19.305 is for ADEQ to demonstrate how all sources permitted under the Minor NSR Program will not cause or contribute to a NAAQS violation or interfere with the maintenance of the NAAQS. EPA further states "the ADEQ may achieve this by providing a detailed analysis and supporting documentation, such as generic air quality modeling, to demonstrate that all sources permitted under the Minor NSR program will not interfere with NAAQS attainment or maintenance for all NAAQS." As part of this demonstration "the ADEQ needs to provide additional technical information to demonstrate that proposed changes with emissions increases less than the referenced thresholds will not cause or contribute to a violation of the NAAQS or interfere with the maintenance of the NAAQS. The referenced thresholds are the proposed permit threshold/de minimus levels listed in the 2010 Arkansas State Implementation Plan Revision. For criteria pollutants, these are as follows: carbon monoxide (CO) 75 tons per year (tpy), oxides of nitrogen (NO_x) 40 tpy, sulfur dioxide (SO₂) 40 tpy, volatile organic compounds (VOC) 40 tpy, particulate matter (PM) 25 tpy, PM₁₀ 15 tpy, and PM_{2.5} 10 tpy.

To examine the potential impacts on these pollutants from new sources or existing sources with emissions increases less than the proposed permit thresholds, ICF conducted a combined AERMOD/CMAQ analysis. The CMAQ modeling for the 2008 base year and the 2008/2015 future year from the Arkansas DEQ statewide modeling effort (ICF, 2014) was used for the regional-scale component of the modeling analysis.

Description of Minor Point Sources

As part of this study, hypothetical minor point sources were modeled using both regional-scale and source-specific modeling methods.

The sources were assumed to emit VOC, NO_x, SO₂, CO, PM_{2.5}, and PM₁₀. The emissions for each species were set equal to the permit threshold values, as follows:

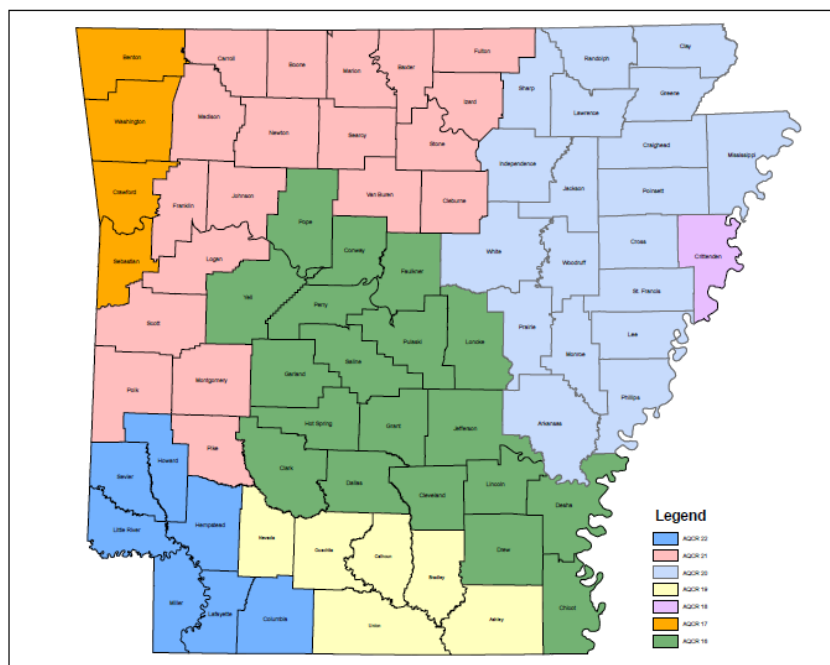
- VOC: 40 tpy
- NO_x: 40 tpy
- SO₂: 40 tpy
- CO: 75 tpy
- PM_{2.5}: 10 tpy
- PM₁₀: 15 tpy

The stack parameters were set equal to the median values of stack height, stack diameter, exit temperature, and exit velocity of all minor point sources in Arkansas, based on the 2011 National Emission Inventory (NEI). These values are as follows:

- Stack height: 12.7 meters (m)
- Stack diameter: 0.67 m
- Temperature: 337.8 degrees Kelvin
- Exit velocity: 9.2 meters per second (m/s)

Eight hypothetical sources were approximately centrally located within each State of Arkansas air quality control region (AQCR) identified in Figure 1. AQCR 21 (pink) includes two locations, since it covers two distinct geographical areas. Specifically, the sites were placed in the approximate centers of the following counties: Pulaski, Washington, Crittenden, Union, Craighead, Van Buren, Polk and Miller. The locations were shifted slightly from the center of the county for Polk, Van Buren, and Washington Counties to ensure that the source locations would be accessible (and near a populated or urban area).

Figure 1. Arkansas DEQ Air Quality Control Regions.



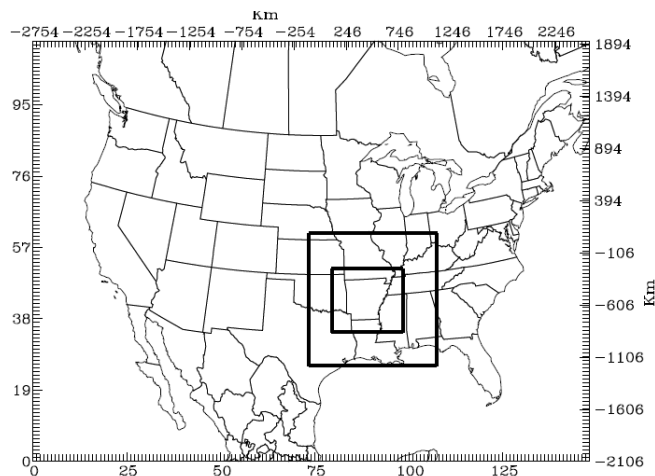
Regional-Scale Modeling

Methodology

Photochemical modeling was used to examine the potential impacts of emission increases from new sources on ozone and PM_{2.5} concentrations. Specifically, the Community Multiscale Air Quality (CMAQ) model was used to simulate the potential impacts from the hypothetical sources described in the previous section. While the photochemical modeling exercise was specifically designed to examine ozone and PM_{2.5}, CMAQ also simulates NO₂, SO₂, and PM₁₀ so the results for those pollutants were also examined. The CMAQ modeling for the 2008 base year (2008 current year scenario) and the 2008/2015 future year (2015 baseline scenario) from the Arkansas DEQ statewide modeling effort (ICF, 2014) was used as the basis for the regional-scale component of the modeling analysis.

The CMAQ future-year (2015) emission inventory was modified to include the eight hypothetical new point sources, distributed throughout the AQCRs. The emission sources were characterized as single low-level point sources with emission rates set to the threshold values. CMAQ was run (for the 4-km grid only) for the annual simulation period. The full CMAQ modeling domain is presented in Figure 2 and includes a 36-km resolution outer grid encompassing the continental U.S.; a 12-km resolution intermediate grid; and a 4-km resolution inner grid encompassing Arkansas. Only the 4-km grid was used for this application; the boundary conditions were obtained from the 12-km modeling results for the statewide modeling effort (ICF, 2014).

Figure 2. CMAQ Modeling Domain for the Arkansas Statewide Criteria Pollutant Air Quality Modeling Analysis.



The maximum CMAQ-derived impact on daily maximum 8-hour ozone, 24-hour average $PM_{2.5}$, and annual average $PM_{2.5}$ for any location in Arkansas was calculated. In addition, the maximum CMAQ-derived impact on daily maximum 1-hour NO_2 , daily maximum 1-hour SO_2 , and 24-hour average PM_{10} was also calculated. The statewide maximum impact for each simulation day (maximum over all AQCRs and grid cells in Arkansas) was used for the remaining steps of this analysis.

The daily maximum CMAQ-derived impact was then added to the simulated CMAQ-derived concentrations for each day and grid cell for the future-year (2015) simulation. The resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid. The adjusted 2015 modeling results will be referred to as the 2015 plus maximum impact dataset or 2015 PMI throughout the remainder of this memorandum.

The 2015 PMI values were used in conjunction with the 2008 current-year modeling results (again from the statewide modeling analysis) to calculate relative reduction factors (RRFs) and estimated future-year design values (FDVs) (for 2015) for both monitored and unmonitored locations. These results were compared with the prior 2015 results (from the original statewide modeling analysis) as well as with the NAAQS to examine whether emission increases less than the referenced thresholds will cause or contribute to a violation of the NAAQS or potentially interfere with the maintenance of the NAAQS.

EPA's MATS software was used to calculate RRFs and future-year design values for ozone and $PM_{2.5}$, following the recommendations outlined in the updated draft guidance issued by EPA in December 2014 (Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze [EPA, 2014]). MATS was also used to calculate RRFs for NO_2 , SO_2 and PM_{10} using the same methodology as used for ozone.

This methodology is based on relative (rather than absolute) use of the modeling results, and relies on the ability of the air quality modeling system to simulate the change in concentration due to changes in emissions, but not necessarily its ability to simulate exact values for future-year concentrations. For each air quality metric, a future-year estimated design value (FDV) is calculated using the “current-year” design value and the future-year and base-year modeling results.

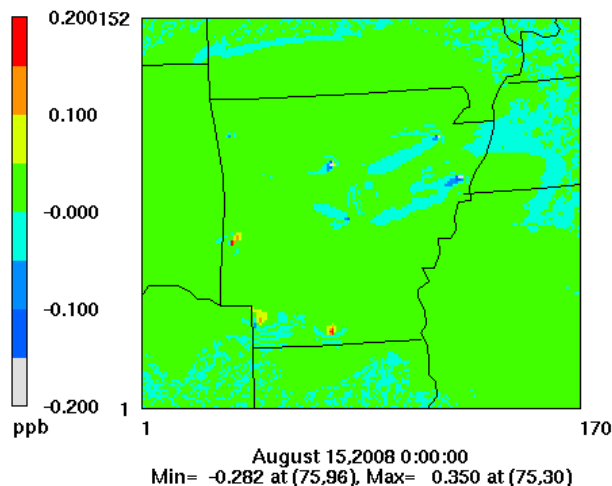
The current-year design value for each pollutant and monitoring site within Arkansas was calculated in accordance with the form of the standard for that pollutant. For this analysis (which is not an attainment demonstration) the current-year design values were based on data for 2006 through 2010. Calculation of the current year design values differs among the pollutants and the procedures outlined in the guidance document were followed. Additional detail for each pollutant is provided in the results sections.

The current-year design value for each site was then multiplied by a relative response factor (RRF), which is defined as ratio of the future-year to base-year simulated concentration in the vicinity of the monitoring site. The resulting value is referred to as the future-year design value or FDV. The methodology has additional layers of complexity for multi-species pollutants such as PM_{2.5}; these are outlined in the guidance document and were accounted for in this analysis. The resulting values were compared with the NAAQS. The analysis was conducted for both the 2008 current-year/2015 baseline and 2008 current year/2015 PMI simulation pairs. Tabular and graphical summaries of the RRFs and EDVs were prepared and average values of the RRFs for each county and AQCR were calculated.

Results for Ozone

The simulated maximum impacts on 8-hour ozone concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 1.1 parts per billion (ppb). An example difference plot illustrating the impacts for 15 August is provided in Figure 3.

Figure 3. Example Difference in CMAQ-Derived Daily Maximum 8-Hour Average Ozone Concentration with the Addition of Emissions from the Eight Hypothetical Minor Point Sources (August 15).



The plot shows a mix of small increases and decreases in simulated daily maximum 8-hour ozone concentrations for the selected day, near and downwind of the source locations. The largest increase is 0.35 ppb. The largest decrease is -0.28. Decreases in ozone are likely due to the added NO_x emissions from the hypothetical sources. The response of the CMAQ model to the changes in emissions is influenced by the complex photochemistry represented by the model. Under certain conditions increases in NO_x emissions can lead to decreases in ozone. This occurs when the conversion of NO to NO₂ is inhibited (due to either relatively low VOC concentrations or limited photolysis conditions – as might be expected to occur during the nighttime hours or on cloudy days).

The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 8-hour ozone concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied for both monitoring sites and unmonitored areas.

SITE-SPECIFIC MODELING RESULTS FOR OZONE

Table 1 summarizes the site-specific MATS results for 8-hour ozone. In this case, the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The current-year design values are based on the data contained within the MATS database and are calculated within MATS. The MATS input parameters were set to the EPA-recommended default values. Per current EPA guidance, the ten highest concentrations, based on

the baseline simulation results, were used in the calculation of the RRFs for each site. Units for the FDVs are ppb. The RRF values are unitless.

Table 1. RRFs and Estimated Future-Year 8-Hour Ozone Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 8-Hr Ozone Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	72.3	0.8837	63.8	0.8881	64.2	0.4
North Little Rock Airport	Pulaski	74.3	0.8773	65.1	0.8813	65.4	0.3
Little Rock (Doyle Springs Rd)	Pulaski	68.0	0.8762	59.5	0.8806	59.8	0.3
Marion	Crittenden	77.3	0.9059	70.0	0.9094	70.2	0.2
Deer	Newton	68.0	0.8966	60.9	0.8988	61.1	0.3
Springdale	Washington	64.0	0.8787	56.2	0.8823	56.4	0.2
Mena	Polk	71.7	0.8932	64.0	0.8966	64.2	0.2

Note: The NAAQS for 8-hour average ozone concentration is 75 ppb.

Ozone design values for 2015 PMI are estimated to be 0.2 to 0.4 ppb higher than the 2015 baseline values. The estimated future-year design values for all sites are below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for any monitoring site.

STATEWIDE MODELING RESULTS FOR OZONE

MATS was also used to conduct a spatial-fields analysis. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the model-derived gradients were used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 8-hour ozone for Arkansas (based on all grid cells that comprise the state) is 0.8910 for the 2015 baseline and 0.8942 for the 2015 PMI scenario. This increase in average RRF (0.0032) represents a 0.2 ppb increase relative to a base concentration of 70 ppb. Table 2 summarizes the RRFs by AQCR.

Table 2. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8842	0.8876	0.0034
AQCR 17	0.8974	0.9012	0.0038
AQCR 18	0.8880	0.8912	0.0032
AQCR 19	0.8959	0.8990	0.0031
AQCR 20	0.8878	0.8906	0.0027
AQCR 21	0.8987	0.9018	0.0031
AQCR 22	0.8896	0.8935	0.0039

For the AQCRs, the worst-case impacts are expected to increase the average RRFs by 0.0027 to 0.0039. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in ozone over time). Overall, there is little variation among the AQCRs. RRFs by county are provided in Attachment A.

Figure 4 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline. The difference plot is intended to examine whether there are areas within the state where the estimated worst-case impacts would have a greater effect on the RRFs compared to other areas.

Figure 4. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.

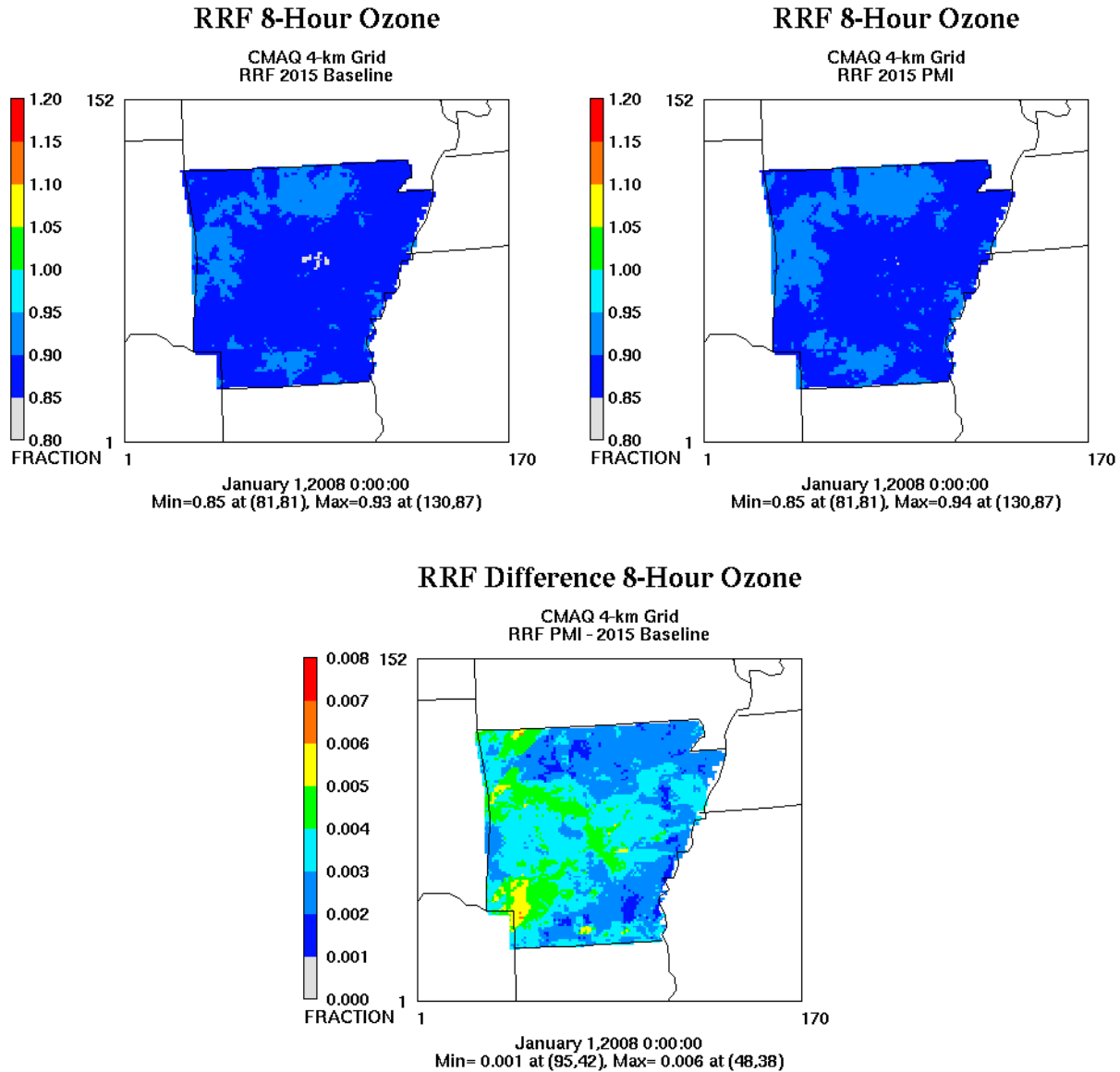
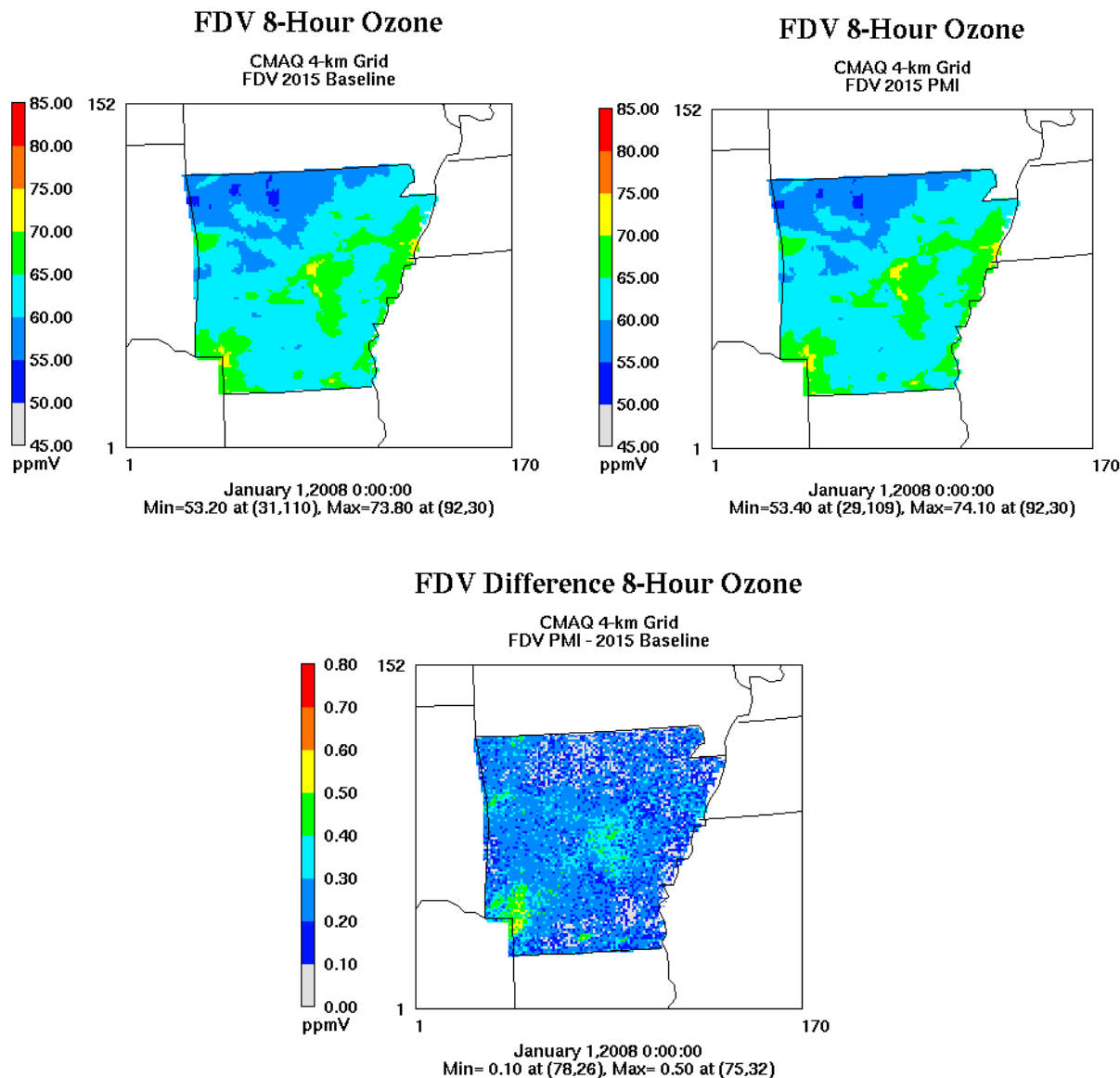


Figure 5 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 5. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 8-Hour Ozone.



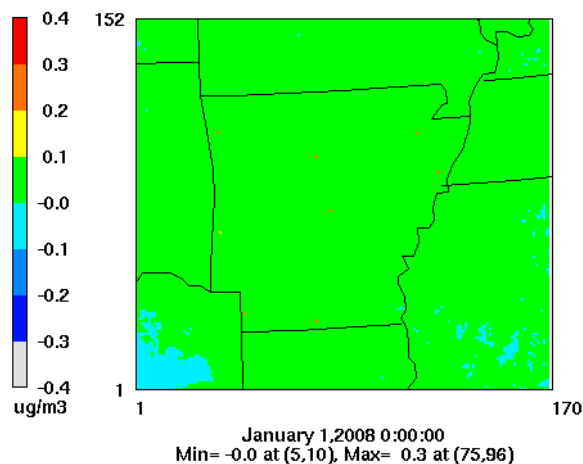
The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. This is likely because the impacts represent a greater percentage of the simulated concentrations on the days with the highest concentrations (those included in the calculation of the RRF) for these areas than for other areas. One possible conclusion is that worst-case impacts are more likely to affect the design values in these areas. Nevertheless, the impacts are small relative to the base concentrations.

Note that the FDVs for some unmonitored locations are greater than those projected for the monitoring sites (as presented in Table 1), for both the 2015 baseline and the 2015 PMI scenarios. This is due to the fact that the modeled concentration gradients are used in MATS to estimate current and future design values for unmonitored areas and this can result in estimated current-year design values for unmonitored areas that are greater than at any monitoring site. Without use of the modeled concentration gradients, the monitored data are simply interpolated to each grid cell. This results in more uniform FDVs and slightly lower peak values (by about 2 ppb). The spatial-fields analysis of the FDVs is not intended to examine if there are unmonitored areas for which the minor source impacts could potentially result in nonattainment issues. Since the result depends on the current-year design value at each unmonitored grid cell, which is unknown, this analysis is most useful at identifying those areas where the impacts are likely to have a greater effect on the design values. Nevertheless, the FDVs are less than 75 ppb (the current or 2015 NAAQS) for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios, and the maximum impact at any grid cell is 0.5 ppb.

Results for PM_{2.5}

The simulated maximum impacts on 24-hour and annual average PM_{2.5} concentration occur at or near the hypothetical sources. The maximum difference varies by location and ranges from approximately 0.2 to 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) on a monthly average basis. An example difference plot illustrating the impacts for annual average PM_{2.5} is provided in Figure 6.

Figure 6. Example Difference in CMAQ-Derived Annual Average PM_{2.5} Concentration with the Addition of Emissions from the Eight Hypothetical Minor Point Sources.



The plot shows small increases in simulated annual average PM_{2.5} concentration at or near the source locations. The largest increase is 0.3 $\mu\text{g}/\text{m}^3$.

The maximum differences in 24-hour average PM_{2.5} concentration for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline 24-hour PM_{2.5} concentration for each day and each grid cell to create the 2015 PMI dataset for PM_{2.5}. The 2015 PMI resultant values are

intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied for monitoring sites (for both 24-hour and annual average PM_{2.5}) and for unmonitored areas (for annual average PM_{2.5} only). MATS does not support spatial-fields analysis for 24-hour PM_{2.5}.

SITE-SPECIFIC MODELING RESULTS FOR PM_{2.5}

Table 3 summarizes the site-specific MATS results for 24-hour PM_{2.5} and Table 4 summarizes the results for annual average PM_{2.5}. The results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All currently operating sites with data during the 2006 to 2010 period are included in the table. The current-year design values are based on the data contained within the MATS database and are calculated within MATS. The MATS input parameters were set to the EPA-recommended default values. Per current EPA guidance, the ten percent highest concentrations, based on the baseline simulation results, were used in the calculation of the RRFs for each site. Units for the FDVs are µg/m³. For PM_{2.5}, the RRF values are calculated for each component species and are therefore not included in the table.

Table 3. RRFs and Estimated Future-Year 24-Hour PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 24-Hr PM _{2.5} Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	2015 PMI FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	25.4	21.6	22.0	0.4
Little Rock (Adams Field)	Pulaski	28.1	23.7	23.9	0.2
Little Rock (Doyle Springs Rd)	Pulaski	25.9	21.8	22.1	0.3
Marion	Crittenden	27.2	22.1	22.4	0.3
Stuttgart	Arkansas	25.4	21.2	21.5	0.3
Mena	Polk	23.3	20.6	22.2	0.6
Hot Springs	Garland	23.4	19.9	20.3	0.4
El Dorado	Union	23.0	19.7	19.9	0.2
Crossett	Ashley	22.9	19.3	19.5	0.2

Note: The NAAQS for 24-hour average PM_{2.5} concentration is 35 µg/m³.

Daily PM_{2.5} design values for 2015 PMI are estimated to be 0.2 to 0.6 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 24-hour PM_{2.5} NAAQS for any monitoring site.

Table 4. RRFs and Estimated Future-Year Annual Average PM_{2.5} Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year Annual PM _{2.5} Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	2015 PMI FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	11.8	10.4	10.6	0.2
Little Rock (Adams Field)	Pulaski	12.2	10.8	11.0	0.2
Little Rock (Doyle Springs Rd)	Pulaski	12.0	10.7	11.0	0.3
Marion	Crittenden	11.8	10.4	10.6	0.2
Stuttgart	Arkansas	11.3	10.2	10.4	0.2
Mena	Polk	10.9	9.8	10.2	0.4
Hot Springs	Garland	11.1	10.1	10.4	0.3
El Dorado	Union	11.3	10.1	10.4	0.3
Crossett	Ashley	11.1	10.0	10.2	0.2

Note: The NAAQS for annual average PM_{2.5} concentration is 12 µg/m³.

Annual PM_{2.5} design values for 2015 PMI are estimated to be 0.2 to 0.4 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites are all below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the annual PM_{2.5} NAAQS for any monitoring site.

STATEWIDE MODELING RESULTS FOR PM_{2.5}

MATS was also used to conduct a spatial-fields analysis for annual PM_{2.5}. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the model-derived gradients were used in conjunction with observed data to estimate current-year design values for every grid cell, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for Arkansas (based on all grid cells that comprise the state) is 0.8619 for the 2015 baseline and 0.9045 for the 2015 PMI scenario. This increase (0.0425) represents a 0.4 $\mu\text{g}/\text{m}^3$ increase relative to a base concentration of 10 $\mu\text{g}/\text{m}^3$. Table 5 summarizes the RRFs by AQCR.

Table 5. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: Annual Average $\text{PM}_{2.5}$.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8619	0.9040	0.0421
AQCR 17	0.8633	0.9056	0.0424
AQCR 18	0.8530	0.8814	0.0284
AQCR 19	0.8629	0.9098	0.0469
AQCR 20	0.8587	0.8918	0.0330
AQCR 21	0.8661	0.9162	0.0501
AQCR 22	0.8588	0.9062	0.0474

For the AQCRs, the worst-case impacts are expected to increase the average RRFs by 0.0284 to 0.0501. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in $\text{PM}_{2.5}$ over time). Overall, RRFs are increased the most for AQCRs 19, 21 and 22, which encompass most of the southwestern part of the State. RRFs by county are provided in Attachment B.

Figure 7 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 7. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: Annual Average PM_{2.5}.

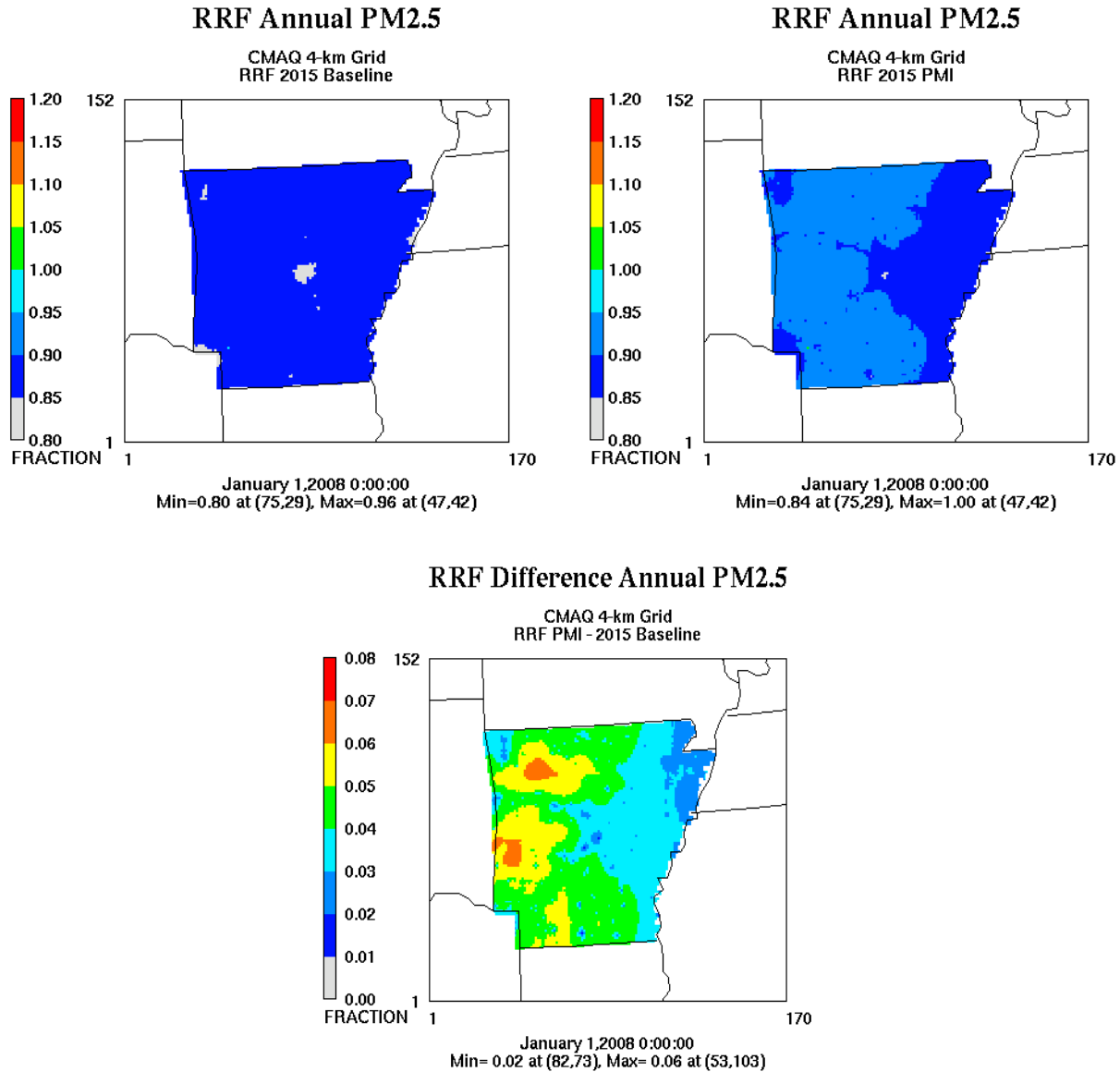
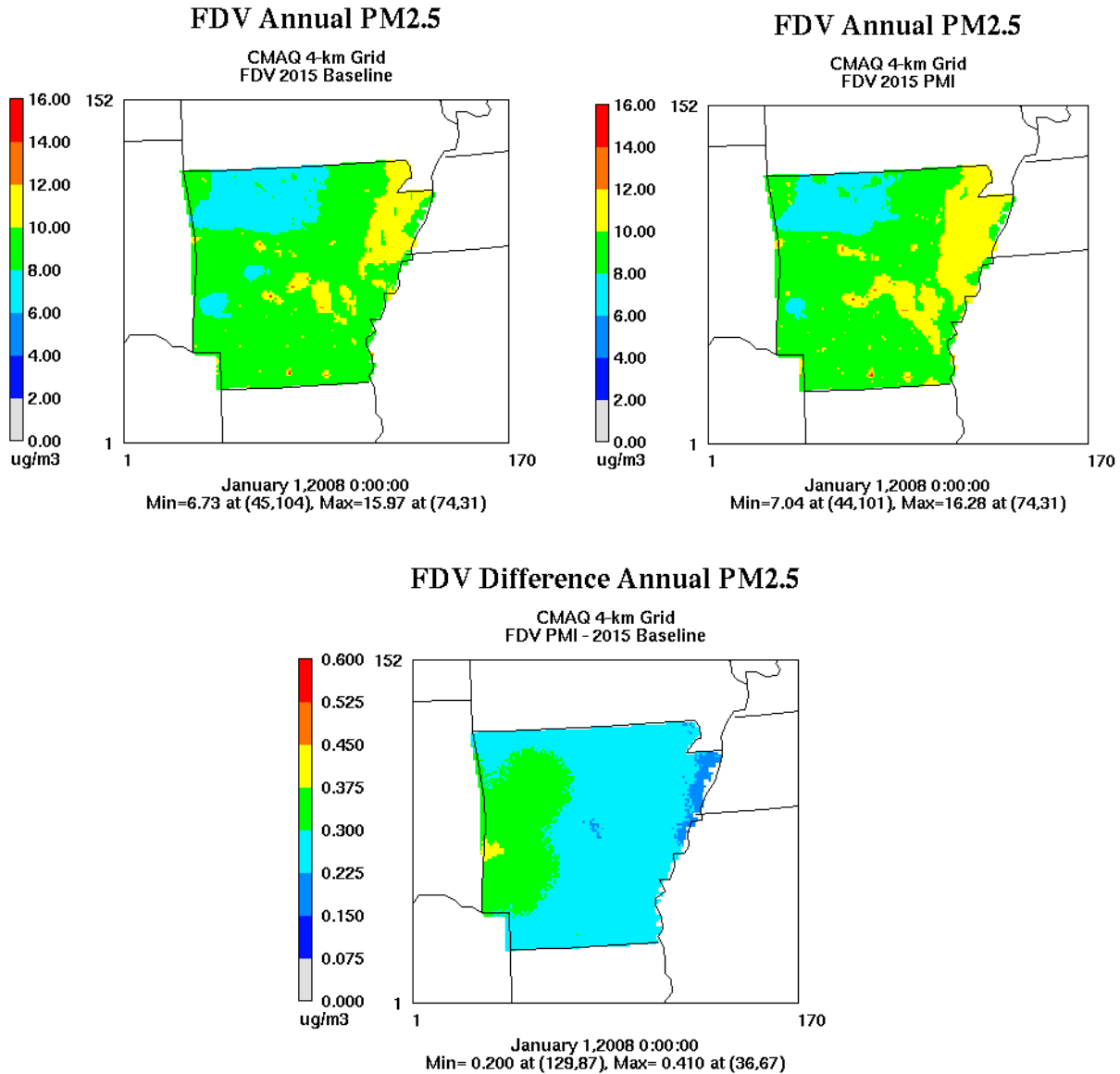


Figure 8 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 8. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: Annual Average PM_{2.5}.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in western Arkansas compared to the rest of the state. Worst-case impacts in these areas are more likely to affect the RRF and FDV values. Nevertheless, the impacts are small relative to the base concentrations.

The MATS projected FDVs show several isolated unmonitored areas throughout the state with annual average PM_{2.5} concentrations greater than 12 µg/m³. These appear in both the 2015 baseline and 2015 PMI plots. The values are greater than those projected for the monitoring sites (as presented in Table 4). This is due to the fact that the modeled concentration gradients are used in MATS to estimate current

and future design values for unmonitored areas and this can result in estimated current-year design values for unmonitored areas that are greater than at any monitoring site. Without use of the modeled concentration gradients, the monitored data are simply interpolated to each grid cell. This results in more uniform FDVs and lower peak values (by up to $5 \mu\text{g}/\text{m}^3$). The spatial-fields analysis is not intended to examine if there are unmonitored areas for which the minor source impacts would potentially result in nonattainment issues. Since the result depends on the assumed current-year design value at each unmonitored location, which is unknown, this analysis is most useful at identifying those areas where the impacts are likely to have a greater effect on the design values. Nevertheless, the FDVs indicate a few isolated areas/grid cells within Arkansas greater than $12 \mu\text{g}/\text{m}^3$ for the gradient-adjusted case and no grid cells greater than $12 \mu\text{g}/\text{m}^3$ for the straight interpolation case for both the 2015 baseline and 2015 PMI scenarios. The maximum impact at any grid cell is $0.41 \mu\text{g}/\text{m}^3$.

Results for NO_2

The simulated maximum impacts on 1-hour NO_2 concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 6 parts per billion (ppb). The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour NO_2 concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate NO_2 but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR NO_2

Table 6 summarizes the site-specific RRFs and FDVs for 1-hour NO_2 . There are two NO_2 monitoring sites in Arkansas, and the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are ppb. The RRF values are unitless.

Table 6. RRFs and Estimated Future-Year 1-Hour NO₂ Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	43.7	0.6846	29.9	0.7150	31.2	1.3
Marion	Crittenden	48.3	0.7986	38.6	0.8308	40.1	1.5

Note: The NAAQS for 1-hour average NO₂ concentration is 100 ppb.

NO₂ design values for 2015 PMI are estimated to be 1.3 to 1.5 ppb higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for either monitoring site.

STATEWIDE MODELING RESULTS FOR NO₂

A simple spatial-fields analysis was also conducted for NO₂. This analysis consisted of several steps: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) an average design value for Arkansas (based on data for the two sites) was calculated, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 1-hour NO₂ for Arkansas (based on all grid cells that comprise the state) is 0.6617 for the 2015 baseline and 0.7630 for the 2015 PMI scenario. This increase (0.0743) represents a 3.3 ppb increase relative to a base concentration of 45 ppb. Table 7 summarizes the RRFs by AQCR.

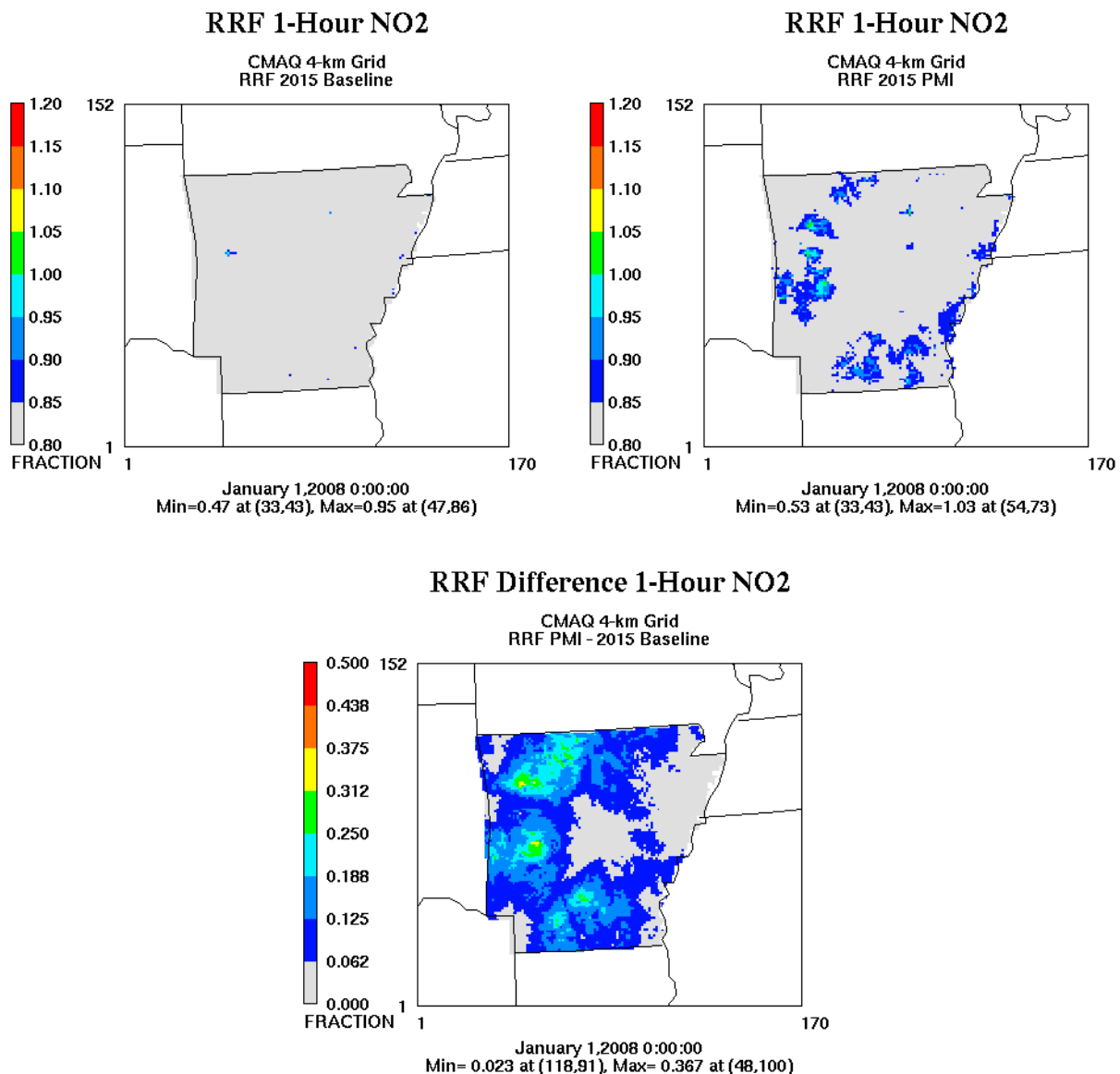
Table 7. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO₂.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.6464	0.7401	0.0937
AQCR 17	0.6462	0.7277	0.0816
AQCR 18	0.7997	0.8311	0.0314
AQCR 19	0.7049	0.8335	0.1286
AQCR 20	0.6861	0.7472	0.0611
AQCR 21	0.6307	0.7826	0.1519
AQCR 22	0.6735	0.7648	0.0912

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0314 to 0.1519. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in $PM_{2.5}$ over time). Overall, RRFs are increased the most for AQCRs 19 and 21, which represent the south-central and southwestern portions of the State. RRFs by county are provided in Attachment C.

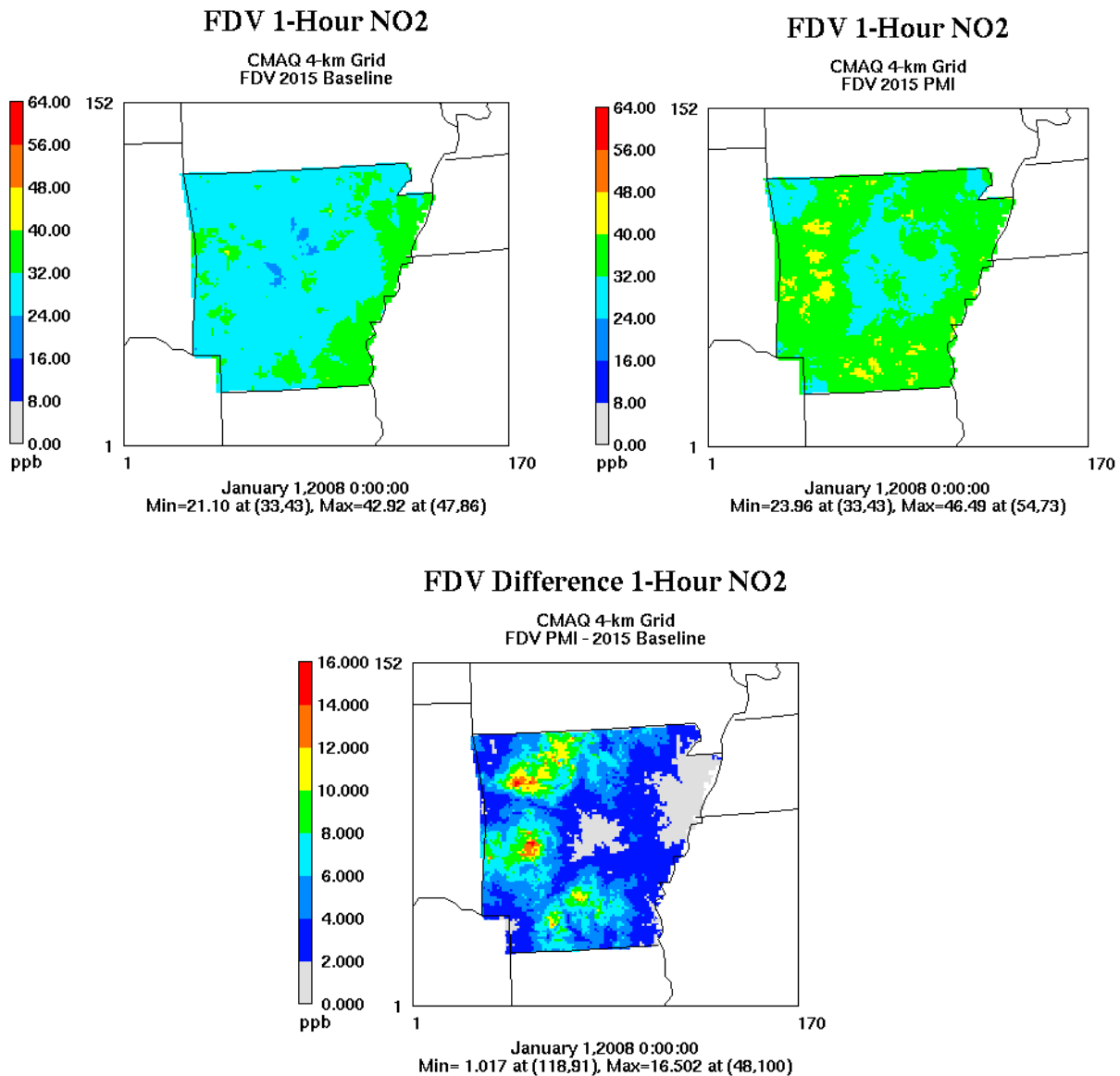
Figure 9 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 9. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO_2 .



FDVs were calculated using a current-year value of 45 ppb for every grid cell. This was based on an average (approximately) of the current-year design values for the Little Rock and Marion monitoring sites. Figure 20 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 10. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour NO₂.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for some areas in northwestern, western, and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of NO₂ emissions, relative to the calculation of 1-hour NO₂ NAAQS-relevant metrics. Despite the increased

RRFs, the FDVs are all well below 100 ppb for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios.

Regional-scale modeling may not be the best tool for the analysis of NO₂ impacts. NO₂ is directly emitted into the atmosphere and a grid-based model like CMAQ is not likely to capture the sub grid-scale impacts due to individual emissions sources. Additional analysis of NO₂ (both 1-hour and annual average concentrations) was performed using the AERMOD model and is presented later in the memorandum.

Results for SO₂

The simulated maximum impacts on 1-hour SO₂ concentration occur near and downwind of the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately zero to 4 parts per billion (ppb). The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 1-hour SO₂ concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate SO₂ but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR SO₂

Table 8 summarizes the site-specific RRFs and FDVs for 1-hour SO₂. There are two SO₂ monitoring sites in Arkansas, and the results for each monitoring site assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the average of the design values for the three overlapping three-year periods that include the modeled year (2006-2008, 2007-2009, and 2008-2010). All sites with data during the 2006 to 2010 period are included in the table. The MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are ppb. The RRF values are unitless.

Table 8. RRFs and Estimated Future-Year 1-Hour SO₂ Design Values (ppb) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline		2015 PMI		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	12.3	0.7560	9.4	0.8412	10.3	0.9
El Dorado	Union	26.0	0.8914	23.2	1.0421	27.1	3.9

Note: The NAAQS for 1-hour average SO₂ concentration is 75 ppb.

SO₂ design values for 2015 PMI are estimated to be 0.9 to 3.9 ppb higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for either monitoring site.

STATEWIDE MODELING RESULTS FOR SO₂

A simple spatial-fields analysis was also conducted for SO₂. This analysis followed the same steps as that for NO₂: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) an average design value for Arkansas (based on data for the two sites) was calculated, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 1-hour SO₂ for Arkansas (based on all grid cells that comprise the state) is 0.9943 for the 2015 baseline and 1.1809 for the 2015 PMI scenario. This increase (0.1866) represents a 3.7 ppb increase relative to a base concentration of 20 ppb. Table 9 summarizes the RRFs by AQCR.

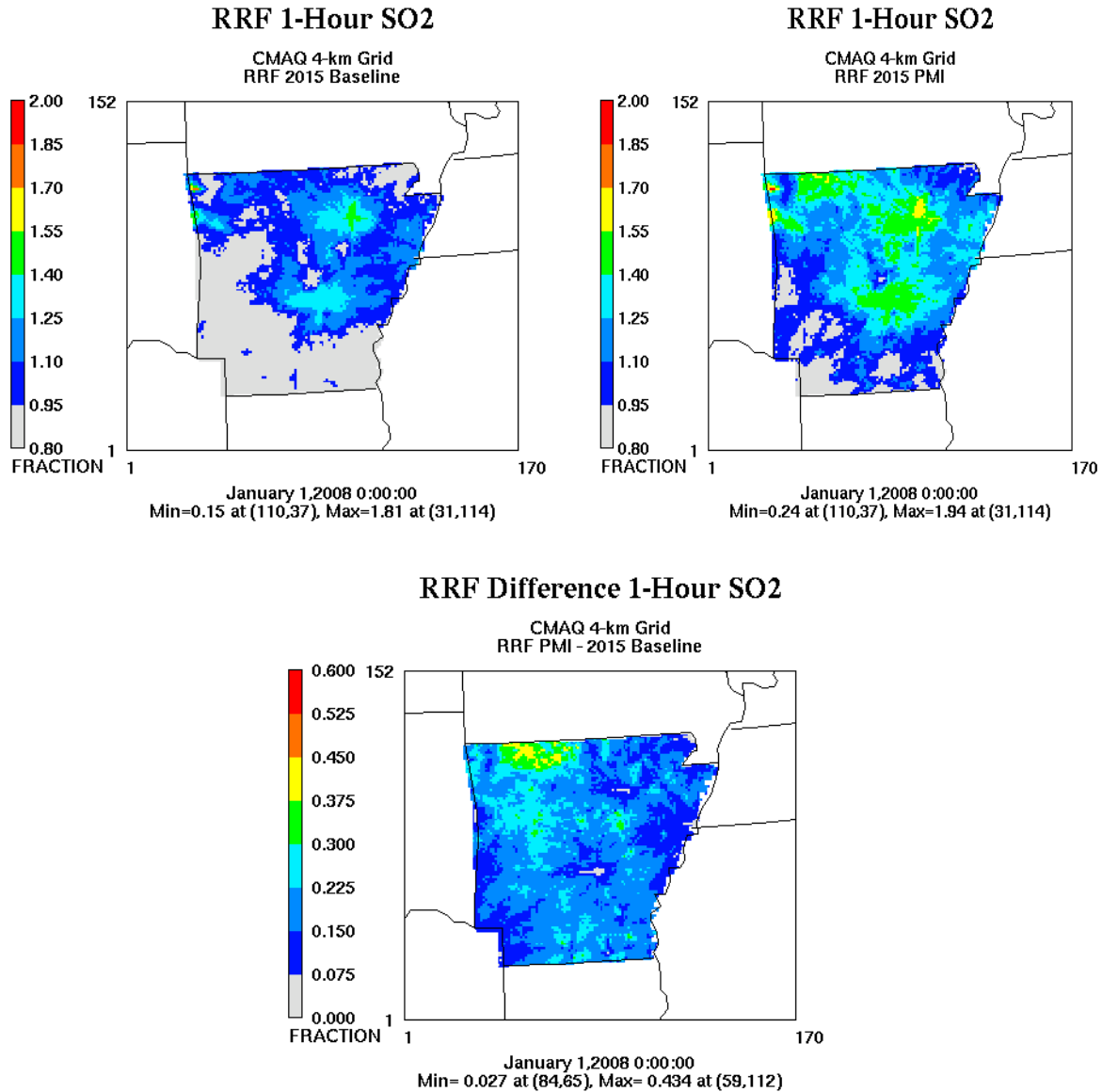
Table 9. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	1.0081	1.1978	0.1897
AQCR 17	1.0302	1.2201	0.1899
AQCR 18	1.1552	1.2641	0.1089
AQCR 19	0.7994	0.9999	0.2005
AQCR 20	1.0926	1.2510	0.1584
AQCR 21	1.0092	1.2341	0.2249
AQCR 22	0.7734	0.9217	0.1483

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.1089 to 0.2249. In no case is the average RRF increased from a value less than one to a value greater than one. However, for several of the AQCRs the baseline values are already greater than one and are increased further. This finding is consistent with that statewide modeling effort (ICF, 2014), which found that SO₂ concentrations in several areas were projected to increase between the base year and 2015. Overall, RRFs are increased the most for AQCR 21 which represents the western to northwestern portion of the State. RRFs by county are provided in Attachment D.

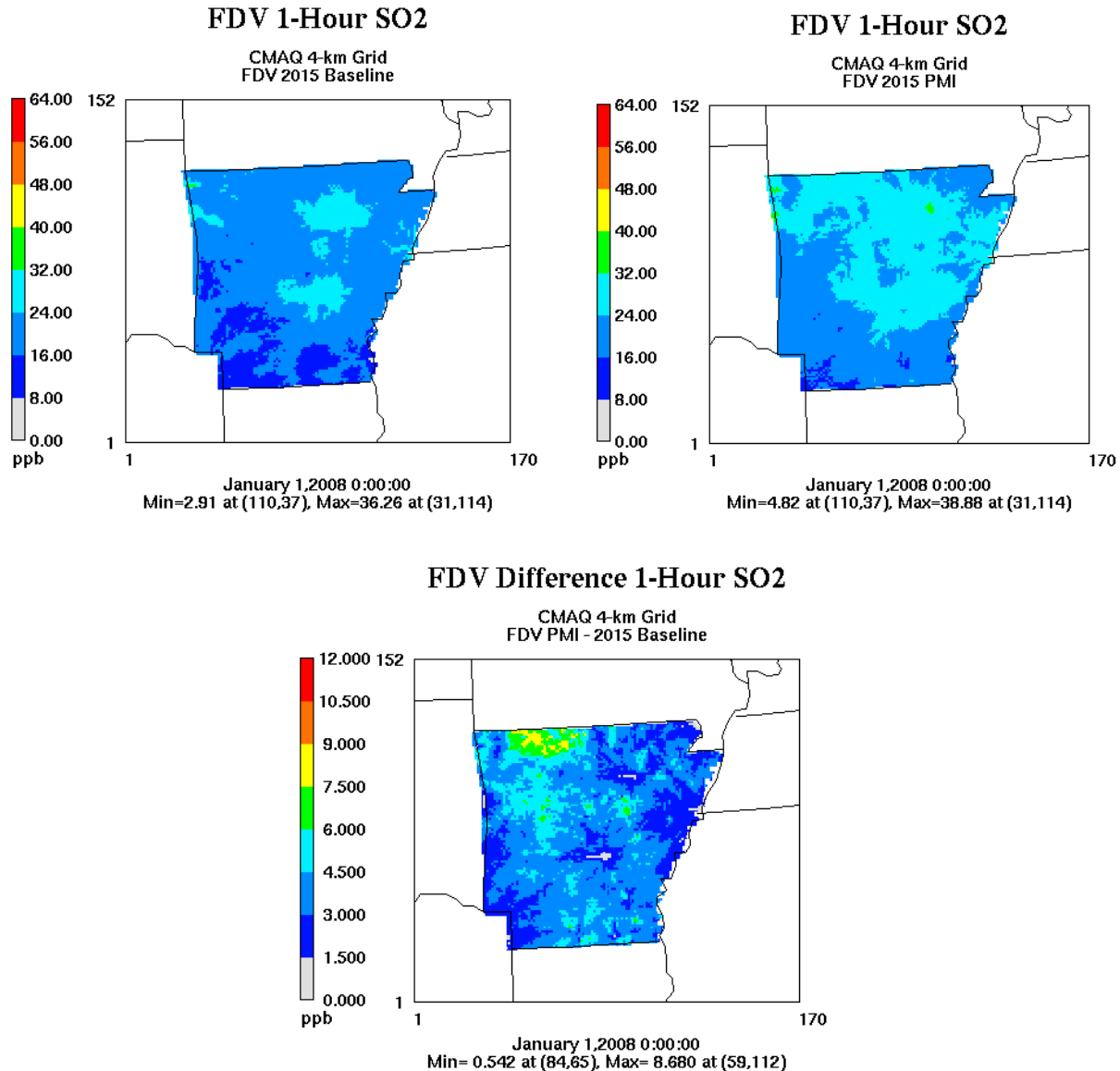
Figure 11 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 11. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.



FDVs were calculated using a current-year value of 20 ppb for every grid cell. This was based on an average (approximately) of the current-year design values for the Little Rock and El Dorado monitoring sites. Figure 12 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 12. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 1-Hour SO₂.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for northwestern Arkansas compared to the rest of the State. This area may be more sensitive to the addition of SO₂ emissions, relative to the calculation of 1-hour SO₂ NAAQS-relevant metrics. Despite the increased RRFs, the FDVs are all well below 75 ppb for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios. Note that the statewide criteria pollutant modeling analysis (ICF, 2014) also showed increases in SO₂ concentrations between the base year and 2015. This is attributable to a projected increase in SO₂ emissions for electric generating units (EGUs) throughout the state. The 2015 emissions used for this analysis reflect Clean Air Interstate Rule

(CAIR) controls. However, Arkansas was identified as one of the states for which CAIR calls for NO_x controls only; no controls are imposed on SO₂ emissions and the emission inventory for 2015 reflects a significant increase in SO₂ emissions for the larger EGU's compared to the base year.

Similar to NO₂, regional-scale modeling may not be the best tool for the analysis of SO₂ impacts. SO₂ is directly emitted into the atmosphere and a grid-based model like CMAQ is not likely to capture the sub-grid-scale impacts due to individual emissions sources. Additional analysis of SO₂ was performed using the AERMOD model and is presented later in the memorandum.

Results for PM₁₀

The simulated maximum impacts on 24-hour PM₁₀ concentration occur at or near the hypothetical sources. The maximum difference varies by location and by day and ranges from approximately 0.1 to 2.7 µg/m³. The maximum differences for each day considering all grid cells in the 4-km grid were compiled and added to the 2015 baseline daily maximum 24-hour PM₁₀ concentration for each day and each grid cell to create the 2015 PMI dataset for ozone. The 2015 PMI resultant values are intended to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

Next, MATS was applied to calculate RRF values only for both monitoring sites and unmonitored areas. MATS does not accommodate PM₁₀ but can be used to calculate RRFs for any two datasets.

SITE-SPECIFIC MODELING RESULTS FOR PM₁₀

Table 10 summarizes the site-specific RRFs and FDVs for 24-hour PM₁₀. There is only one PM₁₀ monitoring sites in Arkansas, and the results assume that a hypothetical source identical to those modeled is located such that the worst-case impact occurs at the monitoring site. The current-year design values used for this summary were calculated as the maximum 2nd highest PM₁₀ concentration for the three years ending with the modeled year 2006-2008. For PM₁₀, the MATS input parameters were set to the EPA-recommended default values for ozone and only the RRFs were calculated using MATS. The FDVs were then calculated by hand. Units for the FDVs are µg/m³. The RRF values are unitless.

Table 10. RRFs and Estimated Future-Year 24-Hour PM₁₀ Design Values (µg/m³) for Monitoring Sites within Arkansas.

Site/Location	County	Current-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline		2015 PMI		Difference in FDV (µg/m ³)
			RRF	FDV (µg/m ³)	RRF	FDV (µg/m ³)	
North Little Rock (Pike Ave)	Pulaski	41.0	0.8434	34.6	0.8621	35.3	0.8

Note: The NAAQS for 24-hour PM₁₀ concentration is 150 µg/m³.

The PM₁₀ design value for 2015 PMI is estimated to be 0.8 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for both sites are well below the NAAQS. Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the NAAQS for the monitoring site.

STATEWIDE MODELING RESULTS FOR PM₁₀

A simple spatial-fields analysis was also conducted for PM₁₀. This analysis followed the same steps as that for NO₂: 1) the modeled concentrations were used to calculate RRFs for every grid cell, 2) the design value for Arkansas was set equal to the value for the only monitoring site, and 3) the results of steps 1 and 2 were used to estimate future-year design values for every grid cell. The objective was to determine whether there are unmonitored areas within the domain that are more sensitive to the addition of emissions corresponding to amount and type modeled than other areas.

The average RRF for 24-hour PM₁₀ for Arkansas (based on all grid cells that comprise the state) is 0.8829 for the 2015 baseline and 0.9067 for the 2015 PMI scenario. This increase (0.0238) represents a 0.95 µg/m³ increase relative to a base concentration of 40 µg/m³. Table 11 summarizes the RRFs by AQCR.

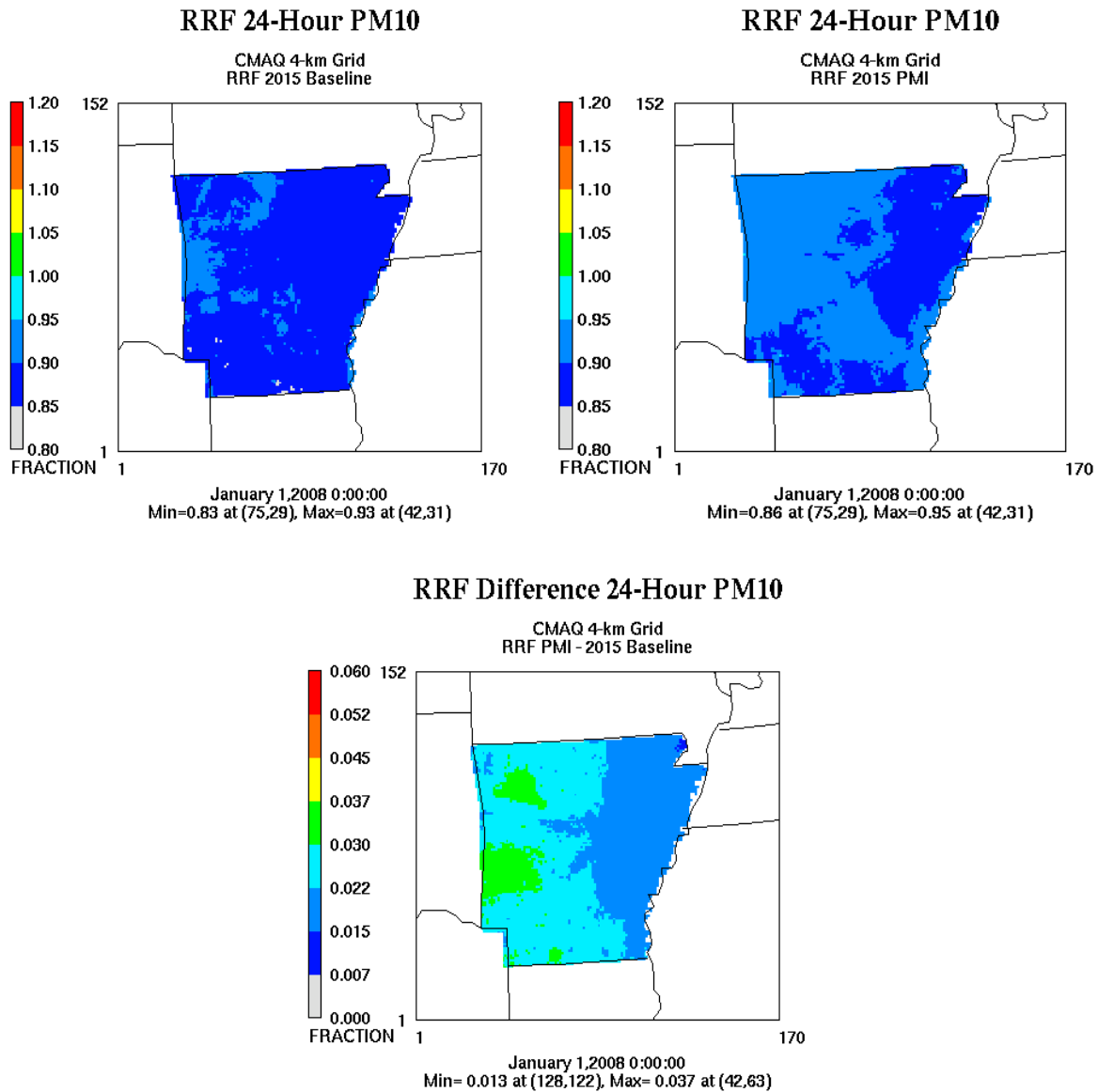
Table 11. RRFs for Each AQCR for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.

AQCR	2015 Baseline	2015 PMI	Difference (PMI – Baseline)
AQCR 16	0.8876	0.9112	0.0236
AQCR 17	0.9017	0.9275	0.0258
AQCR 18	0.8793	0.8963	0.0170
AQCR 19	0.8726	0.8985	0.0259
AQCR 20	0.8727	0.8908	0.0181
AQCR 21	0.8917	0.9192	0.0275
AQCR 22	0.8725	0.9005	0.0280

On average for the AQCRs, the worst-case impacts are expected to increase the RRFs by 0.0170 to 0.0280. In no case is the average RRF increased to a value greater than one (which would indicate an increase rather than a decrease in PM₁₀ over time). Overall, RRFs are increased the most for AQCRs 21 and 22, which represent the western and southwestern portions of the State. RRFs by county are provided in Attachment E.

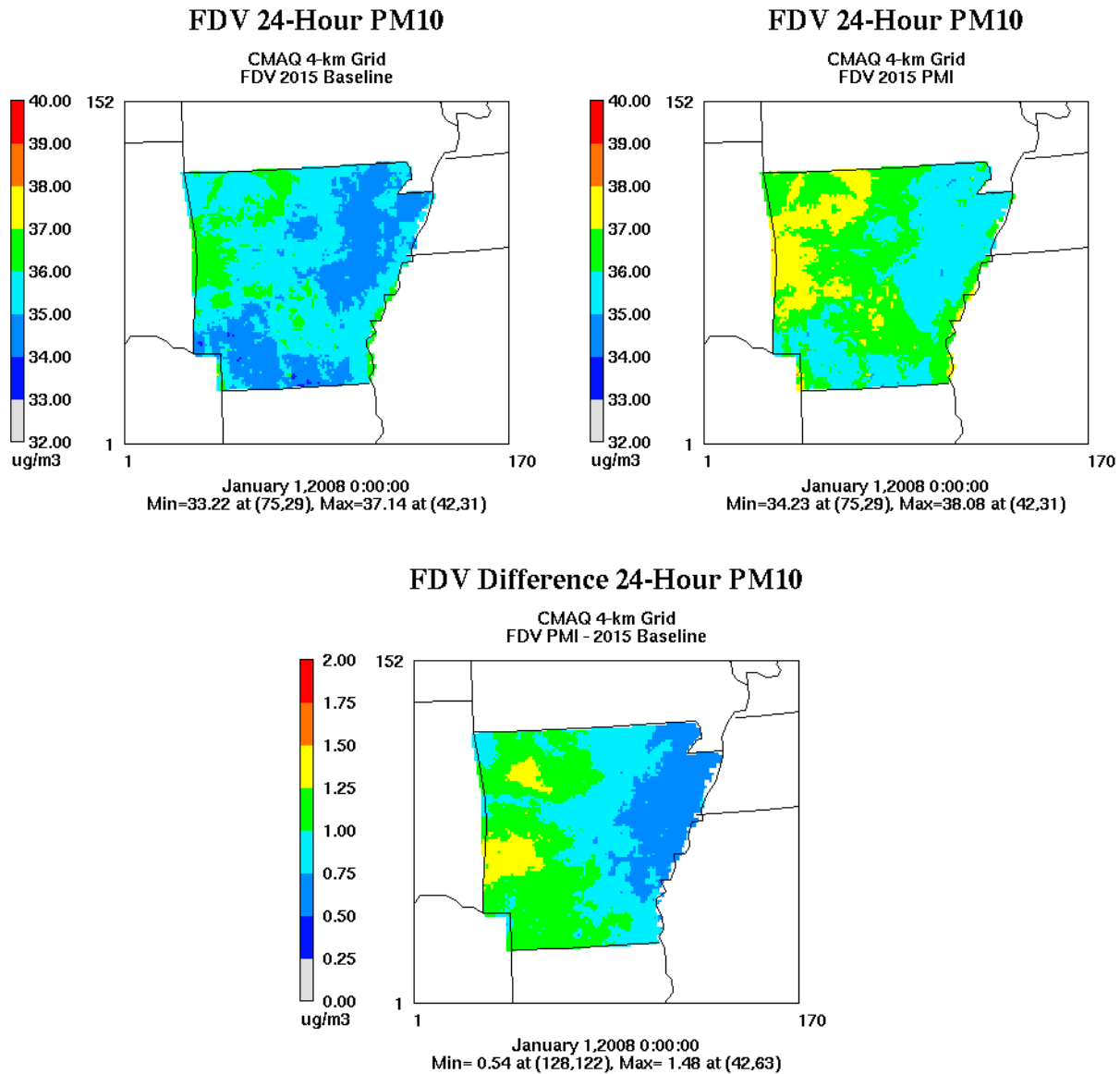
Figure 13 displays the calculated RRF values for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 11. RRFs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.



FDVs were calculated using a current-year value of 40 $\mu\text{g}/\text{m}^3$ for every grid cell. This was based the current-year design value for the Little Rock monitoring site. Figure 12 displays the estimated FDVs for the 4-km grid for the 2015 baseline and 2015 PMI scenarios and the difference between the two, calculated as PMI minus baseline.

Figure 12. FDVs and Differences Based on MATS Spatial-Fields Analysis for the 2015 Baseline and 2015 PMI Scenarios: 24-Hour PM₁₀.



The difference plots show that the addition of the worst-case impacts tends to increase the RRFs and FDVs by a greater amount for western and northwestern Arkansas compared to the rest of the State. This area may be more sensitive to the addition of PM₁₀ emissions, relative to the calculation of 24-hour PM₁₀ NAAQS-relevant metrics. Despite the increased RRFs, the FDVs are all well below 150 µg/m³ for all grid cells within Arkansas for both the 2015 baseline and 2015 PMI scenarios, and the maximum impact for any grid cell is 1.48 µg/m³.

Additional analysis of PM₁₀ was performed using the AERMOD model and is presented later in the memorandum.

Combined Near-Field/Regional Modeling

Methodology

To further examine the potential near-field impacts from new or existing sources with emissions increases less than the proposed permit thresholds, a combined AERMOD/CMAQ analysis was also conducted. The CMAQ modeling for the 2008 base year and the 2015 future year from the statewide modeling effort (ICF, 2014) was also used for this analysis.

AERMOD (version 15181) was applied for the same eight hypothetical sources used for the regional analysis, distributed throughout the AQCRs. Emissions for all species were set equal to permit thresholds (converted to emission rates in grams per second) and stack parameters were set to a median value for minor point sources in Arkansas.

Meteorological inputs for AERMOD were derived from the same gridded meteorological fields used for the CMAQ inputs. Specifically, the meteorological inputs were prepared based on Weather Research and Forecasting (WRF) meteorological inputs for the 2008 base year, using the Meteorological Model Interface (MMIF) program.

The receptor grid for each source consists of receptor cells spaced at 100 m intervals beginning 100 m from the source. This spacing continues out to 1000 m. The spacing then increases to 200 m and continues out to 2000 m from the source. The overall area covered by the receptor grid is 4000 x 4000 m (4 x 4 km), which is the size of one CMAQ grid cell.

For each source location, digital topographical data (in the form of 7.5 minute Digital Elevation Model (DEM) files) for the analysis region were obtained from the U.S. Geological Survey (USGS) and processed for use in AERMOD using the AERMAP preprocessor program.

AERMOD was applied for one year for each of NO_x, SO₂, CO and PM₁₀. For NO₂, the Ozone Limiting Method (OLM) module was used. Hourly ozone values were extracted from the CMAQ regional-scale modeling results and were used by AERMOD to approximate the rate of conversion of nitrogen oxide (NO) to NO₂. In addition, an ambient NO₂/NO_x ratio of 90 percent and an in-stack NO₂/NO_x ratio of 50 percent by mass was used. These values are consistent with EPA guidance. The maximum AERMOD-derived impacts on daily maximum 1-hour NO₂, annual average NO₂, daily maximum 1-hour SO₂, daily maximum 1-hour CO, daily maximum 8-hour average CO, and 24-hour average PM₁₀ were calculated for each AQCR.

For each source location, daily AERMOD-derived concentrations (for the receptor with the maximum annual average value) were added to the CMAQ-derived concentrations for that same location. In this manner, the CMAQ values were used as “background”. The statewide daily maximum impact (maximum over all locations/AQCRs) and statewide average impacts (average over all locations/AQCRs) were obtained and used for the remaining steps of this analysis. The resultant values are expected to represent the near-field future-year concentrations assuming worst-case impacts from threshold emission increases at a range of locations throughout the State.

The daily maximum AERMOD-derived impacts were added to the simulated CMAQ-derived concentrations for each day and grid cell for the “future-year” (2015) simulation. The resultant values are expected to represent the future-year concentrations assuming worst-case impacts from threshold emission increases at any location within the modeling grid.

The adjusted (CMAQ + AERMOD) modeling results were used in conjunction with the 2008 current-year modeling results (again from the statewide modeling analysis) to calculate relative reduction factors (RRFs) and estimated future-year design values (FDVs) (for 2015) for monitored locations. These results were compared with the prior 2015 results (from the original statewide modeling analysis), the regional-scale (PMI) modeling results, and the NAAQS to examine whether emission increases less than the referenced thresholds could cause or contribute to a violation of the NAAQS or potentially interfere with the maintenance of the NAAQS. For this analysis the RRFs were calculated by hand, using the MATS methodology.

As for the regional-scale analysis, the current-year design value for each pollutant and monitoring site within Arkansas was calculated based on data for 2006 through 2010, in accordance with the form of the standard for that pollutant. Tabular summaries of the RRFs and FDVs were prepared and are presented in the results section.

Results

MAXIMUM AERMOD-DERIVED IMPACTS

Tables 12 and 13 provide the AERMOD-derived impacts for each species and relevant NAAQS metric. Table 12 lists the AERMOD-derived impact without background and Table 13 includes the estimated (CMAQ-derived) background concentration. All metrics were calculated in accordance with the form of the standard for each species. For example the 1-hour NO₂ concentration is based on the 98th percentile (or eight highest) value for each modeled location. The maximum and average of these over all locations is presented in the table. Day-specific background values were obtained from the CMAQ results and paired in space and time with the AERMOD concentrations.

Table 12. Maximum and Average AERMOD-Derived Concentrations: No Background.

Species/ Metric	AERMOD (Max Over All Locations)	AERMOD (Average Over All Locations)	NAAQS
1-Hour NO ₂ (ppb)	47.7	37.3	100
Annual NO ₂ (ppb)	6.7	3.6	53
1-Hour SO ₂ (ppb)	42.5	34.7	75
1-Hour CO (ppb)	241	202	35,000
24-Hour PM ₁₀ (µg/m ³)	31.1	22.3	150

Table 13. Maximum and Average AERMOD-Derived Concentrations: With CMAQ-Derived Background.

Species/ Metric	AERMOD + Background (Max Over All Locations)	AERMOD + Background (Average Over All Locations)	NAAQS
1-Hour NO ₂ (ppb)	67.8	53.6	100
Annual NO ₂ (ppb)	12.8	8.4	53
1-Hour SO ₂ (ppb)	45.1	37.8	75
1-Hour CO (ppb)	972	562	35,000
24-Hour PM ₁₀ (µg/m ³)	47.6	39.0	150

For all species and metrics the resultant AERMOD plus background concentrations are much less than the NAAQS. This indicates that for the range of locations modeled, worst-case near-field (or local) impacts would not result in an exceedance of the NAAQS for any species.

SITE-SPECIFIC RRFs AND FDVs WITH AERMOD-DERIVED IMPACTS

The daily maximum AERMOD-derived impacts were then added to the simulated CMAQ-derived concentrations for each day and used in conjunction with the 2008 current-year modeling results to calculate RRFs and FDVs (for 2015) for monitored locations. The results are presented in Tables 14 through 17 for 1-hour NO₂, 1-hour SO₂, 1-hour CO, and 24-hour PM₁₀. Annual NO₂ and 8-hour CO were not included since the results for 1-hour are expected to be larger than for other averaging periods. Note that the RRFs calculated to reflect the AERMOD-derived impacts (AERMOD plus background) are larger (in some cases much larger) than those calculated using the CMAQ-derived impacts (2015 PMI scenarios, as presented earlier in this memorandum). This is consistent with the interpretation that AERMOD is able to represent the local impacts that may not be captured by CMAQ, especially for primary pollutants.

Table 14. RRFs and Estimated Future-Year 1-Hour NO₂ Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	43.7	0.6846	29.9	0.8281	36.2	6.3
Marion	Crittenden	48.3	0.7986	38.6	0.9764	47.2	8.6

Note: The NAAQS for 1-hour average NO₂ concentration is 100 ppb.

Table 15. RRFs and Estimated Future-Year 1-Hour SO₂ Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	12.3	0.7560	9.4	1.6986	20.0	11.6
El Dorado	Union	26.0	0.8918	23.2	1.5221	39.6	16.4

Note: The NAAQS for 1-hour average SO₂ concentration is 75 ppb.

Table 16. RRFs and Estimated Future-Year 1-Hour CO Design Values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 1-Hr CO Design Values (ppb)	2015 Baseline		AERMOD + Background		Difference in FDV (ppb)
			RRF	FDV (ppb)	RRF	FDV (ppb)	
North Little Rock (Pike Ave)	Pulaski	3200	0.5781	1850	0.6022	1927	77

Note: The NAAQS for 1-hour CO concentration is 35,000 ppb.

Table 17. RRFs and Estimated Future-Year 24-Hour PM₁₀ Design Values (µg/m³) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts.

Site/Location	County	Current-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline		AERMOD + Background		Difference in FDV (µg/m ³)
			RRF	FDV (µg/m ³)	RRF	FDV (µg/m ³)	
North Little Rock (Pike Ave)	Pulaski	41.0	0.8434	34.6	0.8992	36.9	2.3

Note: The NAAQS for 24-hour PM₁₀ concentration is 150 µg/m³.

Even with the higher RRFs, the FDVs for all species are less than the NAAQS values. This indicates that for the range of locations modeled, worst-case local impacts would not result in an exceedance of the NAAQS for any species at the monitoring sites. For all species, with the exception of SO₂ the FDVs are lower than the current year values for both the baseline and local impact scenarios.

Key Findings/Conclusions

This analysis utilized two air quality modeling systems (both separately and in combination) as well as a variety of postprocessing and analysis techniques to examine the potential impacts from new minor point sources with emissions increases less than proposed permit thresholds for Arkansas. The emissions were set to the threshold level for all pollutants and the maximum impacts were used in the analysis results and for comparison with the NAAQS for each pollutant. The potential worst-case impacts were applied to every part of the state – including every grid cell based on the 4-km resolution CMAQ modeling domain, all air quality monitoring sites, and specific near-source locations. A variety of modeling and postprocessing techniques was applied in order to ensure the appropriate treatment of primary and secondary pollutants and the resolution of both regional and near-field (or local) impacts. The effects of topography and meteorology on air quality were accounted for in determining the maximum or worst-case impacts.

The regional-scale modeling and impact assessment methodology was designed to examine worst-case impacts from threshold emission increases at each location within the modeling grid. The results indicate:

- Addition of the modeled worst-case impacts (based on 40 tpy of both VOC and NO_x emissions) to the 2015 baseline does not affect attainment or maintenance of the ozone NAAQS for any monitoring site. The worst-case impacts result in estimated 2015 FDVs that are 0.2 to 0.4 ppb higher than the 2015 baseline values. The estimated future-year design values for all sites are below the NAAQS.
- Difference plots show that the addition of the worst-case impacts tends to increase the calculated RRFs and FDVs for ozone by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of ozone-related (VOC or NO_x) emissions, relative to the calculation of 8-hour ozone NAAQS-relevant metrics.
- Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 24-hour or annual PM_{2.5} NAAQS for any monitoring site. The worst-case impacts result in estimated 2015 FDVs for 24-hour PM_{2.5} that are 0.2 to 0.6 µg/m³ higher than the 2015 baseline values and estimated 2015 FDVs for annual average PM_{2.5} that are 0.2 to 0.4 µg/m³ higher than the 2015 baseline values. The estimated future-year design values for all sites and both metrics are below the NAAQS.
- Difference plots show that the addition of the worst-case impacts tends to increase the calculated RRFs and FDVs for PM_{2.5} by a greater amount for some areas in central and southwestern Arkansas compared to the rest of the State. Thus these areas may be more sensitive to the addition of PM-related (VOC, NO_x, SO₂, and primary PM_{2.5}) emissions, relative to the calculation of PM_{2.5} NAAQS-relevant metrics.

- Addition of the modeled worst-case impacts to the 2015 baseline does not affect attainment or maintenance of the 1-hour NO₂, 1-hour SO₂ or 24-hour PM₁₀ NAAQS for any monitoring site (although the number of monitors for these pollutants is very limited).
- Difference plots show that the addition of the worst-case impacts tends to preferentially increase the calculated RRFs and FDVs in northwestern, western and southwestern Arkansas for NO₂, in northwestern Arkansas for SO₂, and in western and northwestern Arkansas for PM₁₀.

The combined near-field/regional-scale modeling and impact assessment was designed to examine worst-case impacts from threshold emission increases for each AQCR and the maximum impacts were applied for each selected source and each monitoring site location. The results indicate:

- For all species and metrics the resultant AERMOD plus background concentrations are much less than the NAAQS. This indicates that for the range of locations modeled, worst-case near-field (or local) impacts would not result in an exceedance of the NAAQS for any species.
- When applied to the monitoring sites, the modeled, worst-case local impacts increase the FDVs but the resultant values for all species are all less than the NAAQS values.
- For all species, with the exception of SO₂, the FDVs are lower than the current year values for both the baseline and local impact scenarios.

The analysis is based on one source per location (for modeling purposes this was assumed to be one grid cell). Since the modeled impacts occur within or nearby to the source location, cumulative effects from sources in multiple grid cells are expected to be small. Cumulative effects from multiple sources at any given location (or within approximately one grid cell) with emissions totals that sum to greater than the threshold levels should be examined on a case-by-case basis.

References

- EPA. 2014. "Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze." U.S. EPA Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina (December 2014, Draft).
- ICF. 2014. "Criteria Pollutant Modeling Analysis for Arkansas." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (14-003).

Appendix E

Air Quality Review of PM_{2.5} Emissions from
Stationary Sources in Arkansas

Air Quality Review of PM_{2.5} Emissions from Stationary Sources in Arkansas

Background

The Arkansas Department of Environmental Quality (“the Department”) is charged with the duty to issue permits, through both federally-delegated and State programs, that help maintain and improve the air quality for all citizens in the State. Part of this duty is to ensure that construction of new stationary sources or modification of existing stationary sources, including construction or modification authorized via minor new source review (minor NSR) permitting actions, do not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) or interfere with the maintenance of the NAAQS. This report focuses on a review of the science behind particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}) and the resulting implications for NAAQS evaluations for minor NSR permitting.

On July 18, 1997, the United States Environmental Protection Agency (EPA) issued NAAQS for PM_{2.5}. The NAAQS for PM_{2.5} were revised in 2006 and 2012. The current and historical PM_{2.5} NAAQS are listed in Table 1. Historically, EPA policy allowed permit applicants to rely on particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀) as a surrogate for demonstrating compliance with the PM_{2.5} NAAQS. On May 10, 2011, EPA issued a final rule which eliminated this surrogate approach (76 FR 28646). As a result of this surrogacy policy, the Department does not have extensive experience modeling for the PM_{2.5} NAAQS for minor NSR permitting actions; therefore, the Department has undertaken an analysis of the chemical nature of PM_{2.5}, emissions trends, and monitoring trends to evaluate the utility of dispersion modeling for minor NSR permitting actions.

Table 1. Current and Historical PM_{2.5} NAAQS

Final Rule	Primary/Secondary	Averaging Time	Level*	Form
1997 65 FR 38652	Primary and Secondary	24-hour	65 µg/m ³	98 th percentile, averaged over 3 years
		Annual	15 µg/m ³	Annual arithmetic mean, averaged over 3 years
2006 71 FR 61144	Primary and Secondary	24-hour	35 µg/m ³	98 th percentile, averaged over 3 years
		Annual	15 µg/m ³	Annual arithmetic mean, averaged over 3 years
2012 78 FR 3086	Primary	Annual	12 µg/m ³	Annual arithmetic mean, averaged over 3 years
	Secondary	Annual	15 µg/m ³	Annual arithmetic mean, averaged over 3 years
	Primary and Secondary	24-hour	35 µg/m ³	98 th percentile, averaged over 3 years

*Micrograms per cubic meter.

The Department has examined the science behind PM_{2.5} to determine what NAAQS evaluation methods should be required for minor NSR permitting actions. Additionally, the Department has examined historical trends in emissions of PM_{2.5} and two of its major precursors—nitrogen oxides (NO_x) and sulfur dioxide (SO₂). Trends in ambient monitor data and speciation data have also been examined. Based on this evaluation, the Department has determined that dispersion modeling of direct PM_{2.5} emissions is not necessary for minor NSR permitting actions.

The Science behind PM_{2.5}¹²

Particulate matter is a mixture of solid particles and liquid droplets with different sizes, compositions, and properties. Some particles are directly emitted from a source (direct PM, primary PM), while others are formed by chemical reactions of gaseous precursor compounds, such as NO_x and SO₂, in the atmosphere (secondary PM). Particulate matter can be divided into size fractions, based on its aerodynamic diameter, which differs in formation mechanisms, sources, health effects, and persistence in the atmosphere.

PM_{2.5} in the atmosphere is primarily produced by combustion or chemical reactions of precursor compounds. Common sources of direct PM_{2.5} include diesel engines, combustion sources, and smelters. Because secondary PM_{2.5} is formed from complex reactions of precursor compounds, relating ambient concentrations of secondary PM to sources of precursor emissions is difficult. PM_{2.5} composition varies widely depending upon the source of the direct and secondary PM. PM_{2.5} may be composed of sulfate, nitrate, ammonium, and/or hydrogen ions. PM_{2.5} may also be composed of elemental carbon, metal compounds, organic compounds, or particle-bound water. Table 2 provides a list of particulate species and their major sources.

Table 2. Major Sources of PM_{2.5} Species³

Species	Direct PM _{2.5} sources		Secondary PM _{2.5} sources	
	Natural	Anthropogenic	Natural	Anthropogenic
Sulfate (SO ₄)	Sea Spray	Fossil Fuel Combustion	Oceans Wetlands Volcanoes Forest Fires	Fossil Fuel Combustion
Nitrate (NO ₃)			Soils Forest Fires Lightning	Fossil Fuel Combustion Motor Vehicles Exhaust

¹ USEPA. “Air Quality Criteria for Particulate Matter” (October 2004) Volume I Chapter 2, 3. <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=87903#Download>

² USEPA memorandum: Guidance for PM_{2.5} Permit Modeling, (May 20, 2014) http://www3.epa.gov/scram001/guidance/guide/Guidance_for_PM25_Permit_Modeling.pdf

³ USEPA. “Air Quality Criteria for Particulate Matter” (October 2004) Volume I Chapter 2, 3. <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=87903#Download>. Table 3-8.

Species	Direct PM _{2.5} sources		Secondary PM _{2.5} sources	
	Natural	Anthropogenic	Natural	Anthropogenic
Minerals	Erosion Entrainment	Paved and Unpaved Roads Agriculture Forestry Construction Demolition		
Ammonium (NH ₄)			Animals Soil	Animal Husbandry Sewage Fertilized Land
Organic Carbon	Wildfires	Prescribed Burning Wood Burning Motor Vehicle Exhaust Cooking	Vegetation Wildfires	Motor Vehicle Emissions Prescribed Burning Wood Burning
Elemental Carbon	Wildfires	Motor Vehicle Exhaust Wood Burning Cooking		
Metals	Volcanoes	Fossil Fuel Combustion Smelting Brake Wear		
Bioaerosols	Viruses Bacteria			

Due to the nature of PM_{2.5}, modeling for minor NSR permitting NAAQS evaluations is not as straightforward as modeling for other NAAQS, such as SO₂, NO₂, lead, etc. Depending on the chemical composition and atmospheric and meteorological conditions, PM_{2.5} may remain in the atmosphere for days to weeks and travel thousands of kilometers. PM_{2.5} may be removed from the atmosphere by precipitation or dry deposition. The AERMOD air dispersion model may be used to model directly-emitted particulate matter, but cannot account for chemical reactions that occur in the atmosphere and produce PM_{2.5} from precursor pollutants such as NO_x and SO₂. Due to the potentially important contribution from secondary formation of PM_{2.5} and the more prominent role of ambient monitoring data in the cumulative analysis to represent background PM_{2.5} concentrations including secondary formation from precursors from nearby sources, certain aspects of standard modeling practices used for PM₁₀ and other criteria pollutants may not be appropriate for PM_{2.5}. The provisions of 40 Code of Federal Regulations Part 51 Appendix W Section 10.2.2 acknowledge that there are circumstances where there is no applicable model for a particular NAAQS compliance demonstration and that data from an array of ambient monitors surrounding the facility to be permitted could be used in lieu of modeling if appropriately justified.

PM_{2.5}, SO₂, and NO_x Emission Trends

Every three years, the EPA publishes a national emissions inventory (NEI) which quantifies the annual emissions of various pollutants from each data category, sector, or source classification code. An examination of trends across NEI years can provide an understanding of which types of sources are contributing to a primary pollutant and whether the level of emissions changes over time. One limitation to comparison of emissions across NEI years is that the methodology used to estimate

emissions for certain sectors has changed over time. The paragraphs below discuss trends in emissions of direct PM_{2.5} as well as two major PM_{2.5} precursors, NO_x and SO₂, in Arkansas based on the 2002, 2005, 2008, and 2011 (most recent) NEI.

According to NEI data, emissions of primary PM_{2.5} have increased in Arkansas between 2002 and 2011. This increase is largely due to increased estimations of emissions from prescribed and wild fires. The contribution of industrial processes, fuel combustion, solvent, and miscellaneous sources—which may be permitted depending on the level of emissions of an individual facility—have decreased over time indicating that stationary sources are not the driver for the increase in emissions of primary PM_{2.5}. Miscellaneous sources include bulk gasoline terminals, commercial cooking, gas stations, non-industrial not elsewhere classified (NEC), and waste disposal sources. A look at the relative contribution of primary PM_{2.5} from major sectors for the 2011 NEI year shows that emissions from fires constituted 51 % of the emission inventory. Industrial processes, miscellaneous sources, fuel combustion, and solvent sources contributed less than 9 % combined. Trends in primary PM_{2.5} for NEI years 2002 – 2011 are displayed in Figure 1. The relative contributions of major sectors to the primary PM_{2.5} inventory for the 2011 NEI are displayed in Figure 2.

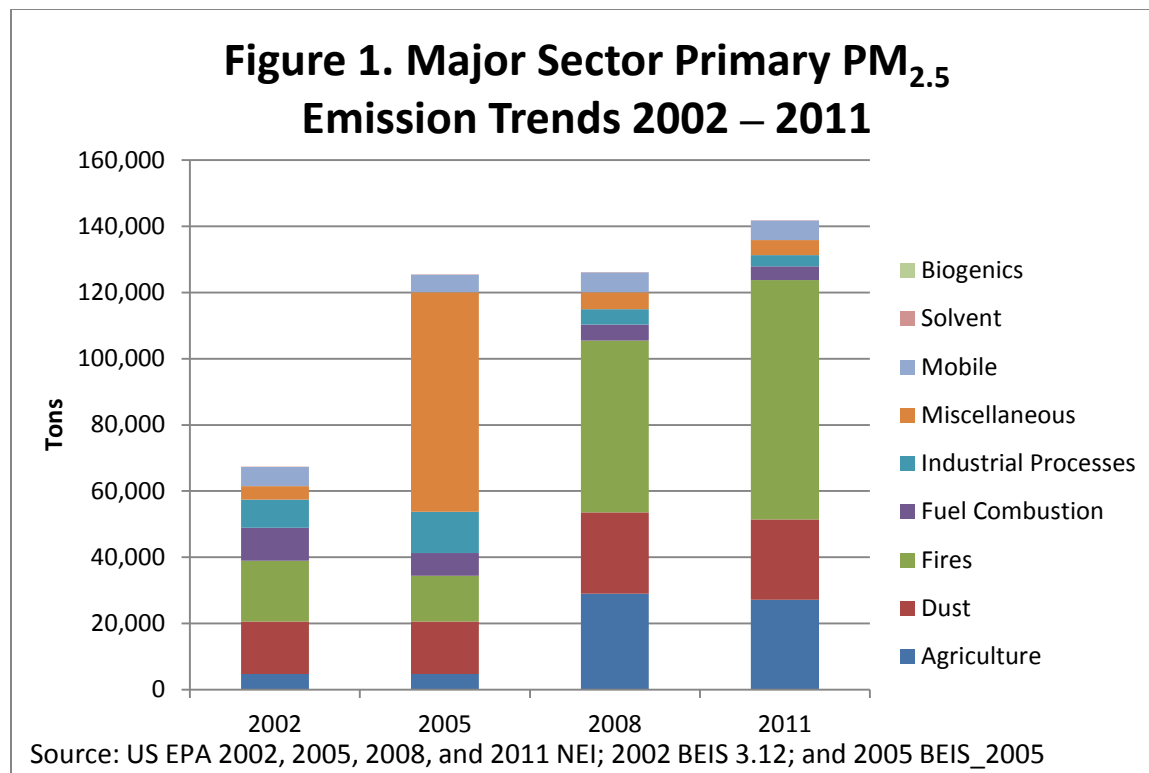
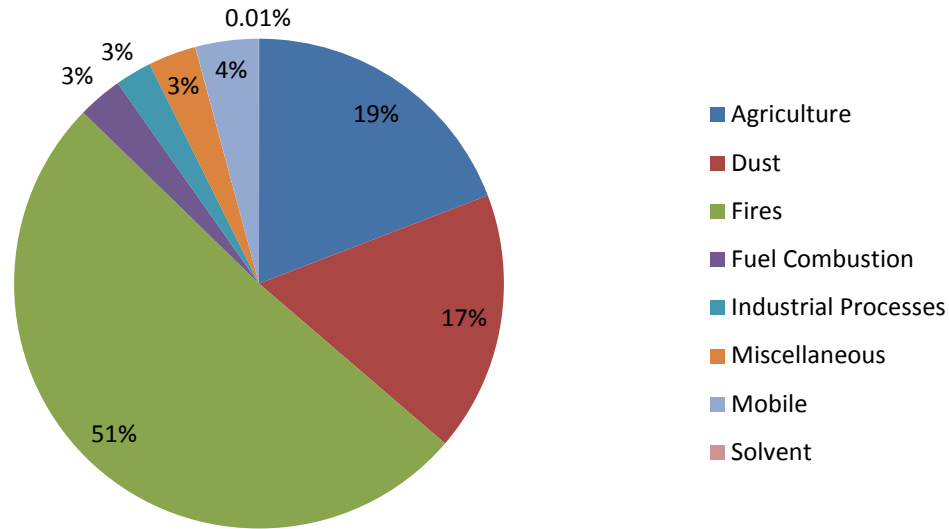


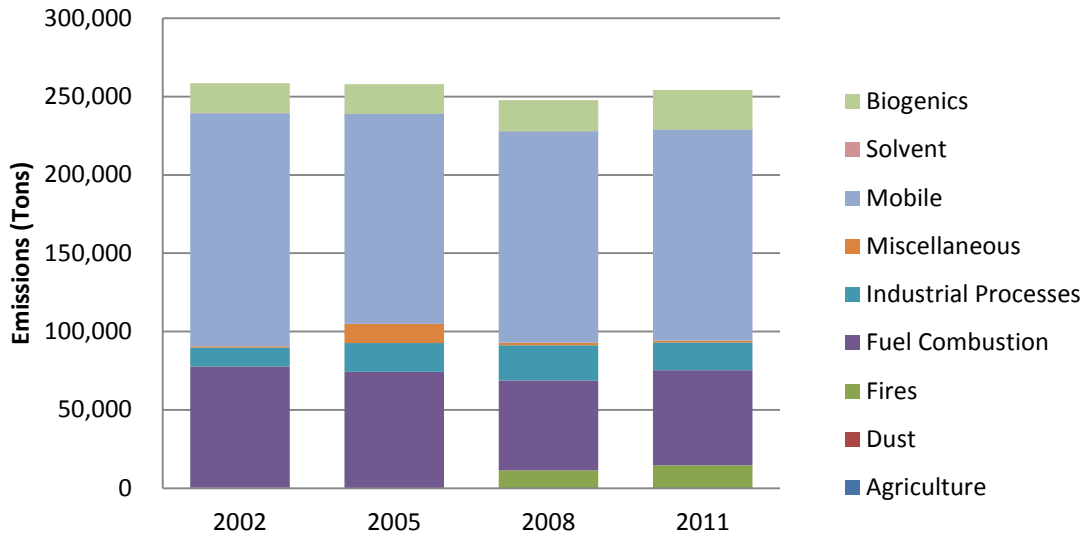
Figure 2. Major Sector 2011 Primary PM_{2.5} Emissions



Source: US EPA 2011 NEIv2

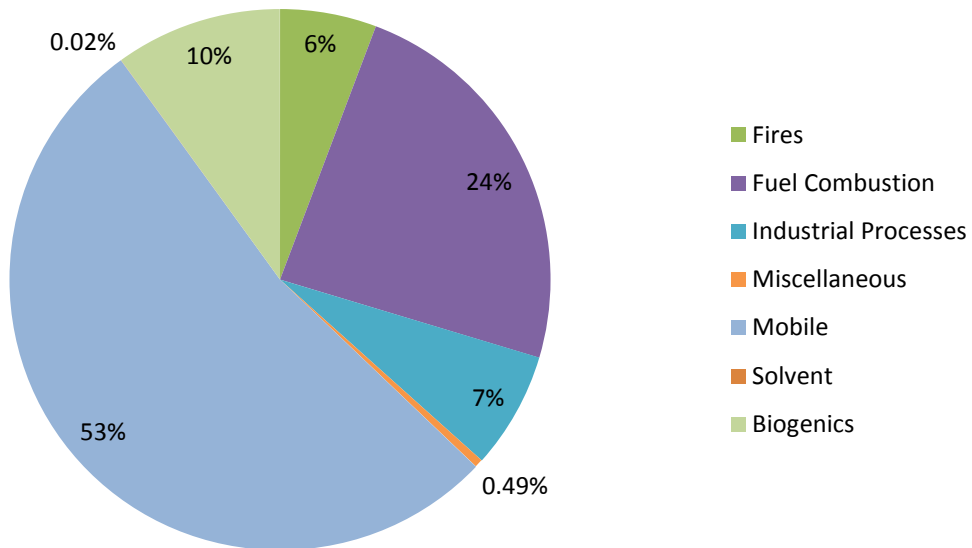
According to NEI data, emissions of NO_x, a secondary PM_{2.5} precursor have remained steady in Arkansas between 2002 and 2011. Emissions of NO_x from fuel combustion and solvents sources have decreased since 2002. Emissions of NO_x from industrial processes and miscellaneous sources have increased from 2002; however, the 2011 NEI shows that emissions from these sources have decreased since 2005 and 2008. A look at the relative contribution of NO_x from major sectors for the 2011 NEI year shows that emissions from mobile sources constituted 53 % of the emission inventory. Emissions from industrial processes, miscellaneous sources, fuel combustion, and solvent sources make up approximately 31 % of the inventory. Trends in NO_x emissions for NEI years 2002 – 2011 are displayed in Figure 3. The relative contributions of major sectors to the NO_x inventory for the 2011 NEI are displayed in Figure 4.

Figure 3. Major Sector NOx Emission Trends (2002 - 2011)



Source: US EPA 2002, 2005, 2008, and 2011 NEI; 2002 BEIS 3.12; and 2005 BEIS_2005

Figure 4. Major Sector 2011 NOx Emissions



Source: US EPA 2011 NEIv2

According to NEI data, emissions of SO₂, a secondary PM_{2.5} precursor, have decreased in Arkansas between 2002 and 2011. A look at the relative contribution of SO₂ from major sectors for the 2011 NEI year shows that emissions from fuel combustion sources constituted 86 % of the emission inventory. The next largest contributor to the SO₂ emissions inventory was fire. Emissions from industrial processes, miscellaneous sources, and solvent sources make up less than 5 % of the inventory. Trends in SO₂ emissions for NEI years 2002 – 2011 are displayed in Figure 5. The relative contributions of major sectors to the SO₂ inventory for the 2011 NEI are displayed in Figure 6.

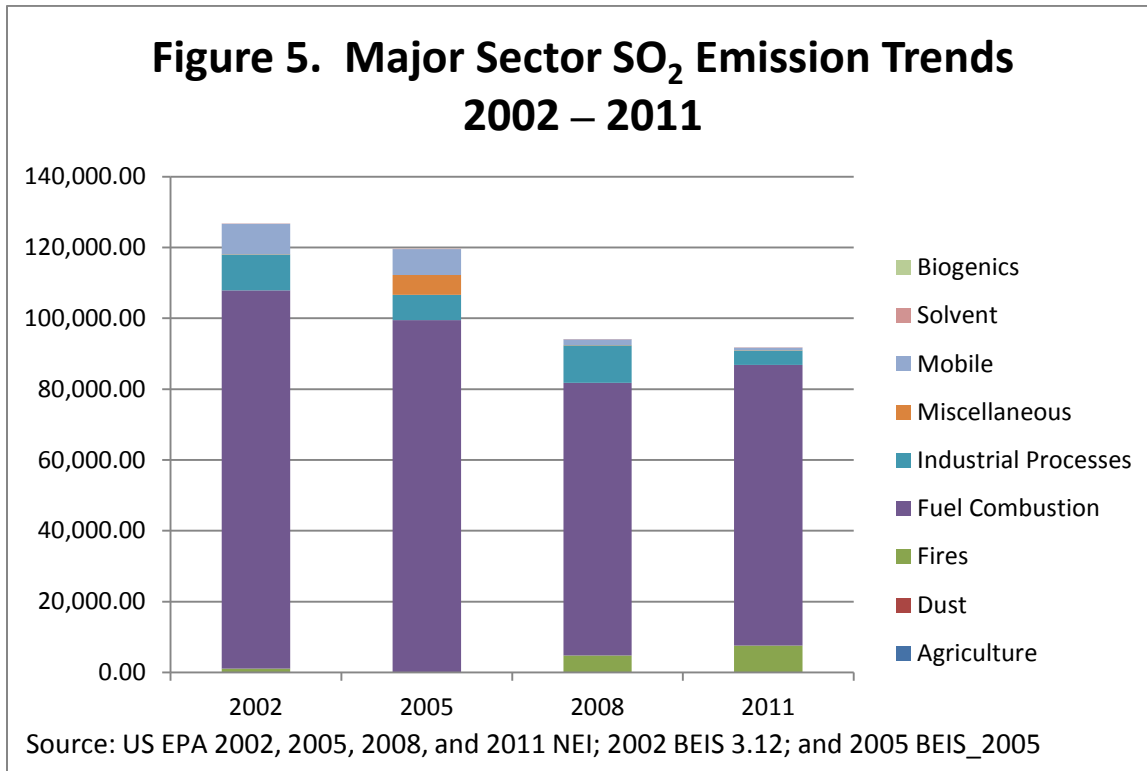
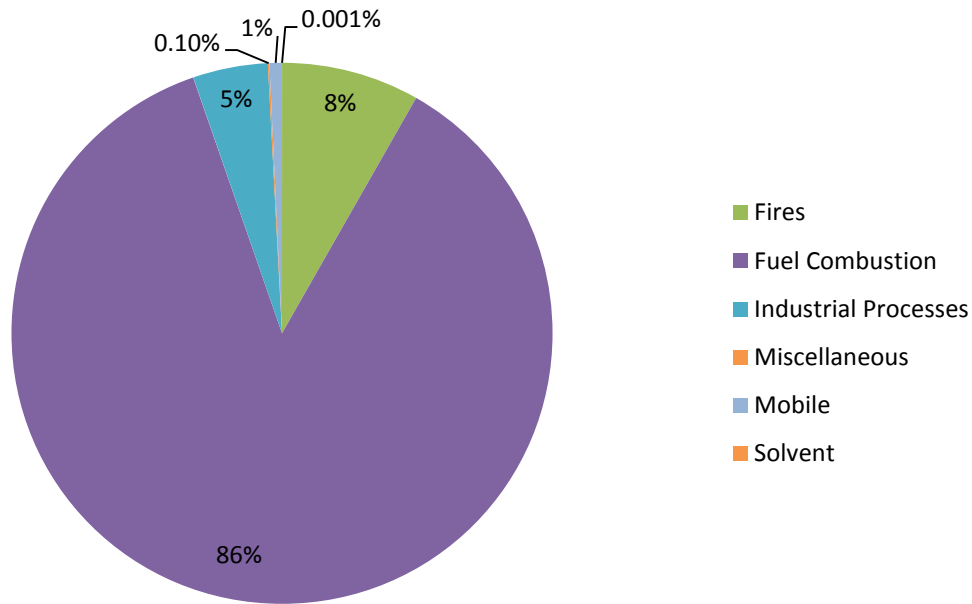


Figure 6. Major Sector 2011 SO₂ Emissions



Source: US EPA 2011 NEIv2

Although trends in direct PM_{2.5} emissions in Arkansas increased between 2002 and 2011, emissions of major precursors of secondary PM_{2.5}, NO_x, and SO₂, have remained steady or decreased, respectively. Additionally, the increase in direct PM_{2.5} is largely caused by increased estimations of emissions from fires and not due to stationary sources. Stationary sources for which the Department issues permits make up a very small fraction of the total sources which contribute to direct PM_{2.5}. Stationary sources permitted by the Department do contribute the majority of SO₂ emissions to the inventory; however, SO₂ emissions overall and emissions from major sectors likely to include permitted sources have decreased since 2002. Due to the nature of PM_{2.5} as both a primary and secondary pollutant, examination of the emission trends for direct PM_{2.5} and two of the major precursors for secondary PM_{2.5} cannot provide a full picture due to the complex chemical reactions involved in the formation of secondary PM_{2.5}.

Trends in Monitor Data

As of 2014, Arkansas operates 12 PM_{2.5} ambient air quality monitors and three PM_{2.5} speciation monitors. Trends in ambient air monitor data between 2007 and 2014 and trends in PM_{2.5} speciation between 2002 and 2014 are discussed below. Over the course of the analysis period, 17 ambient air monitors have been operated; however, design values at some monitors were not available for every year due to installation after or within two years of analyzed timeframe, retirement, or failure to meet completeness criteria for a given design value year.

Ambient Air Monitoring Network Data

The measured ambient concentrations of PM_{2.5} in Arkansas have decreased in recent years. Seventeen ambient air PM_{2.5} monitors have operated during the analyzed 2007 – 2014 timeframe; however, some monitors did not have design values for every year due to installation after or within two years of analyzed timeframe, retirement, or failure to meet completeness criteria for a given design value year. Figures 7 – 10 show trends between 2007 and 2014 in design values for the PM_{2.5} annual NAAQS and PM_{2.5} 24-hour NAAQS at Arkansas monitors. The downward trend in design values is likely due to reduced emissions of precursors of secondary PM_{2.5}, such as NO_x and SO₂. The previously discussed NEI data show emissions of direct PM_{2.5} increasing by 15,650 tons per year between 2008 and 2011—the two NEI years included within the timeframe examined for ambient monitor data. The monitor data further indicate that the quantification of direct PM_{2.5} emissions is not a good predictor of ambient air concentrations of the pollutant.

Figure 7 displays the trends in design value for the annual PM_{2.5} NAAQS for each PM_{2.5} monitor in the State. Figure 8 displays the statewide average of monitor design values for the annual PM_{2.5} NAAQS. As of 2014, no monitor in the State had a design value exceeding the annual PM_{2.5} NAAQS of 12 µg/m³. All monitors have shown a decrease in annual hour PM_{2.5} design value since 2007. The highest design value in 2014 was located in Pulaski County at the Doyle Springs Road monitor. The Doyle Springs Road monitor has shown a 0.9 µg/m³ decrease in design value with respect to the annual PM_{2.5} NAAQS since 2009. On a statewide average, the design value for the annual PM_{2.5} NAAQS has decreased by 3.1 µg/m³ between 2007 and 2014.

Figure 7. PM_{2.5} Annual NAAQS Design Value Trends (2007 – 2014)*

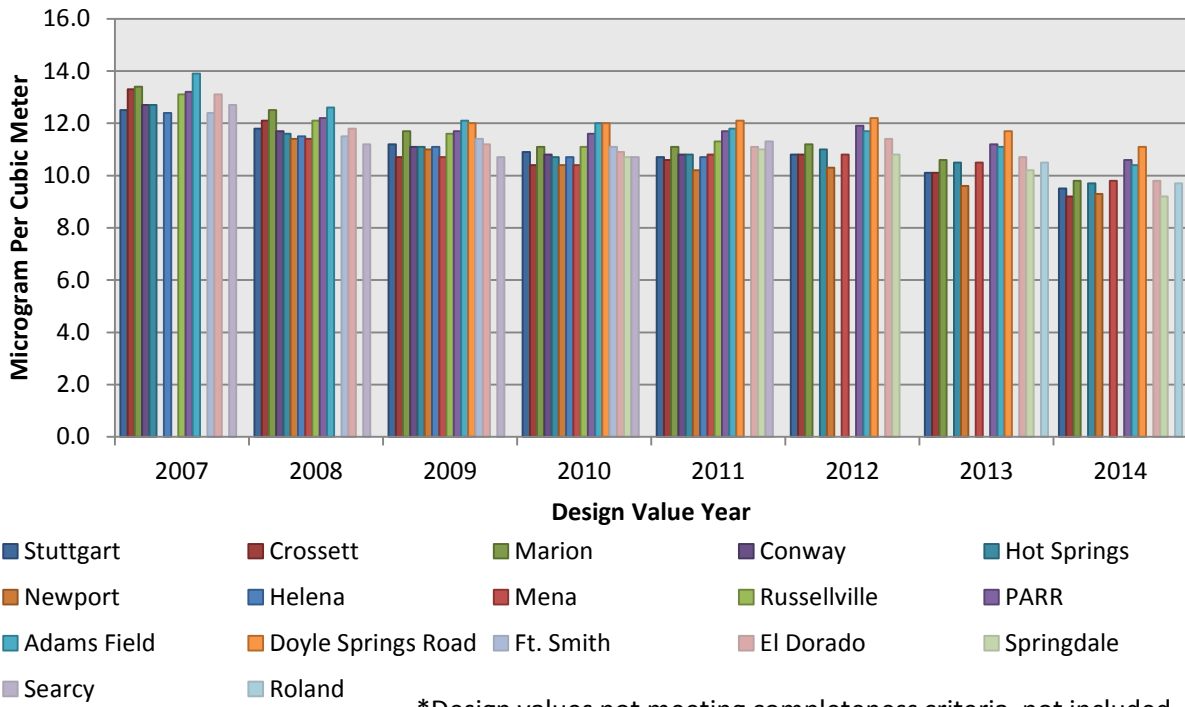


Figure 8. Statewide Average Annual PM_{2.5} NAAQS Design Value Trends (2007 – 2014)*

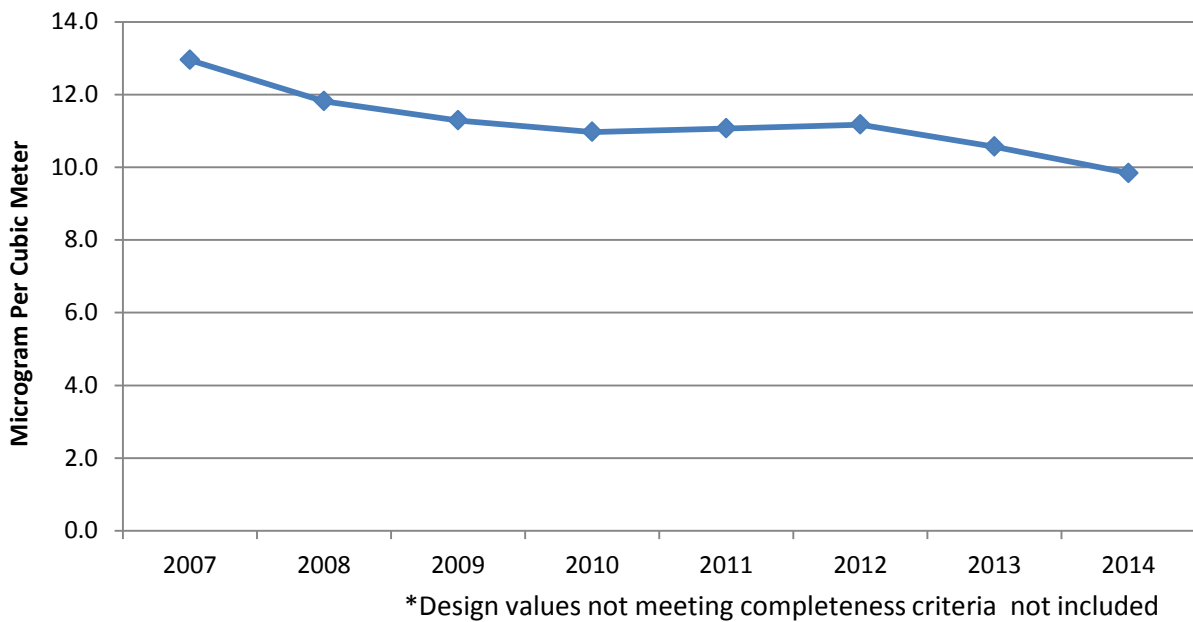


Figure 9 displays the trends in design value for the 24-hour PM_{2.5} NAAQS for each PM_{2.5} monitor in the State. Figure 10 displays the statewide average of monitor design values for the 24-hour PM_{2.5} NAAQS. As of 2014, no monitor in the State had a design value exceeding the 24-hour PM_{2.5} NAAQS of 35 µg/m³ and all design values were at least 25 % lower than the value of the NAAQS. All monitors have shown a decrease in 24-hour PM_{2.5} design value since 2007. On a statewide average, the design value for the 24-hour PM_{2.5} NAAQS has decreased by 8 µg/m³ between 2007 and 2014.

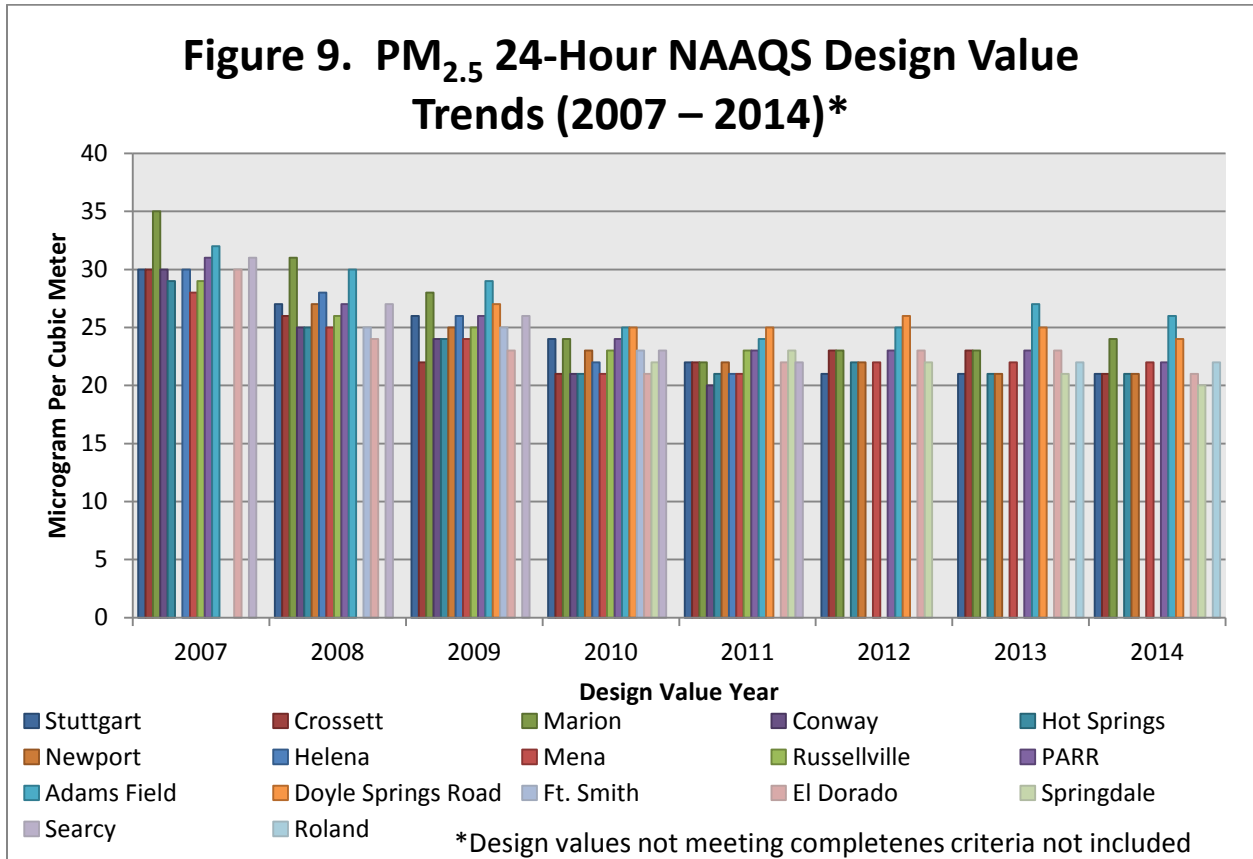
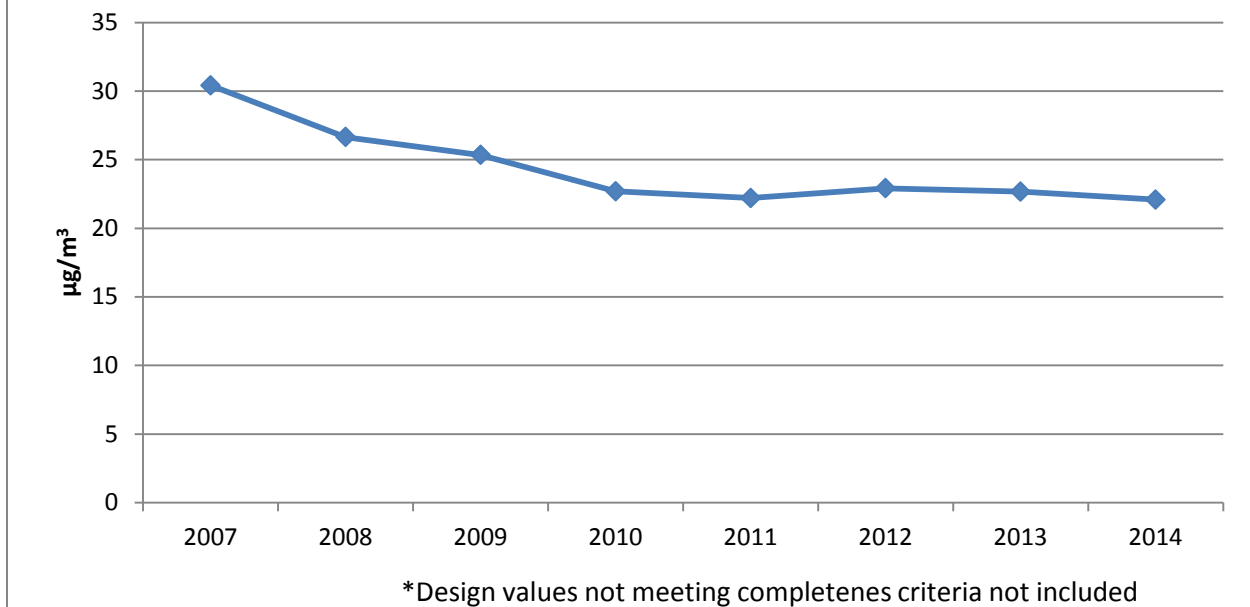


Figure 10. Statewide Average 24-Hour PM_{2.5} NAAQS Design Value Trends (2007 – 2014)*



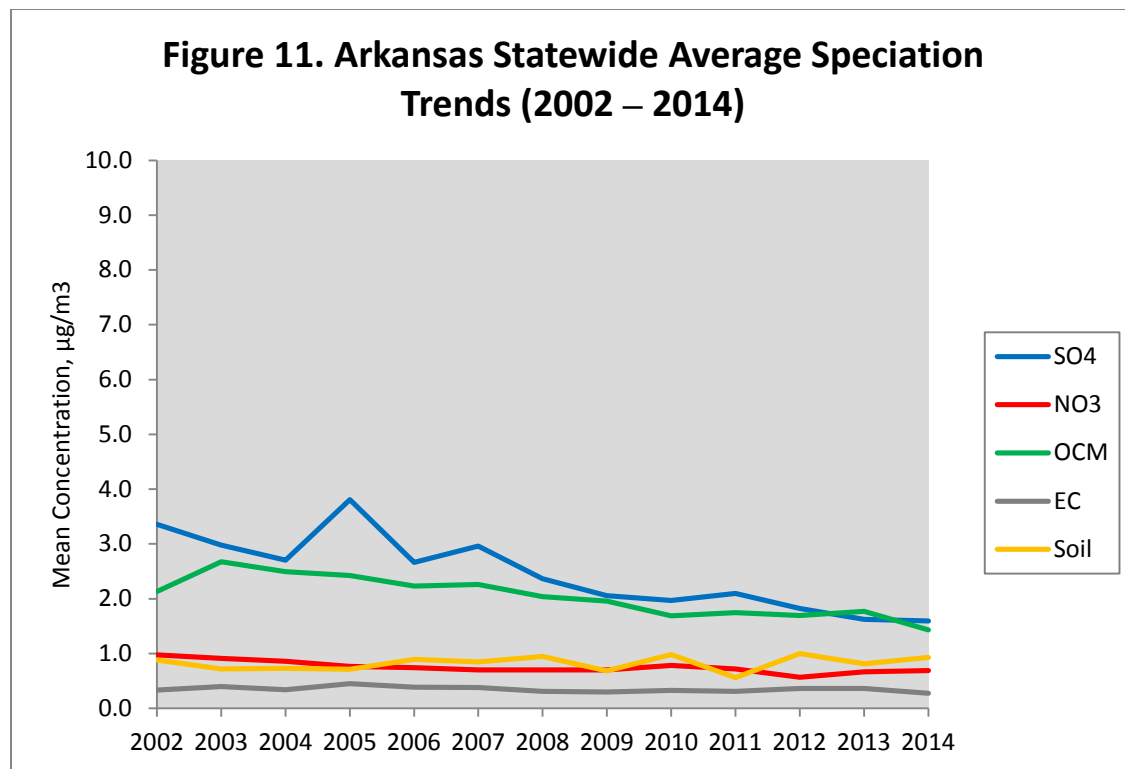
A review of the monitoring data indicates that PM_{2.5} annual and 24-hour NAAQS design values have decreased at all monitoring locations in Arkansas. On a statewide average, the annual PM_{2.5} design value has decreased by 3.1 µg/m³ and the 24-hour PM_{2.5} design value has decreased by 8 µg/m³. The downward trends in monitored design values for the PM_{2.5} annual and 24-hour NAAQS and the upward trend in overall direct PM_{2.5} emissions demonstrate that direct PM_{2.5} emissions are not an accurate predictor of PM_{2.5} concentrations in ambient air.

Speciation Data

PM_{2.5} speciation data is collected in Arkansas's two federal Class I areas, Upper Buffalo Wilderness area (Upper Buffalo monitor) and Caney Creek Wilderness area (Eagle Mountain monitor), and in North Little Rock (PARR monitor). Trends in species concentration for sulfates (SO₄), nitrates (NO₃), organic carbon material (OCM), elemental carbon (EC), and soil are discussed below. Speciated data for soil was not available for PARR.

Figure 11 demonstrates the average statewide trends in PM_{2.5} species concentrations at Arkansas speciation monitors between 2002 and 2014. The SO₄ PM_{2.5} species peaked during 2005 but has generally shown a decrease in concentration between 2002 and 2014. NO₃ PM_{2.5} species have also decreased during the 2002 – 2014 timeframe. SO₄ and NO₃ PM_{2.5} species are formed secondarily through chemical reactions in the atmosphere. The decreasing trend in SO₄ and NO₃ PM_{2.5} species observed on average in the State occurs as NEI data for Arkansas also show a decreasing trend in SO₂ and NO_x emissions. A downward trend was also observed for the OCM species, which is also primarily

formed secondarily through chemical reactions. EC, which is a primary species constituent of direct PM_{2.5}, has remained fairly steady, showing only a slight decrease between 2002 and 2014.



Conclusion

Based on this analysis, the Department has determined that traditional dispersion modeling for direct PM_{2.5} is not an appropriate method to determine compliance with the PM_{2.5} NAAQS for minor NSR permit applications. A comparison of the emission trends for PM_{2.5} and its precursors and the ambient air and speciated PM_{2.5} monitoring trends demonstrates that direct emissions of PM_{2.5}, including emission from stationary sources, have little influence on ambient PM_{2.5} concentrations. Decreasing trends in PM_{2.5} concentrations and in SO₄ and NO₃ PM_{2.5} species in Arkansas appear to relate more to the decreasing trends in NO_x and SO₂ emissions in the State and not to the upward trend in direct PM_{2.5} emissions. Furthermore, the increase in direct PM_{2.5} emissions can be attributed to increased estimates of emissions from fires. The solvent, miscellaneous, fuel combustion, and industrial processes from major sectors, which include stationary sources that may or may not be permitted depending on level of emissions for an individual facility, make up less than 9 % of the total emissions inventory based on the 2011 NEI data. The Department concludes that direct emissions of PM_{2.5} from a single stationary source will not interfere with attainment or maintenance of the annual or 24-hour PM_{2.5} NAAQS. Arkansas will continue to regulate NO_x and SO₂ emissions and will follow EPA guidance on assessing the impact of direct and secondary PM_{2.5} under the Prevention of Significant Deterioration permit program.

Appendix F

Developing the NAAQS SIP: A Look at Minor NSR
Permitting White Paper and Stakeholder
Feedback

Developing the NAAQS SIP: A Look at Minor Stationary Source Permitting

Purpose

The Arkansas Department of Environmental Quality (“the Department”) is charged with the duty to issue permits, through both federally-delegated and State programs, that help maintain and improve the air quality for all citizens in the State. Part of this duty is to ensure that construction of new stationary sources or modification of existing stationary sources, including construction or modification authorized via Minor new source review (NSR) permitting actions, do not cause or contribute to an exceedance of the national ambient air quality standards (NAAQS) or interfere with the maintenance of the NAAQS. To address the requisite level of analysis required for Minor NSR permitting actions, the Department has been engaged in a series of robust meetings with stakeholders to develop an approach which will adequately ensure that the NAAQS are protected and which complies with State statutes and federal requirements. The ultimate goal is to decide upon a policy, to be included in the NAAQS SIP, which will detail both the steps a permittee must undertake to reasonably satisfy the Department that the construction or modification will not interfere with attainment or maintenance of the NAAQS in the Minor NSR permitting process and the roles and obligations of the Department in implementing that process. The purpose of this document is not to propose a particular selection of approaches and measures, but rather to encapsulate and discuss the approaches and measures which have been identified through the stakeholder process, to solicit comment on the advantages or deficiencies of each approach and/or combination of approaches to ensure that minor source construction or modification activities do not cause or contribute to an exceedance or interfere with the maintenance of the NAAQS, and to solicit comment on any other alternative approaches not discussed in this document, as well as their advantages and deficiencies.

NAAQS Protection Levels

The Department examines protection of the NAAQS at two levels:

1) Attainment

Attainment is determined based on time-weighted average concentrations measured at monitors in the Arkansas Ambient Air Quality Monitoring Network (AAAQM Network). A map of the AAAQM Network can be found in Appendix A: Arkansas Ambient Air Monitoring Network.

2) Local Ambient Air Quality/Near-Field Receptors

The Department must ensure that people in all areas of the State, not just those locations with monitors, are protected from exposure to pollutant concentrations exceeding the NAAQS.

Identified Potential Measures and Approaches

The Department is soliciting comments on what combination of measures and approaches could be implemented to create a strategy which adequately addresses the Minor NSR permitting aspect of protecting the NAAQS. Listed below are possible measures and approaches which have been identified through the stakeholder process. The Department reiterates that, at this time, it is not proposing a particular selection of measures and approaches; however, the Department solicits comment on the advantages or deficiencies of each approach and/or combination of approaches to ensure that new minor source permit activities do not cause or contribute to an exceedance or interfere with the maintenance of the NAAQS. The Department also solicits comment on other alternative approaches not listed below, as well as their advantages or deficiencies.

Enhanced Planning Measures and Approaches

1) Regional Modeling of Current Emissions and Projected Growth

The Department contracted regional scale modeling to evaluate future areas of concern for criteria pollutants throughout the State and examine expected changes in these pollutants between the base years (2005 and 2008) and a future year (2015). This modeling was conducted at a 4 km grid resolution and can be used for regional planning efforts to evaluate air quality in unmonitored areas and identify areas that may require additional monitoring. The Department is considering updating this modeling to evaluate future growth.

2) Identification of Sensitive Areas Using Regional Modeling

This approach would identify sensitive areas where increased emissions might result in future-year design values close to or exceeding the NAAQS.

The Department consulted its modeling contractor, ICF, to discuss the feasibility of this approach. ICF proposed tasks to use 2008 and 2015 regional scale modeling results for Arkansas to determine if concentrations of criteria pollutants are increasing and perform an emissions sensitivity analysis to determine whether increasing anthropogenic emissions in an Air Quality Control Region (AQCR) by 10% would result in future-year design values close to or greater than the NAAQS. This modeling effort could identify sensitive areas where a more robust NAAQS analysis, which may include dispersion modeling or monitoring, may be required. The emissions sensitivity analysis would be conducted at a 12 km grid resolution and therefore may not provide sufficient resolution to ensure against exceedances of the NAAQS at near-field receptors

3) Monitoring Network Review

Every year, the Department submits an Annual Network Review to notify EPA of any changes to the AAAQM Network. Every five years, the Department conducts a more extensive review to evaluate the AAAQM Network. The monitors in the AAAQM Network are used to determine attainment status.

4) Emissions Inventory Improvements

Currently, the Department collects emissions inventory data from larger point sources. Type A facilities; which are those facilities permitted to emit 2500 tons per year (tpy) or more of SO_x, NO_x, or CO or 250 tpy or more of VOCs, PM₁₀, PM_{2.5}, or NH₃; are required to report emissions to the Department every year. Type B facilities; which include facilities permitted to emit 1000 tpy or more of CO, facilities permitted to emit 100 tpy or more of SO_x, NO_x, VOCs, PM₁₀, PM_{2.5}, or NH₃, and facilities with actual lead (Pb) emissions of 0.5 tpy or more; are required to report emissions to the Department every three years. The Department uses EPA emissions estimates for nonpoint, onroad, nonroad, and event sources (i.e. wildfires, wild land fire use, prescribed burns).

Future considerations for emissions inventory improvements may include collection of local data inputs for onroad and nonroad sources; collection of local data and emissions estimates for nonpoint and minor sources; collection, analysis, and submittal of prescribed and wildfire occurrence data to EPA for use in emissions modeling; and conducting surveys of agricultural burning practices to verify EPA inputs for emissions modeling.

5) Periodic Multi-Source Modeling for Near-Field Receptor Impacts

Under this approach, the Department would periodically perform air dispersion modeling of multiple sources within an area to examine impacts at near-field receptors. If near NAAQS concentrations or NAAQS exceedances are identified based on the multi-source modeling, the Department would re-evaluate the level of NAAQS analysis required by permit actions in that area and potentially locate a temporary monitor to verify modeled results.

6) Risk-Based Monitoring

This measure would utilize temporary monitors installed, as needed, in areas identified as at risk of exceeding the NAAQS. This measure could be done in conjunction with regional-scale modeling, multi-source modeling, or as a stand-alone task.

7) NAAQS SIP Updates

The NAAQS SIP will be reviewed regularly to re-evaluate attainment status issues due to growth of emissions in the State and revisions, if any, to the NAAQS. The SIP will be updated, as needed to ensure protection from exceedances of the NAAQS. The Department will continue to solicit public input on any future NAAQS SIP Updates

Minor NSR NAAQS Evaluation Flowchart

The Department has created a flowchart to assist in the decision of what level of analysis would be acceptable for a Minor NSR permitting action to ensure that the NAAQS are not exceeded. If such a flowchart were ultimately included in the NAAQS SIP, the Department would develop guidance on good dispersion practices, whether there is sufficient historical modeling data available to identify possible issues with maintaining the NAAQS, and whether any identified issues can be resolved by incorporating

standard conditions or control strategies in the permit. The current draft of the Minor NSR NAAQS Evaluation Flowchart can be found in Appendix B: Minor NSR NAAQS Evaluation Flowchart.

Approaches to Assess Cumulative Impact

1) Development of a Growth Allocation Based on Regional Modeling

This stakeholder-proposed approach involves the creation of growth allowances—based on predictive modeling of hypothetical sources—which could be consumed by new projects without causing concentrations of a criteria pollutant to exceed the NAAQS in the AQCR. Emissions increase allowances would be based on the potential-to-emit (PTE).

The Department consulted ICF to discuss the feasibility of this approach. ICF indicated that the regional scale modeling platform has neither sufficient resolution nor appropriately refined inputs to provide for a growth allocation which is protective of local impacts. The primary usefulness of this approach is in regional planning.

2) Emissions-Distance Threshold

This approach would look at the cumulative PTE of all facilities within close proximity of a new minor source or minor modification. If the cumulative emissions within a defined distance exceeded a threshold value, a more robust analysis, such as dispersion modeling, would be required. Examining the cumulative emissions of sources has been used by other states as part of their Minor NSR NAAQS evaluation program. The appropriate distance and threshold value would need to be determined and supported by evidence from a technical analysis.

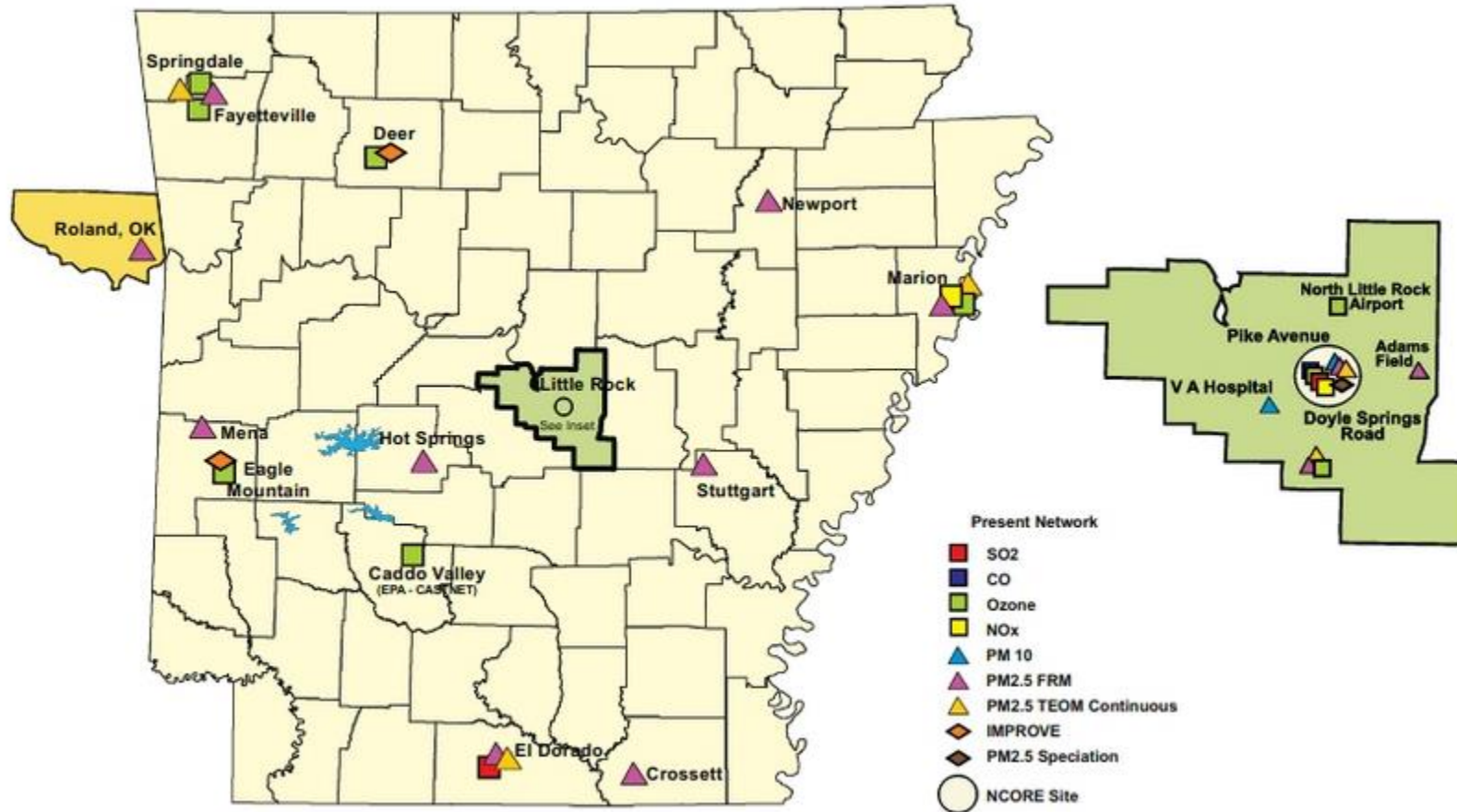
To facilitate this approach, the Department could develop a GIS-based tool that would allow a facility interested in locating a new minor source or minor modification to quickly receive information about the cumulative emissions of their proposed new facility and all existing sources in a particular area.

Conclusion

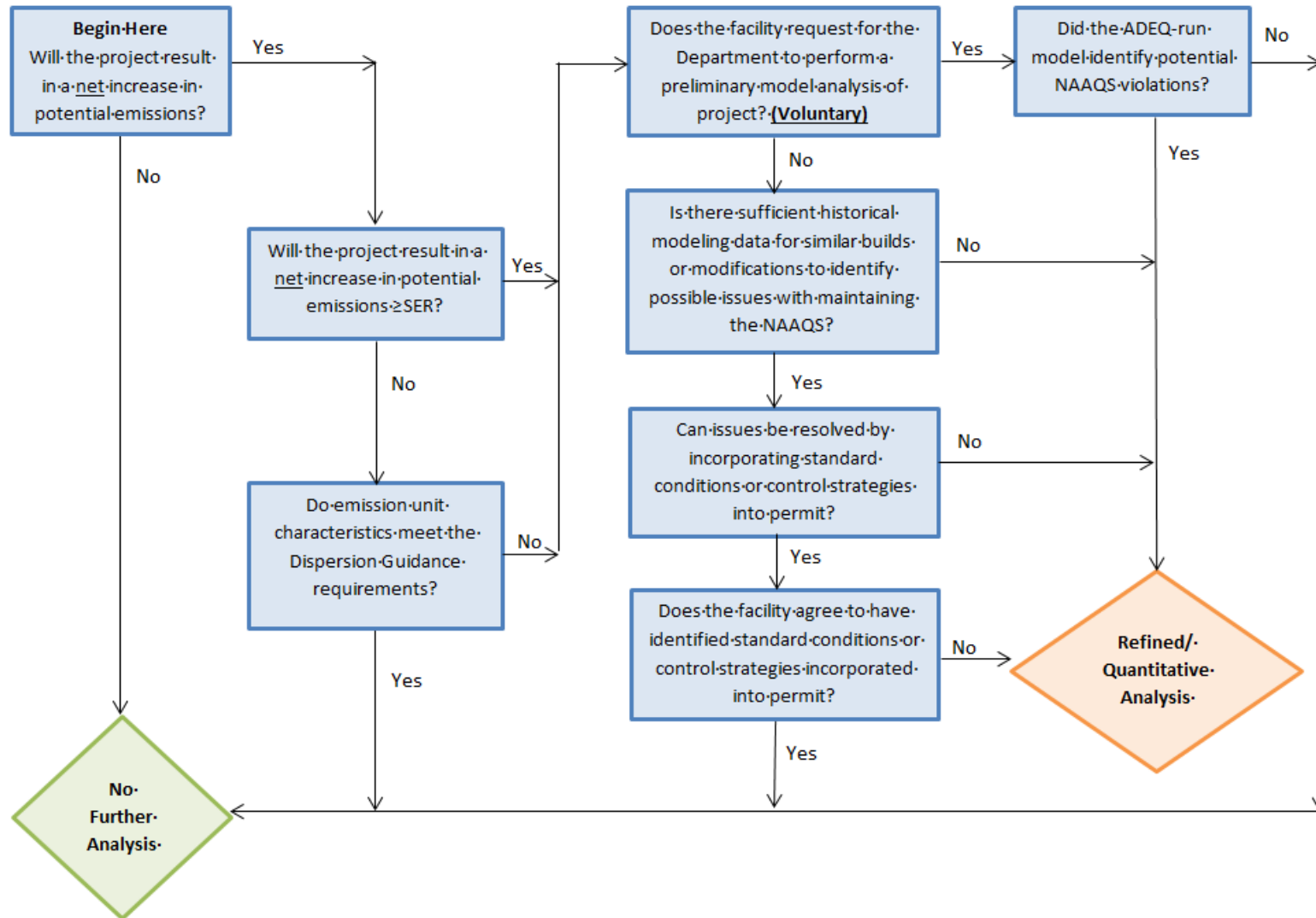
The Department solicits comment on the adequacy or deficiencies of the measures and approaches described above in addressing requirements for NAAQS evaluations for the Minor NSR permitting program. The Department also solicits comment on other measures and approaches not identified above. The Department intends to use feedback received in response to this document to develop a policy, to be included in the NAAQS SIP, which will detail both the steps a permittee must undertake to demonstrate protection of the NAAQS in the Minor NSR permitting process and the roles and obligations of the Department in implementing that process.

Please submit your feedback on the proposed guidance document to Tricia Jackson at: jacksonp@adeq.state.ar.us by July 2, 2015.

Appendix A: Arkansas Ambient Air Monitoring Network



Appendix B: Minor NSR NAAQS Evaluation Flowchart



Proper Implementation of the National Ambient Air Quality Standards Through the State Implementation Plan Process

Congress designed the Clean Air Act (CAA or Act) with two principal mechanisms for assuring the quality of air across our nation: first, a system of “cooperative federalism” in which states develop and implement plans to meet health and welfare-based air quality standards established by the Environmental Protection Agency (EPA), and second, a series of programs providing minimum federal requirements for large facilities and hazardous pollutants. The Arkansas Pollution Control & Ecology Commission (APC&EC), in turn, implements the CAA and the Arkansas Water & Air Pollution Control Act by regulation, including Regulation 18 (the “Arkansas Air Pollution Control Code”), Regulation 19 (the “Regulations of the Arkansas Plan of Implementation for Air Pollution Control”) and Regulation 26 (“Regulations of the Arkansas Operating Air Permit Program”). Based on the structure, language, history, and interpretation of the CAA and relevant EPA and APC&EC regulations the following are clear:

- National Ambient Air Quality Standards (NAAQS) are meant to be implemented by states through state implementation plans (SIPs), based on the consideration of a broad range of factors and tools identified by Congress and EPA.
- NAAQS are not directly applicable to individual facilities. They are neither “emissions standards or limitations” generally, nor are they “applicable requirements” specifically under the Title V program.
- Routine NAAQS modeling at the facility level is neither required by federal or state law nor sensible. Modeling is required for certain large new facilities and modifications, and any broader requirement would exceed federal standards.
- Arkansas can best achieve and maintain the most recent EPA NAAQS through the SIP development process, not *per se* application of the NAAQS to individual facilities.

Arkansans deserve the highest air quality, and the APC&EC should ensure that the burdens of achieving and maintaining that quality are fairly distributed and that all relevant factors and tools have been adequately considered through the SIP development process.

I. The Role of NAAQS in the CAA

The Clean Air Act of 1970 (1970 CAA)¹ established the modern framework for air pollution control in the United States. The centerpiece of the law was the creation of a system whereby EPA establishes the NAAQS, which serve as nationwide benchmarks for clean air, and states develop SIPs, which must be reviewed and approved by EPA, in order to achieve and maintain the NAAQS.² Under this framework, EPA is responsible for setting national air quality goals, while states have “the primary responsibility for assuring air quality” within their borders through their SIPs.³

Under CAA Section 109, EPA is charged with promulgating “primary” and “secondary” NAAQS for pollutants which, in the judgment of the EPA Administrator, “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”⁴ The primary standards are set at levels requisite to protect public health “with an adequate margin of safety,” while the secondary standards are set at levels protective of public welfare, which includes considerations such as visibility and effects on soils, crops, wildlife and buildings.⁵ The NAAQS are required to undergo scientific review every five years, and the Administrator must revise the existing standards or issue new ones as appropriate based on that review.⁶

The primary NAAQS are set at inherently conservative levels. They must protect the health of any “sensitive group” in the population, such as persons with preexisting respiratory illness, children, and the elderly.⁷ Further, the statutory requirement that the primary standards include an “adequate margin of safety” is intended to address uncertainties associated with inconclusive scientific and technical information available at the time of standard setting, and to provide a reasonable degree of protection against hazards that research has not yet identified.⁸

¹ Pub. L. No. 91-604 (1970).

² See 42 U.S.C. §§ 7409-7410.

³ *Id.* § 7407.

⁴ *Id.* §§ 7408, 7409. Pollutants that meet these requirements (*i.e.* for which EPA has set a NAAQS) are often referred to as “criteria pollutants.”

⁵ *Id.* §§ 7409(b), 7602(h).

⁶ *Id.* § 7409(d).

⁷ See, *e.g.*, Primary National Ambient Air Quality Standards for Nitrogen Dioxide; Final Rule, 75 Fed. Reg. 6474, 6475, 6480 (Feb. 9, 2010).

⁸ *Id.* at 6475-76 (citing *Lead Indus. Ass’n v. EPA*, 647 F.2d 1130, 1154 (D.C. Cir. 1980); *Am. Petroleum Inst. v. Costle*, 665 F.2d 1176, 1186 (D.C. Cir. 1981)).

EPA has set primary NAAQS for six pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}) and sulfur dioxide (SO₂). It has set secondary NAAQS for SO₂ and NO₂.⁹ New or revised NAAQS are implemented in two basic steps. First, EPA designates areas as “attainment” (meeting the standard), “nonattainment” (not meeting the standard), or “unclassifiable” (cannot be determined based on available information).¹⁰ Second, each state must adopt and submit SIPs to EPA which provide for the implementation, achievement, and maintenance of the NAAQS at issue within the state.¹¹

In addition to the NAAQS/SIP process, two other major programs were added to the CAA in 1970. Section 111 established the New Source Performance Standards (NSPS) program, under which new sources of pollution in designated industrial categories are assigned technology-based emissions standards developed by EPA.¹² Section 112 established the national emission standards for hazardous air pollutants (NESHAPs), under which EPA develops emission limits applicable to stationary sources for pollutants that cause irreversible or incapacitating illness at low concentrations.¹³ Finally, these two source-focused programs were augmented in 1977 by the addition of the Prevention of Significant Deterioration (PSD) and nonattainment new source review (NNSR) programs.¹⁴ These programs also apply directly to sources, depending on the pollutants at issue and their attainment status at the source location, through case-by-case application of best available technology or lowest achievable emission rates.

Thus, overall, the CAA contains a four-pronged approach to the protection of air quality. Three of those prongs—the NSPS, NESHAP, and PSD/NNSR programs—regulate *sources* of air pollution.¹⁵ The NAAQS/SIP prong, in contrast, creates obligations for *states*, which are charged with implementing control measures designed to attain the NAAQS, as discussed in more detail below.

⁹ See 40 C.F.R. Part 50 (National Primary & Secondary Ambient Air Quality Standards).

¹⁰ 42 U.S.C. § 7407(d)(1). Unclassifiable areas are effectively treated as being in attainment in most instances.

¹¹ *Id.* §§ 7410(a)(2) (required elements of infrastructure SIPs), 7502(c) (required elements of nonattainment SIPs).

¹² See 42 U.S.C. § 7411.

¹³ See *id.* § 7412.

¹⁴ Pub. L. No. 95-95 (1977); CAA Subchapter I, Parts C & D.

¹⁵ The Title V operating permit program, discussed further below, also applies to sources but does not impose new substantive requirements on such sources. Several other programs (*e.g.*, the acid rain and stratospheric ozone programs) are not relevant to this paper.

II. States Are Responsible for Implementing NAAQS Through SIPs

Once EPA establishes a new or revised NAAQS, the SIP development process is set in motion in each state. The legislative history of the 1970 CAA demonstrates the importance that Congress ascribed to the SIP development process:

The establishment alone of ambient air quality standards has little effect on air quality. Standards are only the reference point for the analysis of the factors contributing to air pollution and the imposition of control strategy and tactics. This program is an implementation plan.... [T]he implementation plan is the principal component of control efforts for pollution agents for which national standards are established.... The Committee expects that appropriate Federal, State, and local officials, citizens and affected industry groups will consider the development of the implementation plan the central element of this aspect of the legislation.¹⁶

The CAA prescribes an implementation timeline for the attainment of new or revised NAAQS of up to approximately five years, total. As an initial matter, EPA has two years under Section 107 to make its designations (attainment, nonattainment, or unclassifiable) for the areas within each of the states.¹⁷ The designations are based on recommendations by each state's governor for areas within that state; if EPA disagrees with a recommendation, it is required to notify the state of any intended modifications prior to EPA's promulgation of the final designation.¹⁸

EPA makes attainment and nonattainment decisions on a NAAQS-by-NAAQS basis using a combination of regulatory criteria and guidance.¹⁹ A measured or modeled exceedance of a NAAQS at any given location, such as an individual facility, does *not* equate with "nonattainment." Rather, EPA typically

¹⁶ S. Rep. No. 91-1196, at 10-11 (1970).

¹⁷ 42 U.S.C. § 7407(d)(1)(B)(i). The deadline may be extended for up to one additional year if the Administrator has insufficient information to promulgate the designations. *Id.*

¹⁸ *Id.* §§ 7607(d)(1)(A) & (B)(ii) Areas of the country currently designated as nonattainment are listed at www.epa.gov/airquality/greenbook/astate.html. Arkansas has only one county, Crittenden, which is in marginal nonattainment for the 8-hour ozone standard. *Id.* That county did not actually exceed the NAAQS; rather, EPA believed it was contributing to an exceedance in neighboring Shelby County, Tennessee, due to meteorological conditions and ozone precursor emissions from mobile sources and small ("area") sources. www.epa.gov/ozonedesignations/2008standards/documents/R46_Memphis_TSD_Final.pdf.

¹⁹ Because NAAQS are not emissions standards, limitations, or applicable requirements, they are not "violated" but rather "exceeded." *See, e.g.*, 40 C.F.R. § 50.1(l) (definition of "exceedance" with respect to NAAQS).

looks at *average* values over a multi-year period at an EPA-compliant monitoring location to determine compliance with annual NAAQS standards, and it typically excludes a certain number of high data points when determining compliance with short-term NAAQS, such as 1-, 8-, and 24-hour standards.²⁰ This approach makes sense given the conservative nature of the NAAQS themselves, as discussed above.

Next, within three years after the promulgation of a new or revised NAAQS, states must adopt and submit what is generally referred to as an “infrastructure SIP,” which shows they have the basic air quality management program components in place to implement the specific NAAQS at issue—including ambient air quality monitoring and data systems, programs for enforcement of control measures, and adequate authority and resources to implement the plan.²¹ EPA reviews the submitted SIP and proposes to approve or disapprove of all or part of it based on whether the minimal requirements are met.²² Upon approval, the provisions in the SIP become federally enforceable.²³ If the SIP is disapproved, EPA must develop a federal implementation plan (FIP) to implement the NAAQS within two years, unless the state corrects the deficiency.²⁴

Finally, within 18 months to three years after designations are made, states with nonattainment areas must submit SIPs outlining the specific strategies and emissions control measures that will be employed to attain the relevant NAAQS by a specified deadline no later than five years after the nonattainment designation.²⁵ Nonattainment SIPs must include several specific program requirements aimed at tracking and reducing the emissions of the nonattainment pollutant.²⁶

Three important conclusions flow from the structure that Congress selected. First, Congress did not envision a “one-size-fits-all” strategy for attaining the NAAQS. Instead, it recognized that the strategies for attaining and maintaining the NAAQS would differ from state to state and for the various areas within the states. Second, the process of coming into attainment with

²⁰ See, e.g., 40 C.F.R. Part 50, Appendices H, I, K, N, & P (discussing criteria for nonattainment determinations). EPA can also designate an area in nonattainment regardless of the results of monitoring if the area “contributes” to nonattainment in another area. 42 U.S.C. § 7407(d)(1)(A)(i).

²¹ 42 U.S.C. § 7410(a)(2).

²² *Id.* § 7410(k).

²³ See *id.* § 7413(a)(1), (b)(1), (c)(1), (d)(1)(A).

²⁴ *Id.* § 7410(c).

²⁵ *Id.* § 7502.

²⁶ *Id.* § 7502(c).

the NAAQS, or providing for continued maintenance of the NAAQS, was not designed to occur instantly, but over a period of years. Congress did not intend or expect that emission reductions aimed at achieving the NAAQS would occur until this process played out. Finally, both Congress (in the CAA) and EPA (in its implementing regulations) provide for public notice and comment opportunities at numerous stages throughout the SIP development process.²⁷ This evidences a clear intent to allow for ample public input into the strategies used to achieve the NAAQS in each state.

EPA has emphasized that states should consider a wide range of options and their potential benefits while developing their SIPs. The development process is not intended to focus solely on large stationary sources, as those sources are already covered by the NSPS, NESHAP, and PSD/NNSR programs discussed above. Instead, relevant “control strategies” apply to all types of sources, stationary and mobile, and include but are not limited to:

- Economic incentive or disincentive programs;
- Scheduling, relocation, and closure programs;
- Mobile source inspection and maintenance programs;
- Fuel or fuel additive programs for mobile sources; and
- Emissions limitations on stationary sources.²⁸

EPA furthermore stipulates that nothing in its regulations should be construed, among other things, “[t]o encourage a State to adopt any particular control strategy without taking into consideration the cost-effectiveness of such control strategy in relation to that of alternative control strategies,” “[t]o encourage a State to prepare, adopt or submit a plan without taking into consideration the social and economic impact of the control strategy set forth in such plan,” or “[t]o encourage a State to adopt a control strategy uniformly

²⁷ See, e.g., *id.* § 7409(a)(1)(B) (requiring EPA’s promulgation of NAAQS to occur “after a reasonable time for interested persons to submit written comments thereon”); *id.* § 7410(a)(1) (requiring states’ infrastructure SIP submittals to EPA to occur “after reasonable notice and public hearing”); *id.* § 7410(a)(2) (requiring states’ adoption of infrastructure SIPs to occur “after reasonable notice and public hearing”); *id.* § 7502(b) (same for nonattainment SIPs); *id.* § 7410(l) (requiring each SIP revision to be adopted by states “after reasonable notice and public hearing”); 40 C.F.R. § 51.102 (requiring states to provide notice, opportunity to submit written comments, and opportunity for public hearing prior to adoption and submission to EPA of enumerated SIP materials); see also S. Rep. No. 91-1196, at 11 (1970) (“Any implementation plan could be developed by a region only after participation by the public. Public participation can only be meaningful if there is reasonable notice and full disclosure of information prior to public hearings.”).

²⁸ 40 C.F.R. § 51.100(n); see also 42 U.S.C. § 7410(a)(2)(A), (F).

applicable throughout a region unless there is no satisfactory alternative way of providing for attainment and maintenance of a national standard throughout such region.”²⁹

III. EPA Does Not Require NAAQS Implementation at the Facility Level

While states are obligated to implement the NAAQS through SIP development in accordance with the multi-step process described above, the corollary is equally true: the NAAQS themselves do *not* impose any obligation upon individual sources of air pollution with respect to their emissions. Doing so in Arkansas would significantly exceed federal requirements, to the detriment of the SIP development process envisioned by Congress.

A. NAAQS Are Not “Emissions Standards or Limitations”

If Congress had intended to make the NAAQS directly applicable to sources, it could have done so using language similar to the explicit prohibition language it employed in the Section 111 NSPS program or the Section 112 NESHAP program.³⁰ Instead, it chose to make NAAQS attainment a *state* obligation to be addressed through the development of a SIP. As EPA has explained:

*The NAAQS should not be confused with emission standards. The latter standards apply to individual sources of air pollution or categories of industrial sources. The NAAQS, on the other hand, serve as benchmarks from which each state derives the total emission reductions necessary to be accomplished in a given area. The requisite total emission reductions are translated into specific emission limitations that sources must meet on a continuous basis. Consequently, EPA does not enforce the NAAQS per se. Instead, EPA enforces emission standards designed to contribute to achievement and maintenance of the NAAQS.*³¹

²⁹ 40 C.F.R. § 51.101. Arkansas law echoes these directives in Ark. Code Ann. § 8-4-312, which requires that in the discharge of their duties that the APC&EC and ADEQ consider a list of factors including economic and industrial development of the state, the social and economic value of emission sources, economic feasibility of pollution control, effect of controls on industrial efficiency, etc.

³⁰ Pub. L. No. 91-604, §§ 111(e) (“After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source”), 112(c) (“After the effective date of any emission standard under this section ... no air pollutant to which such standard applies may be emitted from any stationary source in violation of such standard...”).

³¹ Clean Air Act Compliance/Enforcement Guidance Manual (U.S. EPA, 1986), *available at* <http://envinfo.com/caain/enforcement/caad131.html> (emphasis added).

By the same token, “the overwhelming weight of case law” holds that the NAAQS themselves are not “emission standards or limitations” that are enforceable by citizen suit under CAA Section 304.³² As one court noted, “[a] cornerstone of this Court’s interpretation of the citizen suit provision is the principle that an air quality standard established under the Clean Air Act is not an ‘emission standard or limitation.’”³³ Instead, in order to maintain a citizen suit for violation of an emission standard or limitation (either by a regulated source or a governmental agency), a plaintiff must allege a violation of a specific provision in the SIP, and describe with some particularity the respects in which compliance with the provision is deficient, rather than alleging a violation of the NAAQS itself.³⁴

B. NAAQS Are Not “Applicable Requirements”

EPA re-examined the issue of whether NAAQS are directly applicable to sources when it developed the Part 70 regulations to implement the Title V operating permitting program in accordance with the Clean Air Act Amendments of 1990.³⁵ Title V permits must include all pollution control obligations under the CAA that are applicable to a source under a SIP (or FIP), the acid rain program, the air toxics program, or other provisions of the Act and must assure compliance with each applicable standard, regulation or requirement.³⁶ EPA perceived a major benefit of the Title V permitting program to be the codification of all CAA requirements that apply to a source into a single document, thus enhancing compliance with the Act.³⁷

EPA proposed to require states to issue Title V permits that include all “applicable requirements” of the Act or the state’s SIP, and EPA envisioned objecting to permits that failed to assure compliance with the applicable requirements.³⁸ EPA interpreted “applicable requirements” to include “limitations, standards, and/or requirements directly applicable to sources.”³⁹

³² *Cate v. Transcontinental Gas Pipe Line Corp.*, 904 F. Supp. 526, 530-31 (W.D. Va. 1995) (citing *Coal. Against Columbus Ctr. v. New York*, 967 F.2d 764, 769 (2d Cir. 1992); *Atl. Terminal Urban Renewal Area Coal. v. N.Y. City Dep’t of Envtl. Prot.*, 697 F. Supp. 157, 161 (S.D.N.Y. 1988); *Citizens for a Better Env’t v. Deukmejian*, 731 F. Supp. 1448 (N.D. Cal. 1990), *modified*, 746 F. Supp. 976 (N.D. Cal. 1990); *League to Save Lake Tahoe, Inc. v. Trounaday*, 427 F. Supp. 1350 (D. Nev. 1977), *aff’d* 598 F.2d 1164, 1173 (9th Cir. 1979)).

³³ *Coal. Against Columbus Ctr.*, 967 F.2d at 769.

³⁴ *E.g.*, *Wilder v. Thomas*, 854 F.2d 605, 610 (2d Cir. 1981); *Cate*, 904 F. Supp. at 531.

³⁵ See Pub. L. No. 101-549 (1990), CAA Subchapter V, 42 U.S.C. §§ 7601a-7601f.

³⁶ See 42 U.S.C. §§ 7661a(b)(5)(A), 7661c(a), 7661(b)(1).

³⁷ Operating Permit Program; Proposed Rule; Notice of Opportunity for Public Hearing, 56 Fed. Reg. 21,712, 21,713 (May 10, 1991).

³⁸ *Id.* at 21,738.

³⁹ *Id.*

NAAQS, EPA reasoned, do not fall into this category because they impose planning obligations on *states*, not on individual sources. Thus, EPA would not require Title V permits to assure attainment and maintenance of the NAAQS.⁴⁰ Nor would it object to a permit on the grounds that it does not assure attainment of the NAAQS: “It is the State’s responsibility to decide what limits the SIP should impose on the various sources. ... EPA’s review of individual permits will not be the appropriate forum for reviewing the adequacy of such planning decisions.”⁴¹

EPA adopted this approach in the final Part 70 rules—for all but “temporary sources,” whose permits are expressly required by CAA Section 504(e) to assure compliance with the NAAQS.⁴² Some commenters argued that NAAQS should not be excluded from the “applicable requirements” in Title V permits for permanent facilities, because it would be “anomalous” for Congress to impose more comprehensive permit requirements for temporary sources than for permanent ones.⁴³ EPA rejected those comments. It reasoned that permits for temporary sources, unlike for permanent ones, must include the ambient standards as applicable requirements because states were unlikely to have performed attainment demonstrations on temporary sources as part of SIP development.⁴⁴ But to require ambient demonstrations with respect to the NAAQS (*i.e.*, air quality modeling) for all sources, it reasoned, would be overly burdensome and of little overall value:

To require such demonstration ... on every permitted source would be unduly burdensome, and in the case of area-[w]ide pollutants like ozone where a single source’s contribution to any NAAQS violation is extremely small, performing this demonstration would be meaningless. Under the Act, NAAQS implementation is a requirement imposed on States in the SIP; *it is not imposed directly on a source.*⁴⁵

Thus, EPA’s Part 70 rules define “applicable requirement” as including, *inter alia*, “[a]ny national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, *but only as it would apply to*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² Operating Permit Program; Final Rule, 57 Fed. Reg. 32,250, 32,276 (July 21, 1992); 42 U.S.C. § 7661c(e).

⁴³ 57 Fed. Reg. at 32,276. In any event, this logic is completely inconsistent with normal principles of statutory interpretation. Congress’ decision to require NAAQS compliance at temporary sources is evidence that no such requirement was intended for other sources.

⁴⁴ *Id.*

⁴⁵ *Id.* (emphasis added).

temporary sources permitted pursuant to section 504(e) of the Act.”⁴⁶ In sum, just as the NAAQS are not enforceable “emission standards or limitations” under the CAA, they are also not “applicable requirements” to permanent facilities under the CAA Title V permitting program, because the NAAQS are implemented at the state level through SIPs, not at the individual facility level.

Time and again, EPA has affirmed this principle in response to petitions to object to proposed Title V permits. For example, one petitioner argued that a Title V permit’s failure to include enforceable heat input limits meant it would not ensure compliance with the NAAQS for SO₂. The Administrator refused to object to the permit on this ground, observing:

[T]he NAAQS themselves are not ‘applicable requirements,’ rather, the measures contained in each state’s EPA-approved SIP to achieve the NAAQS are applicable requirements. ... As EPA has explained in prior orders, a NAAQS by itself does not impose any obligation on sources. ... It is the EPA-approved measures contained in the Kentucky SIP that assure the attainment and maintenance of the NAAQS and that constitute the applicable requirements for purposes of Title V.⁴⁷

Similarly, the Administrator refused to object to a Title V permit for a paper-waste recycling facility on the grounds that it did not assure compliance with the new NAAQS for PM_{2.5}, rejecting the petitioner’s argument that the state must implement the PM_{2.5} NAAQS with respect to the facility at issue for environmental justice reasons:

EPA finds DEP’s plan to act in accordance with federal requirements regarding PM_{2.5} acceptable. EPA establishes [NAAQS] for certain pollutants, pursuant to section 109 of the CAA, 42 U.S.C. § 7409, and States are required to attain those standards. The SIP is the means by which States comply with CAA requirements to attain the NAAQS, pursuant to section 110(a) of the CAA... The national designations for the PM_{2.5} NAAQS were published in the Federal Register on January 5, 2005. ... Under the Clean Air Act, New Jersey is required to submit its SIP for any area designated by EPA as non-attainment showing how it will attain the new PM_{2.5} standard no later than three years from the effective date of the non-attainment designation (*i.e.* by April 5, 2008).

⁴⁶ 40 C.F.R. § 70.2 (emphasis added); *see also* CAA section 504(e), 42 U.S.C. § 7661c(e).

⁴⁷ *In re E. Ky. Power Coop.*, Order Responding to Petitioner’s Request that the Administrator Object to Issuance of State Operating Permit (Adm’r Dec. 14, 2009).

The new PM_{2.5} standard does not by itself impose any obligation on sources. *A source is not obligated to reduce emissions as a result of the standard until the State identifies a specific emission reduction measure needed for attainment (and applicable to the source), and that measure is incorporated into a SIP approved by EPA.*⁴⁸

This opinion is particularly instructive because it demonstrates that EPA does not expect or anticipate that facilities should demonstrate NAAQS compliance or implement emissions reductions measures upon promulgation of a new or revised NAAQS. Rather, *facilities are not subjected to new obligations until the SIP-development process has played out in accordance with the CAA requirements.*

IV. Except for PSD Permits, the CAA Does Not Require Modeling of Ambient Air Quality Impacts to Ensure Attainment and Maintenance of the NAAQS

EPA has been very specific about what types of permits require modeling to determine potential impacts on attainment and maintenance of NAAQS: PSD permits require modeling, but no such requirement exists for other permits, including Title V and minor source permits.

A. Modeling Is Required for PSD Permits

In 1972, one court concluded that EPA, in exercising its SIP approval authority, had a duty to prevent the degradation of existing clean air in attainment areas.⁴⁹ In response to the court's preliminary injunction, EPA developed the first PSD regulations.⁵⁰ Not long thereafter, Congress formally adopted detailed "Prevention of Significant Deterioration of Air Quality" permitting requirements into the statute as part of the CAA Amendments of 1977.⁵¹

The PSD preconstruction permitting program is intended to ensure that large new facilities, or major modifications to existing large facilities, do not cause air quality to deteriorate beyond prescribed levels in areas that are in

⁴⁸ *In re Marcal Paper Mills, Inc.*, Order Granting in Part & Denying in Part Petition for Objection to Permit (Adm'r Nov. 30, 2006) (emphasis added).

⁴⁹ *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253, 256 (D.D.C. 1972), *aff'd per curiam*, 4 E.R.C. 1815 (D.C. Cir. 1972), *aff'd per curiam by an equally divided Court, sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).

⁵⁰ See Approval and Promulgation of Implementation Plans; Prevention of Significant Air Quality Deterioration, 39 Fed. Reg. 42,510 (Dec. 5, 1974).

⁵¹ Pub. L. No. 95-95 (1977), CAA sections 160-169, 42 U.S.C. §§ 7470-7479.

attainment with the NAAQS.⁵² New and modified sources subject to PSD must demonstrate that construction will not cause air quality to degrade beyond specified “increments” above existing baseline concentrations of pollutants in attainment or unclassifiable areas.⁵³ The PSD “increments” for criteria pollutants represent the maximum allowable increases in pollutant concentrations over baseline levels—*i.e.*, the amount of pollution an area is allowed to increase up to the maximum levels, which are the NAAQS.⁵⁴ Permittees must also employ “best available control technology” to minimize air pollution.⁵⁵

An applicant for a PSD permit is required to conduct an air quality modeling analysis of the ambient impacts associated with the construction and operation of the proposed new source or modification.⁵⁶ The main purpose of the air quality analysis is to demonstrate that new emissions emitted from the proposed new source or modification, in conjunction with other applicable emissions increases and decreases from existing sources, will not cause or contribute to a violation of any applicable NAAQS or PSD increment.⁵⁷ The modeling is generally required to be conducted in accordance with specifications set forth in EPA’s *Guideline on Air Quality Models*.⁵⁸

When it developed the first PSD regulations, EPA was confronted with the issue of which sources should be subject to PSD permitting requirements. From the outset, the agency recognized that it was “not possible” to conduct preconstruction review for each and every source.⁵⁹ Instead, the agency chose early on to “concentrate the effort on the important large sources,” and thus confined the program requirements to certain “major” stationary sources.⁶⁰ In describing how large stationary sources would determine their incremental impact, EPA observed:

⁵² See *id.* The 1977 Amendments also established a detailed NNSR program for major sources located in nonattainment areas, but that program does not require modeling. See 42 U.S.C. §§ 7501-7509a.

⁵³ *Id.* § 7473, 7475.

⁵⁴ *Id.*

⁵⁵ *Id.* § 7475(a)(4).

⁵⁶ *Id.* § 7475(a)(3),

⁵⁷ *Id.*; 40 C.F.R. §§ 51.166(k), 52.21(k).

⁵⁸ *Id.* §§ 51.166(l), 52.21(l); see also 40 C.F.R. Part 51, Appendix W (“Guideline on Air Quality Models”).

⁵⁹ Approval and Promulgation of Implementation Plans; Prevention of Significant Air Quality Deterioration; Proposed Rule, 39 Fed. Reg. 31,000, 31,003 (Aug. 27, 1974).

⁶⁰ *Id.*

It should be noted that the impacts of sources which are not subject to the review procedures are not necessarily reviewed unless a major source proposes to locate in the area. This feature is necessary because the impact of the very large numbers of very small sources could only be assessed by either modeling or air quality measurement. *To model each individual source during an individual pre-construction review would be an extremely laborious task, and the end result would be of questionable accuracy.*⁶¹

Thus, EPA recognized from the beginning of the PSD program that it was necessary to set some sort of threshold for sources that would be subject to ambient impact assessment. The approach that ultimately prevailed, which Congress adopted in the 1977 CAA Amendments, was to apply the PSD permitting program to “major emitting facilities,” which are defined by CAA section 169 as sources in any of 28 categories that have the potential to emit 100 tpy of any pollutant, or any other source with the potential to emit more than 250 tpy of any pollutant.⁶² Accordingly, under EPA regulations, PSD requirements apply only to “new major stationary sources” and “major modifications” of existing major stationary sources.⁶³

The PSD program represents the considered judgment of Congress and EPA regarding the measures that are necessary to preserve air quality in areas that are already in attainment with the NAAQS. Requiring routine air quality modeling for other types of permitting goes beyond what Congress envisioned and EPA requires in order to prevent air quality degradation in clean air areas.

B. Modeling Is Not Required by EPA for Other Permits

Since before the establishment of the PSD program, the CAA has required states to address minor sources (i.e., sources that are not “major” sources subject to PSD or NNSR permitting) through so-called “Minor NSR” programs in their SIPs.⁶⁴ Specifically, Section 110(a)(2)(C) requires each SIP to “include a program to provide for the ... regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that the national ambient air quality standards are

⁶¹ *Id.* at 31,005.

⁶² 42 U.S.C. § 7479(1).

⁶³ 40 C.F.R. §§ 51.166(a)(7); 52.21(a)(2).

⁶⁴ See Clean Air Amendments of 1970, Pub. L. 91-604 at §§ 110(a)(2)(D), 110(a)(4) (requiring procedure for review of location of new source prior to construction or modification to ensure it will not prevent attainment or maintenance of the NAAQS).

achieved.”⁶⁵ The basic requirements for Minor NSR programs are set forth in EPA regulations.⁶⁶

Despite this longstanding requirement to consider the ambient air impacts of *all* new and modified stationery sources prior to construction, EPA has never interpreted the CAA as requiring air quality modeling for minor sources (meaning non-PSD sources). It is clear from the preamble to the 1978 PSD regulations that, while modeling is required for PSD permitting, EPA presumed that non-PSD sources do *not* require modeling:

*The rulemaking allows States generally to exempt from air quality reviews those sources with minimal emissions. Only those sources which would have allowable emissions equal to or greater than [PSD emissions thresholds], or would impact a class I area or an area where the increment is known to be violated, must receive an ambient review.*⁶⁷

This presumption remains true today, as recently illustrated by EPA’s “Model Rule for Minor NSR Program”⁶⁸ which was released in 2012 as part of its “Tribal NSR Implementation Manual.”⁶⁹ The model rule does not require routine modeling. Rather, it provides that the permitting authority *could* require an air quality impacts analysis from a minor source or modification only if it is “concerned” that the construction of the minor source or modification would cause or contribute to a NAAQS or PSD increment violation.⁷⁰

The point is further echoed in the Title V context. As EPA recognized in its original Part 70 rulemaking to implement the Title V program, requiring modeling demonstrations for every permitted source would be “*unduly burdensome*.”⁷¹ In that rulemaking, EPA also declined to require Title V permit applications to include ambient impact assessment information (*i.e.*, source-specific data necessary for input to air quality impact dispersion models, such

⁶⁵ *Id.* § 7410(a)(2)(C).

⁶⁶ *See* 40 C.F.R. § 51.160.

⁶⁷ Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Prevention of Significant Air Quality Deterioration, 43 Fed. Reg. 26,380, 26,381 (June 19, 1978) (emphasis added).

⁶⁸ EPA, Model Rule for Minor New Source Review Program, *available at* http://www.epa.gov/air/tribal/pdfs/model_rule_for_minor_nsr_program.pdf (hereafter, “Model Minor NSR Rule”).

⁶⁹ The entire Manual and appendices are available at <http://www.epa.gov/air/tribal/tribalnsr.html>.

⁷⁰ Model Minor NSR Rule at 9.

⁷¹ 57 Fed. Reg. at 32,276 (emphasis added).

as stack parameters and building height).⁷² EPA explained that, in addition to the NAAQS not being an applicable requirement, “[a]ir quality modeling is not typically required for individual sources by the Clean Air Act (*i.e.*, *it is normally assumed that no individual source can affect attainment or maintenance of an ambient standard on an area-wide basis*).”⁷³

Thus, under the federal CAA regulations, air quality modeling is not required for any type of permitting other than PSD permits. Under EPA’s interpretation of the CAA and its regulations, PSD-triggering projects are the threshold at which ambient air quality modeling is presumed necessary, and thus required.

V. Nothing in the APC&EC Regulations Makes NAAQS Directly Applicable to Arkansas Facilities, Except through the PSD Program

The APC&EC regulatory provisions that have been SIP-approved by EPA are identified at 40 C.F.R. § 52.170. These include (but are not limited to) most provisions of Regulation 19 and parts of Regulation 26. Nothing in those SIP-approved provisions or any other APC&EC regulations requires NAAQS to be stated or enforced as permit limits in any state permit or to be modeled as part of the permitting process, except for PSD permits.⁷⁴

A. Regulation 18

Regulation 18 is a state-only regulation; none of its provisions are part of any EPA-approved Arkansas SIP.⁷⁵ Thus, from a federal perspective, none of the provisions of Regulation 18 are requisite to satisfy Arkansas’ obligation to achieve and maintain the NAAQS. Nothing in Regulation 18 imposes an obligation on ADEQ to evaluate whether a source will cause an exceedance of the NAAQS as part of the permitting process.

Regulation 18.302 provides as follows:

No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or

⁷² *Id.* at 32,273.

⁷³ *Id.* (emphasis added).

⁷⁴ As discuss below, only SIP-approved provisions that are specifically applicable to emissions units at sources subject to Title V permits are “applicable requirements.” The mere fact that EPA has approved a state submission as part of the SIP does not automatically make that provision applicable to all sources.

⁷⁵ *See* 40 C.F.R. § 52.170.

modified to operate without resulting in a violation of applicable portions of this regulation and without causing air pollution.

Further, “air pollution” is defined under Regulation 18 as:

[T]he presence in the outdoor atmosphere of one (1) or more air contaminants in quantities, of characteristics, and of a duration that are materially injurious or can be reasonably expected to become materially injurious to human, plant, or animal life or to property, or that unreasonably interfere with enjoyment of life or use of property throughout the state or throughout the area of the state as shall be affected thereby.⁷⁶

One might contend that, with respect to criteria pollutants, “air pollution” is determined by reference to the NAAQS (such that pollution levels that exceed the NAAQS are deemed to be “air pollution” for the purpose of permit decisions under Regulation 18.302).⁷⁷ This interpretation cannot be correct. First, the Regulation 18 definition of “air pollution” is identical to the statutory definition in the Arkansas Water & Air Pollution Control Act;⁷⁸ thus, its purpose is to implement the state statute, not the federal Clean Air Act. Second, such an interpretation ignores the fact that Regulation 18 separately defines “conditions of air pollution” as follows:

“Conditions of air pollution” *as distinguished from “air pollution”* in a given area shall be deemed to exist when the Director finds that the National Ambient Air Quality Standards, as established from time to time by the EPA, have been exceeded in such area, or when the Director finds that extraordinary measures are necessary to prevent them from being exceeded.⁷⁹

The term “condition of air pollution” is used in another Regulation 18 definition: “air contamination” means “the presence in the outdoor atmosphere of one (1) or more air contaminants which contribute to a condition of air pollution.”⁸⁰ Therefore, under Regulation 18, the term “air contamination,” not “air pollution,” is linked to an exceedance of a NAAQS. Regulation 18 only uses the term “air contamination” in one instance: in Chapter 13. In that chapter, the APC&EC established that ADEQ’s authority to address areas “affected by levels of air contamination” (*i.e.* areas where the NAAQS are exceeded) is

⁷⁶ APC&EC Reg. 18, Ch. 2.

⁷⁷ *Id.*

⁷⁸ Ark. Code Ann. § 8-4-303(5).

⁷⁹ APC&EC Reg. 18, Ch. 2 (emphasis added).

⁸⁰ *Id.*

limited to those that “constitute a *significant departure* from the [NAAQS].”⁸¹ Thus, Regulation 18 has a wholly distinct set of terms for air quality that exceeds the NAAQS, which is purposefully distinguished from the definition of “air pollution.” Interpreting the term “air pollution” as being equivalent to “conditions of air pollution” would vitiate the distinct meaning given to those terms by the APC&EC. Moreover, to the extent Regulation 18 addresses exceedances of the NAAQS, it limits the ADEQ’s authority to instances of *significant departures*.

In sum, Regulation 18.302 does not obligate ADEQ to assess a stationary source’s emissions against the NAAQS during routine permitting. Furthermore, nothing in Regulation 18 purports to impose modeling requirements on permittees.

B. Regulation 19

In general, Chapter 3 of Regulation 19 delineates the responsibilities of ADEQ and of regulated sources, respectively, in meeting and maintaining the NAAQS. Specifically, Regulation 19.303 provides that regulated sources must do three things to prevent any of the NAAQS from being exceeded: (i) obtain a permit from ADEQ prior to construction of a new source or modification of an existing source of federally regulated air pollutant emissions; (ii) operate equipment in accordance with applicable permit requirements and regulations, and (iii) repair malfunctioning equipment and pollution control equipment as quickly as possible, and if the malfunctioning equipment is causing or contributing to a violation of the NAAQS, cease operating the affected equipment until it is repaired.⁸²

Notably, Regulation 19.303 does *not* include a general requirement for all regulated sources to demonstrate in routine permitting that the NAAQS will not be exceeded (much less a demonstration through modeling). The only specific modeling requirement applicable to sources is contained in Regulation 19, Chapter 9, the Arkansas PSD program. Arkansas incorporates by reference the federal PSD regulations in which air quality modeling requirements are limited to the permitting of major stationary sources and major modifications.⁸³

Regulation 19.302 sets forth the “precautions” ADEQ is responsible for taking to prevent the NAAQS from being exceeded:

- (A) Ambient air monitoring in any area that can reasonably be expected to be in excess of the NAAQS.

⁸¹ APC&EC Reg. 18.1301 (emphasis added).

⁸² APC&EC Reg. 19.303.

⁸³ APC&EC Reg. 19.904, incorporating by reference, *inter alia*, 40 C.F.R. § 52.21(k).

- (B) Computer modeling of regulated air pollutant emissions for any area that can reasonably be expected to be in excess of the NAAQS, and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. All computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS.

This regulation does not obligate ADEQ to ensure that the NAAQS are met at every geographic point for every permit that it issues. The only “computer modeling” required by this provision is for “area[s] that can reasonably be expected to be in excess of the NAAQS.” Where there is no such reasonable expectation, the provision does not compel ADEQ to perform modeling. The “review” required for new or modified sources is a separate obligation from the “computer modeling.” As with the federal Minor NSR requirements, there is no reason to assume that this review should routinely include modeling.⁸⁴

Nor does Regulation 19.402 (the “Approval Criteria”) provide a basis for requiring modeling as a routine requirement for all permits. This provision states:

No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.

First, this provision does not apply to major sources. It is part of Regulation 19, Chapter 4, which is titled “Minor Source Review.” It is also SIP-approved to meet the federal Minor NSR requirements.⁸⁵ As described above in Section IV.B, above, EPA does not generally require modeling as a part of Minor NSR, and therefore SIP approval of this particular provision could not be construed as an EPA requirement to model.

Regulation 19.402 has existed in some form since before the federal PSD program was enacted—*i.e.*, before the federal regulations divided sources into “major” and “minor” categories such that construction of major sources and

⁸⁴ See generally Section IV.B, *supra*.

⁸⁵ Approval and Promulgation of Implementation Plans; Arkansas; Regulation 19 and 26; Final Rule, 65 Fed. Reg. 61,103, 61,104 (Oct. 16, 2000).

major modifications required air quality impact analyses, but minor sources did not.⁸⁶ Subsequently, Arkansas divided and recodified its regulations such that Chapter 4 prescribed the permitting procedures for *minor sources*, and Chapters 9 and 11 prescribed the permitting requirements for *major sources*.⁸⁷ The fact that Arkansas chose to preserve this requirement only in the “Minor Source Review” section evidences the intention that it not apply to major sources. From the standpoint of the federal interpretation and enforceability of Chapter 4, EPA’s understanding is that “[t]he provisions of Regulation 19, Chapter 4 *apply only to sources which are not ‘major’ under [the federal CAA] definition.*”⁸⁸

In addition, Regulation 19.402 is further restricted by its plain language to apply only to permits to “construct” or “modify” a source. It does *not* apply to operating permits or renewals thereof. Moreover, Regulation 19’s definition of “modification” is limited to a “physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any federally regulated air pollutant over permitted rates or which results in the emission of a federally regulated air pollutant not previously emitted.”⁸⁹ In addition to other explicit exceptions, it expressly *excludes* changes which meet the “*de minimis*” criteria set forth in Regulation 19.407(C).⁹⁰ Thus, the provision cannot apply to modifications whose associated emissions increases are reasonably expected to be relatively insignificant.⁹¹

Finally, Regulation 19.502 provides:

No person shall cause or permit the construction or modification of equipment which would cause or allow the following standards or limitations which are in effect as of the effective date of this regulation, to be exceeded:

⁸⁶ For example, an earlier version of the provision as published in the 1973 Arkansas Air Code applied to all permits, just as the CAA did not distinguish between “major” and “minor” sources for preconstruction review purposes prior to the 1977 Amendments. Ark. Air Pollution Control Code, As Amended (July 30, 1973), Section 3(f) (Section 3 applied to all “permits and registrations”).

⁸⁷ Regulation 19, Chapter 9 is the PSD program; Chapter 11 provides that sources subject to the Arkansas operating permit program are required to have their permit applications processed in accordance with the procedures of Regulation 26, which it incorporates by reference.

⁸⁸ Approval and Promulgation of Implementation Plans; Arkansas; Regulation 19; Proposed Rule, 65 Fed. Reg. 26,792, 26,795-96 (May 9, 2000) (emphasis added).

⁸⁹ APC&EC Reg. 19, Ch. 2.

⁹⁰ *Id.*

⁹¹ See APC&EC Reg. 19.407(C)

(A) Any National Ambient Air Quality Standard or ambient air increment (as listed in 40 CFR 52.21)....

Thus, like Regulation 19.402, this provision is limited only to permits to “construct” or “modify” and does not apply to routine permitting of sources with *de minimis* emissions, *i.e.*, emissions less than the threshold amounts set forth in Regulation 19.407(C)(2). These are essentially the same as the PSD Significant Emissions Rates (SERs), the threshold levels at which PSD requirements apply to new major sources or existing sources making modifications that result in significant (*i.e.* PSD-level) emission increases.⁹² For all intents and purposes, non-PSD permits are excluded from the requirements of Regulation 19.502.

C. Regulation 26

Regulation 26 sets forth the requirements of the Arkansas Operating Air Permit Program. Regulation 26.304 requires operating permits to include all “applicable requirements” for all relevant emissions units in the source. The Regulation 26 definition of “applicable requirement” is virtually identical to EPA’s definition of that term.⁹³ It includes, *inter alia*, “[a]ny national ambient air quality standard or increment or visibility requirement under part C of Title I of the Act, *but only as it would apply to temporary sources* permitted pursuant to section 504(e) of the Act.”⁹⁴ Thus, the Arkansas operating permits program, like the federal Title V rules, expressly provides that the NAAQS do *not* impose direct regulatory obligations on any *non-temporary* stationary sources permitted under that program. To construe the NAAQS as “applicable requirements” to such sources would be squarely at odds with the state and federal regulatory definitions of that term, which explicitly exclude the NAAQS from direct application to non-temporary sources. It would also be in direct opposition to EPA’s longstanding interpretation that the NAAQS are not “applicable requirements” for such sources.⁹⁵

“Applicable requirements” also include “[a]ny standard[s] or other requirement[s]” provided for in the SIP that implement requirements of the CAA, “*as they apply to emissions units in a part 70 source.*”⁹⁶ Put simply, this means “all the requirements in the SIP *which are applicable to a particular*

⁹² Compare APC&EC Reg. 19.407(C)(2) with 40 C.F.R. § 52.21(b)(23)(i).

⁹³ The only material difference between the two definitions is that the EPA definition includes “[a]ny standard or other requirement under section 126(a)(1) and (c) of the Act,” while the Arkansas definition does not. Compare APC&EC Reg. 26, Ch. 2 with 40 C.F.R. § 70.2.

⁹⁴ APC&EC Reg. 26, Chapter 2 (emphasis added).

⁹⁵ See Section III.B, *supra*.

⁹⁶ APC&EC Reg. 26, Chapter 2 (emphasis added).

source.”⁹⁷ Thus, all Arkansas SIP provisions are not automatically imposed through the operating permits program as “applicable requirements” on all permit holders. Rather, only those SIP provisions that apply to a particular source are “applicable requirements” to that particular source.⁹⁸ SIP requirements that impose obligations on ADEQ, rather than on sources (such as Regulation 19.302), are not “applicable requirements” for *any* source. Any contrary interpretation would result in the absurdity that all SIP provisions would be applicable to all sources, simply because EPA had approved them. There is no support anywhere for that proposition. Moreover, as discussed above, Regulation 19 does not establish NAAQS compliance as a source-specific obligation for any type of source. Thus, NAAQS “compliance” is not an “applicable requirement” under Regulation 26 for any non-temporary sources.

The logical interpretation that flows from the language, organization, and history of Regulations 18, 19 and 26 is that no facilities in Arkansas are subject to NAAQS as emissions standards or limitations or applicable requirements, and no such facilities should routinely require modeling to analyze their effects on NAAQS attainment and maintenance, except where PSD requirements apply. Routine modeling for all permits would be just the type of exercise that EPA described as “unduly burdensome” and potentially “meaningless.”⁹⁹

VI. Conclusion

Congress envisioned that states, in the first instance, would determine both the amount of pollution control necessary to achieve and maintain NAAQS and the most appropriate control strategies, in light of the costs and benefits of each available tool in the broad toolkit available to the states. Neither Congress nor EPA—nor the APC&EC—require the application of NAAQS to individual stationary sources, except where PSD requirements are triggered.

Arkansans should be proud that their state is overwhelmingly in attainment with all NAAQS at almost all locations. To the extent the APC&EC and ADEQ are concerned with achieving or maintaining the NAAQS, they should follow the process envisioned by Congress. Air quality is impacted by

⁹⁷ U.S. EPA, Office of Air Quality Planning & Standards, “White Paper for Streamlined Development of Part 70 Permit Applications” (1995).

⁹⁸ See generally EPA Region 9, “Title V Permit Review Guidelines” (draft), at III-7 (instructing Title V permit reviewers to identify “applicable requirements” by scanning the contents of an approved SIP, identifying each provision potentially related to the source at issue, and “determin[ing] if it is applicable to the source based on source size, fuel type, source construction or modification dates, or other criteria given in the rule.”). Available at <http://www.epa.gov/region9/air/permit/titlev-public-part.html> (see Chapter III, “Applicable Requirements”).

⁹⁹ 57 Fed. Reg. at 32,276; see also 43 Fed. Reg. at 26,381.

many types of sources, mobile and stationary, from residential to industrial. All options should be explored, and a reasoned SIP should be developed as needed. It is equally clear that the state should *not* exceed the federal requirements for NAAQS by making those standards disproportionately applicable to certain stationary sources through routine modeling requirements or NAAQS permit limits.

NAAQS Reviews and Modeling
for Minor New Source Review
under the
Arkansas Infrastructure SIP

January 22, 2014

AGENDA

- I. Introduction of participants – 5 minutes
- II. Review of Objectives by Business Community Stakeholders, ADEQ & EPA – 10 minutes
- III. Brief overview of CAA and CFR requirements for minor NSR SIPs – 15 minutes
- IV. Review of AR SIP elements with focus on minor NSR – 40 minutes
- V. Articulation of specific conflicts between Act 1302 and AR SIP – 10 minutes
- VI. Wrap up and action items – 5 minutes
- VII. Future meetings on this topic? – 5 minutes

II. OBJECTIVES

- Articulate exact conflicts between the AR SIP and Act 1302
- Expectations of ADEQ for this conference
- Expectations of U.S. EPA for this conference
- List of action items following conference

III. OVERVIEW OF CAA AND CFR REQUIREMENTS

§110(a)(2) Infrastructure SIP Elements

- (A) Emission Limits and Other Control Measures
- (B) Ambient Air Quality Monitoring/Data System
- (C) Programs for Enforcement of Control Measures and for Construction or Modification of Stationary Sources** (*excluding Nonattainment NSR*)
- (D) Interstate Pollution Transport and Abatement; International Air Pollution
- (E) Adequate Resources and Authority
- (F) Stationary Source Monitoring and Reporting
- (G) Emergency Episodes
- (H) SIP Revisions
- (I) Consultation with Gov't Officials, Public Notice, Visibility Protection
- (J) Air Quality Modeling and Submission of Modeling Data
- K) Permitting Fees
- (L) Consultation and Participation by Affected Local Entities

CAA §110(a)(2)(C) Includes

3 Infrastructure SIP Sub-elements

- 1) **Enforcement** - A program for enforcement of the emission limits and control measures described in 110(a)(2)(A)
- 2) **Minor New Source Review** - A state-wide program to regulate
 - new construction and modification of minor stationary sources *and*
 - minor modification of major stationary sources
 - A “PSD *major* source” is often subject to *minor* NSR
 - All Title V (Reg. 26) minor permit modifications and many significant permit modifications are PSD minor modifications, even when the source is a major PSD source
- 3) **Major New Source Review** – A preconstruction permitting program to regulate
 - new construction of major stationary sources *and*
 - major modification of major stationary sources
 - in areas designated attainment or unclassifiable for the subject NAAQS as required by CAA Title I Part C (i.e., PSD)

What is the federal legal basis for “NAAQS Review” in permitting?

- **Section 110(a)(2)(C) of the CAA**
 - “a program to provide for *the...regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that the national ambient air quality standards are achieved*, including a permit program as required in parts C and D;”
- **40 CFR 51.160(a)**
 - “procedures...to determine whether the construction or modification of a facility...will result in a violation of applicable portions of the control strategy; *or interference with attainment or maintenance of a national standard...*”

What is New Source Review (NSR)?

- A program to review the construction and modification of minor and major stationary sources, *as necessary*, to assure that SIP control measures are met and that the NAAQS are achieved
- NSR often involves a case-by-case permitting review at the time of initial construction and/or modification of a stationary source
- NSR requirements are sometimes met programmatically without a case-by-case review and/or without issuance of a permit
- Depending on the specific circumstances, NSR may include
 - Control technology reviews (e.g., RACT, BACT, LAER)
 - Emission reduction offset requirements (e.g., NNSR offsets)
 - Ambient monitoring
 - Dispersion modeling
 - Visibility and other impacts analyses
- Major NSR is comprised of highly prescribed requirements
- Minor NSR varies widely from state to state

What is Major NSR?

- Major NSR applies to
 - The initial construction of a stationary source with PTE equal to or greater than the PSD and/or NNSR major source thresholds
 - Includes a change to an existing minor source if the change would constitute a major source by itself
 - The major modification of a PSD or Nonattainment major stationary source
 - Project emissions increase and net emissions increase are equal to or greater than the PSD and/or NNSR significant emission rates
- Major NSR includes
 - Prevention of Significant Deterioration (PSD)
 - For any pollutant for which a NAAQS is established or any precursor of the NAAQS pollutant, PSD applies in attainment and unclassifiable areas
 - PSD also applies to NSR-regulated pollutants for which there is no NAAQS (e.g., H₂S)
 - Nonattainment NSR (NNSR)
 - For any pollutant for which a NAAQS is established or any precursor of the NAAQS pollutant, NNSR applies in designated nonattainment areas
 - Both PSD and NNSR can apply simultaneously to the same project for different NAAQS

What is Minor NSR?

- “The procedures [*SIP*] must identify the types and sizes of facilities...which will be subject to review...” 40 CFR 51.160(e)
- Generally, Minor NSR applies, *as specified in the applicable SIP*, to
 - The construction of any minor stationary source (i.e., with PTE less than the applicable PSD/NNSR major source thresholds)
 - The modification of any minor stationary source
 - The modification of any major stationary source resulting in emissions increases less than the applicable PSD/NNSR significant increase thresholds
- Minor NSR requirements
 - May include a case-by-case permit review and issuance
 - May include controls or other substantive requirements
 - May include modeling, source testing, or monitoring
 - Vary widely from state to state

Minor NSR Flexibility

Excerpts from U.S. Court of Appeals 5th Circuit, 2012

Luminant Generation Company, LLC et al vs. EPA

- In stark contrast [*to major NSR*] the CAA prescribes only the barest of requirements for “minor” NSR
- For minor NSR, the Act requires simply that each SIP “include . . . regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that [NAAQS] are achieved.” 42 U.S.C. § 7410(a)(2)(C).
- The implementing regulations for minor NSR are likewise sparse, spanning less than two pages in the Code of Federal Regulations. See 40 C.F.R. §§ 51.160–51.164.
- The EPA has recognized that because “the Act includes no specifics regarding the structure or functioning of minor NSR programs” and because the implementing regulations are “very general[,] . . . SIP-approved minor NSR programs can vary quite widely from State to State.” 74 Fed. Reg. 51,418, 51,421 (Oct. 6, 2009).
- Minor NSR is “a cooperative federalism regime that affords sweeping discretion to the states to develop implementation plans and assigns to the EPA the narrow task of ensuring that a state plan meets the minimum requirements of the Act.”

Examples of Minor NSR occurring without case-by-case permit reviews

- General permits
- Permits by rule
- Construction of a stationary source with emissions below SIP-established permitting thresholds
- Physical changes and changes in the method of operation at a stationary source resulting in increases below SIP-established permitting thresholds
- Insignificant activities

In all of these examples, the “NAAQS Review” occurs on a programmatic basis

Arkansas SIP

What is the Arkansas Approved SIP for New Source Review?

1. Major NSR (PSD)

EPA approved Regulation 19, Chapter 9 as meeting 40 CFR 51.165

2. Minor NSR is divided into 2 categories

A. Major source review (Title V Non-PSD NSR or Reg. 26 Sources)

B. Minor source review (Non-Title V Minors or Reg. 19 Sources)

What is the Arkansas Approved SIP for New Source Review? (continued)

2. Minor NSR

A. Major source review (Title V Non-PSD NSR, or Reg. 26 Sources)

- Includes construction of sources that are *“major” as defined under Title V of the CAA, but “minor” as defined under PSD*
- Includes modification of *“major” sources as defined under Title V (including “major” PSD sources) but for which the modification results in emissions increases that are less than the PSD significant increase thresholds*
- EPA approved as meeting 40 CFR 51.160 – 51.164 requirements for NSR:
 - Reg. 19 Chapter 11 (which incorporates parts of Reg. 26 by reference);
 - Reg. 19.302 and 19.303
 - Reg. 19.502 and 19.504

What is the Arkansas Approved SIP for New Source Review? (continued)

2. Minor NSR

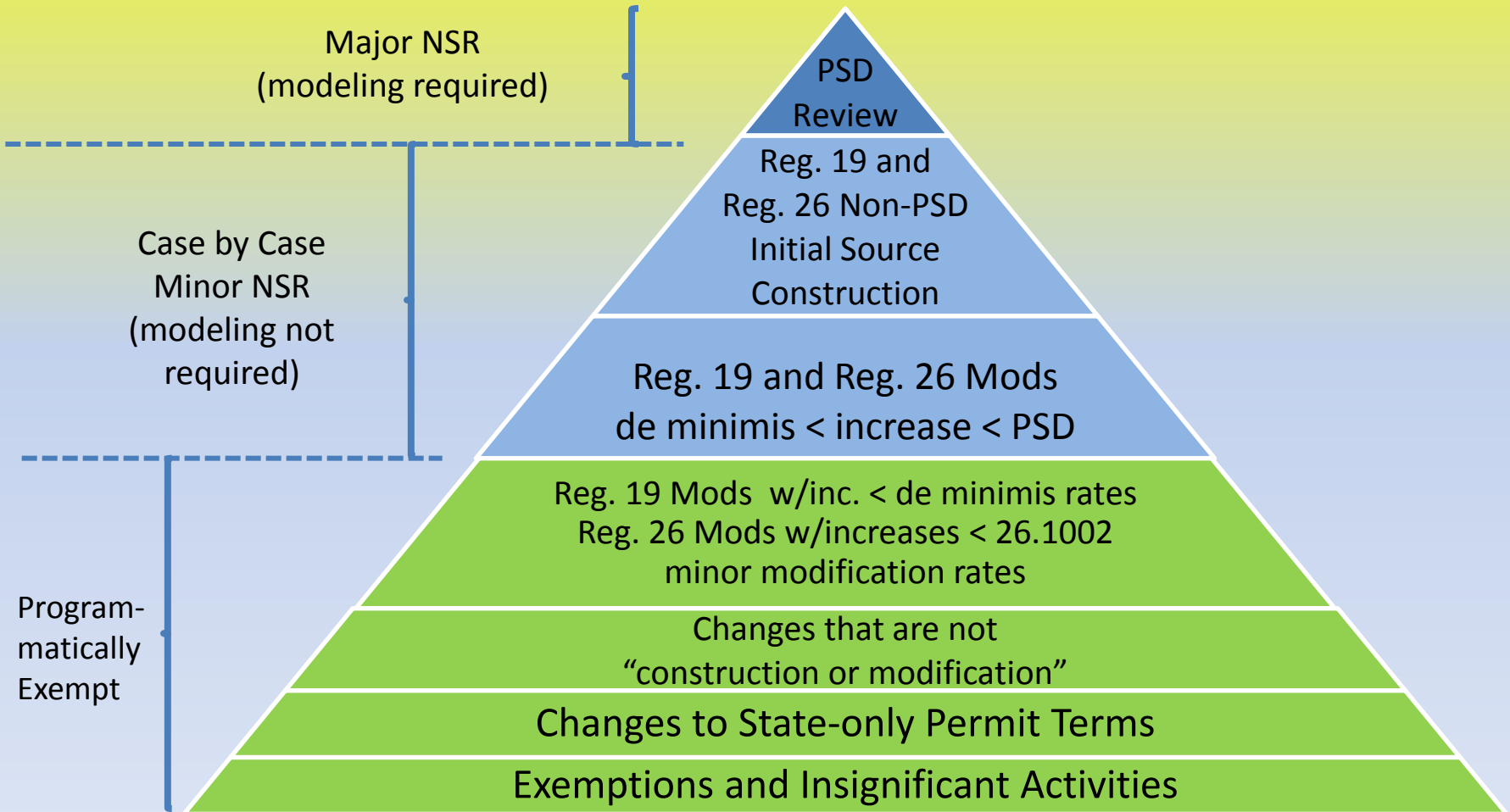
B. Minor source review (Non-Title V Minors, or Reg. 19 Sources)

- Includes construction and modification of sources that are *“minor” as defined under Title V of the CAA*
- EPA approved as meeting 40 CFR 51.160 – 51.164 requirements for NSR:
 - Reg. 19 Chapter 4;
 - Reg. 19.303; and,
 - Reg. 19.502 and 19.504

When is a case-by-case “NAAQS Review” required under the Arkansas SIP?

- What is meant by a “NAAQS review”?
 - A review “to determine whether the construction or modification of a facility...will result in...interference with attainment or maintenance of a national standard...” (40 CFR 51.160(a))
- The SIP requirement for conducting a NAAQS review and the level of rigor of the NAAQS review are contingent on the environmental significance of the construction or modification proposed
- A case-by-case NAAQS review is **not** required for several categories of sources and changes that have trivial environmental impact

The Arkansas NSR NAAQS Review Pyramid



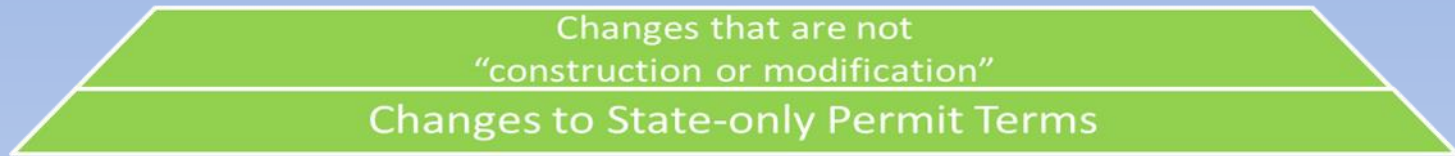
A NAAQS Review is NOT Required for...

Exemptions and Insignificant Activities

- Changes and Activities Exempt from Permitting
 - Construction of or changes to sources with emissions below the Reg. 18.315 registration thresholds
 - Construction of or changes to sources with emissions below the Reg. 19.401 permitting thresholds
 - Insignificant Activities
 - Changing among Alternative Operating Scenarios
 - Changes resulting in no emission increases (Reg. 19.415 and 26.802)
 - Changes that involve a physical change or change in the method of operation but do not result in an increase in emissions over permitted rates

No NAAQS review is required because the approved SIP has identified these categories as exempt from NSR procedures, i.e., exempt from a case-by-case NAAQS review

A NAAQS Review is NOT Required for...



- Changes to State-only Permit Terms
 - No NAAQS review is required because federal NSR requirements do not apply to state-only terms*
- Permits for changes at Reg. 19 or Reg. 26 sources that do not involve “construction or modification”, such as
 - Administrative Amendments
 - Reg. 19.407(C) De minimis changes
 - Reg. 26 minor modifications that satisfy Reg. 19.407 de minimis criteria
 - Reg. 26 significant modifications involving only changes to monitoring, recordkeeping, reporting or adding an applicable requirement
 - Modifications resulting in emissions increases only of non-NAAQS pollutants
 - Changes that increase emissions but do not involve a physical change or change in the method of operation

No NAAQS review is required because federal NSR requirements only apply to the construction and modification of stationary sources

A NAAQS Review is NOT Required for...

Reg. 19 Mods w/inc. < de minimis rates
Reg. 26 Mods w/increases < 26.1002
minor modification rates

- Modifications at Reg. 19 or Reg. 26 sources
 - with emissions increases below the respective de minimis or minor modification emission thresholds
 - Includes some permit revisions under
 - Reg. 19, Chapter 4, Minor Source Review
 - Reg. 26.1010, Significant Modifications
- All Reg. 26.1002 Minor Modifications are programmatically exempt from NAAQS Review

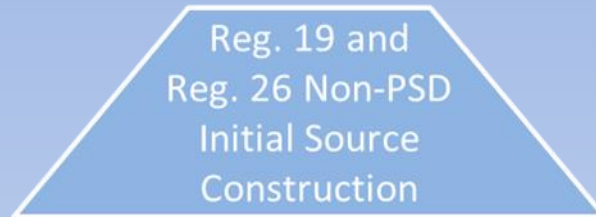
No further NAAQS review is required because the approved SIP has already made a programmatic determination that de minimis increases have a trivial environmental impact

A NAAQS Review is required for...

Reg. 19 and Reg. 26 Mods
de minimis < increase < PSD

- Modifications at Reg. 19 or Reg. 26 sources
 - with emissions increases over permitted rates greater than or equal to the de minimis/Minor Modification thresholds, but which do not trigger PSD review
 - Includes *some* permit revisions under
 - Reg. 19, Chapter 4, Minor Source Review
 - Reg. 26.1010, Significant Modifications
 - No programmatic determination for these minor NSR modifications
 - The permit review must consider whether the modification would interfere with attainment or maintenance of the NAAQS
 - Modeling is not explicitly required by the AR SIP, 40 CFR or CAA

A NAAQS Review is required for...



- Initial permit for construction of a Reg. 26 source (Title V non-PSD)
 - With PTE equal to or greater than Reg. 26 major source thresholds but less than PSD major source thresholds
 - Includes all permits for initial source construction under Reg. 26.404 with emissions of NAAQS pollutants
- Initial permit for construction of a Reg. 19 source (non-Title V Minors)
 - With PTE equal to or greater than Reg. 19.401 permitting thresholds but less than Title V major source thresholds
 - Includes all permits for initial source construction under Reg. 19.401 with emissions of NAAQS pollutants
- No programmatic determination for these minor NSR modifications
- The permit review must consider whether the modification would interfere with attainment or maintenance of the NAAQS
- Modeling is not explicitly required by the AR SIP, 40 CFR or CAA

A NAAQS Review is required for...



- Initial permit for Construction of a PSD major source
 - PTE greater than the PSD major source thresholds
 - Includes a change to an existing minor source if the change would constitute a major source by itself
- The major modification of a PSD major stationary source
 - Project emissions increase and net emissions increase are equal to or greater than the PSD and/or NNSR significant emission rates
- A detailed NAAQS Review is specifically prescribed by the SIP, CFR and CAA for each pollutant triggering review
 - Ambient Air Quality Impact Analysis (AAQIA) is required
 - Modeling is specifically required
- Class I impact analysis is required
- Other impacts analysis is required
- Must follow Reg. 19 Chapter 9 in addition to Reg. 26

Reg. 26 Permitting and NSR NAAQS Review Requirements

- Initial permit for a proposed Part 70 stationary source, Reg. 26.404
 - NAAQS review based on PSD modeling required if proposed source is major under PSD, for any PSD pollutant above significance thresholds
 - NAAQS review required for any other NAAQS pollutant with emissions above de minimis threshold, but modeling not required
- Administrative permit amendments, Reg. 26.901
 - No NAAQS review required
- Minor permit modifications, Reg. 26.1002
 - No NAAQS review required

Reg. 26 Permitting and NSR

NAAQS Review Requirements (continued)

- Significant permit modifications, Reg. 26.1010
 - NAAQS review based on PSD modeling required if proposed change is a major modification under PSD, for any PSD pollutant above significance thresholds
 - NAAQS review required for any other NAAQS pollutant with emissions above de minimis threshold, but modeling not required
 - No NAAQS review required for NAAQS pollutants with increases less than de minimis
 - No NAAQS review required for any NAAQS pollutant if the proposed change is not a physical change or change in method of operation with increases greater over permitted rates
- Title V Permit Renewals
 - No NAAQS review required unless the renewal will authorize construction or modification otherwise subject to a NAAQS review

How is a NAAQS review performed for minor NSR changes?

The NAAQS review can be satisfied by consideration of several factors, such as:

- The level of the emissions increase
 - in comparison to the de minimis thresholds or PSD significance thresholds,
 - in comparison to the facility PTE or area-wide emissions inventory, and/or
 - in comparison to previous NAAQS evaluations.
- The location of the construction or modification
 - in an attainment or unclassifiable area,
 - in relation to other pollutant-emitting activities or industrial sources,
 - in relation to ambient monitoring stations, and/or
 - in relation to potentially sensitive receptors
- The nature of the source or emissions unit

Impact of Act 1302 on SIP Implementation

- The approved SIP does not require a NAAQS review for many permitting actions for which ADEQ was routinely conducting modeling
- For minor NSR changes for which the SIP does require a NAAQS review as part of the permitting process, modeling is not required to conduct the review
- The SIP requires modeling as part of the permit review only for PSD permitting
- Act 1302 does not affect PSD permitting and does not restrict ADEQ from conducting NAAQS reviews for minor NSR

Remaining Agenda Items

- V. Articulation of specific conflicts between Act 1302 and AR SIP – 10 minutes
- VI. Wrap up and action items – 5 minutes
- VII. Future meetings on this topic? – 5 minutes



Industries for the Environment

July 2, 2015

Comments on ADEQ's NAAQS SIP/Minor NSR Permitting Guidance Document

AEF submits the following comments on the ADEQ document entitled "Developing the NAAQS SIP: A Look at Minor Stationary Source Permitting".

BACKGROUND INFORMATION

Under the Clean Air Act (CAA), state and local governments are primarily responsible for the prevention and control of air pollution. Air pollution is controlled by rules and guidelines issued by the U.S. EPA under the CAA. These rules and guidelines must be included in a state's implementation plan (SIP). SIPs contain a state's strategy for attaining and maintaining the National Ambient Air Quality Standards (NAAQS), which exist for carbon monoxide (CO), fine particulate matter (PM₁₀ and PM_{2.5}), lead, nitrogen dioxide (NO₂), ozone, and sulfur dioxide (SO₂). SIPs may be revised at the impetus of EPA or at a state's instigation, always subject to EPA approval.

SIPs are concerned primarily with nonattainment, and states are required to estimate the emissions reductions required to attain the NAAQS and establish their own unique control program to achieve the necessary reductions. Due to the nonattainment focus of SIPs, all state regulations are focused first toward reducing pollution in known problem areas. For a SIP to be valid, its provisions must be supported by state enabling legislation and a regulatory framework that can be applied broadly. In developing SIPs, States are encouraged to take into consideration the social and economic impact of their strategies—including the impact on availability of fuels, energy, and employment—but are not required to do so. Over the decades since the CAA has been in place, Arkansas' air quality has been very good and there have been very few areas where the NAAQS has not been attained.¹ Therefore, Arkansas' SIPs have been relatively simple and have generally conformed to the minimum standards required by EPA. The last Arkansas SIP was approved by EPA in October 2000.² However, a more recent SIP submittal is still pending with EPA.

ADEQ is currently developing a SIP (or SIPs) for several outstanding NAAQS. The NAAQS SIPs to be developed include:

¹ The current exception is Crittenden County, which is part of the Memphis TN-AR-MS interstate area that is currently nonattainment for the 2008 ozone NAAQS.

² 65 FR 61103, October 16, 2000.

1. 2006 PM_{2.5} – Update needed for minor New Source Review (NSR) only. The major NSR/PSD portion of the 2006 PM_{2.5} SIP was completed in November 2014, following promulgation of updates to Regulations 18/19/26.
2. 2008 Ozone
3. 2008 Lead
4. 2010 SO₂ (1-hour NAAQS)
5. 2010 NO₂ (1-hour NAAQS)
6. 2012 PM_{2.5} – These standards reduced the annual PM_{2.5} NAAQS to 12 µg/m³, down from 15.

The CAA requires states to submit SIPs that provide for the implementation, maintenance and enforcement of a new or revised NAAQS within 3 years following the promulgation of the new or revised NAAQS. ADEQ is past the 3-year deadline for submittal of the required SIPs, and the concern is that EPA will eventually take formal action against Arkansas.

As with past SIP submittals, Arkansas is currently in attainment with all of these standards (except for ozone in Crittenden County). Therefore, these “new” NAAQS SIPs do not necessarily require any additional control measures to “attain the NAAQS”.

COMMENTS ON “DEVELOPING THE NAAQS SIP” DOCUMENT

One element of the SIP is the minor New Source Review (NSR) permitting program. ADEQ has an existing minor NSR program under Arkansas Regulation No. 19. The vast majority of Regulation No. 19 has been unchanged for many years, and was approved by EPA in the October 2000 SIP approval. As part of the SIP development process, ADEQ is considering when and if an air quality dispersion modeling analysis needs to be conducted as part of the Minor NSR permitting process.

Comment #1 - Purpose

In the Purpose section of the document, ADEQ makes the following statement:

Part of this duty is to ensure that construction of new stationary sources or modification of existing stationary sources, including construction or modification authorized via Minor new source review (NSR) permitting actions, do not cause or contribute to an exceedance of the national ambient air quality standards (NAAQS) or interfere with the maintenance of the NAAQS.

The phrase “do not cause or contribute to an exceedance of the NAAQS” is not a requirement of an approvable Minor NSR program within a SIP (see 40 CFR 51.160(a)), and should not be used in the Minor NSR context. This phrase implies a site-specific, quantitative determination of the ambient air quality impact from proposed stationary source construction or modification (i.e., dispersion modeling). It is a requirement of the major NSR/PSD permitting program (see 40 CFR 51.165(b)), but not minor NSR. The Minor NSR program must only insure that construction or modification does not cause “interference with attainment or maintenance” of the NAAQS. “Attainment” and “maintenance” specifically refer to

the attainment/nonattainment determination process, which is based on monitored air quality concentrations in the area.

The NAAQS Implementation White Paper provided to ADEQ in November 2012 provides an in-depth evaluation of the NAAQS in relation to stationary source permitting. A copy of this White Paper is enclosed with these comments.

Comment #2 – Enhanced Planning Measures and Approaches

AEF supports the ADEQ's use of measures outside of the stationary source permitting process to evaluate the potential for future nonattainment. For example, the pollutant with monitored concentrations closest to the NAAQS in Arkansas is PM_{2.5}, and the emissions inventory data shared by ADEQ during the stakeholder process showed that the overwhelming majority of PM_{2.5} emissions are from non-stationary sources, such as wildfires, prescribed burning, and on-road/off-road mobile sources. If PM_{2.5} nonattainment were to occur in Arkansas, emission reductions from these non-stationary sources would have to be an important element in any nonattainment SIP. Given the emission inventory data, reducing or even eliminating PM_{2.5} emissions from stationary sources would be unlikely to have any measurable impact on PM_{2.5} attainment.

Comment #3 – Minor NSR NAAQS Evaluation Flowchart

In January 2014, AEF, EEAA, and other industry representatives met with ADEQ and EPA Region 6 (via a videoconference). A copy of the PowerPoint presentation from this meeting is enclosed.

The purpose of the January 2014 meeting was to discuss NAAQS reviews and modeling for minor NSR under the Arkansas infrastructure SIP. During the meeting, it was explained that the "NAAQS review" for many types of minor NSR under the Arkansas regulations occurs on a programmatic basis, and thus case-by-case NAAQS reviews are not required in these instances. The role of modeling in the NAAQS reviews was also discussed.

Figure 1 shows the various levels of Arkansas NSR permitting and describes how the NAAQS review is satisfied for each type. The EPA did not disagree with the explanation of how the Arkansas minor NSR program functions regarding NAAQS reviews. The second level of the Pyramid ("Reg. 19 and Reg. 26 non-PSD Initial Source Construction") right below "PSD Review" rises to the level of a case-by-case NAAQS review for minor NSR (but not necessarily modeling).

Given that the definition of "major source" under the CAA (and thus Reg. 26) is 100 tons per year (tpy) of a regulated pollutant, AEF recommends that ADEQ's NAAQS Evaluation Flowchart adopt an "SER" (as that term is used in the Flowchart) modeling threshold of 100 tpy or more of any single criteria pollutant, i.e. any pollutant with a NAAQS (except PM_{2.5}), calculated on a net emissions increase basis (defined as allowable-to-allowable). The recommended PM_{2.5} threshold is 50 tpy due to existing PM_{2.5} monitored background concentrations near the NAAQS in most areas of the state. The establishment of defined levels where modeling would be conducted would minimize use of a subjective determination that a new or modified source would

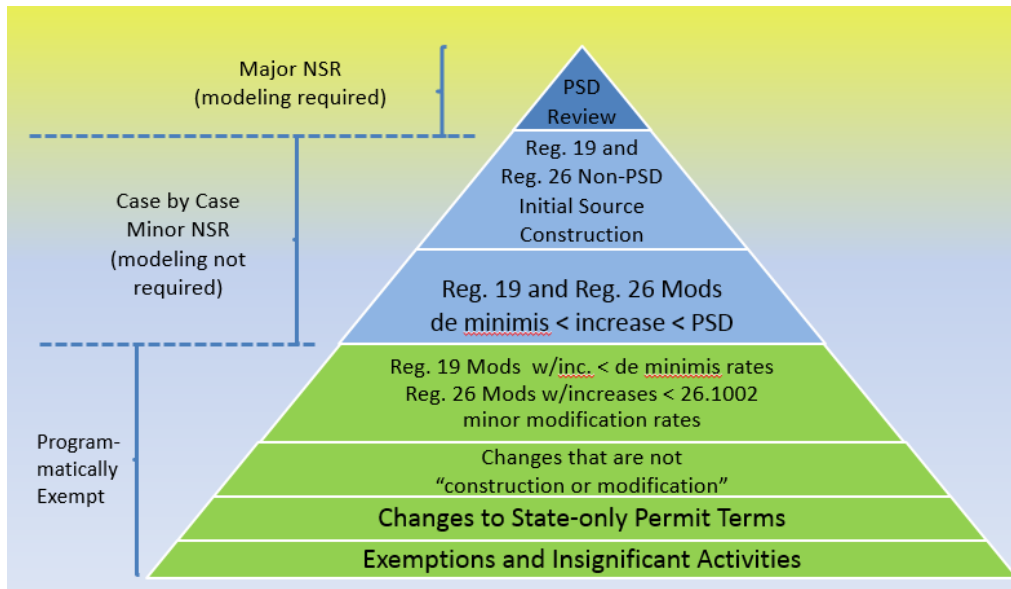


Figure 1. The Arkansas NSR NAAQS Review Pyramid

need a detailed NAAQS review. Emission increases at stationary sources below 100 tpy (or 50 tpy PM_{2.5}) in attainment areas would generally be in the “noise level” of overall area emissions and would not be expected to interfere with maintenance or attainment of the NAAQS. The November 2012 White Paper provides citations to EPA statements in this same vein.

The net emissions increase would be the change in permit allowable emissions (on a pollutant-by-pollutant basis) as a result of the proposed construction or modification requiring a minor NSR permit decision. Only the pollutant(s) with a net emissions increase exceeding the modeling threshold would be subject to a dispersion modeling analysis. For example, if an existing source had facility-wide allowable NO_x emissions of 50 tpy and proposed construction or modification of equipment such that the post-project facility-wide NO_x emissions would exceed 150 tpy, then an NO₂ modeling analysis would be required. Note that the proposed modeling threshold will have no effect on existing PSD major stationary sources, since those large sources have emission increase thresholds much lower than 100 tpy (e.g., 40 tpy NO_x) that subject them to an air quality modeling analysis as part of the major NSR/PSD permit process.

In some cases, an increase of over 100 tpy may not warrant an air quality modeling analysis; for example, in very rural areas or areas where monitored concentrations are far below the NAAQS. AEF recommends that the Flowchart include another decision point for a qualitative analysis. In the event that the tpy thresholds are exceeded, ADEQ may still determine that modeling is not necessary based on an examination of the source type; emission parameters; the emissions increase from the proposed construction or modification relative to the overall emissions (from stationary sources, mobile sources, other anthropogenic sources, and biogenic sources) in this area; population growth and density, and

land use in the area; recent and historical ambient monitoring data and trends within this Air Quality Control Region; and meteorological data.

The resulting Flowchart would mean that a NAAQS modeling analysis would never be required if the emissions increases were below the tpy thresholds, but modeling would be required if the increases were above the thresholds unless ADEQ determined that its qualitative examination satisfied the NAAQS review.

AEF does not agree that historical modeling data should be used to identify possible issues with maintaining the NAAQS and/or be a factor in requiring future modeling. Historical NAAQS modeling completed or required by ADEQ was in many cases overly conservative and did not appropriately use the Minor NSR concept of “attainment or maintenance of the NAAQS”.

CONCLUSION

AEF appreciates ADEQ’s efforts in conducting the stakeholder process and in providing ample time and opportunity for stakeholder input. There are still many details to work out in the SIP process, and we look forward to continuing our partnership with ADEQ toward a timely, effective and approvable SIP submittal package.

Sincerely,

Charles M. Miller
Executive Director

From: [Ashley N Ullstrom](#)
To: [Jackson, Tricia](#)
Cc: [Bruce W Moore](#); [David J Long](#)
Subject: AEP Comments - Minor NSR Permitting Guidance Document
Date: Thursday, July 02, 2015 3:40:04 PM

Ms. Jackson,

AEP-Southwestern Electric Power Company appreciates this opportunity to comment on the draft Minor NSR Permitting Guidance Document. Dave Long of AEP Service Corporation has provided the following comments and concerns regarding issues covered in this document on behalf of AEP-SWEPCO:

We note the apparent heavy reliance on modeling in the Draft Document. We recognize that in some cases a predictive model may be the only tool available to attempt to evaluate the impacts from a prospective project, but our experience with air quality models suggests that, especially for small sources, modeling may not be a reliable means of analyzing impacts.

AEP has a long history of working in the air quality modeling community, working with Gaussian, Lagrangian, and Eulerian models. In addition we participate in various forums where current air quality modeling issues are discussed and ideas exchanged. Based on our participation in these forums, we are aware of significant concerns about the ability of the current USEPA preferred model AERMOD to accurately predict ambient impacts. We would reference several studies published by the Indiana Department of Environmental Management, with the most recent version available on their web site at http://www.in.gov/idem/airquality/files/modeling_aermod_case_study.pdf. In addition, our experience suggests that other than for broad indications of average air quality, the use of regional models for determining impacts of individual small sources is probably not going to be useful to the agency.

As a final concern, our long experience in using air quality models suggests that without careful examination of the inputs being used, especially the mixing height values calculated in the meteorology preprocessor, unrealistic results may occur that can needlessly penalize new or existing sources. The problems we have observed are somewhat random in nature, but result in very low mixing heights that can cause unrealistic concentrations for periods of one to several hours. Smaller sources are more likely to be impacted by this issue since they may have cooler discharges coming from low levels that would not be able to penetrate out of the mixed layer being simulated by the model.

We would recommend that ADEQ undertake a study of the performance of any model they would propose to use and compare its performance to air quality monitoring in various areas around the state. Depending on the outcome of this work, the model may prove itself capable for some pollutant and meteorology combinations and not others. Such a study could also demonstrate that the model does work well in the meteorologic regimes and terrain conditions present in Arkansas. Releasing the results of the study to USEPA and the broader modeling community would be useful in showing both the strengths and weaknesses of the suggested tools that ADEQ is considering for use in these analyses. Should this study show that modeling is not good approach, ADEQ should

consider enhancing the ambient monitoring available in areas where growth is expected to allow a better evaluation of current ambient conditions can be made and compared to the emissions density present in the region that is impacting the monitor.

If you have any questions regarding these comments, please don't hesitate to contact me.

Thank You,

Ashley Ullstrom
American Electric Power
Air Quality Services
214-777-1282

From: [Gesser, Ryan](#)
To: [Jackson, Tricia](#); [Hemann, Chris](#)
Cc: [Ruppel, Mark S.](#); [Thomas, Alan](#)
Subject: Arkansas NAAQS SIP Comments
Date: Thursday, July 02, 2015 2:21:44 PM

Dear Ms. Jackson...

Thank you for allowing the opportunity to provide the following comments on Arkansas' NAAQS SIP guidance...

- GP generally agrees with DEQ's approach to the NAAQS SIP for minor source permitting by promoting planning measures that focus on regional trends in air quality. This emphasis is particularly important for ozone and fine particulate matter, for which the NAAQS are typically most challenging to attain due to the increasing stringency of the standards relative to existing and background conditions, and that are affected by significant emissions of precursor pollutants to a far greater extent than emissions from minor sources and modifications. Items 1 through 4 of "Enhanced Planning Measures and Approaches" appropriately examine statewide air quality by recognizing that emissions from major sources within Arkansas, upwind sources outside the state, and non-road, on-road, non-major, and natural episodic emissions (e.g., forest fires and prescribed burns) are best managed using sound data collected through emissions inventories, monitoring networks, and regional-scale modeling that reflect actual emissions and impacts on air quality.
- Periodic Multi-source Modeling (Item 5) may be a useful tool; however, the guidelines for conducting such modeling should be made clear and generally conform to current (at the time of analysis) EPA modeling guidance, tools, and data resources. GP suggests such analyses be limited to circumstances that suggest a review is necessary, such as when a concentrated number of minor sources locate or increase emissions in a certain area. Otherwise, benefits are more likely realized from regional-scale modeling or cumulative PSD modeling from a major source or modification. GP encourages ADEQ to notify sources considered in multi-source modeling in advance of such analyses being conducted and provide the opportunity to review and refine model inputs that may be important due to changes in emissions factors and other relevant modeling parameters. GP recognizes that EPA guidance provides for use of monitoring in lieu of modeling in limited and constrained circumstances and as a tool to inform, interpret, and validate the modeling analyses because ambient monitors better reflect the inherent variability of emissions, background concentrations (i.e., unmodeled sources), and atmospheric conditions that are critical to characterizing ambient air quality but are approximated (and in the case of variable emissions and background concentrations, ignored) in dispersion models. When used for any purpose, DEQ should make clear that the use of temporary monitors could be used only to identify areas of interest because Federal Reference (or Equivalent) Method ambient monitoring of sufficient quality and duration would be necessary to designate an area as nonattainment. Just as when multi-source modeling is initiated, GP recommends that ADEQ notify sources in advance of temporary monitoring so that sources can provide information that may be meaningful in siting the temporary monitor and potentially collect operational

data that might not otherwise be recorded but would assist in interpreting measured concentrations. The preceding comments also apply to “Risk-based Monitoring” (item 6) deployed temporarily on a stand-alone basis or in conjunction with regional-scale or multi-source modeling.

- GP generally supports the evaluation process represented by the Minor NSR NAAQS Evaluation Flowchart and the opportunity to qualitatively assess ambient concentrations without modeling. This approach is appropriate because, by definition, minor sources and emissions increases that are less than significant emission rates are not expected to cause or contribute to NAAQS exceedances or otherwise interfere with maintenance of attainment. DEQ should be aware of, and its guidance flexible enough to incorporate, emerging EPA methods for assessing significant emissions and impacts through new “modeled emission rates for precursors” (“MERPs”) that are critical for regional pollutants like ozone and PM_{2.5} and pending rulemaking to re-establish significant impact levels (and any associated changes to significant emission rates) for PM_{2.5} and any other criteria pollutants and precursors. GP is concerned that ADEQ suggested the flowchart would be included in the SIP insofar as that may make it difficult by minimizing flexibility to revise the procedures as frequently as may be appropriate in response to changes in federal and state permitting requirements and modeling techniques.

GP supports the use of net changes in potential emissions relative to significant emission rates (SERs) and qualitative assessment of emission unit characteristics to support a determination that “no further analysis” would be required. GP has seen this approach applied reasonably and successfully in other states that rely on information other than dispersion modeling for minor source permitting. GP is not aware of the referenced “Dispersion Guidance” being available for review, but based on preliminary discussion during the SIP development process and experience in other states, we anticipate that good engineering design and operating practices and vertical exhaust discharges would be examples of acceptable criteria. We urge DEQ to make these criteria available for review and comment before finalizing the policy.

GP encourages ADEQ to clearly establish the SERs that would be used for such a comparison to avoid confusion among the federal PSD SERs (e.g., 40 CFR 52.21) or other *de minimis* thresholds that may exist in federal and Arkansas regulations. The federal PSD SERs would be an appropriate basis because, again by definition, minor sources and emissions increases that are less than these SERs are not expected to cause or contribute to NAAQS exceedances or otherwise interfere with maintenance of attainment.

By convention, we recommend against describing “modeled NAAQS *violations*” and instead suggest “potential exceedances” or “high concentrations” because attainment or nonattainment demonstrations can only be made through ambient monitoring with an approved reference or equivalent method.

Please let me know if we can provide and additional information to support the preceding recommendations and comments. Thank you once again for the opportunity to provide comment

and we look forward to continuing to participate in the NAAQS SIP development process.

...Ryan

=====

Ryan A. Gesser, CCM
Air Quality Manager
Georgia-Pacific LLC
133 Peachtree Street NE
Atlanta, GA 30303
404-652-6933 (office)
404-314-7931 (mobile)
ryan.gesser@gapac.com

From: Hemann, Chris [<mailto:HEMANN@adeq.state.ar.us>]
Sent: Monday, June 15, 2015 10:40 AM
Subject: NAAQS SIP Development Stakeholders' Feedback Solicited by July 2, 2015

Sent by an external sender

Over the past several months, the ADEQ Air Planning and Permitting staff has conducted meetings with stakeholders to discuss and develop concepts for National Ambient Air Quality Standards State Implementation Plan (NAAQS SIP) development.

After a series of meetings with the NAAQS SIP Development stakeholder "Modeling Subgroup", ADEQ staff and stakeholders have identified a number of proposed approaches and measures that resulted in the development of a NAAQS SIP/Minor NSR permitting guidance draft document attached.

ADEQ's Air Planning Branch is soliciting comments and feedback on the merits and utility of each approach and/or combination of proposed approaches to ensure that minor source construction or modification activities do not cause or contribute to an exceedance or interfere with the maintenance of the NAAQS, and on any other alternative approaches not proposed in this document.

Please provide feedback on the proposed guidance document by July 2, 2015, to Tricia Jackson at jacksonp@adeq.state.ar.us.

<http://www.adeq.state.ar.us/air/planning/#naaqsFeedback>

http://www.adeq.state.ar.us/air/planning/naaqs_sip/



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

JUL 02 2015

Ms. Tricia Jackson
Air Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

RE: EPA Comments on the Draft NAAQS SIP/Minor NSR Permitting Guidance Document

Dear Ms. Jackson:

Thank you for the opportunity to review and provide comments on the draft National Ambient Air Quality Standards (NAAQS) State Implementation Plan (SIP)/Minor New Source Review (NSR) Permitting guidance document. We understand that the Arkansas Department of Environmental Quality (ADEQ) has developed this document to summarize and discuss the various proposed approaches and measures to address Minor NSR NAAQS demonstration requirements that were identified through the NAAQS SIP development stakeholders' process.

The EPA agrees with ADEQ's statement in the guidance document that the Department is required to ensure that the construction of new stationary sources or modification of existing stationary sources, including Minor NSR permitting actions, do not cause or contribute to an exceedance of the NAAQS or interfere with the maintenance of the NAAQS. Our enclosed comments provide feedback on the specific approaches and measures proposed in the document to assist ADEQ in meeting this requirement. We also identify our concerns regarding elements and/or requirements that are not addressed by the draft guidance document.

We look forward to working with you as you address our comments and continue to develop the referenced NAAQS SIP and any associated guidance document(s). Please note that our comments today do not constitute final determinations concerning the approvability of any associated revisions to the Arkansas SIP or the appropriateness of any final guidance document

developed by ADEQ. If you have any questions about the EPA's review of the draft guidance document, please feel free to contact Ms. Ashley Mohr of my staff at (214) 665-7289.

Sincerely,



Jeff Robinson
Section Chief
Air Permits Section

Enclosure

cc: Tammy Harrelson, Arkansas Department of Environmental Quality
Stuart Spencer, Arkansas Department of Environmental Quality

Enclosure

Comments on Enhanced Planning Measures and Approaches

1. The draft guidance document references regional-scale modeling to aid in assessing impacts of projected growth on ambient air quality, as well as, to identify areas that may be sensitive to potential NAAQS exceedances as a result of emission increases. We do not believe that the resolution of a regional-scale modeling analysis provides sufficient information to assess the local-scale ambient impacts, specifically localized concentration gradients or “hotspots”, resulting from a single facility or to quantify the cumulative local-scale impacts on ambient air from a group of facilities. While regional modeling may be helpful in certain situations, such as regional air quality planning, this scale of modeling does not have sufficient resolution to appropriately characterize or evaluate local-scale impacts.
2. The draft guidance document discusses the importance of existing monitoring network reviews and the potential measure to utilize temporarily installed monitors in areas identified as at risk of NAAQS exceedances. We agree that the AAQM Network and its annual and 5-year monitoring reviews are important pieces in determining attainment status. We also support ADEQ in taking the initiative to identify areas at risk of exceeding the NAAQS and considering the option to install temporary monitors to assess ambient air quality. Please note, a monitor may be operated temporarily, however, if the monitor is above or near the NAAQS continued NAAQS comparable monitoring may be necessary.
3. Periodic multi-source modeling is discussed as a possible enhanced planning approach in the guidance document. While additional periodic multi-source modeling may be a useful tool to help ensure that cumulative impacts from existing sources and/or the addition of new sources do not result in NAAQS exceedances, it is not clear in the guidance document if this intended to take the place of multi-source modeling that may be required as part of a refined, cumulative NAAQS analysis in support of a Minor NSR permit action. We would like to point out that Minor NSR NAAQS compliance requires that a new or modified stationary source does not cause or contribute to a NAAQS exceedance. Therefore, we do not believe that periodic multi-source modeling should be considered as an alternative to or replacement of ADEQ’s ability to require that a Minor NSR permit action include a cumulative modeling analysis, as necessary, to demonstrate that the source will not cause or contribute to a NAAQS exceedance.
4. Regular reviews of the NAAQS SIP are proposed in the guidance document to re-evaluate attainment status issues due to increases in emissions and NAAQS revisions. We agree that these types of reviews are necessary to ensure that the NAAQS SIP requirements continue to ensure compliance with the NAAQS. However, additional information regarding the frequency of these reviews, as well as, how a review of the SIP would be triggered as a result of a revision to a NAAQS should be included within the guidance document and the developed NAAQS SIP.

Comments on Minor NSR Evaluation Flowchart

5. The proposed Minor NSR NAAQS Evaluation Flowchart, as presented, does not contain sufficient information to determine if the proposed approach is protective of the NAAQS for all Minor NSR actions. As discussed below, additional information, including technical supporting documentation, is needed to support the proposed flowchart.
 - a. The flowchart indicates that only those projects with a net increase in emissions would trigger potential additional analysis. It is unclear how Minor NSR projects that do not include net emissions increases but do contain other proposed changes (i.e., stack parameter changes) that may impact ambient impacts will be evaluated to ensure compliance with the NAAQS.
 - b. The flowchart indicates that net emissions increases will be compared with specific values (SERs) to determine if additional analyses may be required. Additional information regarding the SERs and how they are developed is needed. If this flowchart, or a similar one, were included in the NAAQS SIP, additional technical information to support the SERs would be required to demonstrate the values are protective of the NAAQS and to support approval into the Arkansas SIP.
 - c. Similar to Comment 5(a), additional information to support the referenced “historical modeling data,” “standard conditions,” and “control strategies” would be necessary if the NAAQS SIP submittal contained this evaluation flowchart, or a similar flowchart. The current documentation is not sufficient to determine if the proposed approach is protective of the NAAQS for all Minor NSR actions.
 - d. The flowchart and draft guidance document do not clearly describe what would trigger additional refined/quantitative analysis. In addition, the flowchart does not explicitly reference the potential requirement for a case-specific air dispersion modeling. While we agree that an air quality analysis in support of a Minor NSR permit action may not always require a refined/quantitative analysis, such as air dispersion modeling, we do believe that ADEQ should retain the authority to require case-by-case air dispersion modeling when more qualitative or generic approaches are not adequate to demonstrate compliance with the NAAQS and that the guidance document should clearly reference this authority.

Comments on Approaches to Assess Cumulative Impact

6. As stated above in Comment 1, we have concerns regarding the use of a regional modeling to develop growth allocations intended to be protective of the NAAQS with respect to local impacts from emission sources. We agree with ICF and do not believe that regional modeling has sufficient resolution to characterize and evaluate local-scale impacts necessary in developing growth allocations for Minor NSR permitting.

7. While the Emissions-Distance Threshold approach may be useful in specific cases as a way to screen out of a more robust analysis, including air dispersion modeling, we agree that additional information and detailed technical analysis to support any developed distance threshold(s) would be required to determine if the approach was protective of the NAAQS. If the approach is included as part of the NAAQS SIP, this information would need to be included in the SIP submittal to support the proposed revision. This documentation should also clearly describe what type(s) of analysis would be potentially triggered if the threshold value was exceeded.

RICHARD H. MAYS
115 South Third Street
Heber Springs, AR 72543
(501) 362-0055

July 2, 2015

Ms. Tricia Jackson
Air Division
Arkansas Department of
Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Re: Modeling Requirements for New Minor Source Construction Or Modification
Activities for Compliance With National Ambient Air Quality Standards
(NAAQS)

Dear Ms. Jackson:

I am submitting these brief comments on my understanding of a proposal that has been made by some of the stakeholders in the group formed to discuss and develop concepts for National Ambient Air Quality Standards State Implementation Plan (NAAQS SIP) development.

Of course, without having the benefit of the discussions among the members of the stakeholder's group, it is sometimes difficult to appreciate all of the nuances of a proposal. However, there is one proposal regarding the size of the facilities at which monitoring would be required in the event of remodeling, expansion or construction that seems on its face to be objectionable. That is the proposal that, I understand, would raise the minimum amount of emissions required for modeling to be performed from 40 tons/year to 140 tons/year.

As stated on ADEQ's website, one of ADEQ's missions is to ensure that minor source construction or modification activities do not cause or contribute to an exceedance or interfere with the maintenance of the NAAQS. This is to further ensure, according to the website, that people in all areas of the State, not just those locations with monitors, are protected from exposure to pollutant concentrations exceeding the NAAQS.

If ADEQ were to further limit the universe of facilities at which modeling was required as preface to an expansion, modification or other construction activity by increasing the minimum amount of emissions by the facilities at which the requirement for modeling was triggered, the State's air quality would be less well-monitored, the likelihood of deterioration of the State's air quality would increase, and those abovementioned missions of the agency would be made far more difficult.

I strongly urge that the Department reject any proposal to increase the minimum threshold for imposing the modeling requirements for minor source construction or modification activities.

Sincerely,

/s/ Richard H. Mays

From: [McDaniel, Virginia L.-FS](#)
To: [Jackson, Tricia](#)
Subject: NAAQS SIP - fuel loading in Arkansas
Date: Tuesday, June 16, 2015 9:09:32 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

Dear Tricia,

I am writing in regards to the development of the NAAQS SIP. For the past 5 years I have been working with other researchers to document fuel loading in forest communities in Arkansas. We have found fuel loading estimates to be much lower than default fuel loads used by such cover type classifications such as Fuel Characteristic Classification System (FCCS) and Society of American Foresters/Society of Range Management (SAF/SRM) which are used in many smoke emission models (like CONSUME and FOFEM (First Order Fire Effects Model)).

I am wondering if you could tell me what fuel loading estimates you are using or the EPA is using to predict smoke emissions in forest communities in Arkansas and what models are being used to make those predictions? This information is critical to emphasizing why our research on fuel loading in Arkansas is important.

Thanks,
Virginia



Virginia McDaniel
Detailed Wildlife Biologist
Forest Service
**Ouachita National Forest, Jessieville-Winona-
Fourche Ranger District**

p: 501-984-5313 x111
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Jessieville, AR 71949
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Appendix G

Historical Title V Modeling Results Technical
Support Document

Historical Title V Modeling Results

Technical Support Document

Beginning in the mid-1990s, the air permits branch of ADEQ conducted dispersion modeling for all Title V permits in accordance with an established protocol. This protocol, among other things, required modeling for criteria pollutants permitted for 100 tpy emissions or greater. Because of the nature of PM₁₀ emission sources and background levels, PM₁₀ was modeled regardless of permitted emission rates. This modeling protocol is no longer in effect.

The pollutants and averaging times historically modeled were:

Pollutant	Emission Rate	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time
PM ₁₀	Any	50	Annual*
		150	24-hour
SO ₂	> 100 tpy	80	Annual*
		1300	3-hour
		365	24-hour*
VOC		0.12	1-hour (ppm)**
CO	> 100 tpy	10,000	8-hour
		40,000	1-hour
NO _x	> 100 tpy	100	Annual

* standard no longer in effect

** not usually modeled

The typical scenario was for ADEQ to conduct an initial screening model. If results were less than 50 % of the NAAQS, no further evaluation was done. If results were greater than 50 %, background was added and the results were compared to the NAAQS. If total concentrations—composed of predicted values plus background—were over the NAAQS, the facility was contacted for refined modeling analysis. The results of this modeling were summarized in the Statement of Basis for each permit issued.

As part of NAAQS SIP development, the Air Permit Branch compiled a list of every Title V issued in Arkansas; this consisted of 365 facilities (2039 permit versions issued). Approximately 240 of the facilities had modeling results. However the remainder of the facilities did not. This is mainly because they fell below the then applicable modeling thresholds. Single or multiple pollutants may have been included in any specific facility modeling. Any ADEQ modeling result

that exceeded 50 % of the NAAQS was then identified for further investigation, including the addition of background values.

- There were a total of 3 instances in which the 1-hour or 8-hour CO impacts predicted over 50 % of NAAQS. One was from a source permitted at 1290 pounds per hour (lbs/hr), 80 % of the 8-hour and 65 % of the 1-hour, both of which included background. The other source, 55.8 lbs/hr was 59 % of the 8-hour NAAQS, including background. It does not appear that emission rates below major NSR levels would ever indicate a NAAQS compliance issue
- There were eight instances of the 3-hour SO₂ impacts predicted of 50 % of the NAAQS. Except for the case of some emergency diesel generators (LM Windpower) and the TEC unit at Riceland, emission rates modeled were in excess of 600 lb/hr. The LM scenario is an unrealistic event and the Riceland results were less than 52 % of the NAAQS. It does not appear that emission rates below major NSR levels would ever indicate a 3-hour SO₂ NAAQS compliance issue.
- Annual NO_x impacts approached the NAAQS on multiple occasions. There is no consistency or pattern of emission rates vs impact, however, the impacts do not approach 90 % of the NAAQS until around an equivalent emission rate of 250 tpy. It does not appear that emission rates below major NSR levels would ever indicate an annual NO₂ NAAQS compliance issue.
- PM₁₀ – There is no correlation between PM₁₀ emission rates and predicted impacts. This is probably due to the wide variation in PM emission sources and the tendency of these sources to be fugitive or otherwise with minimal dispersion. These types of sources are also the most difficult to model; emission rates are questionable and the performance of the actual model is questionable in predicting these impacts. Past permit review has resulted in some control requirements. The most common has been controlling fugitive dust from roads, but there have been other controls (Dust control nozzles, baghouses on PM sources, etc.). No generalization can be made about emission rates and 24-hour PM₁₀ NAAQS.

Other issues based on historical ADEQ modeling

- 1-hour standards for NO₂ and SO₂ NAAQS have not been evaluated in minor NSR actions. Because of the much stricter 1-hour values and the shorter averaging times, any comparison to past modeling would not suffice to assure compliance with these NAAQS.
- Any modeling done by ADEQ is a screening tool. While the model may be able to simulate relative impacts, this requires considerable effort in obtaining source data, meteorological data, background and surround facility data and other parameters. ADEQ modeling is only the first level of an analysis that can be extremely complicated, time consuming and costly.

- Even with all the modeling conducted by ADEQ and facilities, the occurrences of emission reductions to demonstrate compliance with NAAQS were rare.

Notes: Data is extracted from the modeling section of the latest Statement of Basis with such data
 Data only exists for pollutants above ADEQ modeling thresholds
 If no emissions were above the modeling thresholds, standard language was included indicating modeling was not warranted
 New Title V facilities permitted after Act 1302 either have no modeling data or the standard language about the ACT

AFIN	Facility Name	Facility City	NAICS	Permit Number	Status	Most Recent Modeling Results																																																						
01-00008	RICELAND FOODS, INC/SOY DIV.	STUTTGART	311224	0908-AOP-R0	V																																																							
				0908-AOP-R1	V																																																							
				0908-AOP-R2	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m³)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>50.2</td> <td>150</td> <td>24-Hour</td> <td>148.102861</td> <td>98.74%</td> </tr> <tr> <td>SO₂</td> <td>53.6</td> <td>80</td> <td>Annual</td> <td>22.42251 (2010)</td> <td>28.10%</td> </tr> <tr> <td></td> <td></td> <td>1300</td> <td>3-Hour</td> <td>673.11173</td> <td>51.80%</td> </tr> <tr> <td></td> <td></td> <td>365</td> <td>24-Hour</td> <td>167.66471</td> <td>50.00%</td> </tr> <tr> <td>CO</td> <td>49.3</td> <td>10,000</td> <td>8-Hour</td> <td>73.5</td> <td>0.74%</td> </tr> <tr> <td></td> <td></td> <td>40,000</td> <td>1-Hour</td> <td>150.7</td> <td>0.38%</td> </tr> <tr> <td>NO_x</td> <td>132.4</td> <td>100</td> <td>Annual</td> <td>21.59864 (2010)</td> <td>21.60%</td> </tr> <tr> <td>Pb</td> <td>N/A</td> <td>0.15</td> <td>Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)</td> <td>N/A</td> <td>--</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	PM ₁₀	50.2	150	24-Hour	148.102861	98.74%	SO ₂	53.6	80	Annual	22.42251 (2010)	28.10%			1300	3-Hour	673.11173	51.80%			365	24-Hour	167.66471	50.00%	CO	49.3	10,000	8-Hour	73.5	0.74%			40,000	1-Hour	150.7	0.38%	NO _x	132.4	100	Annual	21.59864 (2010)	21.60%	Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	--
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0908-AOP-R6	V																																																											
0908-AOP-R7	A																																																											
0908-AOP-R8	P																																																											

01-00022	BELLEVILLE SHOE SOUTH, INC.	DEWITT	316210	2079-AOP-R0	V	Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time
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				2079-AOP-R1	V	
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01-00228	RICELAND-ASH STORAGE SITE	STUTTGART	311222	2312-AOP-R0	V	Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant. Criteria
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				2312-AOP-R1	A	
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02-00005	GEORGIA-PACIFIC PLYWOOD/STUD	CROSSETT	321219	0736-AOP-R0	V	
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Pollutant	Emission Rate ¹ (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Background (µg/m ³)	Highest Concentration ² (µg/m ³)	% of NAAQS

0736-AOP-R10	P	PM ₁₀	80.4	150	24-Hour	37	98.19	90.13
0736-AOP-R2	V	SO ₂	16	1300	Annual	5.2	12.76	22.45
0736-AOP-R3	V	CO	460.5	10,000	3-Hour	39.3	251.35	22.58
0736-AOP-R4	V	NO _x	127.5	40,000	24-Hour	13.1	107.9	33.15
					8-Hour	1717.8	606.94	23.25
					1-Hour	2863	1230.05	10.23
		Pb	0.04	0.15	Annual	16.196	25.37	41.57
					Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)		0.01625	10.84
0736-AOP-R5	V	¹ Emissions contributed by the Plywood facility only ² Total emission from the entire complex were included in the modeled results						
0736-AOP-R6	V	The plywood facility shares the site with a paper and chemical facility also owned by GP. The emissions from the entire complex was modeled in order to demonstrate NAAQS for criteria pollutants. MET data from Shreveport from 2005 to 2009 was used for this model.						
0736-AOP-R7	V							
0736-AOP-R8	V							
0736-AOP-R9	A							

02-00013 GEORGIA-PACIFIC, LLC CROSSETT 322110

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Background (µg/m ³)	Highest Concentration (µg/m ³)	% of NAAQS
0579-AOP-R14	N					
0597-AOP-R0	V					
0597-AOP-R1	V					
0597-AOP-R10	V					
0597-AOP-R11	V					
0597-AOP-R12	V					
0597-AOP-R13	V					
0597-AOP-R14	V					
0597-AOP-R15	V					
0597-AOP-R16	A					
0597-AOP-R2	V					
0597-AOP-R3	V					
0597-AOP-R4	V					
0597-AOP-R5	V					
0597-AOP-R6	V					
0597-AOP-R7	V					
0597-AOP-R8	V					
0597-AOP-R9	V					

02-00028 GEORGIA-PACIFIC CHEMICALS, LLC CROSSETT 325180

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
1177-AOP-R0	V				
1177-AOP-R1	V				
1177-AOP-R10	V				
1177-AOP-R11	V				
1177-AOP-R12	A				
1177-AOP-R13	P				
1177-AOP-R2	V				

1177-AOP-R3 V
 1177-AOP-R4 V
 1177-AOP-R5 V
 1177-AOP-R6 V
 1177-AOP-R7 V
 1177-AOP-R8 V
 1177-AOP-R9 V
 02-00030 RAPID DIE & MOLDING HAMBURG 1082-AOP-R0 V

1082-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

02-00065 ENABLE MISS. RIVER/ FTN. HILL HAMBURG 486210 1433-AOP-R0 V
 1433-AOP-R1 V
 1433-AOP-R2 V
 1433-AOP-R3 V
 1433-AOP-R4 V
 1433-AOP-R5 A
 1433-AOP-R6 V
 1433-AOP-R7 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	1	50	Annual	*20.2	40.4
		150	24-Hour	*28.1	18.7
SO ₂	< 100 tpy	80	Annual	N/A	N/A
		1300	3-Hour	N/A	N/A
VOC	N/A	365	24-Hour	N/A	N/A
		0.12	1-Hour (ppm)	N/A	N/A
CO	306.8	10,000	8-Hour	1436.5	14.4
		40,000	1-Hour	2814.2	7
NO _x	257.7	100	Annual	64.17	64.2
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A

03-00002 BAXTER HEALTHCARE-MT HOME MOUNTAIN HOME 326113 0544-AOP-R0 V
 0544-AOP-R1 V
 0544-AOP-R2 V
 0544-AOP-R3 V
 0544-AOP-R4 V
 0544-AOP-R5 V

0544-AOP-R3 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

03-00081 BASS CAT BOATS MOUNTAIN HOME 336612 1624-AOP-R0 V
 1624-AOP-R1 V
 1624-AOP-R2 V
 1624-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	0.2	50	Annual	0.47	0.94
		150	24-Hour	5.29	3.53

			1624-AOP-R4	A
03-00082	CHAMPION BOATS, INC	MOUNTAIN HOME	1041-AOP-R0	V
				No info
				Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time
03-00111	VENOM BOATS, INC	MOUNTAIN HOME	1650-AOP-R0	V
			1650-AOP-R1	V
				Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time
04-00100	GLAD MANUFACTURING COMPANY	ROGERS	326113 0407-AOP-R0	V
			0407-AOP-R1	V
			0407-AOP-R2	V
			0407-AOP-R3	V
			0407-AOP-R4	A
04-00107	SWEPCO FLINT CREEK POWER PLNT	GENTRY	221112 0276-AOP-R0	V
			0276-AOP-R1	V
			0276-AOP-R2	V
			0276-AOP-R3	V
			0276-AOP-R4	V
			0276-AOP-R5	V
			0276-AOP-R6	V
			0276-AOP-R7	A
04-00111	TGRC-THE GATES CORP.	SILOAM SPRINGS	326220 0378-AOP-R0	V
			0378-AOP-R1	V
				Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	827.96	150	24-Hour	119.1*	79.4
		80	Annual	6	7.4
SO ₂	7,590.70	1300	3-Hour	201	15.4
		365	24-Hour	59	16.2
CO	828.5	10,000	8-Hour	39	0.4
		40,000	1-Hour	189	0.5
NO _x	4,454.90	100	Annual	15	15
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00012	0.08

0378-AOP-R2 V
 0378-AOP-R3 V
 0378-AOP-R4 V
 0378-AOP-R5 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

04-00120 KENNAMETAL, INC. ROGERS 333515 0842-AOP-R0 V
 0842-AOP-R1 V
 0842-AOP-R2 V
 0842-AOP-R3 V
 0842-AOP-R4 V
 0842-AOP-R5 V
 0842-AOP-R6 A

04-00213 PREFORMED LINE PRODUCTS ROGERS 335932 2232-AOP-R0 A

RESERVED

04-00246 FILMPRINT, INC. GENTRY 326113 1097-AOP-R0 V

04-00247 MIDAMERICA CABINETS INC GENTRY 337110 1035-AOP-R0 V
 1035-AOP-R1 V
 1035-AOP-R2 V
 1035-AOP-R3 V
 1035-AOP-R4 A
 1035-AOP-R5 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	4	150	24-Hour	7.42769	4.95%
SO ₂	--	80	Annual	--	--
		1300	3-Hour	--	--
		365	24-Hour	--	--
VOC	206.8	0.12	1-Hour (ppm)	--	--
CO	--	10,000	8-Hour	--	--
		40,000	1-Hour	--	--
NO _x	--	100	Annual	--	--
Pb	--	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	--	--

04-00255 SUPERIOR INDUST.INTERNATL AR ROGERS 331524 1304-AOP-R0 V
 1304-AOP-R1 V
 1304-AOP-R2 V
 1304-AOP-R3 V
 1304-AOP-R4 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

04-00313 HENDREN PLASTICS GRAVETTE 326140 1290-AOP-R0 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

04-00322 FM STRUCTURAL PLASTICS TECH ROGERS 326113 1349-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

05-00022 WABASH WOOD PRODUCTS, INC. HARRISON 321918 1138-AOP-R0 V

1349-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	52.9	50	Annual	12.09	24%
		150	24-hour	135	90%
SO ₂	1.5	80	Annual		0%
		365	24-hour		0%
NO _x	3.9	100	Annual		0%
CO	51.9	10,000	8-hour	171.3	2%
		40,000	1-hour	325.9	1%
VOC	70.4	0.12	1-hour (ppm)	0.015	13%

05-00066 THORPE PLANT SERVICES, INC. HARRISON 336612 1093-AOP-R0 V

1093-AOP-R1 V

1093-AOP-R2 V

1093-AOP-R3 V

1093-AOP-R4 V

1093-AOP-R5 V

1093-AOP-R6

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

06-00001 OUACHITA HARDWOOD FLOORING WARREN

1093-AOP-R7 A
1676-AOP-R0 V
1676-AOP-R1 V
1676-AOP-R2 V
1676-AOP-R3 V
1676-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	Guideline Concentration	Modeled Concentration	Pass ?
VOC	117.2	(.25)*(0.12) 1-hour = 0.03 ppm	0.0113	Yes
PM/PM ₁₀	33.3	(.50) *150 24-hour = 75 µg/m ³ (.50) *50 annual = 25 µg/m ³	61.3c ¹ 1.99	Yes Yes

06-00004 POTLATCH LAND & LUMBER, LLC WARREN

321113 0356-AOP-R0 V
0356-AOP-R1 V
0356-AOP-R2 V
0356-AOP-R3 V
0356-AOP-R4 V
0356-AOP-R5 V
0356-AOP-R6 V
0356-AOP-R7 V
0356-AOP-R8 V
0356-AOP-R9 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	41.3	150	24-Hour	129.6*	86.40%
SO ₂	N/A	80 1300 365	Annual 3-Hour 24-Hour		
CO	92.9	10,000 40,000	8-Hour 1-Hour	181 312	1.81% 0.78%
NO _x	88.9	100	Annual	94.9**	94.90%
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)		

06-00014 ARMSTRONG HARDWOOD FLOORING WARREN

321918 0427-AOP-R0 V
0427-AOP-R1 V
0427-AOP-R10 V
0427-AOP-R11 A
0427-AOP-R2 V
0427-AOP-R3 V
0427-AOP-R4 V
0427-AOP-R5 V
0427-AOP-R6 V
0427-AOP-R7 V
0427-AOP-R8 V
0427-AOP-R9 V
0427-AOP-R10 V
0427-AOP-R11 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	29.2	50 150	Annual 24-Hour	9.95 48.35	19.9 32.2
CO	23.1	10,000 40,000	8-Hour 1-Hour	73.3 91.1	0.733 0.91
NO _x	40	100	Annual	8.8	8.8

07-00033 ESTERLINE ARMTEC CINTERMEASURE EAST CAMDEN

325998 1865-AOP-R1 V
1865-AOP-R2 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
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1865-AOP-R3	V	PM ₁₀	12	150	24-Hour	69.48	46%
1865-AOP-R4	V	SO ₂	0.5	80	Annual	0.68	0.85%
1865-AOP-R5	V			1300	3-Hour	177.65	14%
				365	24-Hour	22.72	7%
		CO	4.3	10,000	8-Hour	239.76	3%
				40,000	1-Hour	953.85	3%
		NO _x	2.6	100	Annual	4.46	5%

07-00035 AEROJET ROCKETDYNE, INC EAST CAMDEN 332993
 1865-AOP-R6 V
 1865-AOP-R7 A
 0617-AOP-R0 V
 0617-AOP-R1 V
 0617-AOP-R10 V
 0617-AOP-R11 V
 0617-AOP-R12 A
 0617-AOP-R13 P
 0617-AOP-R2 V
 0617-AOP-R3 V
 0617-AOP-R4 V
 0617-AOP-R5 V
 0617-AOP-R6 V
 0617-AOP-R7 V
 0617-AOP-R8 V
 0617-AOP-R9 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

07-00212 GEORGIA-PACIFIC WOOD PRODUCTS FORDYCE 321219

0617-AOP-R10 V
 1803-AOP-R0 V
 1803-AOP-R1 V
 1803-AOP-R10 V
 1803-AOP-R11 V
 1803-AOP-R12 V
 1803-AOP-R13 V
 1803-AOP-R14 A
 1803-AOP-R2 V
 1803-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
*PM ₁₀	136.8	150	24-Hour	133	88.7
SO ₂	11.2	80	Annual	0.09	0.12
		1300	3-Hour	1.75	0.14
		365	24-Hour	0.58	0.16
CO	226	10,000	8-Hour	137.12	1.37
		40,000	1-Hour	267.35	0.67
NO _x	143.9	100	Annual	7.54	7.54

*North Little Rock background values 2008 were used, since there are few PMIO

monitors in Arkansas, the monitors from the urban areas (Little Rock) overestimate the background conditions in rural areas.

- 1803-AOP-R4 V
- 1803-AOP-R5 V
- 1803-AOP-R6 V
- 1803-AOP-R7 V
- 1803-AOP-R8 V
- 1803-AOP-R9 V

07-00216 NATIONAL TECHNICAL SERVICES EAST CAMDEN

1911-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

09-00053 LIVINGSTON PECAN & METAL INC LAKE VILLAGE

331314

2047-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

10-00004 REYNOLDS METALS-GUM SPRINGS ARKADELPHIA

562211

- 1016-AOP-R0 V
- 1016-AOP-R1 V
- 1016-AOP-R2 V
- 1016-AOP-R3 V
- 1016-AOP-R4 V
- 1016-AOP-R5 V
- 1016-AOP-R6 V
- 1016-AOP-R7 V
- 1016-AOP-R8 A
- 1016-AOP-R9 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	13.9	150	24-Hour	69.3	46.2
	427.9* 757.6**	80	Annual	3.97* 5.49**	4.96 6.86
SO ₂		1300	3-Hour	116.65*	8.97
		365	24-Hour	206.55**	15.88
CO	24.8	10,000 40,000	8-Hour	38.05*	10.42
			1-Hour	67.35**	18.45
NO _x	112.6	100	Annual	44.14+11***	55.14
Pb	0.1	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.002	1.4

10-00005 GP WOOD PRODUCTS SOUTH, LLC GURDON

321113

- 0463-AOP-R0 V
- 0463-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	76.2	150	24-Hour	138.6	92.40%

0463-AOP-R2 V
 0463-AOP-R3 V
 0463-AOP-R4 V
 0463-AOP-R5 V
 0463-AOP-R6 V
 0463-AOP-R7 V

SO ₂	1.7	80	Annual	----	17%
		1300	3-Hour	----	
CO	451**	365	24-Hour	----	5%
		10,000	8-Hour	1717.8	
NO _x	115.5**	40,000	1-Hour	2175.9	43%
		100	Annual	42.86	
Pb	0.016**	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.002	1.30%

0463-AOP-R8 A
 0463-AOP-R9 P

10-00070 ANTHONY TIMBERLANDS-BEIRNE BEIRNE 321113

1355-AOP-R0 V
 1355-AOP-R1 V
 1355-AOP-R2 V
 1355-AOP-R3 A
 1355-AOP-R4 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	24.6*	150	24-Hour	120.8	80.5
SO ₂	N/A	80	Annual		
		1300	3-Hour		
CO	34.2	365	24-Hour		
		10,000	8-Hour	82.1	0.82
NO _x	N/A	40,000	1-Hour	131	0.33
		100	Annual		
Pb	0.00274	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00088	0.59

10-00115 ENABLE GAS TRANS/BEIRNE GURDON 486210

1451-AOP-R0 V
 1451-AOP-R1 V
 1451-AOP-R2 V

Pollutant	Emissions (lb/hr)	Averaging Period	NAAQS (Fg/m3)	Modeled Concentration (Fg/m3)	Percent of NAAQS
PM/PM ₁₀	<100 tpy, therefore no modeling performed				
CO	65.5	8-hour	10,000	232.3	2.30%
NO _x	314	1-hour	40,000	331.8	0.80%
		Annual	100	37.5	37.50%

11-00067 L.A. DARLING CO PIGGOTT 337122

0758-AOP-R0 V
 0758-AOP-R1 V
 0758-AOP-R2 V
 0758-AOP-R3 V
 0758-AOP-R4 N

Modeling is not required.

11-00070 PINNACLE FRAMES & ACCENTS, INC PIGGOTT 321219

0784-AOP-R0 V
 0784-AOP-R1 V
 0784-AOP-R2 V
 0784-AOP-R3 V
 0784-AOP-R4 V

0784-AOP-R4 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

11-00075 PINNACLE FRAMES & ACCENTS #2 PIGGOTT 321219 0822-AOP-R0 V
 Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time
 0822-AOP-R1 V
 0822-AOP-R2 V

0822-AOP-R3 V
 Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicateS that modeling is not warranted at this time

12-00074 CALICO TRAILER MFG QUITMAN 336214 1412-AOP-R0 V
 1412-AOP-R1 V
 1412-AOP-R2 V
 1412-AOP-R3 V

12-00445 DESOTO GATHERING/W CUTTHROAT 2 QUITMAN 486210 2203-AOP-R0 V
 2203-AOP-R1 V
 2203-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	3.5	50	Annual	21.4	14.2
			24-Hour	3.2	2.1
CO	44.4	10,000	8-Hour	74.3	0.7
			1-Hour	203	0.5
NO _x	54	100	Annual	7.2	7.2

12-00478 DESOTO GATHERING/MIDGE CPF-5 HEBER SPRINGS 211111 2350-AOP-R1 A
 Reserved.

14-00004 WHITE ROCK OIL & GAS,LLC/MSPU MAGNOLIA 211111 0871-AOP-R0 V
 0871-AOP-R1 V
 0871-AOP-R2 V
 0871-AOP-R3 V
 0871-AOP-R4 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
SO ₂	642.7*	80	Annual	11.8	15%
			3-Hour	330	25%
			24-Hour	117	32%

14-00008 WEYERHAEUSER NR CO EMERSON 321113 0828-AOP-R0 V
 0828-AOP-R1 V
 0828-AOP-R10 A
 0828-AOP-R2 V
 0828-AOP-R3 V
 0828-AOP-R4 V
 0828-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	80.5	50	Annual	40.5	81%
			24-hour	132	88%
SO ₂	7.9	Below 100 tpy			
NO _x	167.1	100	Annual	1.76	1.76%
VOC*	214.9	0.12	1-hour (ppm)	0.01572	<0.1%
CO	350.5	10,000	8-hour	412.4	<0.1%
			1-hour	1445	<0.1%

0828-AOP-R6 V
 0828-AOP-R7 V
 0828-AOP-R8 V
 0828-AOP-R9 V
 14-00028 ALBEMARLE-SOUTH MAGNOLIA 325180 0762-AOP-R0 V
 0762-AOP-R1 V
 0762-AOP-R10 V
 0762-AOP-R11 V
 0762-AOP-R12 V
 0762-AOP-R13 V
 0762-AOP-R14 V
 0762-AOP-R15 V
 0762-AOP-R16 V
 0762-AOP-R17 V
 0762-AOP-R18 V
 0762-AOP-R19 V
 0762-AOP-R2 V
 0762-AOP-R20 V
 0762-AOP-R21 V
 0762-AOP-R22 V
 0762-AOP-R23 A
 0762-AOP-R3 V
 0762-AOP-R4 V
 0762-AOP-R5 V
 0762-AOP-R6 V
 0762-AOP-R7 V
 0762-AOP-R8 V
 0762-AOP-R9 V

Pollutant	Emission Rate(lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)*	% of NAAQS
PM ₁₀	29.68	50	Annual	31	62.00%
			24-hour	78.9	52.60%
SO ₂	756.6	1,300	Annual	20.1	25.20%
			3-hour	1,178.50	90.70%
			24-hour	330	90.50%
NO _x	136.5	100	Annual	31.2	31.20%
VOC**	410.63	0.12	1-hour (ppm)	0.0191	16.00%
			8-hour	4531	45.30%
CO	215.48	40,000	1-hour	9933	24.80%

14-00037 DELTIC TIMBER-WALDO WALDO 321113 0697-AOP-R0 V
 0697-AOP-R1 V
 0697-AOP-R10 V
 0697-AOP-R11 V
 0697-AOP-R12 V
 0697-AOP-R13 V
 0697-AOP-R14 V
 0697-AOP-R15 V
 0697-AOP-R16 A
 0697-AOP-R17 P
 0697-AOP-R2 V
 0697-AOP-R3 V
 0697-AOP-R4 V
 0697-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	27.9	50	Annual	41.3	82.60%
			24-hour	133.3	88.90%
NO _x	64.1	100	Annual	10.7	10.70%
CO	100.8	10,000	8-hour	185	1.85%
			1-hour	225	<1%

0697-AOP-R6 V
 0697-AOP-R7 V
 0697-AOP-R8 V
 0697-AOP-R9 V

14-00040 AMFUEL-MAGNOLIA MAGNOLIA 326291 0982-AOP-R0 V
 0982-AOP-R1 V
 0982-AOP-R2 V
 0982-AOP-R3 V
 0982-AOP-R4 V
 0982-AOP-R5 A

Pollutant	Emission Rate(lb/hr)	NAAQS Standard($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	0.4	150	24-Hour	40.9	27%
			Annual	N/A	N/A
SO ₂	0.3	1300	3-Hour	N/A	N/A
			24-Hour	N/A	N/A
CO	3.8	10,000	8-Hour	N/A	N/A
			1-Hour	N/A	N/A
NO _x	4.4	100	Annual	N/A	N/A
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A

14-00046 SAPA EXTRUSIONS, INC MAGNOLIA 332321 0576-AOP-R0 V
 0576-AOP-R1 V
 0576-AOP-R2 V
 0576-AOP-R3 V
 0576-AOP-R4 V
 0576-AOP-R5 V
 0576-AOP-R6 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM10	48.3	50	Annual	0.14	0.28
			24-Hour	2.89	1.9
			Annual	0.0015	0.002
SO ₂	1.7	1300	3-Hour	0.283	0.02
			24-Hour	0.085	0.02
CO	9	10,000	8-Hour	1.17	0.01
			1-Hour	2.43	0.006
NO _x	45.3	100	Annual	0.13	0.13

14-00124 PETRO-CHEM OPERATING MAGNOLIA 211111 1677-AOP-R0 V
 1677-AOP-R1 V
 1677-AOP-R2 V
 1677-AOP-R3 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	1.5	50	Annual	36.81*	74
			24-Hour	67.55*	45
			Annual	7.95	10
SO ₂	43.3	1300	3-Hour	78.84	6
			24-Hour	33.15	9

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

14-00145 CMC STEEL-ARKANSAS MAGNOLIA 331221 0928-AOP-R0 V
 0928-AOP-R1 V
 0928-AOP-R2 V
 0928-AOP-R3 V

14-00186 ENABLE GAS TRANS/TAYLOR TAYLOR 486210 1202-AOP-R0 V
 1202-AOP-R1 V
 1202-AOP-R2 V
 1202-AOP-R3 V
 1202-AOP-R4 V
 1202-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
NO _x	543.8	100	Annual	70.7	70.70%
CO	75.5	10,000	8-hour	441	4.40%
			1-hour	957	2.40%

15-00001 GREEN BAY PACKAGING/ARK KRAFT MORRILTON 322130 0224-AOP-R0 V
 0224-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
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								PM ₁₀	312.8	50	Annual	20.42*	40.84%
										150	24-Hour	94.36*	62.91%
										80	Annual	2.59	3.24%
								SO ₂	125.6	1300	3-Hour	66.89	5.15%
										365	24-Hour	23.85	6.53%
								CO	1338.2	10,000	8-Hour	524.65	5.25%
										40,000	1-Hour	2458.18	6.15%
								NO _x	297.9	100	Annual	5.49	5.49%
15-00019	PINECREST LUMBER-GREEN BAY PKG	PLUMERVILLE	321113	0670-AOP-R0	V			Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				0670-AOP-R1	V			PM ₁₀	15	50	Annual	30.4*	60%
				0670-AOP-R2	V					150	24-Hour	102.09*	68%
				0670-AOP-R3	V				<100 tpy, therefore no modeling	80	Annual	-	-
				0670-AOP-R4	A			SO ₂	66.1	1300	3-Hour	-	-
				0670-AOP-R5	P			VOC	24.2	0.12	1-Hour (ppm)	0.018	15%
								CO	24.2	10,000	8-Hour	1115	11%
										40,000	1-Hour	2847	7%
								NO _x	<100 tpy, therefore no modeling performed	100	Annual	-	-
15-00068	ENABLE GAS TRANS/ROUND MTN	MORRILTON	486210	1725-AOP-R0	V			Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				1725-AOP-R1	V			PM ₁₀	0.7	50	Annual	0.36348*	0.73%
				1725-AOP-R2	A					150	24-Hour	6.34194*	4.23%
										80	Annual	0.34479	0.43%
								SO ₂	7	1300	3-Hour	17.86055	1.38%
										365	24-Hour	4.21601	1.16%
								VOC	2.7	0.12	1-Hour (ppm)	N/A	-
								CO	71.1	10,000	8-Hour	3613	36.13%
										40,000	1-Hour	7806	19.52%
								NO _x	55.2	100	Annual	7.57518	7.58%
15-00573	DESOTO GATHERING/SE RAINBOW 2	BEE BRANCH	486210	2191-AOP-R0	V			Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				2191-AOP-R1	A			PM ₁₀	3.4	50	Annual	22.1	44.2
										150	24-Hour	6.6	4.4
								CO	43.4	10,000	8-Hour	128.1	1.3
										40,000	1-Hour	188.3	0.5
								NO _x	53	100	Annual	21.2	21.2
15-00590	DESOTO GATHERING/PHILLIPS MTN	CLEVELAND	486210	2200-AOP-R0	V			Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				2200-AOP-R1	V			PM ₁₀	3.5	50	Annual	21.48897*	42.98%
				2200-AOP-R2	A					150	24-Hour	4.8021*	3.20%
										80	Annual	0.36568	0.46%
								SO ₂	1.9	1300	3-Hour	12.70928	0.98%
										365	24-Hour	3.81832	1.05%
								CO	43.7	10,000	8-Hour	59.16125	0.60%
										40,000	1-Hour	166.08958	0.42%
								NO _x	55.7	100	Annual	7.10643	7.11%

15-00592	DESOTO GATHERING/COVE CRK.CPF3 CENTER RIDGE	213112	2207-AOP-R0	V
			2207-AOP-R1	V
			2207-AOP-R2	A
15-00593	DESOTO GATHERING/ S.RAINBOW 4 CENTER RIDGE	486210	2201-AOP-R0	A
			2201-AOP-R1	P
16-00002	ACME BRICK CO-WTP PLANT JONESBORO	327120	2004-AOP-R0	V
			2004-AOP-R1	V
			2004-AOP-R2	V
			2004-AOP-R3	A
16-00005	DELTA CONSOLIDATED INDUSTRIES JONESBORO	332439	0994-AOP-R0	V
			0994-AOP-R1	V
16-00014	GE MOTORS & INDUSTRIAL SYSTEMS JONESBORO	335312	1047-AOP-R0	V
16-00061	ARK GLASS CONTAINER JONESBORO	327213	1440-AOP-R0	V
			1440-AOP-R1	V
			1440-AOP-R2	V
			1440-AOP-R3	V
			1440-AOP-R4	V
			1440-AOP-R5	A
16-00101	RICELAND-JONESBORO JONESBORO	311212	0462-AOP-R0	V
			0462-AOP-R1	V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	3.5	50	Annual	21.4	42.8
			24-Hour	4.4	2.93
CO	43.7	10,000	8-Hour	105.7	1.1
			1-Hour	132.8	0.3
NO _x	55.7	100	Annual	7.3	7.3

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	2.8	50	Annual	5.46	11%
			24-hour	21.9	15%
SO ₂	1.4	80	Annual	2.73	3%
			3-hour	24.6	2%
			24-hour	10.93	3%
NO _x	19.4	100	Annual	37.9	38%
CO	4.6	10,000	8-hour	62.8	1%
			1-hour	89.8	0%

No info avail

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³) (model + background)	% of NAAQS
PM ₁₀	30.6	50	Annual	9.6 + 12.3 = 21.9	43.8
			24-Hour	39.8 + 33 = 72.8	48.5
NO _x	104.9	100	Annual	38.2 + 7.2 = 45.4	45.4

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
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0462-AOP-R10	V	PM ₁₀	49.3066	150	24-Hour	137.4*	91.60%
		NO _x	54	100	Annual	22.5	22.50%
0462-AOP-R11	V						
0462-AOP-R12	V						
0462-AOP-R13	V						
0462-AOP-R14	V						
0462-AOP-R15	V						
0462-AOP-R16	V						
0462-AOP-R17	V						
0462-AOP-R18	V						
0462-AOP-R19	A						
0462-AOP-R2	V						
0462-AOP-R20	P						
0462-AOP-R3	V						
0462-AOP-R4	V						
0462-AOP-R5	V						
0462-AOP-R6	V						
0462-AOP-R7	V						
0462-AOP-R8	V						
0462-AOP-R9	V						

16-00181 QG PRINTING II CORP-JONESBORO JONESBORO 511120 0921-AOP-R0 V
 0921-AOP-R1 V
 0921-AOP-R2 V
 0921-AOP-R3 V
 0921-AOP-R4 V
 0921-AOP-R5 V
 0921-AOP-R6 V
 0921-AOP-R7 V
 1037-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	0.8	50	Annual	0.5	1%
		150	24-Hour	4.7	3.20%

16-00197 ASSOCIATED PLASTICS INC JONESBORO 326113

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	7.3 lb/hr is less than 100 tpy □ modeling is not required	50	Annual		0%
		150	24-hour		0%

16-00199 CRAIGHEAD CO SWDA JONESBORO JONESBORO 562212 2087-AOP-R0 V
 2087-AOP-R1 V
 2087-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	18.9	50	Annual	30.22	61%
		150	24-Hour	121.45	81%

16-00222 CRANE COMPOSITES, INC JONESBORO 326113 2111-AOP-R0 V
 2111-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

2111-AOP-R2 A

16-00412 JONESBORO WATER & LIGHT-NW SUB JONESBORO 221112 1819-AOP-R0 V
 1819-AOP-R1 V
 1819-AOP-R10 V
 1819-AOP-R11 A
 1819-AOP-R2 V
 1819-AOP-R3 V
 1819-AOP-R4 V
 1819-AOP-R5 V
 1819-AOP-R6 V
 1819-AOP-R7 V
 1819-AOP-R8 V

Pollutant	R9 Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	R8 Highest Concentration (ug/m ³)	Calculated R9 Concentration (ug/m ³)	% of NAAQS
PM ₁₀	75.4	150	24-Hour	25.6	25.8	17.2
SO ₂	241	1300	Annual	0.99	1.01	1.27
			3-Hour	39.01	39.88	3.07
CO	125	10,000	24-Hour	11.24	11.49	3.15
			8-Hour	14.7	15.24	0.15
NO _x	300	100	1-Hour	30.4	31.52	0.1
			Annual	0.56	0.59	0.59
Pb		0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0		0

1819-AOP-R9 V

16-01044 CITY OF JONESBORO/PUBLIC WORKS JONESBORO 562213 2219-AOP-R0 V
 2219-AOP-R1 V
 2219-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	0.8	50	Annual	0.1	0.2
			24-Hour	0.5	0.4
SO ₂	N/A	1300	Annual	---	---
			3-Hour	---	---
VOC	N/A	365	24-Hour	---	---
			1-Hour (ppm)	---	---
CO	N/A	10,000	8-Hour	---	---
			1-Hour	---	---
NO _x	25	100	Annual	6.1	6.1
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	---	---

17-00076 OXANE MATERIALS, LLC VAN BUREN 212325 1263-AOP-R0 V

Pollutant	Facility Total Emission Rate (lb/hr)	NAAQS (ug/m3)	Averaging Time	Model Prediction (ug/m3)	% of NAAQS
PM/PM ₁₀	<100 tpy, therefore no modeling performed				
SO ₂	<100 tpy, therefore no modeling performed				
NO _x	<100 tpy, therefore no modeling performed				
CO	<100 tpy, therefore no modeling performed				

17-00077 TATE & LYLE , VAN BUREN VAN BUREN 311221 0696-AOP-R0 V
 0696-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	3.6	150	24-Hour	9.692	6.50%

0696-AOP-R2 V
 0696-AOP-R3 V
 0696-AOP-R4 A

SO ₂	80	Annual
	1300	3-Hour
CO	365	24-Hour
	10,000	8-Hour
NO _x	40,000	1-Hour
	100	Annual
Pb	0.15	Rolling 3-month
		Period over 3 years (not to be exceeded in any 3 month period)

17-00100 ARK POLY INC VAN BUREN 326112 1331-AOP-R0 V
 1331-AOP-R1 V
 1331-AOP-R2 V
 1331-AOP-R3 V
 1331-AOP-R4 V
 1331-AOP-R5 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

17-00136 NORAM GAS TRANS-HOBBS DYER 486210 1203-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	0	50	Annual		0%
		150	24-hour		0%
SO ₂	0	80	Annual		0%
		365	24-hour		0%
NO _x	80.2	100	Annual	36	36%
CO	20.6	10,000	8-hour	295.05	3%
		40,000	1-hour	421.5	1%

18-00054 TROJAN LUGGAGE CO./AMERICO WEST MEMPHIS 313320 1523-AOP-R0 V
 1523-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

18-00081 BASF CORP WEST MEMPHIS 325199 0860-AOP-R0 V
 0860-AOP-R1 V
 0860-AOP-R10 V
 0860-AOP-R11 V
 0860-AOP-R12 V
 0860-AOP-R2 V
 0860-AOP-R3 V
 0860-AOP-R4 V
 0860-AOP-R5 V
 0860-AOP-R6 V
 0860-AOP-R7 V
 0860-AOP-R8 V
 0860-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Background Value	Concentration (µg/m ³)	% of NAAQS
PM ₁₀	10.5	50	Annual	26	0.518	53
		150	24-Hour	47	13.24	40.6
		80	Annual	10.5	6.19	20.2
SO ₂	57.9	1300	3-Hour	78.5	237.36	24.3
		365	24-Hour	28.8	82	30.4
VOC	135	0.12	1-Hour (ppm)	NMOC < NO _x		
CO	42.9	10,000	8-Hour	3206.5	117.28	33.2
		40,000	1-Hour	6756.6	681.49	18.6
NO _x	149.5	100	Annual	23.4	9.09	32.5

18-00082 TRINITY ESC-PROCTOR PROCTOR 327120 0280-AOP-R0 V
 0280-AOP-R1 V
 0280-AOP-R2 V
 0280-AOP-R3 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	66.3	50	Annual	4.98	10%
		150	24-Hour	51.42	34%
		80	Annual	0.2	0%
SO ₂	58.5	1300	3-Hour	1.8	0%

		365	24-Hour	2.58	1%
CO	79	10,000	8-Hour	471.94	5%
		40,000	1-Hour	1092.21	3%
NO _x	121.3	100	Annual	0.72	1%

18-00094 CRITTENDEN COUNTY LANDFILL MARION 1994-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1994-AOP-R1 V

18-00120 VALERO PARTNERS/W.MEMPHIS TERW WEST MEMPHIS 424710 0668-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀		50	Annual		0%
			24-hour		0%
			3-hour		0%
SO ₂		80	Annual		0%
			3-hour		0%
			1,300		0%
NO _x		365	24-hour		0%
			100	Annual	
VOC		0.12	1-hour (ppm)	0.045	38%
CO		10,000	8-hour		0%
			40,000	1-hour	

18-00148 AUTOMATED CONVEYOR SYSTEMS WEST MEMPHIS 333922 1585-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1585-AOP-R1 V

1585-AOP-R2 V

1585-AOP-R3 V

1585-AOP-R4 V

18-00230 STATESIDE STEEL & WIRE, LLC WEST MEMPHIS 332618 1719-AOP-R0 V

The only criteria pollutant emitted above a major threshold is VOC. However, current Air Division policy only requires ozone modeling if VOC emissions exceed 500 ton/yr. This facility is limited to 249.32 ton/yr VOC; therefore, no modeling was performed for this pollutant.

1719-AOP-R1 V

1719-AOP-R2 V

19-00004 MUELLER COPPER TUBE PRODUCTS WYNNE 331420 1027-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)*	% of NAAQS
PM ₁₀	18.7	50	Annual	24.69	49.4
			24-Hour	101.34	67.6
CO	151.1	10,000	8-Hour	2,512.52	25.1
			40,000	1-Hour	4,321.81

* Includes background levels.

1027-AOP-R3 V

1027-AOP-R4 V

1027-AOP-R5 V

1027-AOP-R6 V

1027-AOP-R7 V

1027-AOP-R8 V

1027-AOP-R9 A

19-00233 EAKAS ARKANSAS WYNNE 336360 2053-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

2053-AOP-R1 V

20-00004 FORDYCE PLYWOOD PLANT FORDYCE 321212 0233-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	59.73	50	Annual	43.8*	87.60%
			24-hour	149.4*	99.60%
SO2	<100 tpy				
	therefore no need to model				
NOX	35.3	100	Annual	4.5	4.50%
VOC	<500 tpy				
	therefore no need to model				
CO	291.7	10,000	8-hour	261.2	2.60%
			1-hour	373.2	1.00%
	* 24 hour (36.9 mg/m ³) and Annual (22.6 mg/m ³) background concentrations are included				

0233-AOP-R3 V

0233-AOP-R4 V

20-00017 IDAHO TIMBER CORP/CARTHAGE,LLC CARTHAGE 321113 0551-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	17.28	50	Annual	19.6	39.2
			24-Hour	102.86	68.57
SO ₂	1.74	1300	3-Hour	8.9	0.68
			24-Hour	4.9	1.34
VOC	50.8	0.12	1-Hour (ppm)	N/A	N/A
CO	55.9	10,000	8-Hour	100.9	1
			1-Hour	136.1	0.34
NO _x	14.4	100	Annual	15.6	15.6
Pb	0.004	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A

0551-AOP-R1 V

0551-AOP-R2 V

0551-AOP-R3 V

0551-AOP-R4 V

0551-AOP-R5 V

0551-AOP-R6 A

20-00058 RAY WHITE LUMBER COMPANY SPARKMAN 321113 1468-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	44.2	50	Annual	5	10
			24-Hour	36	24
			Annual	0.05	0.06
SO ₂	1.2	1300	3-Hour	1.4	0.1
			24-Hour	0.486	0.13
VOC	47	0.12	1-Hour (ppm)	VOC and NOx are less than 100 tpy.	
CO	67.8	10,000	8-Hour	57.3	0.57
			1-Hour	96.3	0.24
NO _x	8.1	100	Annual	0.37	0.37
Pb	0.002	1.5**	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00081*	0.54%

1468-AOP-R1 V

1468-AOP-R2 V

1468-AOP-R3 V

1468-AOP-R4 V

1468-AOP-R5 A

21-00036 CLEARWATER PAPER CORP ARKANSAS CITY 322130 0271-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	132.1	150	24-Hour	55.36304	36.9%
SO ₂	535.3	80	Annual	2.13193	2.7%
			3-Hour	68.00229	5.2
			24-Hour	27.0957	7.4
VOC	643.2	0.12	1-Hour	--	--
CO	491.5	10000	8-Hour	490.40011	4.9
			1-Hour	637.87164	1.6
NO _x	450.4	100	Annual	7.8509	7.9
Pb	0.07	0.15	Rolling 3-month period over 3 years (not to be exceeded in any 3 month period)	0.0166*	--

0271-AOP-R14 V

0271-AOP-R15 V

0271-AOP-R16 V

0271-AOP-R17 V

0271-AOP-R18 V

0271-AOP-R19 A

0271-AOP-R2 V

0271-AOP-R20 P

0271-AOP-R3 V

0271-AOP-R4 V

0271-AOP-R5 V

0271-AOP-R6 V

0271-AOP-R7 V

0271-AOP-R8 V

0271-AOP-R9 V

21-00067 TRANSMONTAIGNE OPERATING CO,LP ARKANSAS CITY 493190 1605-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1605-AOP-R1 V

1605-AOP-R2 V

1605-AOP-R3 V

1605-AOP-R4 V

21-00079 SAF-HOLLAND USA,INC. DUMAS 332510 1951-AOP-R0 V

No SOB

22-00007 INTERFOR U.S.,INC. MONTICELLO 321113 1567-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	75.0	50	Annual	2.2	4.4%
		150	24-hour	20.9	13.9%

1567-AOP-R1 V

1567-AOP-R2 A

1567-AOP-R3 P

22-00018 BIG RIVERS OUTFITTERS, LLC MONTICELLO 336611 1971-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1971-AOP-R1 V

22-00046	DREW FOAM COMPANIES INC	MONTICELLO	326113	1292-AOP-R0	V	Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.
				1292-AOP-R1	V	
				1292-AOP-R2	V	
22-00057	DREW FOAM CO., INC.	MONTICELLO	326140	2132-AOP-R0	V	Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.
				2132-AOP-R1	V	
				2132-AOP-R2	V	
22-00065	AKIN INDUSTRIES, INC.	MONTICELLO	1695-AOP-R0	1695-AOP-R1	V	Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.
				1695-AOP-R2	V	
				1695-AOP-R3	V	
22-00390	ZILKHA BIOMASS MONTICELLO, LLC	MONTICELLO	321999	2349-AOP-R0	A	Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00001 VIRCO MFG CONWAY 0135-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00004 IC BUS, LLC CONWAY 332322 0536-AOP-R0 V
 0536-AOP-R1 V
 0536-AOP-R2 V
 0536-AOP-R3 V
 0536-AOP-R4 V
 0536-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	9.1	150	24-Hour	54.463	36.31%
			Annual	0.088	0.11%
SO2	0.1	1300	3-Hour	1.699	0.13%
			24-Hour	0.658	0.18%
CO	2	10,000	8-Hour	10.297	0.10%
			1-Hour	21.838	0.05%
NOX	7.3	100	Annual	4.454	4.45%

23-00006 PROGRESSIVE FOAM TECHNOLOGIES CONWAY 333415 0418-AOP-R0 V
 0418-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00007 BALDWIN PIANO, INC. CONWAY 339992 2086-AOP-R0 V
 0609-AOP-R0 V
 0609-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00010 CITY/CONWAY SANITARY LANDFILL CONWAY 921110 2148-AOP-R0 V
 2148-AOP-R1 V
 2148-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	65	150	24-Hour	122.5	81.67%

23-00084 CONWAY REGIONAL HOSPITAL CONWAY 622110 1955-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00237 SAN ANTONIO SHOE CO. CONWAY 316219 1683-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1683-AOP-R1 V
1683-AOP-R2 V
1683-AOP-R3 V

23-00244 TOKUSEN USA, INC CONWAY 314994 0992-AOP-R0 V
0992-AOP-R1 V
0992-AOP-R2 V
0992-AOP-R3 V
0992-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	10.3	150	24-Hour	64.59	43.06%
			Annual	0.1	0.13%
SO2	0.2	1300	3-Hour	1.61	0.12%
			24-Hour	0.82	0.22%
			8-Hour	39.81	0.40%
CO	3.5	40,000	1-Hour	64.67	0.16%
NOX	5.9	100	Annual	4.39	4.39%

23-00294 STEELE PLASTICS INC CONWAY 326113 1629-AOP-R0 V
1629-AOP-R1 V
1629-AOP-R2 V
1629-AOP-R3 V
1629-AOP-R4 V
1629-AOP-R5 V
1629-AOP-R6 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

23-00969 DESOTO GATHERING/NEW QUITMAN 2 QUITMAN 486210 2216-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

24-00012 ARK ELECTRIC COOP FITZHUGH OZARK 221112 2216-AOP-R1 A

1165-AOP-R0 V
1165-AOP-R1 V
1165-AOP-R2 V
1165-AOP-R3 V
1165-AOP-R4 V
1165-AOP-R5 V
1165-AOP-R6 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	90.9	150	24-Hour	0.176	0.12%
			Annual	1.39	1.74%
SO2	839.8	1300	3-Hour	100.2	7.71%
			24-Hour	30.1	8.25%
CO	499.6	10,000	8-Hour	41.9	0.42%
NOX	447	100	1-Hour	115.43	0.29%
			Annual	0.74	0.74%

24-00014 SGL CARBON LLC OZARK 335991 0429-AOP-R0 V

0429-AOP-R1 V
0429-AOP-R10 V
0429-AOP-R11 V
0429-AOP-R12 V
0429-AOP-R13 V
0429-AOP-R14 V
0429-AOP-R15 V
0429-AOP-R16 V
0429-AOP-R17 A
0429-AOP-R18 P
0429-AOP-R2 V
0429-AOP-R3 V
0429-AOP-R4 V
0429-AOP-R5 V
0429-AOP-R6 V
0429-AOP-R7 V
0429-AOP-R8 V
0429-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	Background	Total	% of NAAQS
PM10	43.7	150	24-Hour	87	36.8	123.8	82.50%
SO2	207.4	1300	Annual	35.3	5.2	40.5	50.60%
			3-Hour	585.9	34	619.9	47.70%
CO	1290.5	10,000	24-Hour	170.7	12.8	183.5	50.30%
			8-Hour	6156.1	1839	7995.1	80.00%
NOX	76.2	100	1-Hour	23723.3	2404.8	26128.1	65.30%
			Annual	23	18.4	41.4	41.40%

24-00057 CORRELL INC CHARLESTON 337214 0814-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

0814-AOP-R1 V
 0814-AOP-R2 V
 0814-AOP-R3 V
 0814-AOP-R4 V
 0814-AOP-R5 A

24-00068 SOURCEGAS ARK-WOOLSEY COMP OZARK 486210 0972-AOP-R0 V

0972-AOP-R1 V
 0972-AOP-R2 V
 0972-AOP-R3 V
 0972-AOP-R4 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.3	150	24-Hour	7.3	4.87%
			Annual	0.7	0.88%
			3-Hour	9.2	0.71%
SO2	0.3	1300	24-Hour	5.8	1.59%
			8-Hour	340.7	3.41%
CO	13.7	10,000	1-Hour	396.9	0.99%
NOX	27.6	100	Annual	40.9	40.90%

24-00071 SOURCEGAS ARK-DRAKE COMP OZARK 486210 1185-AOP-R0 V

1185-AOP-R1 V
 1185-AOP-R2 V
 1185-AOP-R3 V
 1185-AOP-R4 V
 1185-AOP-R5 V
 1185-AOP-R6 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
CO	111.9	10,000	8-Hour	4763.4	47.63%
NOX	52.9	40,000	1-Hour	5927.6	14.82%
NOX	52.9	100	Annual	85.3	85.30%

24-00081 ENABLE GAS TRANS/WALKER CECIL 486210 1204-AOP-R0 V

1204-AOP-R1 V
 1204-AOP-R2 V
 1204-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.0499	150	24-Hour	42.8716	28.58%
NOX	102.2261	100	Annual	28.652	28.65%

24-00083 SPECTRA ENERGY/NOARK COMP. ALIX 486210 1271-AOP-R0 V

1271-AOP-R1 V
 1271-AOP-R2 V
 1271-AOP-R3 V
 1271-AOP-R4 V
 1271-AOP-R5 V
 1271-AOP-R6 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.11	150	24-Hour	0.76	0.51%
CO	43.2	10,000	8-Hour	240	2.40%
			1-Hour	445.3	1.11%
NOX	24.8	100	Annual	65.3	65.30%

24-00086 CROSS TIMBERS HOLDING CO. FORT SMITH 486210 1934-AOP-R0 V

1285-AOP-R0 V
 1285-AOP-R1 V
 1285-AOP-R2 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
NOX	59.8	100	Annual	8.9	8.90%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.3	150	24-Hour	2.22	1.48%
			Annual	0.22	0.28%

26-00077 TRG-HOT SPRINGS, LLC HOT SPRINGS 331315 0279-AOP-R0 V
 0279-AOP-R1 V
 0279-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	11.9	150	24-Hour	91.67	61.11%

26-00268 TWO D, LLC HOT SPRINGS 321113 1436-AOP-R0 V
 1436-AOP-R1 V
 1436-AOP-R2 N

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	248.1	150	24-Hour	78.87	52.58%
SO2	0.5	1300	Annual	0.04	0.05%
			3-Hour	0.36	0.03%
CO	47.8	10,000	24-Hour	0.169	0.05%
			8-Hour	26.92	0.27%
NOX	2.5	100	1-Hour	38.45	0.10%
			Annual	0.2	0.20%

27-00002 WEST FRASER-LEOLA LUMBER MILL LEOLA 321113 0057-AOP-R0 V

0057-AOP-R1 V

0057-AOP-R2 V

0057-AOP-R3 V

0057-AOP-R4 V

0057-AOP-R5 V

0057-AOP-R6 V

0057-AOP-R7 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	22.6	150	24-Hour	114.95	76.63%
CO	502.3	10,000	8-Hour	1190.28	11.90%
			1-Hour	1841.78	4.60%
NOX	65.8	100	Annual	10.5	10.50%
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00031	0.21%
Pb	0.0004	0.15			

27-00008 H.G. TOLER & SON LUMBER CO,INC LEOLA 321113 0193-AOP-R0 V

0193-AOP-R1 V

0193-AOP-R2 V

0193-AOP-R3 V

0193-AOP-R4 V

0193-AOP-R5 V

0193-AOP-R6 A

0193-AOP-R7 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	35.1	150	24-Hour	101.3	67.53%
Pb	0.0012	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00029	0.19%

27-00039 CENTRIA SHERIDAN 332321 0757-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

0757-AOP-R1 V

0757-AOP-R2 V

0757-AOP-R3 V

28-00002 NIDEC MOTOR COMPANY PARAGOULD 335312 0965-AOP-R0 V

0965-AOP-R1 V

0965-AOP-R2 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

28-00060 PARAGOULD CITY LIGHT & WATER PARAGOULD 221112 0965-AOP-R3 V
0985-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	5.6	150	24-Hour	2.563	1.71%
			Annual	0.041	0.05%
SO2	1.5	1300	3-Hour	1.215	0.09%
			24-Hour	0.479	0.13%
CO	52.7	10,000	8-Hour	38.37	0.38%
			1-Hour	66.82	0.17%
NOX	183.9	100	Annual	6.358	6.36%

28-00077 NORTHEAST ARK REG SOLID WASTE PARAGOULD 562212 2126-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	15.8	150	24-Hour	135.64	92.43%

2126-AOP-R1 V
2126-AOP-R2 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

28-00090 KNL HOLDINGS, LLC PARAGOULD 333318 1584-AOP-R0 V

28-00251 AMERICAN RAILCAR INDUSTRIES PARAGOULD 336510 1779-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	4.4	150	24-Hour	95.5	63.67%

1779-AOP-R1 V
1779-AOP-R2 V
1779-AOP-R3 V
1779-AOP-R4 V
1779-AOP-R5 A
1779-AOP-R6 P

28-00256 AMERICAN RAILCAR IND-MARMADUKE MARMADUKE 336510 1830-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	8.2	150	24-Hour	89.7	59.80%

1830-AOP-R1 V
1830-AOP-R10 A
1830-AOP-R2 V
1830-AOP-R3 V
1830-AOP-R4 V
1830-AOP-R5 V
1830-AOP-R6 V
1830-AOP-R7 V

1830-AOP-R8 V
 1830-AOP-R9 V
 29-00016 SOUTHERN BAKERIES, LLC HOPE 311812 1940-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1940-AOP-R1 V
 1940-AOP-R2 V
 1940-AOP-R3 V
 1940-AOP-R4 A
 29-00090 NEW MILLENNIUM BUILDING,LLC HOPE 332312 1092-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m3)	Averaging Time	Highest Concentration (ug/m3)	% of NAAQS
PM10	3.4	150	24-Hour	147.1	98.10%

1092-AOP-R1 V
 1092-AOP-R10 P
 1092-AOP-R2 V
 1092-AOP-R3 V
 1092-AOP-R4 V
 1092-AOP-R5 V
 1092-AOP-R6 V
 1092-AOP-R7 V
 1092-AOP-R8 V
 1092-AOP-R9 A
 29-00120 GEORGIA-PACIFIC PANEL PRODUCTS HOPE 321219 1533-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m3)	Averaging Time	Highest Concentration (ug/m3)	% of NAAQS
PM10	73.6	150	24-Hour	56.56391	37.70%
SO2	1	1300	Annual	0.69832	0.06%
			3-Hour		
CO	101.4	10,000	24-Hour	199	19.90%
			8-Hour		
NOX	106.4	100	1-Hour	647	16.20%
			Annual		
Pb	0.02	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00629	4.20%

1533-AOP-R1 V
 1533-AOP-R10 V
 1533-AOP-R11 V* *- for CO and NOx only
 1533-AOP-R12 V
 1533-AOP-R13 A** ** - for PM10, SO2, and Pb
 1533-AOP-R2 V
 1533-AOP-R3 V
 1533-AOP-R4 V
 1533-AOP-R5 V
 1533-AOP-R6 V
 1533-AOP-R7 V
 1533-AOP-R8 V
 1533-AOP-R9 V
 29-00121 BRENTWOOD INDUSTRIES INC HOPE 326199 1539-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1539-AOP-R1 V
 1539-AOP-R2 V
 1539-AOP-R3 V
 29-00142 WEYERHAEUSER-MID SOUTH PROJEC FULTON 1755-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Highest Concentration (µg/m3)		% of NAAQS
			Averaging Time		
PM10	149.9	150	24-Hour	66.08	44.05%
			Annual	14.37	17.96%
			3-Hour	244.31	18.79%
SO2	1471.7	1300	24-Hour	69.53	19.05%
			8-Hour	3550	35.50%
CO	2131.8	10,000	1-Hour	3584	8.96%
			Annual	16.59	16.59%
NOX	642.9	100	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.05	33.33%
			Pb	1.79	0.15

29-00304 ARKANSAS ELECTRIC CO-OP-CT1 FULTON 22112 1860-AOP-R0 V
 1860-AOP-R1 V
 1860-AOP-R2 V
 1860-AOP-R3 V
 1860-AOP-R4 A
 1860-AOP-R5 P
 1868-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Highest Concentration (µg/m3)		% of NAAQS
			Averaging Time		
PM10	70.9	150	24-Hour	0.79718	0.53%
			Annual	0.133	0.13%
NOX	172	100			

29-00305 SMI STEEL PRODUCTS HOPE 332312 1925-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

29-00506 SW/AMERICAN ELECTRIC POWER CO FULTON 22112 2123-AOP-R0 V
 2123-AOP-R1 V
 2123-AOP-R2 V
 2123-AOP-R3 V
 2123-AOP-R4 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Highest Concentration (µg/m3)		% of NAAQS
			Averaging Time		
PM10	171.7	150	24-Hour	19.68	13.12%
			Annual	0.49	0.61%
			3-Hour	10.38	0.80%
SO2	480.6	1300	24-Hour	4.22	1.16%
			8-Hour	12.9	0.13%
CO	933.2	10,000	1-Hour	23.7	0.06%
			Annual	0.91	0.91%
NOX	503.3	100	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.0002	0.13%
			Pb	0.106	0.15

30-00008 ACME BRICK-PERLA PLANT MALVERN 327120 1154-AOP-R0 V
 1154-AOP-R1 V

Emission Rate	NAAQS Standard	Highest Concentration
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30-00011	ENTERGY ARKANSAS-LK CATHERINE JONES MILLS	221112	1154-AOP-R2	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>(lb/hr)</th> <th>(µg/m3)</th> <th>Averaging Time</th> <th>(µg/m3)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td rowspan="3">SO2</td> <td rowspan="3">54.1</td> <td rowspan="3">1300</td> <td>Annual</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td>3-Hour</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td>24-Hour</td> <td>48.32449</td> <td>13.24%</td> </tr> </tbody> </table>	Pollutant	(lb/hr)	(µg/m3)	Averaging Time	(µg/m3)	% of NAAQS	SO2	54.1	1300	Annual	0	0.00%	3-Hour	0	0.00%	24-Hour	48.32449	13.24%
			Pollutant	(lb/hr)		(µg/m3)	Averaging Time	(µg/m3)	% of NAAQS														
			SO2	54.1		1300	Annual	0	0.00%														
							3-Hour	0	0.00%														
							24-Hour	48.32449	13.24%														
1154-AOP-R3	V																						
1154-AOP-R4	A																						
1717-AOP-R0	V																						

30-00015	FLAKEBOARD AMERICA, LLC MALVERN	321219	1717-AOP-R1	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m3)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m3)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>525.7</td> <td>150</td> <td>24-Hour</td> <td>114.85</td> <td>76.57%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">2000</td> <td rowspan="2">1300</td> <td>Annual</td> <td>34.7</td> <td>43.38%</td> </tr> <tr> <td>3-Hour</td> <td>312.3</td> <td>24.02%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">2000</td> <td rowspan="2">365</td> <td>24-Hour</td> <td>138.8</td> <td>38.03%</td> </tr> <tr> <td>8-Hour</td> <td>211.08</td> <td>2.11%</td> </tr> <tr> <td>CO</td> <td>375.7</td> <td>10,000</td> <td>1-Hour</td> <td>563.63</td> <td>1.41%</td> </tr> <tr> <td>NOX</td> <td>4786</td> <td>100</td> <td>Annual</td> <td>47.97</td> <td>47.97%</td> </tr> <tr> <td>VOC</td> <td>53.8</td> <td>0.12</td> <td>1-Hour (ppm)</td> <td>0</td> <td>0.00%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS	PM10	525.7	150	24-Hour	114.85	76.57%	SO2	2000	1300	Annual	34.7	43.38%	3-Hour	312.3	24.02%	SO2	2000	365	24-Hour	138.8	38.03%	8-Hour	211.08	2.11%	CO	375.7	10,000	1-Hour	563.63	1.41%	NOX	4786	100	Annual	47.97	47.97%	VOC	53.8	0.12	1-Hour (ppm)	0	0.00%
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1717-AOP-R5	V																																																				
1717-AOP-R6	A																																																				

30-00030	REYNOLDS CONSUMER PRODUCTS,LL MALVERN	331315	0688-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m3)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m3)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>25.9</td> <td>150</td> <td>24-Hour</td> <td>120.45051</td> <td>80.30%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">3</td> <td rowspan="2">1300</td> <td>Annual</td> <td>2.80018</td> <td>3.50%</td> </tr> <tr> <td>3-Hour</td> <td>80.85395</td> <td>6.22%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">3</td> <td rowspan="2">365</td> <td>24-Hour</td> <td>37.65784</td> <td>10.32%</td> </tr> <tr> <td>8-Hour</td> <td>205.37388</td> <td>2.05%</td> </tr> <tr> <td>CO</td> <td>91</td> <td>10,000</td> <td>1-Hour</td> <td>310.26269</td> <td>0.78%</td> </tr> <tr> <td>NOX</td> <td>67.5</td> <td>100</td> <td>Annual</td> <td>1.62043</td> <td>1.62%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS	PM10	25.9	150	24-Hour	120.45051	80.30%	SO2	3	1300	Annual	2.80018	3.50%	3-Hour	80.85395	6.22%	SO2	3	365	24-Hour	37.65784	10.32%	8-Hour	205.37388	2.05%	CO	91	10,000	1-Hour	310.26269	0.78%	NOX	67.5	100	Annual	1.62043	1.62%
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30-00039	NATURAL GAS PIPELINE #306 MALVERN	486210	0448-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m3)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m3)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>14.76</td> <td>150</td> <td>24-Hour</td> <td>108.7</td> <td>72.47%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">N/A</td> <td rowspan="2">1300</td> <td>Annual</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td>3-Hour</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td rowspan="2">SO2</td> <td rowspan="2">N/A</td> <td rowspan="2">365</td> <td>24-Hour</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td>8-Hour</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td rowspan="2">CO</td> <td rowspan="2">N/A</td> <td rowspan="2">10,000</td> <td>1-Hour</td> <td>0</td> <td>0.00%</td> </tr> <tr> <td>Annual</td> <td>95</td> <td>95.00%</td> </tr> <tr> <td>NOX</td> <td>55.5</td> <td>100</td> <td>Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)</td> <td>0.07</td> <td>46.67%</td> </tr> <tr> <td>Pb</td> <td>0.03</td> <td>0.15</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS	PM10	14.76	150	24-Hour	108.7	72.47%	SO2	N/A	1300	Annual	0	0.00%	3-Hour	0	0.00%	SO2	N/A	365	24-Hour	0	0.00%	8-Hour	0	0.00%	CO	N/A	10,000	1-Hour	0	0.00%	Annual	95	95.00%	NOX	55.5	100	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.07	46.67%	Pb	0.03	0.15			
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30-00039	NATURAL GAS PIPELINE #306 MALVERN	486210	1591-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m3)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m3)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM10</td> <td>13.1</td> <td>150</td> <td>24-Hour</td> <td>4.08</td> <td>2.72%</td> </tr> <tr> <td rowspan="2">CO</td> <td rowspan="2">265.4</td> <td rowspan="2">10,000</td> <td>8-Hour</td> <td>208.24</td> <td>2.08%</td> </tr> <tr> <td>1-Hour</td> <td>374.08</td> <td>0.94%</td> </tr> <tr> <td>NOX</td> <td>1126.4</td> <td>100</td> <td>Annual</td> <td>38.6</td> <td>38.60%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS	PM10	13.1	150	24-Hour	4.08	2.72%	CO	265.4	10,000	8-Hour	208.24	2.08%	1-Hour	374.08	0.94%	NOX	1126.4	100	Annual	38.6	38.60%
			Pollutant	Emission Rate (lb/hr)		NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS																							
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			1591-AOP-R1	V																												
			1591-AOP-R2	V																												
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1591-AOP-R5	V																															
1591-AOP-R6	V																															
1591-AOP-R7	A																															
1591-AOP-R8	P																															

30-00071	PACTIV, LLC MALVERN	MALVERN	326140	0916-AOP-R0	V						
				0916-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
				0916-AOP-R2	V	PM10	1.5	150	24-Hour	8.261	5.51%
				0916-AOP-R3	V						
				0916-AOP-R4	V						
				0916-AOP-R5	V						
				0916-AOP-R6	A						

30-00081	ENABLE GAS TRANS/MALVERN	MALVERN	486210	1102-AOP-R0	V						
				1102-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
				1102-AOP-R2	V	PM10	4.79	150	24-Hour	3.66	2.44%
				1102-AOP-R3	A	CO	50.3	10,000	8-Hour	77.16	0.77%
				1102-AOP-R4	P	NOX	75.7	100	1-Hour	141.53	0.35%

30-00084	ANTHONY TIMBERLANDS	MALVERN	321113	1140-AOP-R0	V						
				1140-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
				1140-AOP-R2	V	PM10	25.8	150	24-Hour	80	60.00%
				1140-AOP-R3	V	SO2	0	80	Annual	0	0.00%
				1140-AOP-R4	A	SO2	0	1300	3-Hour	0	0.00%
				1140-AOP-R5	P	CO	44.7	365	24-Hour	0	0.00%
				1140-AOP-R6	P	CO	44.7	10,000	8-Hour	52	0.52%

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

30-00086	ACME BRICK-OEP PLANT	MALVERN	327120	1343-AOP-R0	V						
				1343-AOP-R1	V						
				1343-AOP-R2	V						
				1343-AOP-R3	W						

30-00229	ENERGY AR,INC/HOT SPRING PLNT	MALVERN	221112	1936-AOP-R0	V						
				1936-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
				1936-AOP-R2	V	PM10	58.8	150	24-Hour	15.06124	10.04%
				1936-AOP-R3	V	SO2	27.5	80	Annual	0.18311	0.23%
				1936-AOP-R4	V	SO2	27.5	1300	3-Hour	4.714	0.36%
				1936-AOP-R5	V	CO	241.4	365	24-Hour	1.985	0.54%
				1936-AOP-R6	A	NOX	94.2	10,000	8-Hour	64.28	0.64%

30-00337	MAGNET COVE GENERATING STATION MALVERN	MALVERN	221112	1987-AOP-R0	V						
				1987-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
					PM10	80.4	150	24-Hour	3.17	2.11%	

31-00010	CERTAINTED GYPSUM MFG., INC	NASHVILLE	327420	1987-AOP-R2	V	SO2	9.6	80	Annual	0.09	0.11%
				1987-AOP-R3	V			1300	3-Hour	1.93	0.15%
						365	24-Hour	0.56	0.15%		
						10,000	8-Hour	20.567	0.21%		
				1987-AOP-R4	V	CO	180.6	40,000	1-Hour	61.26	0.15%
		NOX	86.6	100	Annual	0.23	0.23%				

31-00010	CERTAINTED GYPSUM MFG., INC	NASHVILLE	327420	1987-AOP-R5	A							
				0598-AOP-R0	V							
				0598-AOP-R1	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	
				0598-AOP-R2	V	PM10	63.4	150	24-Hour	26.4	17.60%	
						CO	45.3	10,000	8-Hour	16.3	0.16%	
						NOX	55.3	40,000	1-Hour	52.1	0.13%	
								100	Annual	1.4	1.40%	
0598-AOP-R3	V				Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)							
0598-AOP-R4	V	Pb	0.00133	0.15		0.002	1.33%					
0598-AOP-R5	V											
0598-AOP-R6	V											
0598-AOP-R7	A											

31-00016	WEYERHAEUSER-NR CO.-DIERKS	DIERKS	321113	0023-AOP-R0	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				0023-AOP-R1	V	PM ₁₀	55.9	50	Annual	8.2	16.40%
								150	24-Hour	45.2	30%
						80	Annual	N/A	N/A		
				0023-AOP-R10	P	SO ₂	12.6	1300	3-Hour	N/A	N/A
						365	24-Hour	N/A	N/A		
				0023-AOP-R2	V	VOC	365.6	0.12	1-Hour (ppm)	N/A	N/A
				0023-AOP-R3	V	CO	313.3	10,000	8-Hour	126.2	1.30%
						40,000	1-Hour	181.9	0.50%		
				0023-AOP-R4	V	NO _x	99.3	100	Annual	47	47
0023-AOP-R5	V				Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)						
0023-AOP-R6	V	Pb	0.02	0.15		0.002	1.3				
0023-AOP-R7	V										
0023-AOP-R8	V										
0023-AOP-R9	A										

31-00023	HUSQVARNA FORESTRY PROD.N..A.	NASHVILLE	333991	0349-AOP-R0	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				0349-AOP-R1	V	PM ₁₀	0.7	150	24-Hour	38.04	25.40%
						80	Annual				
				0349-AOP-R2	V	SO ₂		1300	3-Hour		
						365	24-Hour				
				0349-AOP-R3	V	CO		10,000	8-Hour	2795	28.00%
		40,000	1-Hour	4643	11.60%						
0349-AOP-R4	V	NO _x		100	Annual						
0349-AOP-R5	P				Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)						
		Pb		0.15							

31-00107	UPPER SOUTHWEST ARK SW MGMT	NASHVILLE	562212	2241-AOP-R0	A						
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Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

32-00007 WHITE-RODGERS/EMERSON ELECTRIC BATESVILLE 334512 0261-AOP-R0 V No criteria pollutants met the significance level for modeling.

0261-AOP-R1 V

0261-AOP-R2 V

32-00014 ARK LIME-LIME PLANT BATESVILLE 327410 0045-AOP-R0 V

0045-AOP-R1 V

0045-AOP-R2 V

0045-AOP-R3 V

0045-AOP-R4 V

0045-AOP-R5 V

0045-AOP-R6 A

0045-AOP-R7 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	63.4	150	24-Hour	117.832 + 30*	98.60%
		80	Annual	1.614	2.10%
SO ₂	137.2	1300	3-Hour	112.775	8.70%
		365	24-Hour	22.641	6.30%
CO	267	10,000	8-Hour	175.904	1.80%
		40,000	1-Hour	607.16	1.60%
NO _x	321.6	100	Annual	5.077	5.10%

*The North Little Rock 2009 PM₁₀ background value of 30 µg/m³ was added to determine % of NAAQS

32-00036 FUTUREFUEL CHEMICAL CO BATESVILLE 325199 1085-AOP-R0 V

1085-AOP-R1 V

1085-AOP-R10 A

1085-AOP-R11 P

1085-AOP-R2 V

1085-AOP-R3 V

1085-AOP-R4 V

1085-AOP-R5 V

1085-AOP-R6 V

1085-AOP-R7 V

1085-AOP-R8 V

1085-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	54.1	150	24-Hour	9.35	6
		80	Annual	11.75	14.7
SO ₂	1423.1	1300	3-Hour	265.43	20.4
		365	24-Hour	71.43	19.6
CO	268.8	10,000	8-Hour	41.04	<1
		40,000	1-Hour	128.71	<1
NO _x	189	100	Annual	8.09	8
Pb	0.9	0.15	Rolling 3-Month	0.02**	13.3

*Emergency generators were not modeled

**H1H Monthly, 5 years of data

32-00038 GDx NORTH AMERICA, INC. BATESVILLE 326291 0315-AOP-R0 V

0315-AOP-R1 V

0315-AOP-R10 V

0315-AOP-R11 V

0315-AOP-R2 V

0315-AOP-R3 V

0315-AOP-R4 V

0315-AOP-R5 V

0315-AOP-R6 V

0315-AOP-R7 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
VOC*	475	0.12	1-hour (ppm)	0.1157	96.50%

* Used Scheffe Method

0315-AOP-R8 V
0315-AOP-R9 V
 32-00042 ENTERGY ARKANSAS-INDEPENDENCE NEWARK 221112 0449-AOP-R0 V
 0449-AOP-R1 V
 0449-AOP-R2 V
 0449-AOP-R3 V
 0449-AOP-R4 V
 0449-AOP-R5 V
 0449-AOP-R6 V
0449-AOP-R7 V
 0449-AOP-R8 A
 0449-AOP-R9 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1,392.70	50	Annual	34.63716	69.30%
			24-Hour	148.57665	99.10%
			80	7.86022	9.90%
SO ₂	16,292.20	1300	3-Hour	812.3476	62.50%
			24-Hour	246.31127	67.50%
VOC	105.4	0.12	1-Hour (ppm)	--	--
CO	6,480.40	10,000	8-Hour	385.49405	3.90%
			40,000	1241.37146	3.10%
NO _x	12,250.60	100	Annual	27.99792	28.00%
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.04073	27.20%

33-00013 UNILIN FLOORING, NC, LLC- MELBOURNE 321918 0559-AOP-R0 V
 0559-AOP-R1 V
 0559-AOP-R2 V
 0559-AOP-R3 V
 0559-AOP-R4 V
0559-AOP-R5 V
 0559-AOP-R6 V
 0559-AOP-R7 A
 0559-AOP-R8 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	30.844 (33.3)	150	24-Hour	48.24*	32.16%
			80	1.487	1.86%
SO ₂	4.65 (4.70)	1300	3-Hour	65.48	5.04%
			365	29.86	8.18%
CO	26.72 (26.8)	10,000	8-Hour	46.64	0.47%
			40,000	188.41	0.47%
NO _x	40.19 (40.2)	100	Annual	9.14	9.14%
			0.004087	Rolling 3-month period over 3 years (not to be	0.002**
Lead (Pb)	-0.01	0.15	Rolling 3-month period over 3 years (not to be		

*Background not added because concentration less than 50%.
 ** 24-hr

34-00010 NORANDAL USA INC NEWPORT 331315 **0907-AOP-R0** V
 0907-AOP-R1 V
 0907-AOP-R2 V
 0907-AOP-R3 V
 0907-AOP-R4 V
 0907-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	Emission Rate (tpy)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	3.2	6.3	50	Annual		
			150	24-Hour		Modeling not necessary <100 tpy
			80	Annual		
SO ₂	3.1	3.1	1300	3-Hour		Modeling not necessary <100 tpy
			365	24-Hour		
VOC	3.1	4.2		0.12	1-Hour (ppm)	0.056 ppm 46%
VOC OILS	1156.9	2556.4				
VOC COATINGS	772.7	1172				
VOC total	1932.7	3732.6				
CO	8	26.2	10,000	8-Hour		Modeling not necessary <100 tpy
			40,000	1-Hour		
NO _x	8.4	35.4	100	Annual		Modeling not necessary <100 tpy

34-00033 ARK STEEL ASSOCIATES NEWPORT 331110 0035-AOP-R0 V
 0035-AOP-R1 V
 0035-AOP-R10 V
 0035-AOP-R11 V
 0035-AOP-R12 A
 0035-AOP-R13 P
 0035-AOP-R14 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	
PM ₁₀	15.5	150	24-Hour	87.8	58.53	
			80	Annual	8.6	10.75
SO ₂	42.1	1300	3-Hour	246	18.92	
			365	24-Hour	93	25.48
			10,000	8-Hour	1538	15.38
CO	469.7	40,000	1-Hour	5040	12.6	
			100	Annual	10.5	10.5
NO _x	77.4	100	Annual	10.5	10.5	
			Rolling 3-month Period over 3 years (not to be	0.046 (highest month)		
Pb	0.41	0.15	Rolling 3-month Period over 3 years (not to be		30.6	

exceeded in any
3 month period)

- 0035-AOP-R2 V
- 0035-AOP-R3 V
- 0035-AOP-R4 V
- 0035-AOP-R5 V
- 0035-AOP-R6 V
- 0035-AOP-R7 V
- 0035-AOP-R8 V
- 0035-AOP-R9 V

34-00109 CENTERPOINT ENERGY/DIAZ DIAZ 486210 1246-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
NO _x	25.8	100	Annual	20.8	21%
CO	87	40000	8-Hour 1-Hour	490.3 700.5	5% 2%

34-00111 ENABLE MISS. RIVER TRANS. TUCKERMAN 486210 1419-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Modeled Concentration (µg/m ³)	Highest Concentration with Background (µg/m ³)	% of NAAQS
PM ₁₀	1.8	50	Annual	0.5	20.5	41.00%
		150	24-Hour	4.7	41.7	27.80%
CO	48.2	10,000	8-Hour	232.5	1950.3	19.50%
		40,000	1-Hour	318.5	3181.5	8.00%
NO _x	281	100	Annual	60.1	76.3	76.30%

*
Background
- PM10:
Annual -
20µg/m³, 24-
hr - 37µg/m³;
CO: 8 hr -
1717.8
µg/m³, 1 hr
2863.0
µg/m³; NO_x:
Annual -
16.196 µg/m³

1419-AOP-R5 P

34-00259 DUKE ENERGY,JACKSON FACILITY NEWPORT 1998-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	68.50	50	Annual	0.39	1%
		150	24-Hour	4.12	3%
		80	Annual	0.22	0%
SO ₂	14.20	1300	3-Hour	7.04	1%
		365	24-Hour	2.42	1%
NO _x	91.4	100	Annual	0.97	100%
VOC	40.20	0.12	1-Hour (ppm)	0.02	17%
		10,000	8-Hour	110.16	1%
CO	277.60	40,000	1-hour	273.37	1%

35-00013 CENTRAL MOLONEY-2400 WEST 6TH PINE BLUFF 335311 0370-AOP-R0 V

0370-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
VOC	213.2	0.12	1-hour (ppm)	(+0.008ppm)	7%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)*	% of NAAQS
PM ₁₀	337.6	150	24-Hour	118.3*	78.90%
		80	Annual	31.6*	39.50%
SO ₂	1617.3	1300	3-Hour	1,035.3*	79.60%
		365	24-Hour	363.1*	99.50%
CO	1634.6	10,000	8-Hour	2,622.4*	26.20%

35-00016 EVERGREEN PACKAGING, ING PINE BLUFF 322121 0580-AOP-R0 V

- 0580-AOP-R1 V
- 0580-AOP-R10 V
- 0580-AOP-R11 A

0580-AOP-R12	P	NO _x	1424.2	40,000	100	1-Hour	4,440.5*	11.10%
0580-AOP-R2	V					Annual	46.0*	46.00%
0580-AOP-R3	V	Pb	0.40509	0.15		Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.025**	16.70%
0580-AOP-R4	V	<p>1. All NO_x were assumed to be NO₂.</p> <p>*Includes background concentrations of 36 µg/m³ for PM₁₀, 17 µg/m³ for NO_x, 2176 µg/m³ for CO 1-hour standard, 1718 µg/m³ for CO 8-hour, 65 µg/m³ for SO₂ 3-hour, 17 µg/m³ for SO₂ 24-hour, and 5 µg/m³ for SO₂ annual standards.</p> <p>**The highest modeled monthly concentration for the 2005 through 2009 time period was 0.025 µg/m³. Therefore, the quarterly average and the 3-month rolling average would not exceed the NAAQS.</p>						
0580-AOP-R5	V							
0580-AOP-R6	V							
0580-AOP-R7	V							
0580-AOP-R8	V							
0580-AOP-R9	V							

35-00017 MONDI BAGS USA, LLC PINE BLUFF

322121

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	109.19	150	24-Hour	110	73
		80	Annual	-145	-97
SO ₂	34	1300	3-Hour	2.3	2.9
		365	24-Hour	27.52	2.1
CO	7,913.70	10,000	8-Hour	13.69	3.8
		40,000	1-Hour	2,646	26.5
NO _x	86.8	100	1-Hour	4,643	11.6
			Annual	9.8	9.8
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.0087*	5.8
Pb	0.0243	0.15			

0385-AOP-R8 A

*Modeled 1st
High on a
monthly
basis- no
further
processing
needed since
it passes.

35-00025 PLANTERS COTTON OIL MILL, INC PINE BLUFF 311224 0385-AOP-R9 P

1427-AOP-R0 V
1427-AOP-R1 V
1427-AOP-R10 V
1427-AOP-R11 V
1427-AOP-R12 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	15.2	150	24-Hour	142.12*	95
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	-107.12	71
Pb	0.000022	0.15		0.009**	6
*2012 background for Little Rock has been added.					
**1 st Monthly High over a 3-year period (2007-2009). Lead did not increase with R12 and the lead modeling info is from the R11 renewal.					

1427-AOP-R13 A

1427-AOP-R2 V
1427-AOP-R3 V
1427-AOP-R4 V
1427-AOP-R5 V
1427-AOP-R6 V
1427-AOP-R7 V
1427-AOP-R8 V
1427-AOP-R9 V

35-00058 VARCO-PRUDEN BUILDINGS PINE BLUFF 0721-AOP-R0 V
0721-AOP-R1 V
0721-AOP-R2 V
0721-AOP-R3 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

35-00110 ENTERGY ARKANSAS-WHITE BLUFF REDFIELD 22112 0263-AOP-R0 V
0263-AOP-R1 V
0263-AOP-R2 V
0263-AOP-R3 V
0263-AOP-R4 V
0263-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1493.3	150	24-Hour	121.7	81.10%
			Annual	11.42	14.30%
SO ₂	20990.1	1300	3-Hour	426.4	32.80%
			24-Hour	128.3	35.20%
CO	6508.8	10,000	8-Hour	1809.5	18.10%
			1-Hour	3084	7.71%
NO _x	12240.2	100	Annual	33.1	33.10%
Lead	0.5	0.15	3 month rolling	< 0.01	< 6.7%

Background
 - PM10 - 47;
 SO2 - 39.3,
 13.1, 5.2; CO
 - 2863,
 1717.8; NOx
 - 19.2 ug/m3

0263-AOP-R6 V
 0263-AOP-R7 V
 0263-AOP-R8 A
 0263-AOP-R9 P

35-00116 PINE BLUFF ARSENAL PINE BLUFF 928110

1113-AOP-R0 V
 1113-AOP-R1 V
 1113-AOP-R10 A
 1113-AOP-R11 P
 1113-AOP-R2 V
 1113-AOP-R3 V
 1113-AOP-R4 V
 1113-AOP-R5 V
 1113-AOP-R6 V
 1113-AOP-R7 V
 1113-AOP-R8 V
 1113-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	104.2	50	Annual	29.41 (includes background)	58.82%
		150	24-Hour	135.25 (includes background)	90.16%
VOC	-----	0.12	1-Hour (ppm)	N/A	N/A
CO	434.5	10,000	8-Hour	1949.32	19.50%
		40,000	1-Hour	6107.5	15.04%
NO _x	483.5	100	Annual	6.31844	6.30%
Lead	1.35	1.5	Quarterly	0.2688	17.92%

35-00117 SOUTHWIND MILLING CO, LLC PINE BLUFF 311212

0533-AOP-R0 V
 0533-AOP-R1 V
 0533-AOP-R2 V
 0533-AOP-R3 V
 0533-AOP-R4 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

35-00170 WASTE MGMT ARK-PINE BLUFF PINE BLUFF 562212

1887-AOP-R0 V
 1887-AOP-R1 V
 1887-AOP-R2 V
 1887-AOP-R3 V
 1887-AOP-R4 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	27.3	150	24-Hour	147.59036*	98.40%
		80	Annual	3.56843	4.46%
SO ₂	7.9	1300	3-Hour	87.89321	6.77%
		365	24-Hour	40.77309	11.18%
VOC	15.4	0.12	1-Hour (ppm)	--	--
CO	24.8	10,000	8-Hour	199.57755	2.00%
		40,000	1-Hour	387.61359	0.97%
NO _x	4.6	100	Annual	2.07782	2.08%
Pb	N/A	0.15	Rolling 3-month Period over 3 years	N/A	N/A

* Includes background of 38 ug/m³ (Little Rock 2010).

35-00213 BERENFIELD CONTAINERS PINE BLUFF 332439

1056-AOP-R0 V
 1056-AOP-R1 V
 1056-AOP-R2 V
 1056-AOP-R3 V
 1056-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	4.2	50	Annual	1.31	2.60%
		150	24-Hour	6.97	4.60%
		80	Annual	0.09	0.11%
SO ₂	0.3	1300	3-Hour	2.44	0.20%
		365	24-Hour	1	0.27%
CO	0.6	10,000	8-Hour	3.94	0.04%
		40,000	1-Hour	6.83	0.02%

				1056-AOP-R5	V	NO _x	0.6	100	Annual	0.2	0.19%
				1056-AOP-R6	V						
				1056-AOP-R7	V						
				1056-AOP-R8	A						

35-00266	CENTERPOINT ENERGY/SHERRILL	SHERRILL	486210	1245-AOP-R0	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
						NO _x	201	100	Annual	20.1	20.00%
						Ozone**	8.4	0.12 (ppm)	1-Hour	(+0.011 ppm)	9.00%
						CO	106	10,000 40,000	8-Hour 1-Hour	38.07 54.39	0.00% 0.00%

35-00409	PINE BLUFF ENERGY LLC	PINE BLUFF	221112	1822-AOP-R0	V	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
				1822-AOP-R1	V	PM ₁₀	30.1	50 150	Annual 24-Hour	0.12992* 1.04993*	0.26% 0.70%
				1822-AOP-R2	V			80	Annual	0.4	0.50%
				1822-AOP-R3	V	SO ₂	117.2	1300 365	3-Hour 24-Hour	9.7 3.4	0.80% 1%
				1822-AOP-R4	V	CO	169.4	10,000 40,000	8-Hour 1-Hour	14.1 25.7	0.14% 0.07%
				1822-AOP-R5	A	NO _x	411.1	100	Annual	10.96	11%
						Pb	0.03208	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00039**	0.26%
						* Does not include background. ** 1 Month high.					

35-01477 Highland Pellets, LLC Pine Bluff 321113 2341-AOP-R0 P Reserved

36-00004 ACME BRICK CO-EBP PLANT CLARKSVILLE 327120 1515-AOP-R0 V
1515-AOP-R1 V

1515-AOP-R2 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1515-AOP-R3 V
1515-AOP-R4 A

36-00005 TRACKER MARINE- KENNER PLANT KNOXVILLE 1606-AOP-R0 V
1606-AOP-R1 V
1606-AOP-R2 V
1606-AOP-R3 V
1606-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	Less than 100 tpy	50 150 80	Annual 24-Hour Annual		0% 0% 0%
SO ₂	Less than 100 tpy	1300 365	3-Hour 24-Hour		0% 0%
NO _x	Less than 100 tpy	10,000 40,000	8-Hour 1-Hour		0% 0%
VOC	139.2	0.12	Annual	0.014	12%
CO	Less than 100 tpy	10,000 40,000	8-Hour 1-Hour		0% 0%

36-00015	GREENVILLE TUBE COMPANY, LLC	CLARKSVILLE	331210	0161-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>Modeling Results (µg/m³)</th> <th>Back-ground Conc. (µg/m³)</th> <th>Highest Concentration (µg/m³)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>0.41</td> <td>6.64 1.52</td> <td>46 23.2</td> <td>52.64 24.72</td> <td>150 50</td> <td>24-hour Annual</td> <td>35.10% 49.50%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	Modeling Results (µg/m ³)	Back-ground Conc. (µg/m ³)	Highest Concentration (µg/m ³)	NAAQS Standard (µg/m ³)	Averaging Time	% of NAAQS	PM ₁₀	0.41	6.64 1.52	46 23.2	52.64 24.72	150 50	24-hour Annual	35.10% 49.50%
				Pollutant	Emission Rate (lb/hr)	Modeling Results (µg/m ³)	Back-ground Conc. (µg/m ³)	Highest Concentration (µg/m ³)	NAAQS Standard (µg/m ³)	Averaging Time	% of NAAQS											
PM ₁₀	0.41	6.64 1.52	46 23.2	52.64 24.72	150 50	24-hour Annual	35.10% 49.50%															

- 0161-AOP-R1 V
- 0161-AOP-R2 V
- 0161-AOP-R3 V
- 0161-AOP-R4 V

36-00161	SOURCEGAS ARK-BATSON COMP	OAKGROVE	486210	1449-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m³)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>0.2</td> <td>50 150</td> <td>Annual 24-Hour</td> <td>0.09978 1.66375</td> <td></td> </tr> <tr> <td>CO</td> <td>32.784</td> <td>10,000 40,000</td> <td>8-Hour 1-Hour</td> <td>446.933 784.44</td> <td></td> </tr> <tr> <td>NO_x</td> <td>52.889</td> <td>100</td> <td>Annual</td> <td>33.569</td> <td>33.50%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	PM ₁₀	0.2	50 150	Annual 24-Hour	0.09978 1.66375		CO	32.784	10,000 40,000	8-Hour 1-Hour	446.933 784.44		NO _x	52.889	100	Annual	33.569	33.50%
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- 1449-AOP-R1 V
- 1449-AOP-R2 V
- 1449-AOP-R3 V
- 1449-AOP-R4 V

36-00181	XTO-ENERGY, MCMILLAN COMP. STA	CLARKSVILLE	486210	1935-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m³)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>not listed in permit</td> <td>50 150</td> <td>Annual 24-Hour</td> <td></td> <td>0% 0%</td> </tr> <tr> <td>SO₂</td> <td>not listed in permit</td> <td>80 1300 365</td> <td>Annual 3-Hour 24-Hour</td> <td></td> <td>0% 0% 0%</td> </tr> <tr> <td>NO_x</td> <td>28.2</td> <td>100</td> <td>Annual</td> <td>4</td> <td>4%</td> </tr> <tr> <td>VOC</td> <td>Modeling NR</td> <td>0.12</td> <td>1-Hour (ppm)</td> <td></td> <td>0%</td> </tr> <tr> <td>CO</td> <td>38.8</td> <td>10,000 40,000</td> <td>8-Hour 1-Hour</td> <td>38.5 55</td> <td>0% 0%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	PM ₁₀	not listed in permit	50 150	Annual 24-Hour		0% 0%	SO ₂	not listed in permit	80 1300 365	Annual 3-Hour 24-Hour		0% 0% 0%	NO _x	28.2	100	Annual	4	4%	VOC	Modeling NR	0.12	1-Hour (ppm)		0%	CO	38.8	10,000 40,000	8-Hour 1-Hour	38.5 55	0% 0%
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37-00004	ENTERGY ARKANSAS-HARVEY COUCH STAMPS		221112	1759-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m³)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>132.2</td> <td>50 150 80</td> <td>Annual 24-Hour Annual</td> <td>24.3 54.38 19.04</td> <td>49% 37% 24%</td> </tr> <tr> <td>SO₂</td> <td>2009.6</td> <td>1300 365</td> <td>3-Hour 24-Hour</td> <td>457.53 170.92</td> <td>36% 47%</td> </tr> <tr> <td>CO</td> <td>161.3</td> <td>10,000 40,000</td> <td>8-Hour 1-Hour</td> <td>18.56 31.79</td> <td>0.20% 0.10%</td> </tr> <tr> <td>NO_x</td> <td>1102.4</td> <td>100</td> <td>Annual</td> <td>11.11</td> <td>12%</td> </tr> <tr> <td>Pb</td> <td>0.03</td> <td>0.15</td> <td>Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)</td> <td>0.0002</td> <td>0.20%</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	PM ₁₀	132.2	50 150 80	Annual 24-Hour Annual	24.3 54.38 19.04	49% 37% 24%	SO ₂	2009.6	1300 365	3-Hour 24-Hour	457.53 170.92	36% 47%	CO	161.3	10,000 40,000	8-Hour 1-Hour	18.56 31.79	0.20% 0.10%	NO _x	1102.4	100	Annual	11.11	12%	Pb	0.03	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.0002	0.20%
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- 1759-AOP-R1 V
- 1759-AOP-R2 V
- 1759-AOP-R3 V
- 1759-AOP-R4 V
- 1759-AOP-R5 V
- 1759-AOP-R6 V
- 1759-AOP-R7 V

37-00005	BONANZA CREEK ENERGY RESOURCE STAMPS		211111	1742-AOP-R0	V	<table border="1"> <thead> <tr> <th>Pollutant</th> <th>Emission Rate (lb/hr)</th> <th>NAAQS Standard (µg/m³)</th> <th>Averaging Time</th> <th>Highest Concentration (µg/m³)</th> <th>% of NAAQS</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td colspan="5">No modeling required since less than 100 tpy</td> </tr> <tr> <td>SO₂*</td> <td>917.1</td> <td>80</td> <td>Annual</td> <td>16.59 (w/o SN-04) 19.87 (w/o SN-05)</td> <td>20% 24%</td> </tr> <tr> <td></td> <td></td> <td>1,300</td> <td>3-hour</td> <td>912.43 (w/o SN-04) 490.46 (w/o SN-05)</td> <td>70%** 37%</td> </tr> <tr> <td></td> <td></td> <td>365</td> <td>24-hour</td> <td>174.3 (w/o SN-04) 140.17 (w/o SN-05)</td> <td>47% 38%</td> </tr> <tr> <td>NO_x</td> <td colspan="5">No modeling required since less than 100 tpy</td> </tr> <tr> <td>CO</td> <td>39</td> <td>10,000 40,000</td> <td>8-hour 1-hour</td> <td>4902 7831</td> <td>49% 19%</td> </tr> <tr> <td>VOC</td> <td colspan="5">No modeling required since less than 100 tpy</td> </tr> </tbody> </table>	Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS	PM ₁₀	No modeling required since less than 100 tpy					SO ₂ *	917.1	80	Annual	16.59 (w/o SN-04) 19.87 (w/o SN-05)	20% 24%			1,300	3-hour	912.43 (w/o SN-04) 490.46 (w/o SN-05)	70%** 37%			365	24-hour	174.3 (w/o SN-04) 140.17 (w/o SN-05)	47% 38%	NO _x	No modeling required since less than 100 tpy					CO	39	10,000 40,000	8-hour 1-hour	4902 7831	49% 19%	VOC	No modeling required since less than 100 tpy				
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CO	39	10,000 40,000	8-hour 1-hour	4902 7831	49% 19%																																																	
VOC	No modeling required since less than 100 tpy																																																					

- 1742-AOP-R1 V
- 1742-AOP-R2 V
- 1742-AOP-R3 V
- 1742-AOP-R4 V

37-00105 FALCON PRODUCTS LEWISVILLE 337214 1062-AOP-R0 V

Criteria pollutant emissions were not modeled in this analysis because the emission of these pollutants did not qualify as being a major source.

39-00023 USA COE HUXTABLE PUMPING STAT MARIANNA 924110 1793-AOP-R0 V

1793-AOP-R1 V

1793-AOP-R2 A

1793-AOP-R3 P

1793-AOP-R4 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM ₁₀	16.7	150	24-Hour	146.6 ^a	97.80%
		80	Annual	12.8 ^b	16.00%
SO ₂	1.5	1300	3-Hour	47.5 ^c	3.70%
		365	24-Hour	42.5 ^d	11.70%
CO	74.8	10,000	8-Hour	2969.7 ^e	29.70%
		40,000	1-Hour	5026.6 ^f	12.60%
NO _x	67.3	100	Annual	77.4 ^g	77.40%
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A
<p>a. Includes background concentration of 30 $\mu\text{g}/\text{m}^3$, NLR, 2009.</p> <p>b. Includes background concentration of 7.9 $\mu\text{g}/\text{m}^3$, Memphis, 2008.</p> <p>c. Includes background concentration of 28.8 $\mu\text{g}/\text{m}^3$, Memphis, 2008.</p> <p>d. Includes background concentration of 31.4 $\mu\text{g}/\text{m}^3$, Memphis, 2008.</p> <p>e. Includes background concentration of 1,603.3 $\mu\text{g}/\text{m}^3$, Memphis, 2008.</p> <p>f. Includes background concentration of 2,863 $\mu\text{g}/\text{m}^3$, Memphis, 2008.</p>					

g. Includes background concentration of 17 µg/m³, Crittenden County, 2009. Also used 75% factor.

40-00041 ENABLE MISS. RIVER/GLENDALE GLENDALE 486210 1424-AOP-R0 V
 1424-AOP-R1 V
 1424-AOP-R2 V
 1424-AOP-R3 V
 1424-AOP-R4 V
 1424-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.4	150	24-Hour	3.4	2.3
CO	245.2	10,000 40,000	8-Hour 1-Hour	1280.1 1863.1	12.8 4.7
NO _x	223.2	100	Annual	49.7	49.7
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A

41-00001 ASH GROVE CEMENT FOREMAN 327310 0075-AOP-R0 V
 0075-AOP-R1 V
 0075-AOP-R10 V
 0075-AOP-R11 V
 0075-AOP-R12 V
 0075-AOP-R13 V
 0075-AOP-R14 V
 0075-AOP-R15 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	83.8	150	24-Hour	145,5462 ^b	97%
		80	Annual	23.6 ^a	30%
SO ₂	618.1	1300	3-Hour	882.6 ^a	68%
		365	24-Hour	268.6 ^a	74%
CO	2503.3	10,000 40,000	8-Hour 1-Hour	1169.0 ^a 4366.8 ^a	12% 11%
NO _x	685.6	100	Annual	51.1 ^a	51%
Pb	0.14	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.00063 ^c	0.50%

a. These modeling results were obtained through detailed modeling performed by the facility in Permit # 0075-AOP-R7. There were no increases in emissions from these pollutants.

0075-AOP-R16 A

b.
Modeled result of 97.5462 $\mu\text{g}/\text{m}^3$ plus background of 48 $\mu\text{g}/\text{m}^3$ (Little Rock 2007). The PM_{10} modeling results were obtained through detailed modeling performed by the facility in Permit 0075-AOP-R13. There were no permitted increases in PM_{10} emissions.

c.
Modeled as the 1st highest Month, therefore it is impossible for the rolling 3-month average to exceed the NAAQS.

- 0075-AOP-R17 P
- 0075-AOP-R2 V
- 0075-AOP-R3 V
- 0075-AOP-R4 V
- 0075-AOP-R5 V
- 0075-AOP-R6 V
- 0075-AOP-R7 V
- 0075-AOP-R8 V
- 0075-AOP-R9 V

41-00002 DOMTAR A.W. ,LLC

ASHDOWN

322121

- 0287-AOP-R0 V
- 0287-AOP-R1 V
- 0287-AOP-R10 V
- 0287-AOP-R11 V
- 0287-AOP-R12 V
- 0287-AOP-R13 V
- 0287-AOP-R14 V
- 0287-AOP-R15 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$) ^A	% of NAAQS
PM ₁₀	472.9	150	24-Hour	125.4 ^A	81.6
		80	Annual	63	78.8
SO ₂	3,112.40	1300	3-Hour	1,024	78.8
		365	24-Hour	337	92.3
CO	3,000.80	10,000	8-Hour	216	2.2
		40,000	1-Hour	664	1.7
NO _x	1,902.80	100	Annual	74	74
			Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.014	7.3
Pb	0.17	0.15			
<p>^A Includes Little Rock 2009 background concentration of 38 mg/m^3</p>					
<p>^B Includes background for 2010 El Dorado (SO₂) and Little Rock (NO₂)</p>					
0287-AOP-R16 P					

41-00370 SPECIALTY MINERALS, INC ASHDOWN 424690 2337-AOP-R0 A

42-00056 TYSON POULTRY-RIVER VALLEY SCRANTON 311613 0792-AOP-R0 V

0792-AOP-R1 V

0792-AOP-R2 V

0792-AOP-R3 V

0792-AOP-R4 V

0792-AOP-R5 V

No SOB

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀		50	Annual	1.68	3.30%
		150	24-hour	13.9	9.20%
SO ₂		80	Annual		0%
		1,300	3-hour		0%
NO _x		365	24-hour		0%
		100	Annual		0%
VOC	0.12		1-hour (ppm)		0%
CO		10,000	8-hour	233.5	2.30%
		40,000	1-hour	304.4	0.70%

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

42-00064 SPANG & CO-MAGNETICS FERRITE BOONEVILLE 335314 0899-AOP-R0 V

42-00088 ENABLE GAS TRANS/TRANS-DUNN MAGAZINE 486210 1209-AOP-R0 V

1209-AOP-R1 V

1209-AOP-R2 V

1209-AOP-R3 V

1209-AOP-R4 V

1209-AOP-R5 A

1209-AOP-R6 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	5.8	50	Annual	0.7	1.4
		150	24-Hour	4.06	2.7
SO ₂	Less than 100 tpy				
VOC	Less than 100 tpy				
CO	46.1	10,000	8-Hour	24.9	0.30%
		40,000	1-Hour	89.4	0.20%
NO _x	708.6	100	Annual	79.78*	79.78*
		188	1-Hour	na	Na

*Modeled result of 70.78735 ug/m³ and background of 8.998 ug/m³.

42-00108 ENABLE MIDSTREAM/CHISMVILLE CHISMVILLE 486210 1907-AOP-R0 V

42-00119 PINE BLUFF SAND & GRAVEL CO DELAWARE 212319 0174-AOP-R2 V

1747-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
NO _x	33.3	100	Annual	6.2	6.20%
VOC	not applicable, emissions are < 500 tons per year				
CO	36	10,000	8-hour	9.6	<1%
		40,000	1-hour	21.3	<1%

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1747-AOP-R1 V
 1747-AOP-R2 V
 1747-AOP-R3 V
 42-00207 ENABLE MIDSTREAM/ BROWNSVILLE 486210 1906-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
NO _x	38.6	100	Annual	39.72	40%
CO	33.9	10,000	8-hour	9.6	<1%
		40,000	1-hour	21.2	<1%
VOC	not applicable, emissions are < 100 tons per year				
Modeling was conducted using Fort Smith five-year Metdata, 2001 – 2005					

1906-AOP-R1 V
 1906-AOP-R2 V
 1906-AOP-R3 V
 42-00212 ARMBRUSTER COMPRESSOR STATION NEW BLAINE 22121 1969-AOP-R0 V

Pollutant	Emission Rate	NAAQS Standard	Averaging Time	Highest Concentration	% of NAAQS
PM10	N/A	50	annual		0
		150	24-hour		0
		80	Annual		0%
		1,300	3-hour		0%
SO2	NA	365	24-hour		0%
NOX	24.8	100	Annual	21.5	22%
VOC	NA	0.12	1-hour (ppm)		0%
CO	NA	10,000	8-hour		0%
		40,000	1-hour		0%

42-00238 ENABLE MIDSTREAM/BROWNSVILLE BOONEVILLE 486210 2054-AOP-R0 V
 2054-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
NO _x	168.2	100	Annual	7.2	7.20%
CO	*196.7	10,000	8-hour	188.55	1.90%
		40,000	1-hour	279.11	<1%
*Current permit action pound per hour of CO is 45 lb/hr.					

2054-AOP-R2 V
 43-00093 ENABLE MISS. RIVER/CARLISLE CARLISLE 486210 1244-AOP-R0 V
 1244-AOP-R1 V
 1244-AOP-R2 V
 1244-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	1.7	50	Annual	23.31*	47%
		150	24-Hour	45.62*	31%
CO	436.1	10,000	8-Hour	2602.7	26%
		40,000	1-Hour	3483.57	9%
NO _x	344.7	100	Annual	85.58	88%
* PM ₁₀ highest concentrations include background of 23 µg/m³ (annual) and 43 µg/m³ (24-hour)					

1244-AOP-R4 V
 1244-AOP-R5 A
 43-00131 GRACE COMPOSITES, LLC LONOKE 326122 2141-AOP-R0 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard	Averaging Time	Highest Concentration	% of NAAQS
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43-00202 TENASKA AR. GENERATING STATION KEO 1959-AOP-R0 V

		($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$)	
PM₁₀	3.6	150	24-Hour	112.05	74.70%
pollutant	avg. time	total ipact	naaqs	% naaqs	
PM	annual	35	50	70	
	24-hour	56.2	150	37.5	
SO2	annual	9	80	11.3	
	24-hour	62	365	17	
	3-hour	168	1300	12.9	

pollutant	avg period	psd class II increment	Max Predicted Concentration	Percent of Standard	Percent of available increment
PM10	annual	17	0.69	4.1	4.2
	24-hour	30	9.47	31.6	--
SO2	annual	20	0.97	4.9	5.1
	24-hour	91	13.8	15	--
	3-hour	512	98.1	19	--

43-00203 GENPOWER/KEO KEO 1963-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
		80	Annual	0.50	1%
		1,300	3-hour	5.73	0%
SO2	8.7	365	24-hour	2.54	1%
NOX	71.8	100	Annual	11.66	12%
VOC	24.8	0.12	1-hour (ppm)	-	0%
		10,000	8-hour	128.46	1%
CO	127.5	40,000	1-hour	183.52	0%

43-00565 ENGLAND OIL FIELD SERVICES,INC ENGLAND 333132 2151-AOP-R0 A

reserved

45-00008 FISHING HOLDINGS, LLC FLIPPIN 336612 0979-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM₁₀	10	150	24-Hour	113.8 (148.8)*	99%
*Includes Background					

0979-AOP-R1 V

0979-AOP-R2 V

0979-AOP-R3 V

0979-AOP-R4 V

0979-AOP-R5 V

0979-AOP-R6 V

0979-AOP-R7 V

0979-AOP-R8 V

0979-AOP-R9 A

46-00005 COOPER TIRE & RUBBER COMPANY TEXARKANA 326211 0957-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM₁₀	21	50	Annual	37.3	74.6
		150	24-Hour	144	96
		80	Annual	6.58	8.3
SO ₂	63.3	1300	3-Hour	172.3	13.3
		365	24-Hour	67.55	18.5
NO _x	99.9	100	Annual	2.89	2.89
Pb	0.00835	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.147	98%

0957-AOP-R1 V

0957-AOP-R10 V

0957-AOP-R11 V

0957-AOP-R12 A

0957-AOP-R2 V

0957-AOP-R3 V

Note: For PM₁₀ the highest concentration reported includes Shreveport, LA 2008 PM₁₀ background concentrations. For Lead compliance with the NAAQS is demonstrated by comparing the highest concentration which is on a 24-hour basis (a short term averaging period) to the 3-month rolling total limit (a long term averaging period). In this

0957-AOP-R4 V
 0957-AOP-R5 V
 0957-AOP-R6 V
 0957-AOP-R7 V
 0957-AOP-R8 V
 0957-AOP-R9 V

46-00114 SMITH-BLAIR, INC TEXARKANA 332919 0847-AOP-R0 V
 46-00133 ENBRIDGE GATHERING (NE TX,LLC) FOUKE 211111 1002-AOP-R0 V

No SOB

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM10	0.6	50	annual	0.2	0
		150	24-hour	1.9	1
SO2	47.2	80	annual	0.5	1
		365	24-hour	6.6	2
NOx	20.5	100	annual	4.2	4
CO	22.5	10000	8-hour	99.3	1
		40000	1-hour	205	1

46-00150 NATURAL GAS PIPELINE #305 TEXARKANA 486210 1589-AOP-R0 V
 1589-AOP-R1 V
 1589-AOP-R2 V
 1589-AOP-R3 V
 1589-AOP-R4 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	11	50	Annual	0.7	1.4
		150	24-Hour	4.06	2.7
		80	Annual	0.07	<1
SO ₂	1.1	1300	3-Hour	1.3	<1
		365	24-Hour	0.4	<1
VOC	55.9	0.12	1-Hour (ppm)	0.02	0.16
CO	265.5	10,000	8-Hour	213	2.1
		40,000	1-Hour	458	1.1
NO _x	1102.8	100	Annual	70.62	71

47-00012 KINDER MORGAN OPERATING,LP "C" BLYTHEVILLE 493190 0232-AOP-R0 V
 0232-AOP-R1 V
 0232-AOP-R2 V
 0232-AOP-R3 V

Pollutant	Facility Total Emission Rate (lb/hr)	NAAQS (ug/m3)	Averaging Time	Model Prediction (ug/m3)	% of NAAQS
PM/PM ₁₀	65.8	50	Annual	10.5	21
		150	24-hour	42	27.9
SO ₂	<100 tpy, therefore no modeling performed				
NO _x	615.1	100	Annual	15.2	15.2
CO	4262.6	10000	8-hour	4284	42.3
		40000	1-hour	6121.3	15.3

47-00093 BALL METAL FOOD CONTAINER CORP BLYTHEVILLE 332431 1339-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1339-AOP-R1 V

47-00113 ENTERGY ARKANSAS-BLYTHEVILLE BLYTHEVILLE 0155-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	Maximum Concentration (Fg/m3)/(lb/hr)	Factor (Time Period)	Impacts/unit (Fg/m3)	Primary NAAQS Standard (Fg/m3)
PM/PM10	30	0.592	0.4 24 -hour 0.1 annual	7.1 1.776	150 50
so2	1153.5	0.593	0.4 24-hour 0.1 annual	273.14 68.3	365 80
nox	1594.5	0.593	0.1 annual	94.6	100
co	109.8	0.592	1.0 1hour 0.7 8-hour	65 45.5	40000 10000

47-00115 VISKASE CORP OSCEOLA 326121 0268-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	14	150	24-Hour	86.2*	57.5
SO ₂	149.2	1300	3-Hour	465.4	36
NO _x	67.7	100	Annual	11.74	12

*2010 background values added to modeled high.

0268-AOP-R1 V

0268-AOP-R2 V

0268-AOP-R3 V

0268-AOP-R4 V

0268-AOP-R5 V

0268-AOP-R6 V

0268-AOP-R7 A

47-00145 BLYTHEVILLE TRANSFER STATION BLYTHEVILLE 22132 1956-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

47-00148 CITY OF OSCEOLA COMPOST FAC. OSCEOLA 325314 1919-AOP-R0 N

No SOB

47-00188 S-R OF ARKANSAS WILSON 326113 0707-AOP-R0 V

Pollutant	Emission Rate (tpy)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration ppm	% of NAAQS
VOC	400.5	0.12		0.0127	11

47-00202 NUCOR YAMATO STEEL BLYTHEVILLE 33111 0883-AOP-R0 V

Pollutant	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	50	Annual	21.95	43.90%
	150	24-Hour	92.4	61.60%
	80	Annual	20.1	25.10%

0883-AOP-R1 V

0883-AOP-R10 A

0883-AOP-R11 P
 0883-AOP-R2 V
 0883-AOP-R3 V
 0883-AOP-R4 V
 0883-AOP-R5 V
 0883-AOP-R6 V
 0883-AOP-R7 V
 0883-AOP-R8 V
 0883-AOP-R9 V

SO ₂	1300	3-Hour	124.6	34.10%
	365	24-Hour	274	21%
NO _x	100	Annual	35.4	35.40%
Lead	1.5	Quarter	0.403	26.80%

47-00233 NUCOR STEEL/HICKMAN MILL BLYTHEVILLE 331110

1139-AOP-R0 V
 1139-AOP-R1 V
 1139-AOP-R10 V
 1139-AOP-R11 V
 1139-AOP-R12 V
 1139-AOP-R13 V
 1139-AOP-R14 V
 1139-AOP-R15 V
 1139-AOP-R16 V
 1139-AOP-R17 V
 1139-AOP-R18 V
 1139-AOP-R19 A
 1139-AOP-R2 V
 1139-AOP-R3 V
 1139-AOP-R4 V
 1139-AOP-R5 V
 1139-AOP-R6 V
 1139-AOP-R7 V
 1139-AOP-R8 V
 1139-AOP-R9 V

Pollutant	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
pm10	160.5	150	24	106.5

47-00251 MAVERICK TUBE CORP ARMOREL 331210

1763-AOP-R0 V
 1763-AOP-R1 V
 1763-AOP-R2 V
 1763-AOP-R3 V
 1763-AOP-R4 V
 1763-AOP-R5 V
 1763-AOP-R6 V
 1763-AOP-R7 V
 1763-AOP-R8 V
 1763-AOP-R9 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	250%	150	24-hour	39	26
		80	annual	2	3
SO2	40%	1300	3-hour	83	7
		365	24-hour	47	13
CO	380%	10000	8-hour	113	1
		40000	1-hour	134	0
NOx	570%	100	annual rolling 3-month period over 3 years (not to be exceeded in any 3 month period)	21	22
Pb	N/A	0		--	--

47-00448 ASSOC.ELEC.CO-OP,INC.AECI/DELL DELL 221121

1903-AOP-R0 V
 1903-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	100%	50	Annual	27.16	55%

				1903-AOP-R2	V
				1903-AOP-R3	V
				1903-AOP-R4	V
				1903-AOP-R5	V
				1903-AOP-R6	V
				1903-AOP-R7	V
				1903-AOP-R8	V
				1903-AOP-R9	A
47-00453	AES CYPRESS, LLC	DELL		1957-AOP-R0	V
47-00461	PLUM POINT ENERGY STATION	OSCEOLA	221112	1995-AOP-R0	V
				1995-AOP-R1	V
				1995-AOP-R2	V
				1995-AOP-R3	V
				1995-AOP-R4	V
				1995-AOP-R5	V
				1995-AOP-R6	A
				1995-AOP-R7	P
47-00476	BLYVILLE MUN.WASTE-ENERGY FAC	BLYTHEVILLE		1956-AOP-R1	N
47-00493	SKYLINE STEEL, LLC	BLYTHEVILLE	332312	2156-AOP-R0	V
				2156-AOP-R1	V
				2156-AOP-R2	A
				2156-AOP-R3	P
47-00519	DENSO MANUFACTURING ARKANSAS	OSCEOLA	336211	2048-AOP-R0	V
				2048-AOP-R1	V
				2048-AOP-R2	V

		150	24-Hour	80.95	54%
CO	230.6	10,000	8-Hour	186	2%
		40,000	1-Hour	854	3%
NO _x	132.2	100	Annual	13.5	14%
			Rolling 3-month		
Pb	0.31	0.15	Period over 3	0.04	27%
			years (not to be		
			exceeded in any		
			3 month period)		

No SOB

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	127.8	50	Annual	14	28%
		150	24-Hour	2.7	1.80%
		80	Annual	3.7	4.60%
SO ₂	1070.8	1300	3-Hour	98	7.60%
		365	24-Hour	22	6%
CO	1116.3	10,000	8-Hour	31	0.31%
		40,000	1-Hour	84	0.21%
NO _x	602	100	Annual	7	7%
			Rolling 3-month	.00001 1 month average	
Pb	0.17	0.15	Period over 3	The concentration was too low for the calpost processor.	
			years (not to be exceeded in any 3 month period)		

No SOB

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Modeled Concentration (µg/m ³)	Background Values NLR 2008 (µg/m ³)	Total Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	0.87*	50	Annual	18.67	20	38.67	77.4
		150	24-Hour	104.58	37	141.58	94.4

* Includes SN-01, 02 @ 0.0167 lb/hr, SN-05 @ 0.8 lb/hr, & SN-06, 07, 08 @ 0.0111 lb/hr

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

47-00541 STEELCORR, INC OSCEOLA 33111 2062-AOP-R0 V

PSD modeling for the facility was performed as part of the permit application.

47-00914 PRECOAT METALS BLYTHEVILLE 332812 2124-AOP-R0 V
2124-AOP-R1 V
2124-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (J.Lg/m3)	Averaging Time	Hig Conce (J.L)	hest ntration lm3	%of NAAQS
PM10	5.8	150	24-Hour	178.29*	3*	2.6%
CO	69.5	40,000	8-Hour 1-Hour	518.91*		1.7% 1.2%

47-00991 BIG RIVER STEEL, LLC OSCEOLA 33111 2305-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM10	5.8	50	Annual	1.33	2.60%
		150	24-Hour	16.41	10.90%
		80	Annual		
SO2	N/A	1300	3-Hour		
		365	24-Hour		
VOC	N/A	0.12	1-Hour (ppm)		
CO	69.5	10,000	8-Hour	178.29	1.70%
		40,000	1-Hour	518.91	1.20%
NOx	N/A	100	Annual		
Pb	N/A	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)		

50-00001 PRESCOTT LUMBER MILL PRESCOTT 321113 2305-AOP-R1 A
0117-AOP-R0 V
0117-AOP-R1 V
0117-AOP-R2 V
0117-AOP-R3 V
0117-AOP-R4 V
0117-AOP-R5 V
0117-AOP-R6 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM10	3.43	50	Annual	44*	88
	5.38	150	24-Hour	124*	83
CO	233.2	10,000	8-Hour	205	<0.1
		40,000	1-Hour	253	<0.1
NOx	43.2	100	Annual	3.34	4
* Includes Shreveport, LA 2007 PM10 background concentration of 64 mg/m³ (24 hour) and 27 mg/m³ (Annual)					

50-00058 SPECTRA ENERGY/HOPE COMPRESSC EMMET 486210 1342-AOP-R0 V
1342-AOP-R1 V
1342-AOP-R2 V
1342-AOP-R3 V
1342-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM10	3.3	50	Annual	2.35	4.70%
		150	24-Hour	15,846	10.6
		80	Annual	2,092	2.60%
SO2	0.9	1300	3-Hour	12.29	0.95%
		365	24-Hour	6,941	1.90%
VOC		0.12	1-Hour (ppm)		
CO	44.4	10,000	8-Hour	1221.781	12.20%
		40,000	1-Hour	1490.147	3.70%
NOx	272.3	100	Annual	60.66*	60.70%
*Consultant modeling result.					

50-00103 NORBORD ARKANSAS, INC PRESCOTT 321219 1342-AOP-R5 A
1905-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	54.5	50	Annual	33	0.66
		150	24-Hour	123	0.82
SO2	6.7	80	Annual	0.07	0

		1300	3-Hour	0.63	0
		365	24-Hour	0.28	0.01
NOx	53.7	100	Annual	0.57	0.01
VOC	39.3	0.12	1-hour (ppm)	0.1071	0.89
CO	53.7	10000	8-hour	3.96	0
		40000	1-hour	12.27	0

52-00013 IP CAMDEN CAMDEN 0725-AOP-R0 V
0725-AOP-R1 V
 0725-AOP-R2 V

Pollutant	Model Used	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
SO2	BUG 33	1300	3 hour	260.5	0.2
		365	24 hour	46.1	0.126
		80	annual	4.4	0.055

52-00035 ANTHONY TIMBERLANDS, INC. BEARDEN 321113 0456-AOP-R0 V
 0456-AOP-R1 V
 0456-AOP-R2 V
 0456-AOP-R3 V
 0456-AOP-R4 V
 0456-AOP-R5 V
0456-AOP-R6 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	50.1	150	24-Hour	114.9*	76.6
CO	140.9	10000	8-Hour	71	0.8
		40000	1-Hour	109.8	0.3
NOx	32.7	100	Annual	1.6	1.6
Pb	0.00554	0.15	Rolling 3-month	0.00031	0.2
* Includes Little Rock 2012 background (36 µg/m3)					

52-00055 ARK ELECTRIC COOP-MCCLELLAN CAMDEN 221112 0181-AOP-R0 V
 0181-AOP-R1 V
 0181-AOP-R2 V
 0181-AOP-R3 V
 0181-AOP-R4 V
0181-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	279.5	150	24-Hour	19.18153	12.80%
SO2	4240.5	80	Annual	35.14319 (2007)	44.00%
		1300	3-Hour	942.31104	72.50%
		365	24-Hour	274.43663	75.20%
CO	1201.2	10000	8-Hour	137.87403	1.40%
		40000	1-Hour	221.49159	0.60%
NOx	874.3	100	Annual	8.34314 (2011)	8.40%
Pb	0.0145	0.15	Rolling 3-month	0.00029	0.20%

52-00247 VICTORY LUMBER CAMDEN 321113 1862-AOP-R0 V

Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant.

52-00298 MARCONI AEROSPACE DEFENSE SYSTEM EAST CAMDEN 32592 1865-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

52-00305 POTLATCH CORP. CAMDEN 1952-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

53-00039 BAY HAWK INDUSTRIES-BIGELOW BIGELOW 1827-AOP-R0 V

Total criteria pollutant emissions were not modeled, because the rates as estimated in the calculations did not indicate a potential threat to the National Ambient Air Quality Standards (NAAQS)

54-00013 ADM GRAIN RIVER SYSTEM, INC HELENA 424510 0800-AOP-R0 V

No modeling was performed. Since the previous permit was a PSD permit and significant modeling was performed at that time and the requested modification resulted in a decrease in emissions. *No copy of previous permit on pds*

54-00017 ENTERGY ARKANSAS-RITCHIE HELENA 221112 1131-AOP-R0 V

0800-AOP-R1 V

0800-AOP-R2 V

1131-AOP-R1 V

1131-AOP-R2 V

1131-AOP-R3 V

1131-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Conc. (µg/m3)	% of NAAQS
PM10	654.3	150	24-Hour	8.6843	5.78
SO2	10068	80	Annual	15.534	19.41
			3-Hour	483.9991	37.23
CO	1802.9	10000	24-Hour	166.6187	45.64
			8-Hour	16.8388	0.16
NOx	5156.7	40000	1-Hour	29.1785	0.072
			Annual	6.1695	6.16
Pb	0.0993	100	Rolling 3-month	0.00016	0.1

54-00019 DELTA OIL MILL HELENA 311224 1089-AOP-R0 V

No modelling analysis performed

54-00081 HOFFINGER INDUSTRIES WEST HELENA 326199 1341-AOP-R0 V
 1341-AOP-R1 V

All criteria pollutants were modeled using Screen3. All criteria pollutants were less than 50% of the NAAQS, thus no refined modeling was performed

54-00110 ENTERPRISE REFINED PRODUCTS CO HELENA 486210 1598-AOP-R0 V
 1598-AOP-R1 V
 1598-AOP-R2 V
 1598-AOP-R3 V
 1598-AOP-R4 V
 1598-AOP-R5 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

54-00120 ENABLE GAS TRANS/HELENA HELENA 486210 1217-AOP-R0 V
 1217-AOP-R1 V
 1217-AOP-R2 V
 1217-AOP-R3 V
 1217-AOP-R4 V
 1217-AOP-R5 A
 1217-AOP-R6 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.3	50	Annual	0.2	0.004
		150	24-Hour	1.93	0.013
SO2	Modeling was not performed as it is less than 100 tpy				
VOC	Modeling was not performed as it is less than 100 tpy				
CO	90.6	10000	8-Hour	900	0.09
		40000	1-Hour	1204	0.03
NOx	94.5*	100	Annual	40.44	0.4044

54-00130 CYPRESS CHEMICAL COMPANY HELENA 325311 1492-AOP-R0 V
 1492-AOP-R1 V
 1492-AOP-R2 V
 1492-AOP-R3 V
 1492-AOP-R4 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time. All criteria pollutants are permitted at less than 100 tv.

54-00132 EURAMAX INTERNATIONAL, INC. HELENA 332812 1581-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard	Averaging Time	Highest Concentration	% of NAAQS
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55-00017	BEAN LUMBER COMPANY, INC	GLENWOOD	321113	0189-AOP-R0	V
				0189-AOP-R1	V
				0189-AOP-R2	V
				0189-AOP-R3	V
				0189-AOP-R4	A
56-00049	BALDWIN PIANO, INC.	TRUMANN	339992	0518-AOP-R0	V
				0518-AOP-R1	V
56-00085	BALDWIN PIANO, INC	TRUMANN	337121	1504-AOP-R0	V
58-00011	BLUE CUBE OPERATIONS LLC	RUSSELLVILLE	333249	0801-AOP-R0	V
				0801-AOP-R1	V
				0801-AOP-R2	V
				0801-AOP-R3	V
				0801-AOP-R4	V
				0801-AOP-R5	V
				0801-AOP-R6	V
				0801-AOP-R7	V
				0801-AOP-R8	V
				0801-AOP-R9	A
58-00014	WEST FRASER, INC	RUSSELLVILLE	321113	1628-AOP-R0	V
				1628-AOP-R1	V
				1628-AOP-R10	A
				1628-AOP-R2	V
				1628-AOP-R3	V
				1628-AOP-R4	V
				1628-AOP-R5	V
				1628-AOP-R6	V
				1628-AOP-R7	V
				1628-AOP-R8	V

Lead	0.18	(µg/m3) 1.5	Quarterly	(µg/m3) 1.3	0.87
Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	32.7	50	Annual	15.281	30.6
		150	24-Hour	74.631	49.8
SO2	6.7	80	Annual	0.06	0.08
		1300	3-Hour	2.39	0.19
		365	24-Hour	0.64	0.18
VOC	205	0.12	1-Hour (ppm)	0.0911	76.9
CO	55.8	10000	8-Hour	5972.51	59.8
		40000	1-Hour	7016.61	17.6
NOx	55.8	100	Annual	28.71	28.7

Included background
Included background
Included background
Included background
Included background

No modelling analysis performed

Criteria Pollutants did not exceed the level of significance and were not modeled

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	2.6	150	24-Hour	134.87	0.899

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)*	% of NAAQS
PM10	8.5	50	Annual	40.5	81.1
		150	24-Hour	109.6	73.1
* Little Rock 2008 background concentration – 23 mg/m3 (Annual) 43 mg/m3 (24-hour)					

1628-AOP-R9 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

58-00030 RUSSELLVILLE STEEL COMPANY RUSSELLVILLE 332312 1604-AOP-R0 V

1604-AOP-R1 V

1604-AOP-R2 V

58-00050 RIVERSIDE FURN #5-N PHOENIX RUSSELLVILLE 0852-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	37.8	50	Annual	36.122	72.25
		150	24-Hour	53.06	35.37

0852-AOP-R1 V

0852-AOP-R2 V

0852-AOP-R3 V

58-00145 SUPERIOR GRAPHITE COMPANY RUSSELLVILLE 335991 0766-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS**
SO2	54.53*	80	Annual	5.3	6.6
	106.23*	1300	3-Hour	392.2	30.2
	88.87*	365	24-Hour	103.9	28.5
PM10	9.25	150	24-Hour	136.8	91.2
		50	Annual	45.9	91.8

0766-AOP-R1 V

0766-AOP-R10 A

0766-AOP-R2 V

0766-AOP-R3 V

0766-AOP-R4 V

0766-AOP-R5 V

0766-AOP-R6 V

0766-AOP-R7 V

0766-AOP-R8 V

0766-AOP-R9 V

58-00223 CENTERPOINT ENERGY, LLC LONDON 486210 1218-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
NOx	37.5	100	Annual	11.22	0
CO	80.5	10000	8-hour	1470	0.15
		40000	1-hour	2100	0.05

1218-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time for VOC and SO2.

58-00224 ENABLE GAS TRANS/PINEY LONDON 486210 1178-AOP-R0 V

For Nox, PM10, and CO, the permittee elected to install non-selective catalytic control devices rather than provide refined modelling.

1178-AOP-R1 V
 1178-AOP-R2 V
 1178-AOP-R3 V
 1178-AOP-R4 V

58-00272 J.W. ALUMINUM CO. RUSSELLVILLE 331315 1659-AOP-R0 V
 1659-AOP-R1 V
 1659-AOP-R2 V
 1659-AOP-R3 V
 1659-AOP-R4 V
 1659-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	12.4	150	24-Hour	59	39
SO2	1.2	80	Annual	4.5	6
		1300	3-Hour	36	3
		365	24-Hour	13	4
CO	17.9	10000	8-Hour	132	1
		40000	1-Hour	307	1
NOx	46.3	100	Annual	40	40
Pb	0.00004	0.15	Rolling 3-month	0.000004 highest	<1

59-00036 ROLLING MEADOWS LANDFILL, INC HAZEN 562212 1888-AOP-R0 V
 1888-AOP-R1 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	10.6*	50	Annual	41.102**	0.822
		150	24-Hour	120.977***	0.807

60-00003 3M COLLEGE STATION PLANT LITTLE ROCK 212325 0039-AOP-R0 V
 0039-AOP-R1 V
 0039-AOP-R10 V
 0039-AOP-R11 A
 0039-AOP-R12 P
 0039-AOP-R2 V
 0039-AOP-R3 V
 0039-AOP-R4 V
 0039-AOP-R5 V
 0039-AOP-R6 V
 0039-AOP-R7 V
 0039-AOP-R8 V
 0039-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Modeled Concentration (µg/m3)	Background Values NLR 2009 (µg/m3)	Total Highest Concentration (µg/m3)	% of NAAQS
PM10	89.04	150	24-Hour	114.09	30	144.09	96.1
CO	73.9	10000	8-Hour	1890			0.18
NOx	48.1	40000	1-Hour	7393			0.18
		100	Annual	48.5			0.48
Pb	0.64	0.15	Calendar quarter	0.76*			50%*

60-00004 POROCEL INDUSTRIES, LLC LITTLE ROCK 327999 0635-AOP-R0 V
 0635-AOP-R1 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant. Criteria pollutants were not evaluated for impacts on the NAAQS.

60-00058 HALL TANK COMPANY, LLC NORTH LITTLE ROCK 332420 2016-AOP-R0 V

2016-AOP-R1 V

2016-AOP-R2 A

2016-AR-1 P

60-00059 ESSICK AIR PRODUCTS LITTLE ROCK 339999 1520-AOP-R0 V

NA. Total emissions for each criteria pollutant is less than 100 tons per year.

60-00061 ADM-LITTLE ROCK LITTLE ROCK 0683-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	11.5	50	Annual	14	0.28
			24-hour	56.1	0.37
NOx	70	100	Annual	28.5	0.28
VOC	80	0.12	1-hour (ppm)	0.015	0.13

0683-AOP-R1 V

0683-AOP-R2 V

60-00065 AFCO STEEL, LLC LITTLE ROCK 332312 1043-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	10.5	50	Annual	11.354	0.22
			24-Hour	72.705	48.47

1043-AOP-R1 V

1043-AOP-R2 V

1043-AOP-R3 V

1043-AOP-R4 V

1043-AOP-R5 A

60-00087 ENTERGY ARKANSAS-LYNCH NORTH LITTLE ROCK 221112 0019-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	47.1*	50	Annual	5.34*	10.7*
			24-Hour	26.19*	17.5*
SO2	1423.3*	80	Annual	25.35*	31.7*
			3-Hour	526.14*	40.5*
			24-Hour	171.42*	47.0*
VOC	N/A	0.12	1-Hour (ppm)	N/A	N/A
CO	303.8*	10000	8-Hour	677.10*	6.8*
			1-Hour	1704.41*	4.3*
NOx	1731.1* 86.28**	100	Annual	6.2**	6.2**
Pb	N/A	0.15	Rolling 3-month	N/A	N/A

0019-AOP-R1 V

0019-AOP-R2 V

0019-AOP-R3 V

0019-AOP-R4 V

0019-AOP-R5 V

0019-AOP-R6 V

* Screening emissions and model results based on total potential to emit for all sources.

0019-AOP-R7 V

** Refined modeling results based on a reduced emission rate to account for facility peaking operations.

60-00090 ENTERGY ARKANSAS-MABELVALE MABELVALE 22112 1734-AOP-R0 V
 1734-AOP-R1 V
 1734-AOP-R2 V
 1734-AOP-R3 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	15.2	50	Annual	23.3	46.6
		150	24-Hour	45.9	30.6
SO2	595.2	80	Annual	11.2	14
		1300	3-Hour	615.2	47.3
		365	24-Hour	142	38.9
CO	125.2	10000	8-Hour	80	0.8
		40000	1-Hour	305.1	0.8
			Annual	19.7	19.7
Pb*	0.04	0.15	Rolling 3-month	0.0185	12.3

*Modeling was performed using a conservative 24-hr analysis

60-00097 MUSKET CORP/NLR TRANSLOAD SITE NORTH LITTLE ROCK 1063-AOP-R0 V
 1063-AOP-R1 V
 1063-AOP-R2 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
SO2	42.6	80	Annual	20	0.25
		1300	3-hour	178	0.14
		365	24-hour	79	0.22
VOC	80.6	0.12	1-hour(ppm)	0.02	0.17

60-00107 BLUEGRASS MILTIWALL BAG, LLC JACKSONVILLE 32312 1039-AOP-R0 V
 1039-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	0.7	50	Annual	0.15	0
		150	24-hour	1.69	0.01
SO2	0.5	80	Annual	0.04	0
		1300	3-hour	1.64	0
		365	24-hour	0.56	0
NOx	10.5	100	Annual	4.94	0.05
VOC	346	0.12	1-hour(ppm)	0.012	0.1
CO	4.5	10000	8-hour	45.7	0
		40000	1-hour	90.1	0

60-00110 GEORGIA-PACIFIC HARDBOARD-NLR NORTH LITTLE ROCK 0248-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	84.7	50	Annual	10.017425	0.2
		150	24-hour	134.789104	0.9
SO2	54.6	80	Annual	1.73047	0.02
		1300	3-hour	75.289869	0.06
		365	24-hour	23.432412	0.06
VOC	147.3	0.12	1-hour(ppm)	NA	0
CO	122.2	10000	8-hour	113.691166	0.01
		40000	1-hour	257.62257	0.01

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

60-00118 FIBER GLASS SYSTEMS, L.P. LITTLE ROCK 326122 0587-AOP-R0 V
 0587-AOP-R1 V
 0587-AOP-R2 V

60-00302 U OF A MEDICAL CENTER LITTLE ROCK 622110 2125-AOP-R0 V
 2125-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
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2125-AOP-R2 V
 2125-AOP-R3 A
 2125-AOP-R4 P
 60-00438 TWO PINE LANDFILL JACKSONVILLE 562212 1697-AOP-R0 V
 1697-AOP-R1 V
 1697-AOP-R2 V
 1697-AOP-R3 V
 1697-AOP-R4 V
 1697-AOP-R5 V
 1697-AOP-R6 A
 1697-AOP-R7 P

PM10	36.5	50	Annual	13.648	0.273
		150	24-Hour	71.412	0.476
NOx	818.7	100	Annual	27.47	0.275

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)*	% of NAAQS
PM10	28.81	50	Annual	42.56	85.12
		150	24-Hour	112.56	75.06
SO2	2.2	80	Annual	4.48	5.6
		1300	3-Hour	130.88	10.07
		365	24-Hour	44.75	12.26
CO	56.9	10000	8-Hour	2619.9	26.2
		40000	1-Hour	6028.13	15.07
NOx	23.2	100	Annual	47.24	47.24

* Includes Background Concentrations

60-00440 JP ENERGY ATT,LLC NORTH LITTLE ROCK 424710 0590-AOP-R0 V
 0590-AOP-R1 V
 0590-AOP-R10 V
 0590-AOP-R11 V
 0590-AOP-R12 V
 0590-AOP-R13 V
 0590-AOP-R14 V
 0590-AOP-R15 V
 0590-AOP-R16 V
 0590-AOP-R17 A
 0590-AOP-R18 P
 0590-AOP-R2 V
 0590-AOP-R3 V
 0590-AOP-R4 V
 0590-AOP-R5 V
 0590-AOP-R6 V
 0590-AOP-R7 V
 0590-AOP-R8 V

Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant. Criteria pollutants were not evaluated for impacts on the NAAQS.

0590-AOP-R9 V

60-00532 UNION PACIFIC RAILROAD-JENKS NORTH LITTLE ROCK 482111 1713-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1713-AOP-R1 V

1713-AOP-R2 V

60-00565 BFI WASTE SYSTEMS OF ARK,LLC LITTLE ROCK 562212 1614-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1614-AOP-R1 V

1614-AOP-R2 V

1614-AOP-R3 A

60-00617 FALCON JET CORP (DASSAULT) LITTLE ROCK 336411 1876-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration*(u a/m ³)	% of NAAQS
PM10	1.6	150	24-Hour	62.3	41.5

1876-AOP-R1 V

1876-AOP-R10 P

1876-AOP-R2 V

1876-AOP-R3 V

1876-AOP-R4 V

1876-AOP-R5 V

1876-AOP-R6 V

1876-AOP-R7 V

1876-AOP-R8 V

1876-AOP-R9 A

60-00621	ROL-LIFT CORP	LITTLE FLOCK		1364-AOP-R0	V
60-00650	HERITAGE CRYSTAL-CLEAN-LR FAC.	LITTLE ROCK	423930	0915-AOP-R0	V
60-00683	WHEATLAND TUBE-OMEGA DIV	LITTLE ROCK	33121	1430-AOP-R0	V
				1430-AOP-R1	V
				1430-AOP-R2	V
				1430-AOP-R3	V
				1430-AOP-R4	V
				1430-AOP-R5	V
				1430-AOP-R6	V
				1430-AOP-R7	V
60-00685	METRO SCRAP METALS	NORTH LITTLE ROCK	331314	0752-AOP-R0	V
				0752-AOP-R1	V
60-00689	ARKANSAS CHILDREN'S HOSPITAL	LITTLE ROCK	622110	1923-AOP-R0	V
				1923-AOP-R1	V

Total criteria pollutant emissions were not modeled, because the rates of total VOC and particulate as estimated in the calculations did not indicate a potential threat to the National Ambient Air Quality Standards (NAAQS).

All criteria pollutants were less than 50% of the NAAQS, thus no refined modeling was performed for these.

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration*(u g/m ³)	% of NAAQS
PM10	7	150	24-Hour	33.4	65.6
CO	84	10000	8-hour	3603.7	
		40000	1-hour	7443.4	
Nox	335.7	100	Annual	89.2	

1923-AOP-R2 V

* Includes the following background concentrations, Little Rock. 39 ug/m PM10•

** Includes the following background concentrations, North Little Rock: 1832 (8-Hour) and 2061 (1-Hour) ug/rrr CO, and 19.0 Jlg/m3 NOx.

1923-AOP-R4 V

1923-AOP-R5 V

1923-AOP-R6 V

1923-AOP-R7 A

60-00852

ROCK CITY FURNITURE

NORTH LITTLE ROCK

0969-AOP-R0 V

Criteria pollutant emissions were not modeled in this analysis because the emission of these pollutants did not qualify as being a major source.

0969-AOP-R1 V

60-00923

JASON INTERNATIONAL

NORTH LITTLE ROCK

326191

1687-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m^3)	Averaging Time	Highest Concentration*(u a/m^3)	% of NAAQS
PM10	2	50	Annual	31.6886	63.40%
		150	24-Hour	87.97121	58.70%
SO2	--	80	Annual	N/A	N/A
		1300	3-Hour	N/A	N/A
VOC	148.8	365	24-Hour	N/A	N/A
		0.12	1-Hour (ppm)	N/A	N/A
CO	--	10,000	8-Hour	N/A	N/A
		40,000	1-Hour	N/A	N/A
NOx	--	100	Annual	N/A	N/A
Pb	--	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	N/A	N/A

1687-AOP-R1 V

1687-AOP-R2 V

1687-AOP-R3 V

1687-AOP-R4 V

1687-AOP-R5 V

1687-AOP-R6 V

1687-AOP-R7 A

60-01071

LITTLE ROCK MUNICIPAL LANDFILL

LITTLE ROCK

562212

1781-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

1781-AOP-R1 V

1781-AOP-R2 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

60-01191 PROGRESS RAIL SERVICES CORP LITTLE ROCK 488210 1601-AOP-R0 V

60-01380 HARRY L. OSWALD GENERATING STA WRIGHTSVILLE 221112 1842-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration*(u g/m ³)	% of NAAQS
PM ₁₀	42	50	Annual	0.15	0.3
		150	24-Hour	1.75	1.2
		80	Annual	0.014	1.1
SO ₂	3.8	1300	3-Hour	0.35	0.02
		365	24-Hour	0.158	0.004
		10,000	8-Hour	53.1	0.53
CO	612.9	40,000	1-Hour	77.7	0.2
		100	Annual	1.51	1.5

1842-AOP-R1 V

1842-AOP-R2 V

1842-AOP-R3 V

1842-AOP-R4 V

1842-AOP-R5 A

1842-AOP-R6 P

60-04008 NOVUS ARKANSAS, LLC LITTLE ROCK 311119 2107-AOP-R0 V

No SOB

60-04184 WELSPUN TUBLAR, LLC LITTLE ROCK 331210 2145-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	22.4	50	Annual	11.7	23.40%
		150	24-Hour	103.4	68.90%
		80	Annual	-	-
SO ₂	Less than 100 tpy	1300	3-Hour	-	-
		365	24-Hour	-	-
		10,000	1-Hour (ppm)	-	-
VOC	Less than 100 tpy	0.12	8-Hour	-	-
CO	Less than 100 tpy	40,000	1-Hour	-	-
NO _x	Less than 100 tpy	100	Annual	-	-

60-04196 LM WIND POWER BLADES (AR),INC LITTLE ROCK 333611 2152-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM10	7.9	150	24	8.29524	5.50%
		80	annual	14.84177	18.60%
		1300	3	639.13193	49.20%
SO2	46.2	365	24	297.18736	81.50%
		10000	8	170.47044	1.70%
CO	17.4	40000	1	244.58262	0.70%
		100	annual rolling 3-month period over 3 years (not to be exceeded in any 3 month period)	5.75637	5.80%
PB	--	0.15		--	--

2152-AOP-R1 V

2152-AOP-R2 V

2152-AOP-R3 V

2152-AOP-R4 V

2152-AOP-R5 V

2152-AOP-R6 A

60-04199 LM WIND POWER BLADES (AR), INC LITTLE ROCK 326199 2153-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM ₁₀	8.1	50	Annual	27.91	55.80%
		150	24-hour	77.11	51.40%
		80	Annual	30.62	38.25%
SO ₂	45	1,300	3-hour	525.62	40.43%
		365	24-hour	334.02	91.50%
NO _x	154.2	100	Annual	91.32	91.30%
		10,000	8-hour	3123.91	31.24%
CO	47.7	40,000	1-hour	3911.11	9.80%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (ug/m ³)	Averaging Time	Highest Concentration (ug/m ³)	% of NAAQS
PM10	20.1	50	Annual	9.53	19
		150	24	68.44	45
		80	Annual	2.79	3.5

2153-AOP-R1 V

2153-AOP-R2 V

2153-AOP-R3 V

61-00001 NIELSEN BAINBRIDGE FRAME,INC POCAHONTAS 339999 0823-AOP-R0 V

0823-AOP-R1 V

0823-AOP-R2 V
 0823-AOP-R3 V
 0823-AOP-R4 V
 0823-AOP-R5 V
 0823-AOP-R6 V
 0823-AOP-R7 V

SO2	0.3	1300	3	169.76	13
		365	24	27.13	7.5
CO	1	10000	8	95.37	1
		40000	1	228.88	1
NOx	1.2	100	Annual	5.69	5.7

61-00009 WATERLOO INDUSTRIES POCAHONTAS

0833-AOP-R0 V
 0833-AOP-R1 V
 0833-AOP-R2 V
 0833-AOP-R3 V
 0833-AOP-R4 V
 0833-AOP-R5 V
 0833-AOP-R6 V
 0833-AOP-R7 V

Pollutant	Emission Rate	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
VOC	219.2 tpy	0.12	1-hour (ppm)	0.015	13%

61-00031 NATURAL GAS PIPELINE #308 BIGGERS

486210 1587-AOP-R0 V
 1587-AOP-R1 V
 1587-AOP-R2 V
 1587-AOP-R3 V
 1587-AOP-R4 V
 1587-AOP-R5 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	13.7	50	Annual	0.71	1.5
		150	24-Hour	6.2	4.2
SO ₂	Less than 100 tpy				
VOC	387.6 tpy	0.12	1-Hour (ppm)	0.03	27
CO	391.9	10,000	8-Hour	316	3.2
		40,000	1-Hour	513	1.3
NO _x	1181	100	Annual	99.828*	99.8

61-00076 ENABLE MISS. RIVER/BIGGERS BIGGERS

486210 1513-AOP-R0 V
 1513-AOP-R1 V
 1513-AOP-R2 V
 1513-AOP-R3 A
 1513-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.9	50	Annual	0.38998	0.80%
		150	24-Hour	4.06825	2.80%
		80	Annual	0.30114	0.40%
SO ₂	1.1	1300	3-Hour	6.86558	0.60%
		365	24-Hour	3.08009	0.90%
VOC	2.9	0.12	1-Hour (ppm)	N/A	N/A
CO	296	10,000	8-Hour	1412.31127	14.20%
		40,000	1-Hour	2028.04226	5.10%
NO _x	297.7	100	Annual	47.64494	47.70%
Pb	N/A	0.15	Rolling 3-month Period over 3 years	N/A	N/A

61-00084 DACO TRAILER CORP POCAHONTAS

336212 1757-AOP-R0 V

No modelling analysis performed

61-01017 PECO FOODS, INC POCAHONTAS 311615 2332-AOP-R0 A

Pursuant to Act 1302 of the Regular Session of the 89th General Assembly of the State of Arkansas, no dispersion modeling was performed by ADEQ because it was not voluntarily proposed and agreed to by the facility. No other information was submitted by the applicant.

62-00010 ENTERGY ARKANSAS-MOSES FORREST CITY 221112 0097-AOP-R0 V
 0097-AOP-R1 V
 0097-AOP-R2 V
 0097-AOP-R3 V
 0097-AOP-R4 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	118.5	150	24-Hour	32.424	21.61
SO2	2110.2	80	Annual	18.586	23.23
			3-Hour	484.306	37.25
			24-Hour	149.819	41.04
CO	169.4	10000	8-Hour	27.722	0.27
			1-Hour	46.732	0.11
NOx	1167.4	100	Annual	10.281	10.28

63-00010 ALMATIS, INC. BAUXITE 331313 1527-AOP-R0 V
 1527-AOP-R1 V
 1527-AOP-R10 V
 1527-AOP-R11 V
 1527-AOP-R12 V
 1527-AOP-R13 V
 1527-AOP-R14 V
 1527-AOP-R15 A
 1527-AOP-R2 V
 1527-AOP-R3 V
 1527-AOP-R4 V
 1527-AOP-R5 V
 1527-AOP-R6 V
 1527-AOP-R7 V
 1527-AOP-R8 V
 1527-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	206.4 is now	150	24-Hour	146.8 (110.8+36)	97.8
SO2	8.6	80	Annual	3.6	4.5
			3-Hour	38.4	3
			24-Hour	20.6	5.7
CO	73.1	10000	8-Hour	147.6	1.5
			1-Hour	254.4	0.7
NOx	152.8	100	Annual	12.6	12.6

63-00011 ST-GOBAIN CERAMICS & PLASTICS BRYANT 327992 0034-AOP-R0 V
 0034-AOP-R1 V
 0034-AOP-R2 A
 0034-AOP-R3 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Background Concentration (µg/m3)	Modeled Concentration (µg/m3)	% of NAAQS
PM10	36.3	150	24-Hour	38	81.931	119.93 79.95
SO2	48.5	80	Annual	5	7.441	12.44 15.55
			3-Hour	21	155.5451	176.545 13.58
			24-Hour	14	59.5921	73.592 20.16
CO	42.9	10000	8-Hour	4241	555.591	4796.59 47.96
			1-Hour	2995	318.551	3313.55 8.28
NOx	76.6	100	Annual	22	1.554	23.554 23.55

63-00029 WABASH ALLOYS BENTON 0139-AOP-R0 V
 0139-AOP-R1 N

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	48.1	50	Annual	7.3	15.00%

SO2	32.1	150	24-Hour	116.6	78.00%
		80	Annual	0.5	1.00%
		1300	3-Hour	23	2.00%
		365	24-Hour	9.9	3.00%
NOx	20.2	100	Annual	0.6	1.00%
VOC	26.3	0.12	1-hour (ppm)		0.00%
CO	7.9	10000	8-hour	4.7	0.00%
		40000	1-hour	6.8	0.00%

63-00155	BFI WASTE SYSTEMS OF AR, LLC	BAUXITE	562212	1855-AOP-R0	V
				1855-AOP-R1	V
				1855-AOP-R2	V
				1855-AOP-R3	V
				1855-AOP-R4	V
				1855-AOP-R5	A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Modeled Concentration (µg/m3)	Background Values NLR 2008 (µg/m3)	Total Highest Concentration (µg/m3)	% of NAAQS
PM10	21.37*	150	24-Hour	8.81	37	45.81	30.5
CO	23.59**	10000	8-Hour	187.5	1717.8	1905.3	19.1
		40000	1-Hour	571.2	2863	3434.2	8.6

* Includes SN-02 @ 20.3 lb/hr (17.3 lb/hr unpaved + 0.36 lb/hr paved + 2.64 lb/hr unpaved perimeter) + SN-03 @ 1.07 lb/hr
** SN-02 Flare

63-00164	COORS TEK-AR OPERATIONS	BENTON	327110	1672-AOP-R0	V
64-00049	MANSFIELD, A DIV./ WEST FRASER	MANSFIELD	321113	1386-AOP-R0	V
				1386-AOP-R1	V
				1386-AOP-R2	V
				1386-AOP-R3	V
				1386-AOP-R4	V
				1386-AOP-R5	V
				1386-AOP-R6	A

No modelling analysis performed

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	Highest Concentration (µg/m3)	% of NAAQS
PM10	24.6	150	24-Hour	138.2a	0.922
Pb	0.02	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	0.009b	0.06

a. Includes the background concentration of 36 µg/m3 (2009, Little Rock).
b. Monthly average used in lieu of quarterly average.

66-00026	DIXIE CONSUMER PRODUCTS, LLC	FORT SMITH	322219	0309-AOP-R0	V
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No modelling analysis performed

66-00030 GREENWOOD FIXTURE DIV-KRAFT GREENWOOD 1309-AOP-R0 V

Total criteria pollutant emissions were not modeled, because the rates of total VOC and particulate as estimated in the calculations did not indicate a potential threat to the National Ambient Air Quality Standards (NAAQS).

66-00041 BALDOR ELECTRIC COMPANY FORT SMITH 335312 1309-AOP-R1 V

1309-AOP-R1 V

0966-AOP-R0 V

0966-AOP-R3 V

0996-AOP-R1 V

0996-AOP-R10 V

0996-AOP-R11 V

0996-AOP-R12 V

0996-AOP-R13 V

0996-AOP-R14 V

0996-AOP-R15 V

0996-AOP-R16 V

0996-AOP-R17 V

0996-AOP-R18 V

0996-AOP-R19 V

0996-AOP-R2 V

0996-AOP-R20 A

0996-AOP-R21 P

0996-AOP-R3 V

0996-AOP-R4 V

0996-AOP-R5 V

0996-AOP-R6 V

0996-AOP-R7 V

0996-AOP-R8 V

0996-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m3)	Averaging Time	6th Highest Concentration* (µg/m3)	% of NAAQS
PM10	3.3	150	24-Hour	114.88*	0.766

* Includes a background of 36 µg/m3

66-00048 WHIRLPOOL CORPORATION FORT SMITH 335222 0796-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

0796-AOP-R1 V

0796-AOP-R2 V
 66-00050 TRANE US, INC FORT SMITH 333415 1155-AOP-R0 V

No modelling analysis performed

1155-AOP-R1 V
 66-00063 COSCO, INC. FORT SMITH 0973-AOP-R0 V
 0973-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	6th Highest Concentration* (µg/m ³)	% of NAAQS
PM10	Low Emission Limit - No Modeling Required	50	Annual		0
		150	24-hour		0
VOC	750 tpy	0.12	1-hour (ppm)	0.016	0.13

66-00081 ACME BRICK COMPANY FORT SMITH 327120 0713-AOP-R0 V
 0713-AOP-R1 V
 0713-AOP-R2 V
 0713-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM10	18.7	50	Annual	6.7	13.4
		150	24-Hour	51.05	34
		80	Annual	7.7	9
SO2	21.4	1300	3-Hour	134	10
		365	24-Hour	58	15
		0.12	1-Hour (ppm)	-	-
CO	31.7	10000	8-Hour	168.9	1
		40000	1-Hour	358	0.9
NOx	9.5	100	Annual	3.46	3.4

66-00150 RIVERSIDE FURN #2 3 6 & 7 FORT SMITH 337122 1160-AOP-R0 V
 1160-AOP-R1 V
 1160-AOP-R2 V
 1160-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	28.56	150	24-Hour	65.19	43.46%
SO ₂		80	Annual		
		1300	3-Hour		
CO		365	24-Hour		
		10,000	8-Hour		
NO _x		40,000	1-Hour		
		100	Annual		
Pb		0.15	Rolling 3-month		

66-00219 SAINT GOBAIN CERAMICS/PLASTICS FORT SMITH 327992 0492-AOP-R0 V
 0492-AOP-R1 V
 0492-AOP-R10 A
 0492-AOP-R2 V
 0492-AOP-R3 V
 0492-AOP-R4 V
 0492-AOP-R5 V
 0492-AOP-R6 V
 0492-AOP-R7 V
 0492-AOP-R8 V
 0492-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	61.7	150	24-Hour	93.64	97.00%
SO ₂	55.7	80	Annual	8.54	10.67%
		1300	3-Hour	331.96	25.53%
		365	24-Hour	87.23	23.89%
CO	23.4	10,000	8-Hour	4825.74	48.25%
		40,000	1-Hour	3107.21	7.76%
NO _x	108.4	100	Annual	24.76	24.76%
Pb		0.15	Rolling 3-month		

66-00226 FT SMITH, CITY OF FORT SMITH 921110 1791-AOP-R0 V
 1791-AOP-R1 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	20.82	150	24-Hour	133.39	89.00%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	24.71	10,000	8-Hour	1794.1	17.90%
		40,000	1-Hour	3132.2	7.80%
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

66-00274 GERDAU MACSTEEL FORT SMITH 331110 0693-AOP-R0 V
 0693-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
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0693-AOP-R10 A
 0693-AOP-R2 V
 0693-AOP-R3 V
 0693-AOP-R4 V
 0693-AOP-R5 V
 0693-AOP-R6 V
 0693-AOP-R7 V
 0693-AOP-R8 V
 0693-AOP-R9 V

66-00294 OWENS CORNING COMPOSITE MAT. FORT SMITH 313230
 0747-AOP-R0 V
 0747-AOP-R1 V
 0747-AOP-R2 V
 0747-AOP-R3 V
 0747-AOP-R4 A

66-00352 QUALSERV SOLUTIONS, LLC FORT SMITH 337127
 1366-AOP-R0 V
 1366-AOP-R1 V
 1366-AOP-R2 V
 1366-AOP-R3 V
 1366-AOP-R4 V
 1366-AOP-R5 V
 1366-AOP-R6 V
 1366-AOP-R7 A

66-00496 FEDERAL COACH, LLC FORT SMITH 336211
 1421-AOP-R0 V
 1421-AOP-R1 V
 1421-AOP-R2 V

66-00507 HICKORY SPRINGS MFG CO. FORT SMITH 326150
 1456-AOP-R0 V

PM ₁₀	38.9	150	24-Hour	37.6	25.3%
SO ₂	109.2	80	Annual	9.5	11.90%
	109.2	1300	3-Hour	191.9	14.80%
	109.2	365	24-Hour	89.2	24.40%
CO	469	10,000	8-Hour	711	7.10%
	469	40,000	1-Hour	1140	2.90%
	137.7	100	Annual	16.3	16.30%
Pb	0.3	0.15	Rolling 3-month	0.06	40%

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	10.9	150	24-Hour	141.79456	94.60%
SO ₂	1.2	80	Annual	0.07756	0.10%
	1.2	1300	3-Hour	3.96813	0.30%
	1.2	365	24-Hour	1.00493	0.30%
CO	52.3	10,000	8-Hour	111.22127	1.10%
	52.3	40,000	1-Hour	263.90512	0.70%
	12.7	100	Annual	0.80372	0.80%
Pb		0.15	Rolling 3-month		

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

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66-00640 CENTERPOINT ENERGY/HOBBS LAVACA 486210 1203-AOP-R1 V

1203-AOP-R2 V

1203-AOP-R3 V

1203-AOP-R4 V

1203-AOP-R5 V

66-00701 HUNTINGTON FOAM CORP. FORT SMITH 326140 2041-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	0.2	150	24-Hour	0.7937	0.53%
SO ₂	0.2	80	Annual	0.0586	0.07%
		1300	3-Hour	1.525	0.12%
		365	24-Hour	0.7937	0.22%
CO	1.8	10,000	8-Hour	11.316	0.11%
		40,000	1-Hour	18.088	0.05%
NO _x	2	100	Annual	0.58626	0.59%
Pb		0.15	Rolling 3-month		

66-01533 W & W FIBERGLASS TANK, LLC FORT SMITH 326199 2143-AOP-R0 V

2143-AOP-R1 V

2143-AOP-R2 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	3	150	24-Hour	25.28	42.20%
SO ₂		80	Annual		
		1300	3-Hour		
CO		365	24-Hour		
		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

67-00296 HUSQVARNA FORESTRY PRODUCTS DE QUEEN 333991 1753-AOP-R0 V

1753-AOP-R1 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	464.4	150	24-Hour	6287	63.00%
SO ₂		80	Annual		
		1300	3-Hour		
CO		365	24-Hour		
		10,000	8-Hour	8981	22.00%
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

68-00234 BIGGS HARDWARE & AUTO SUPPLY WIRTH 441310 2077-AOP-R0 N

70-00012 GREAT LAKES CHEMICAL/CENTRAL EL DORADO 325998 1077-AOP-R0 V

1077-AOP-R1 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	136.4	150	24-Hour	148.6	99.10%
SO ₂	129.1	80	Annual	26.91	33.64%
		1300	3-Hour	198.11	15.24%
		365	24-Hour	123.68	33.89%
CO	146	10,000	8-Hour	593.65	5.94%
		40,000	1-Hour	1308.18	3.27%
NO _x	163.2	100	Annual	42.1	42.10%
Pb		0.15	Rolling 3-month		

70-00013 WEST FRASER ,INC/HUTTIG MILL HUTTIG 321113 0118-AOP-R0 V

0118-AOP-R1 V

0118-AOP-R2 V

0118-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	72.7	150	24-Hour	29.92	6.60%
SO ₂	3.8	80	Annual	0.44	0.01%
		1300	3-Hour	5.61	0.00%
		365	24-Hour	2.72	0.01%
CO	84.2	10,000	8-Hour	112.46	1.10%

0118-AOP-R4 V
 0118-AOP-R5 V
 0118-AOP-R6 V
 0118-AOP-R7 A

	84.2	40,000	1-Hour	137.05	0.35%
NO _x	34.9	100	Annual	4.53	4.50%
Pb		0.15	Rolling 3-month		

70-00014 D & D PROPERTIES EL DORADO 325180 0906-AOP-R0 V
 0906-AOP-R1 V
 0906-AOP-R2 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

70-00016 LION OIL COMPANY EL DORADO 324110 0868-AOP-R0 V
 0868-AOP-R1 V
 0868-AOP-R10 P
 0868-AOP-R2 V
 0868-AOP-R3 V
 0868-AOP-R4 V
 0868-AOP-R5 V
 0868-AOP-R6 V
 0868-AOP-R7 V
 0868-AOP-R8 V
 0868-AOP-R9 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀		150	24-Hour	60.6	
SO ₂		80	Annual	16	20.00%
		1300	3-Hour	88.9	24.00%
		365	24-Hour	252	19.00%
CO		10,000	8-Hour	14295	35.00%
		40,000	1-Hour	6821	68.00%
NO _x		100	Annual	17.6	
Pb		0.15	Rolling 3-month		

70-00032 UNION COUNTY LUMBER CO EL DORADO 321113 0703-AOP-R0 V
 0703-AOP-R1 V
 0703-AOP-R2 V
 0703-AOP-R3 V
 0703-AOP-R4 V
 0703-AOP-R5 V
 2348-AOP-R0 A

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

70-00036 COOPER-STANDARD AUTOMOTIVE, INC EL DORADO 326291 0818-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

				0818-AOP-R1	V
				0818-AOP-R2	V
				0818-AOP-R3	V
				0818-AOP-R4	V
				0818-AOP-R5	V
				0818-AOP-R6	V
				0818-AOP-R7	V
70-00037	GREAT LAKES SOUTH	EL DORADO	325998	0873-AOP-R0	V
				0873-AOP-R1	V
				0873-AOP-R2	V
				0873-AOP-R3	V
				0873-AOP-R4	V
				0873-AOP-R5	V
				0873-AOP-R6	V
				0873-AOP-R7	A
				0873-AOP-R8	P
				0873-AOP-R9	P
70-00039	MARTIN OPERATING PARTNERSHIP	SMACKOVER	324191	1227-AOP-R0	V
				1227-AOP-R1	A
70-00040	EL DORADO CHEMICAL COMPANY	EL DORADO	325311	0573-AOP-R0	V
				0573-AOP-R1	V
				0573-AOP-R10	V
				0573-AOP-R11	V
				0573-AOP-R12	V
				0573-AOP-R13	V
				0573-AOP-R14	V
				0573-AOP-R15	V
				0573-AOP-R16	A
				0573-AOP-R17	P
				0573-AOP-R2	V
				0573-AOP-R3	V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀		150	24-Hour		
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	141.8	10,000	8-Hour	4956.9	49.50%
	141.8	40,000	1-Hour	15775.4	39.50%
NO _x	54.3	100	Annual	7.9	7.90%
Pb		0.15	Rolling 3-month		

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.8	150	24-Hour	69.6337	46.00%
SO ₂	9	80	Annual	9.13	11.00%
	9	1300	3-Hour	100.27	8.00%
	9	365	24-Hour	57.82	16.00%
CO	26.7	10,000	8-Hour	154.71	2.00%
	26.7	40,000	1-Hour	178.54	0.00%
NO _x	33.4	100	Annual	45.03	45.00%
Pb		0.15	Rolling 3-month		

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	172	150	24-Hour	136.49246	91.00%
SO ₂	92.2	80	Annual	13.29965	16.63%
	92.2	1300	3-Hour	555.91071	42.77%
	92.2	365	24-Hour	129.21823	35.41%
CO	24	10,000	8-Hour	36.3551	0.37%
	24	40,000	1-Hour	89.89168	0.23%
NO _x	592.3	100	Annual	12.34876	12.35%
Pb		0.15	Rolling 3-month		

0573-AOP-R4 V
 0573-AOP-R5 V
 0573-AOP-R6 V
 0573-AOP-R7 V
 0573-AOP-R8 V
 0573-AOP-R9 V

70-00098 CLEAN HARBORS EL DORADO, LLC EL DORADO 562211 1009-AOP-R0 V
 1009-AOP-R1 V
 1009-AOP-R10 V
 1009-AOP-R11 V
 1009-AOP-R12 A
 1009-AOP-R13 P
 1009-AOP-R2 V
 1009-AOP-R3 V
 1009-AOP-R4 V
 1009-AOP-R5 V
 1009-AOP-R6 V
 1009-AOP-R7 V
 1009-AOP-R8 V
 1009-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	15.98	150	24-Hour	57.56	63.00%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	53.19	10,000	8-Hour	16.49	16.00%
		40,000	1-Hour	24.99	5.50%
NO _x	181	100	Annual	3.07	23.00%
Pb	0.07315	0.15	Rolling 3-month	0.00937	6%

70-00101 GREAT LAKES WEST MAGNOLIA 325998 0286-AOP-R0 V
 0286-AOP-R1 V
 0286-AOP-R10 A
 0286-AOP-R2 V
 0286-AOP-R3 V
 0286-AOP-R4 V
 0286-AOP-R5 V
 0286-AOP-R6 V
 0286-AOP-R7 V
 0286-AOP-R8 V
 0286-AOP-R9 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	19.7	150	24-Hour	62.25	41.50%
SO ₂	1987	80	Annual	28.68	35.85%
		1300	3-Hour	575.86	44.30%
		365	24-Hour	195.63	53.60%
CO	82.1	10,000	8-Hour	309.89	3.10%
		40,000	1-Hour	569.25	1.42%
NO _x	82.2	100	Annual	28.73	28.73%
Pb		0.15	Rolling 3-month		

70-00364 UNION COUNTY RECYCLING & DISP. EL DORADO 562212 1854-AOP-R0 V
 1854-AOP-R1 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM ₁₀	10.2	150	24-Hour	66.7836	44.52%
SO ₂	1	80	Annual	0.20475	0.26%
		1300	3-Hour	6.60471	0.51%
		365	24-Hour	2.08542	0.57%
CO	3	10,000	8-Hour	25.57573	0.26%
		40,000	1-Hour	200.41039	0.50%
NO _x	2.6	100	Annual	3.37581	3.38%
Pb		0.15	Rolling 3-month		

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

70-00400 ENTERPRISE REFINED PRODUCTS CO EL DORADO 486910 1611-AOP-R0 V

1611-AOP-R1 V

1611-AOP-R2 V

1611-AOP-R3 V

1611-AOP-R4 V

1611-AOP-R5 V

1611-AOP-R6 A

70-00473 ANTHONY FOREST PRODUCTS-URBAN URBANA 321113 1681-AOP-R0 V

1681-AOP-R1 V

1681-AOP-R10 V

1681-AOP-R11 V

1681-AOP-R12 A

1681-AOP-R13 P

1681-AOP-R2 V

1681-AOP-R3 V

1681-AOP-R4 V

1681-AOP-R5 V

1681-AOP-R6 V

1681-AOP-R7 V

1681-AOP-R8 V

1681-AOP-R9 V

70-00480 DEL-TIN FIBER L.L.C. EL DORADO 321219 1714-AOP-R0 V

1714-AOP-R1 V

1714-AOP-R2 V

1714-AOP-R3 V

1714-AOP-R4 V

1714-AOP-R5 V

1714-AOP-R6 V

1714-AOP-R7 V

1714-AOP-R8 V

1714-AOP-R9 A

70-00543 UNION POWER STATION EL DORADO 221112 1861-AOP-R0 V

1861-AOP-R1 V

1861-AOP-R2 V

1861-AOP-R3 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	19.2	150	24-Hour	123.6	82.40%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	45	10,000	8-Hour	356	3.40%
		40,000	1-Hour	616	1.50%
NO _x	25.6	100	Annual	14.7	14.70%
Pb		0.15	Rolling 3-month		

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	50.5	150	24-Hour	121.2	81.00%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	175.6	150	24-Hour		0.52%
SO ₂	24	80	Annual		0.14%
		1300	3-Hour		0.21%
		365	24-Hour		0.20%

1861-AOP-R4 V
 1861-AOP-R5 V
 1861-AOP-R6 V
 1861-AOP-R7 A

CO	378.4	10,000	8-Hour	0.36%
	378.4	40,000	1-Hour	0.17%
NO _x	270.4	100	Annual	1.19%
Pb	0.016	0.15	Rolling 3-month	0.00062 0%

71-00315 DESOTO GATHERING/CPF-2 CLEVELAND 213112 2204-AOP-R0 A
 2204-AOP-R1 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.5	150	24-Hour	3.43	2.30%
SO ₂	1.9	80	Annual	0.33	0.40%
		1300	3-Hour	13.1	1.00%
		365	24-Hour	3.42	0.90%
CO	43.7	10,000	8-Hour	66.98	0.70%
		40,000	1-Hour	150.93	0.40%
NO _x	55.7	100	Annual	7.73	7.70%
Pb		0.15	Rolling 3-month		

71-00380 DESOTO GATHERING/COVE CREEK 4 SOUTHSIDE 486210 2247-AOP-R0 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.6	150	24-Hour	1.91	1.27%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	47.8	10,000	8-Hour	75.55	0.76%
		40,000	1-Hour	152.76	
NO _x	52.6	100	Annual	5.14	5.14%
Pb		0.15	Rolling 3-month		

71-00396 DESOTO GATHERING/GRAVEL HILL 4 SCOTLAND 486210 2252-AOP-R0 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.4	150	24-Hour	5	4.00%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	44.4	10,000	8-Hour	174.9	2.00%
		40,000	1-Hour	197.7	0.50%
NO _x	51.6	100	Annual	6.7	7.00%
Pb		0.15	Rolling 3-month		

72-00048 BALL METAL FOOD CONTAINER, LLC SPRINGDALE 332431 0782-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

0782-AOP-R1 V
 0782-AOP-R2 V
 0782-AOP-R3 V
 0782-AOP-R4 V
 0782-AOP-R5 V
 0782-AOP-R6 V
 0782-AOP-R7 A
 0782-AOP-R8 P

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

72-00054	AMERICAN TUBING ARKANSAS,LLC	SPRINGDALE	332999	2001-AOP-R0	V
				2001-AOP-R1	V
				2001-AOP-R2	V
				2001-AOP-R3	V
				2001-AOP-R4	V

72-00144	ECO-VISTA, LLC	SPRINGDALE	562212	1884-AOP-R0	V
				1884-AOP-R1	V
				1884-AOP-R2	V
				1884-AOP-R3	V
				1884-AOP-R4	V
				1884-AOP-R5	A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	32.5	150	24-Hour	131.98	88.00%
SO ₂	18	80	Annual	2.95	3.70%
	18	1300	3-Hour	74.76	5.80%
	18	365	24-Hour	41.54	11.40%
CO	57.3	10,000	8-Hour	182.26	1.80%
	57.3	40,000	1-Hour	321.92	0.80%
NO _x	23.2	100	Annual	4.02	4.02%
Pb		0.15	Rolling 3-month		

72-00205	KAWNEER COMPANY, INC	SPRINGDALE	332321	0904-AOP-R0	V
				0904-AOP-R1	V
				0904-AOP-R2	V
				0904-AOP-R3	V
				0904-AOP-R4	V
				0904-AOP-R5	V
				0904-AOP-R6	V
				0904-AOP-R7	V
				0904-AOP-R8	A
				0904-AOP-R9	P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.5	150	24-Hour	0.02352	<1%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

72-00270	SUPERIOR INDUSTRIES INTERNAT'L	FAYETTEVILLE	331524	1302-AOP-R0	V
				1302-AOP-R1	V
				1302-AOP-R10	V
				1302-AOP-R11	V
				1302-AOP-R12	V
				1302-AOP-R13	V
				1302-AOP-R14	V
				1302-AOP-R15	V
				1302-AOP-R16	V
				1302-AOP-R17	V
				1302-AOP-R18	V
				1302-AOP-R19	V
				1302-AOP-R2	V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	8.98	150	24-Hour	109.8	73.20%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

1302-AOP-R20 V
 1302-AOP-R21 V
 1302-AOP-R22 V
 1302-AOP-R23 V
 1302-AOP-R24 V
 1302-AOP-R3 V
 1302-AOP-R4 V
 1302-AOP-R5 V
 1302-AOP-R6 V
 1302-AOP-R7 V
 1302-AOP-R8 V
 1302-AOP-R9 V
 1302-AR-2 A

72-00320 JV MANUFACTURING SPRINGDALE 333995 1668-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

72-00695 HARRY D.MATTISON POWER PLANT TONTITOWN 221112 2009-AOP-R0 V

1668-AOP-R1 V

2009-AOP-R1 V

2114-AOP-R0 V

2114-AOP-R1 V

2114-AOP-R2 V

2114-AOP-R3 V

2114-AOP-R4 V

2114-AOP-R5 A

73-00006 ARMSTRONG HARDWOOD FLOORING KENSETT 0869-AOP-R0 V

0869-AOP-R1 V

0869-AOP-R2 V

0869-AOP-R3 V

0869-AOP-R4 V

0869-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	60	150	24-Hour	51	34.00%
SO ₂		80	Annual	5.8	7.00%
		1300	3-Hour	Natural Gas	0.00%
CO	4998	365	24-Hour	13.4	3.70%
		10,000	8-Hour	3240	32.00%
NO _x	1908	40,000	1-Hour	4606	12.00%
Pb		100	Annual	35	35.00%
		0.15	Rolling 3-month		

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	34.2	150	24-Hour	29.45	19.63%
SO ₂		80	Annual		
		1300	3-Hour		
CO	55.1	365	24-Hour		
		10,000	8-Hour	88.17	0.88%
NO _x	55.1	40,000	1-Hour	158.73	0.40%
Pb		100	Annual		
		0.15	Rolling 3-month		

73-00104 NATURAL GAS PIPELINE #307 SEARCY 486210 0715-AOP-R0 V
 0715-AOP-R1 V
 0715-AOP-R2 V
 0715-AOP-R3 V
 0715-AOP-R4 V
 0715-AOP-R5 V
 0715-AOP-R6 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	13.8	150	24-Hour	10.3	26.90%
SO ₂	<100	80	Annual		
	<100	1300	3-Hour		
	<100	365	24-Hour		
CO	145.5	10,000	8-Hour	827.7	8.30%
	145.5	40,000	1-Hour	2087.4	5.20%
NO _x	1727.6	100	Annual	98.16	98.20%
Pb		0.15	Rolling 3-month		

73-00110 BRYCE COMPANY, LLC SEARCY 323111 0763-AOP-R0 V
 0763-AOP-R1 V
 0763-AOP-R10 V
 0763-AOP-R11 V
 0763-AOP-R12 V
 0763-AOP-R13 V
 0763-AOP-R14 A
 0763-AOP-R2 V
 0763-AOP-R3 V
 0763-AOP-R4 V
 0763-AOP-R5 V
 0763-AOP-R6 V
 0763-AOP-R7 V
 0763-AOP-R8 V
 0763-AOP-R9 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

73-00123 TETCO-BALD KNOB BALD KNOB 486210 1340-AOP-R0 V
 1340-AOP-R1 V
 1340-AOP-R2 V
 1340-AOP-R3 A
 1340-AOP-R4 P

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.3	150	24-Hour	1.936	3.87%
SO ₂	0.9	80	Annual	0.654	0.82%
	0.9	1300	3-Hour	9.061	0.70%
	0.9	365	24-Hour	5.988	1.64%
CO	45.1	10,000	8-Hour	463.39	4.63%
	45.1	40,000	1-Hour	617.24	1.54%
NO _x	274.7	100	Annual	70.99	71.00%
Pb		0.15	Rolling 3-month		

73-00127 ENABLE MISS. RIVER/W.POINT WEST POINT 486210 1432-AOP-R0 V
 1432-AOP-R1 V
 1432-AOP-R2 V
 1432-AOP-R3 V
 1432-AOP-R4 A
 1432-AOP-R5 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.3	150	24-Hour	45.115	30.10%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	417.2	10,000	8-Hour	1427.25	14.30%
	417.2	40,000	1-Hour	2461.33	6.20%
NO _x	238.6	100	Annual	39.91	40.00%
Pb		0.15	Rolling 3-month		

73-00150 MAYTAG MANUFACTURING, LLC SEARCY 335224 1152-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

1152-AOP-R1 V

73-00177 CON-WAY MANUFACTURING, INC. SEARCY 336212 1534-AOP-R0 V
1534-AOP-R1 V
1534-AOP-R2 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.7	150	24-Hour	48.4607	32.30%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

73-00787 BHP BILLITON PETRO/HARMONY SEARCY 486210 2292-AOP-R0 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	2.4	150	24-Hour	4.58	3.05%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

73-00987 DESOTO GATHERING/TIGER CPF-1 JUDSONIA 486210 2202-AOP-R0 V
2202-AOP-R1 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	3.5	150	24-Hour	54.9	36.60%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO	43.7	10,000	8-Hour	93.3	0.90%
	43.7	40,000	1-Hour	235.7	0.60%
NO _x	55.7	100	Annual	7.5	7.50%
Pb		0.15	Rolling 3-month		

73-00988 LIDE INDUSTRIES, LLC SEARCY 326199 2164-AOP-R0 V

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time

73-01044 TEXAS GAS/BALD KNOB COMP. STA. BALD KNOB 486210 2190-AOP-R0 V

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM ₁₀	1.7	150	24-Hour	48.4607	32.30%
SO ₂		80	Annual		
		1300	3-Hour		
		365	24-Hour		
CO		10,000	8-Hour		
		40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month		

73-01081 DESOTO GATHERING/MAKO CPF-1 PANGBURN 486210 2236-AOP-R0 A

Pollutant	Emission Rate (lb/hr)	NAAQS Standard	Averaging Time	Highest Concentration	% of NAAQS

Appendix H

Infrastructure SIP Transport Elements Technical
Support Document

Infrastructure SIP Transport Elements Technical Support Document

INTRODUCTION

Under Clean Air Act (CAA) section 110(a)(1) and 110(a)(2), each state is required to submit a State Implementation Plan (SIP), referred to as an “infrastructure SIP,” that provides for the implementation, maintenance, and enforcement of a revised primary or secondary National Ambient Air Quality Standards (NAAQS). In addition to implementing, maintaining, and enforcing the NAAQS within the state, each state must also address interstate pollution transport pursuant to Section 110(a)(2)(D)(i)(I) and (II) of the Clean Air Act (CAA) which states:

Each such plan shall –

(D) contain adequate provisions –

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will –

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility.

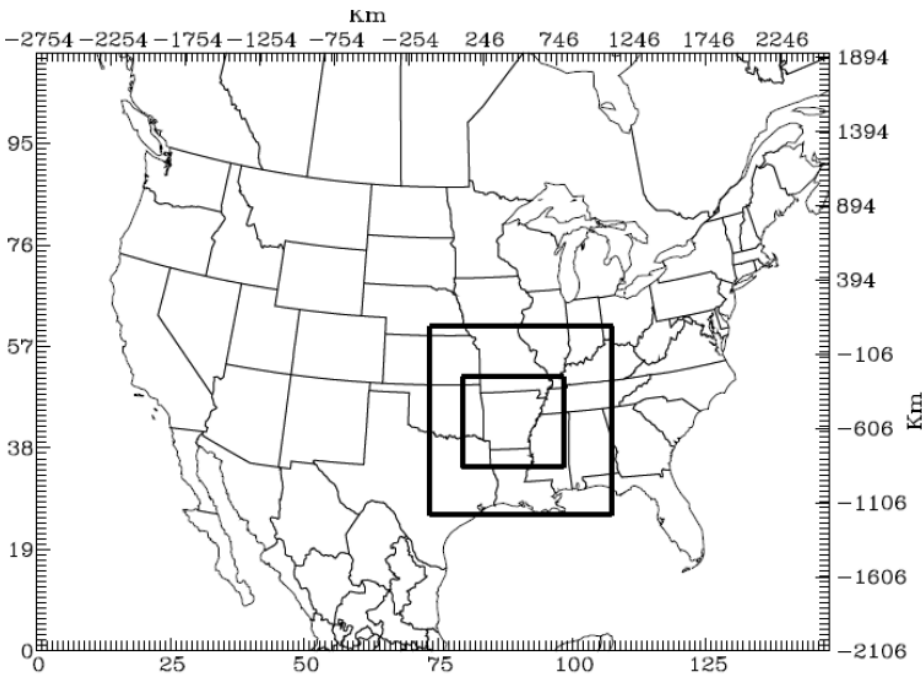
In support of Arkansas’s infrastructure SIP, which contains adequate provisions to ensure that Arkansas does not significantly contribute to NAAQS nonattainment or interfere with NAAQS maintenance in any other state, this document summarizes an air quality modeling study conducted for the Arkansas Department of Environmental Quality¹. This air quality modeling summary further demonstrates that Arkansas does not contribute significantly to NAAQS nonattainment or interfere with maintenance of the NAAQS in any other state. The modeling analysis is attached.

MODELING METHODOLOGY

This modeling study used the Community Multiscale Air Quality (CMAQ) Model to evaluate concentrations of ozone, fine particulate matter (PM_{2.5}), nitrogen dioxide (NO₂) and sulfur dioxide (SO₂) at three levels of resolution: a 36-km resolution outer grid encompassing the continental United States (the CONUS grid), a 12-km intermediate resolution grid over the south-central portion of the United States, and a high-resolution 4-km inner grid encompassing the entire state of Arkansas and the adjacent portions of all of the surrounding states (Figure 1).

¹ ICF. 2014. “Criteria Pollutant Modeling Analysis for Arkansas”. Prepared by ICF International, San Rafael, California (14-003)

Figure 1: CMAQ modeling study domain



The modeling analysis included two base year simulation periods (2005 and 2008), as well as one future year assessment (2015). Input emissions were based on the input inventory data: monthly emissions for the on-road and non-road sectors, and annual emissions for other sectors for criteria pollutants. To evaluate model performance, the CMAQ modeling results were compared with observed data, using a variety of graphical and statistical analysis products and focused on the 12- and 4-km resolution grids. Bias and error plots were used to graphically display statistical measures of model performance and to identify any spatial patterns or trends in the model performance statistics. Concentration time-series scatter plots comparing simulated and observed values at selected monitoring sites were used to determine whether the timing and magnitude of the simulated values match the observations.

RESULTS

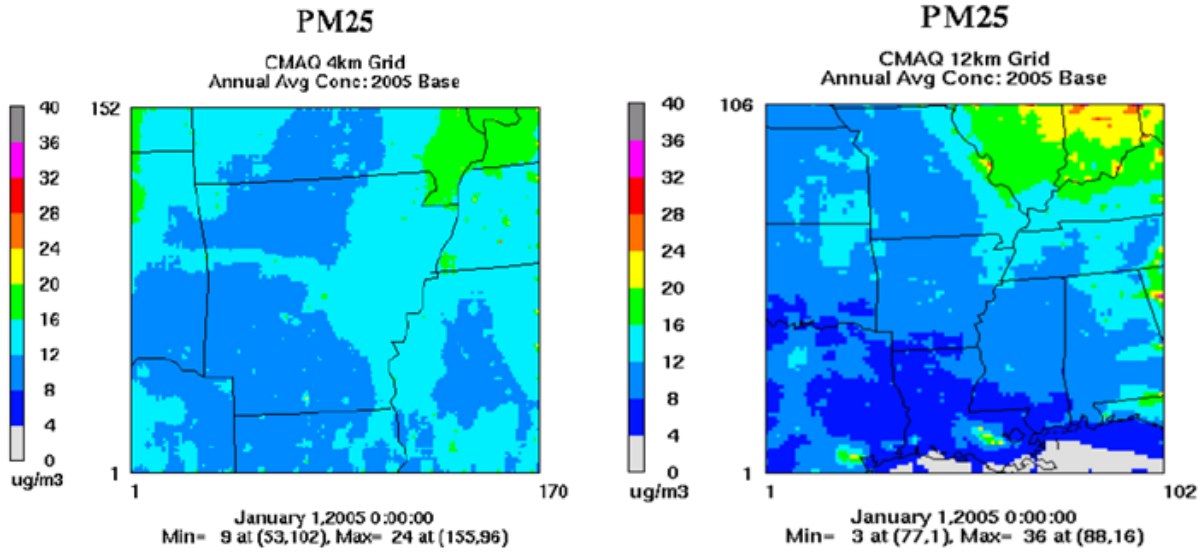
While a complete report of the analyses is provided, this summary of the results focuses on $PM_{2.5}$, NO_2 and SO_2 within the 4-km grid resolution, which includes a high resolution analysis of Arkansas and the adjacent portions of the surrounding states.

$PM_{2.5}$

For the 2005 simulation, $PM_{2.5}$ concentrations in the 4-km grid are calculated as an annual average. Modeled concentrations are highest in a broad area over northeastern Oklahoma and eastern Kansas, as well as over southeastern Missouri northward into southern Illinois and

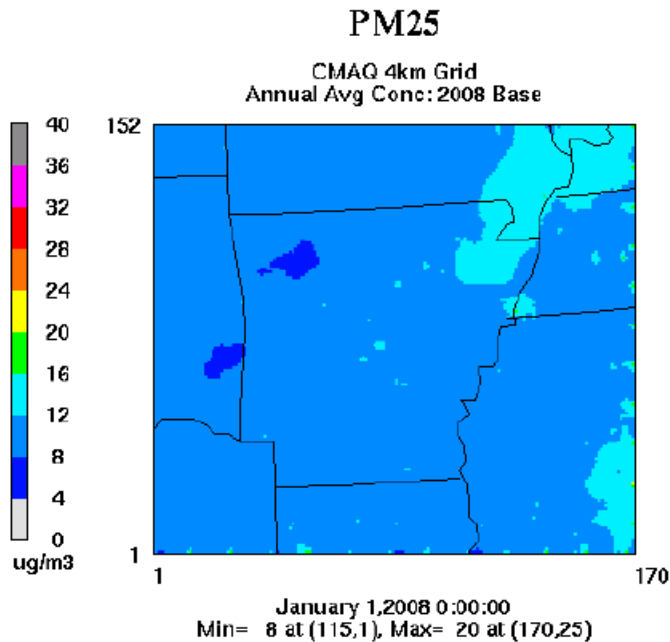
southern Indiana; both of these areas of higher concentrations are better visualized at the 12-km grid resolution (Figure 2).

Figure 2: 4-km and 12-km resolution of 2005 simulated PM_{2.5} concentration as an annual average ($\mu\text{g}/\text{m}^3$)



For the 2008 PM_{2.5} simulation, concentrations in the 4-km grid are lower than in 2005 with the same areas of higher concentrations (Figure 3).

Figure 3: 4-km resolution of 2008 simulated PM_{2.5} concentration as an annual average ($\mu\text{g}/\text{m}^3$)



For the 2005/2015 differences (Figure 4) and the 2008/2015 differences (Figure 5) at the 4-km resolution of simulated PM_{2.5} concentrations, the plots show a regional decrease in concentrations.

Figure 4: 4-km resolution 2005/2015 differences for simulated PM_{2.5} (annual average $\mu\text{g}/\text{m}^3$)

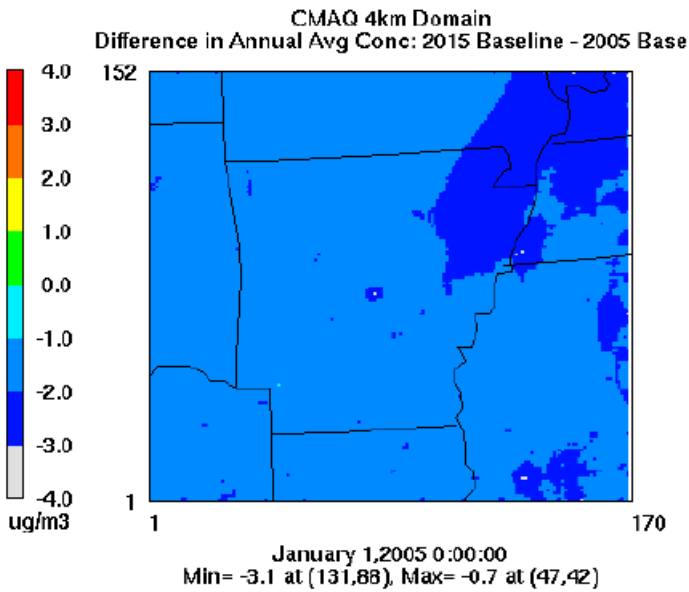
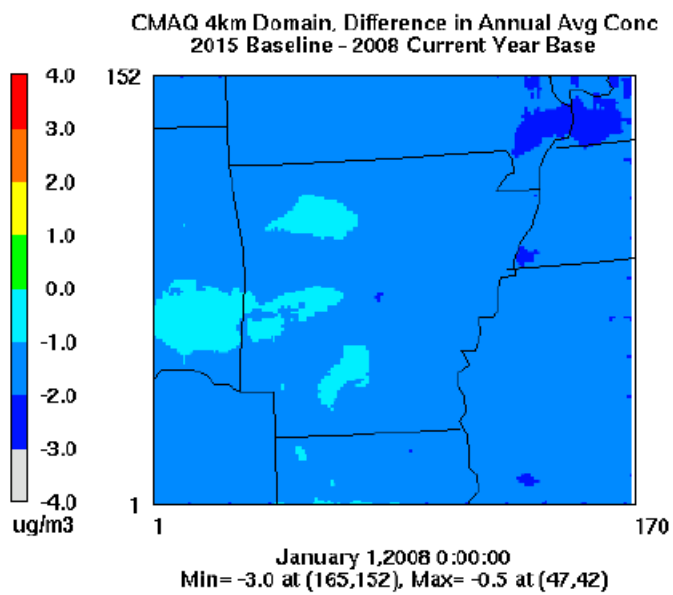


Figure 5: 4-km resolution 2008/2015 differences for simulated PM_{2.5} (annual average $\mu\text{g}/\text{m}^3$)

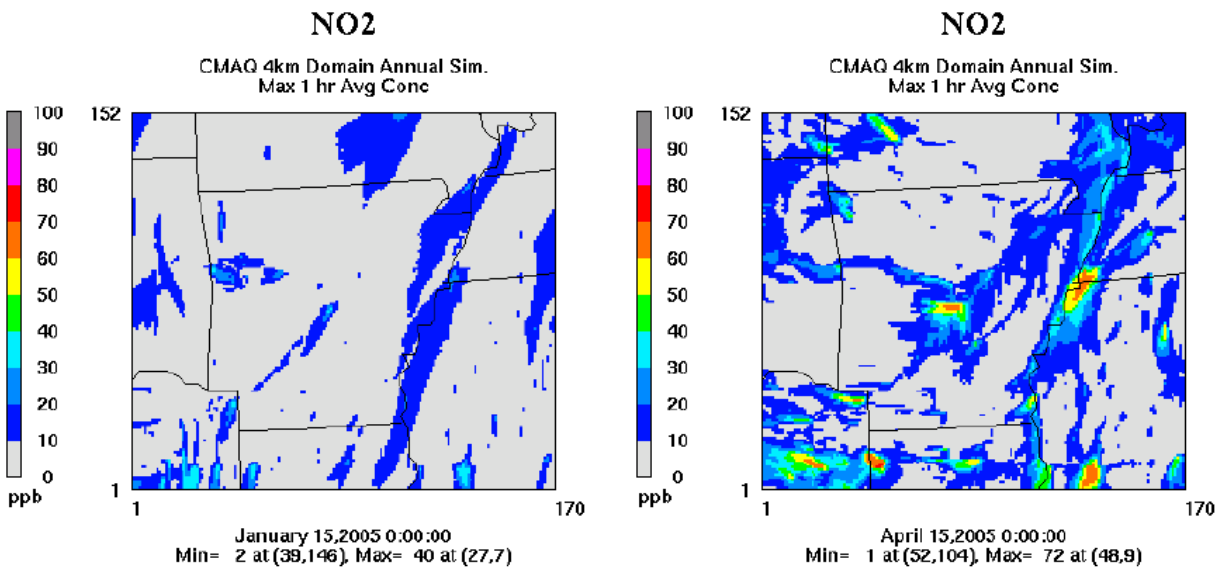


NO₂

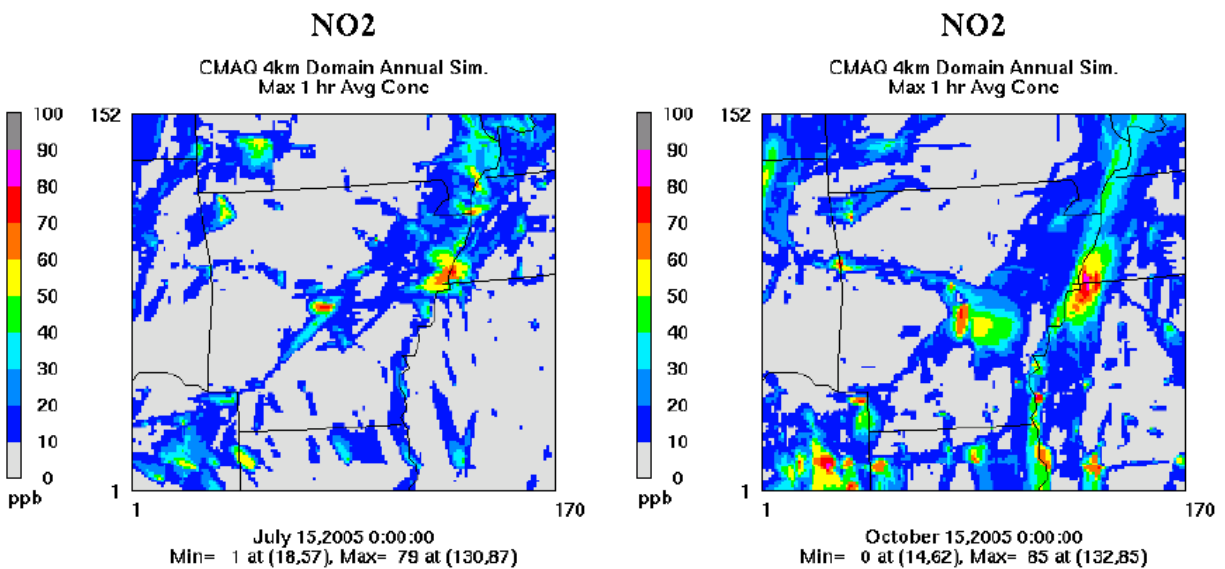
For the 2005 simulation, NO₂ concentrations in the 4-km grid are calculated as a daily maximum 1-hour and depicted quarterly (Figure 6). Concentrations are highest around Memphis, Tennessee, northeast Texas, eastern Mississippi and Little Rock, Arkansas. No simulated concentrations exceed the 1-hour standard of 100 ppb, and the highest concentration is 85 ppb.

Figure 6: 4-km resolution of 2005 simulated NO₂ 1-hour concentration (ppb)

January 15/April 15

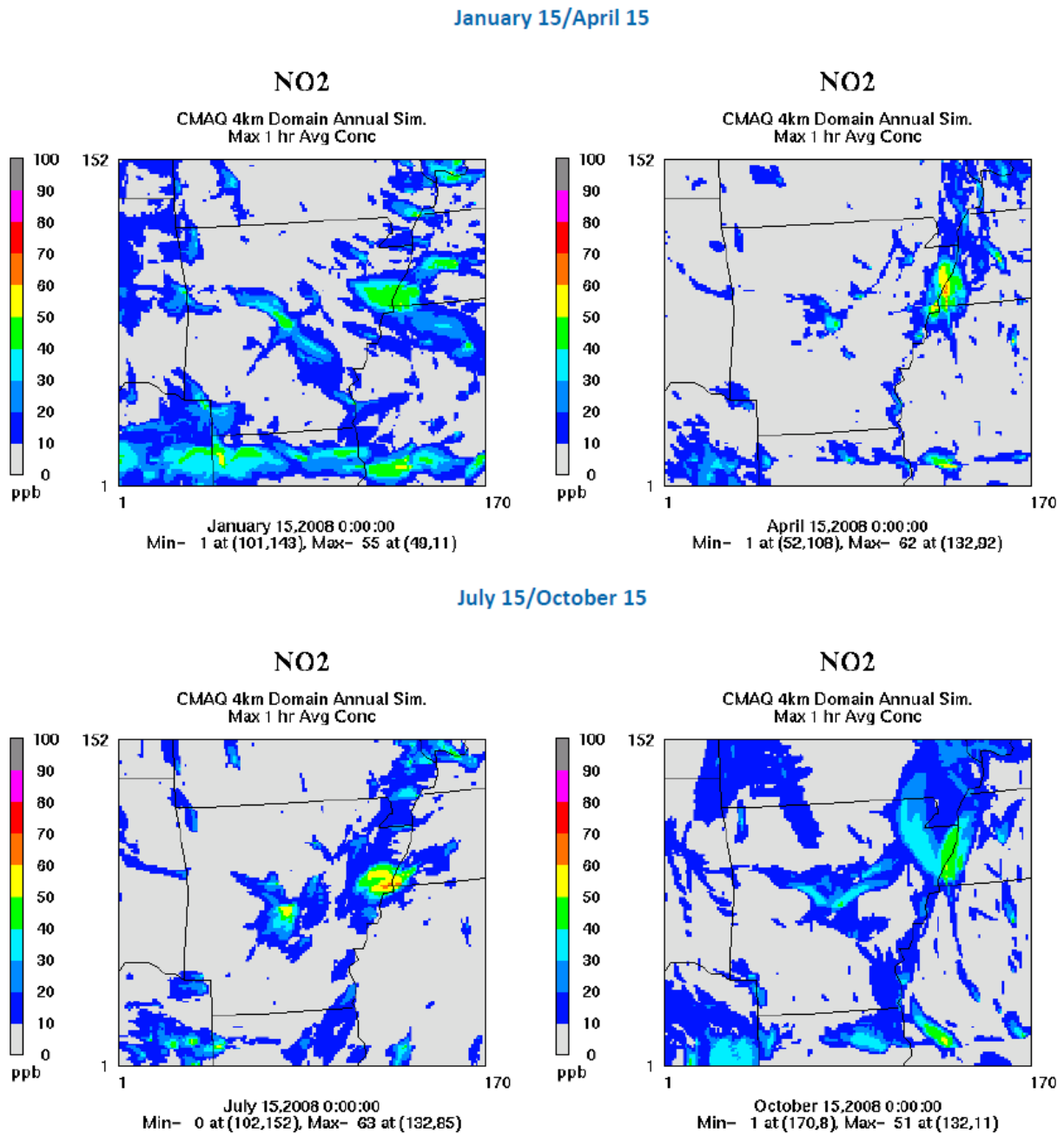


July 15/October 15



For the 2008 simulation, NO₂ concentrations in the 4-km grid are calculated as a daily maximum 1-hour average and depicted quarterly (Figure 7). Concentrations are generally decreased from 2005 and the highest concentration of 63 ppb is around Memphis, Tennessee.

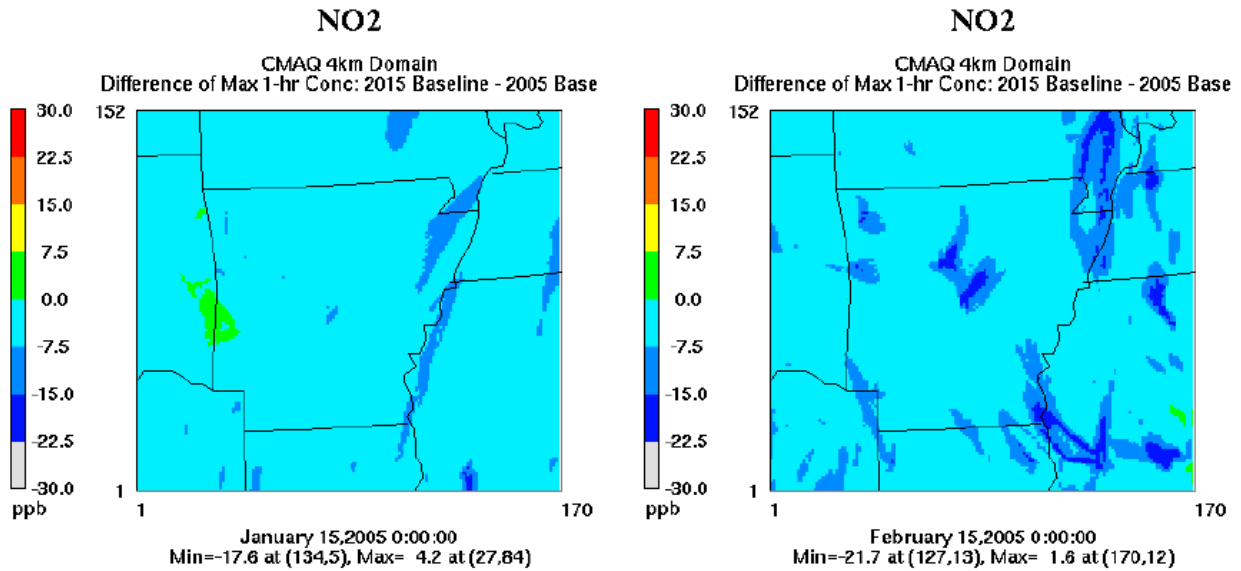
Figure 7: 4-km resolution of 2008 simulated NO₂ 1-hour concentration (ppb)



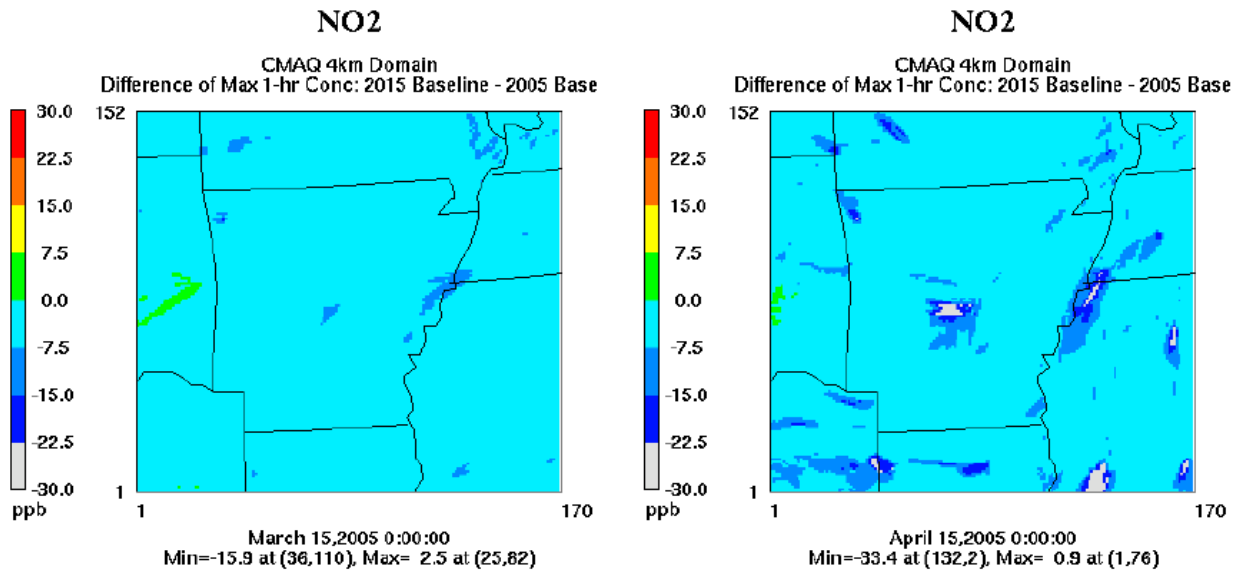
The 2005/2015 differences (Figure 8) and the 2008/2015 differences (Figure 9) at the 4-km resolution of simulated NO₂ 1-hour concentrations are presented monthly. For NO₂, areas of both increase and decrease are realized although the decreases are far greater than the increases and all simulated concentrations remain below the 1-hour standard of 100 ppb. Furthermore, the 2008/2015 concentrations are lower than the 2005/2015 concentrations.

Figure 8: 4-km resolution of simulated 2005/2015 differences for 1-hour NO₂ (ppb)

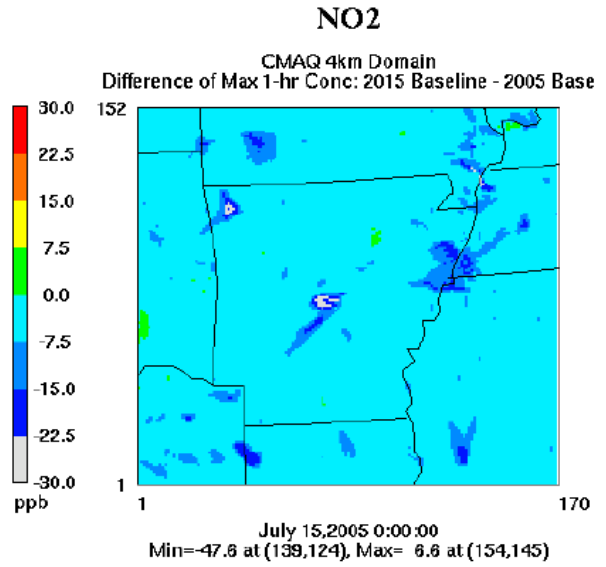
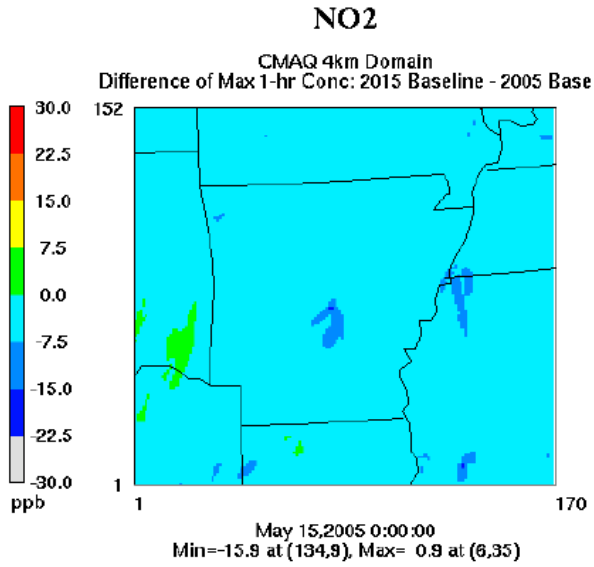
January/February



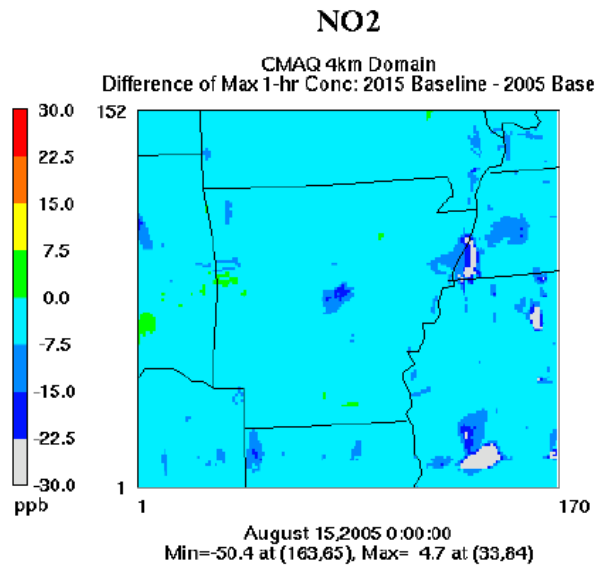
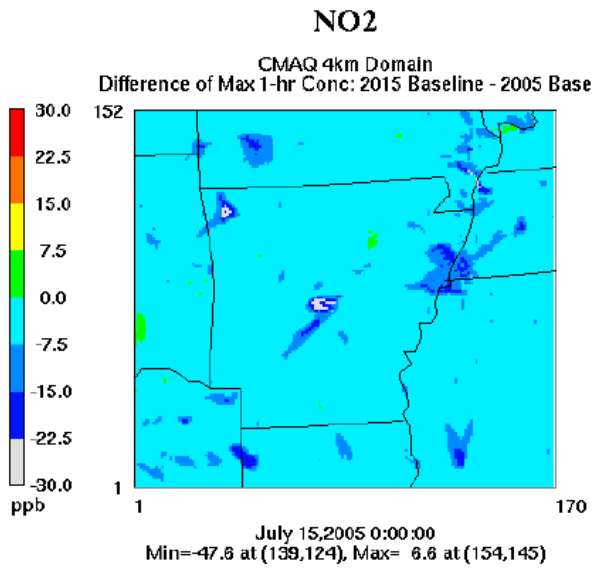
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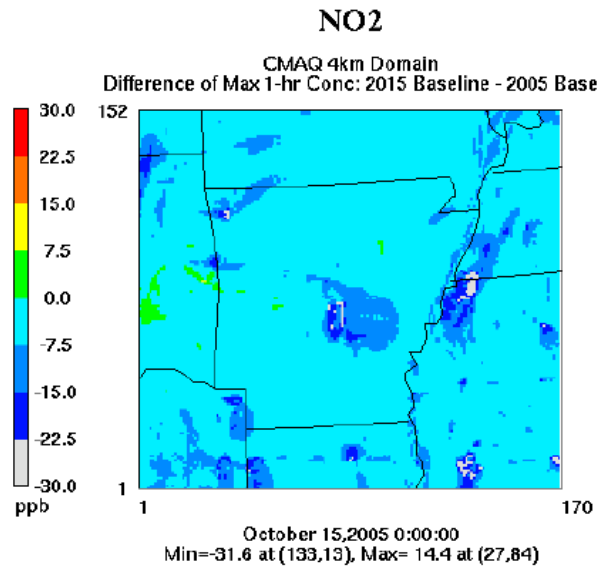
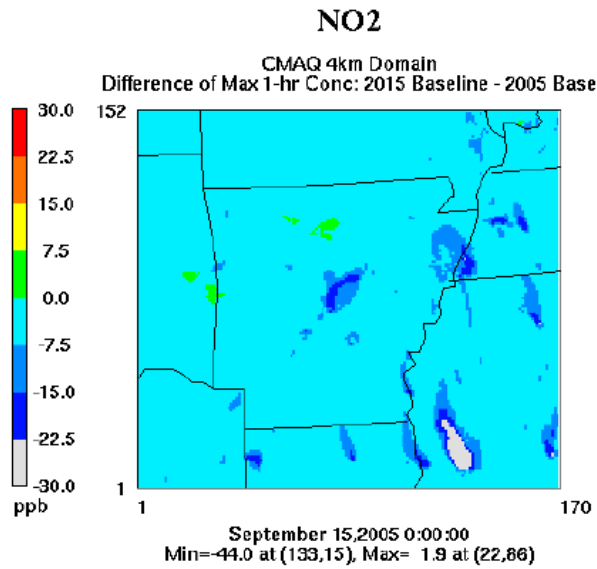
May/June



July/August



September/October



November/December

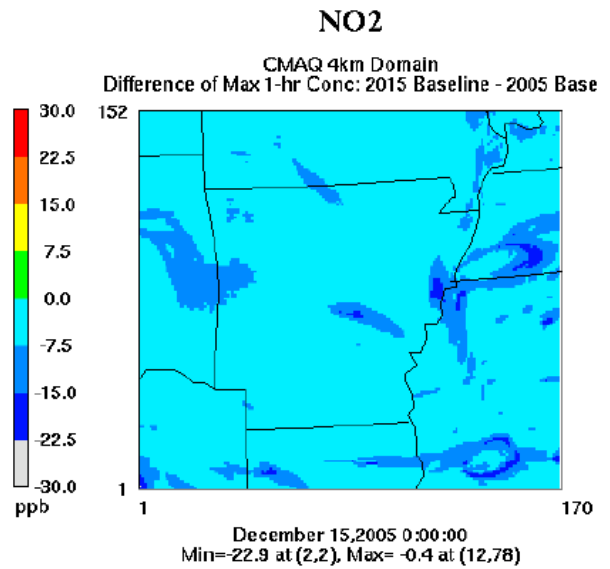
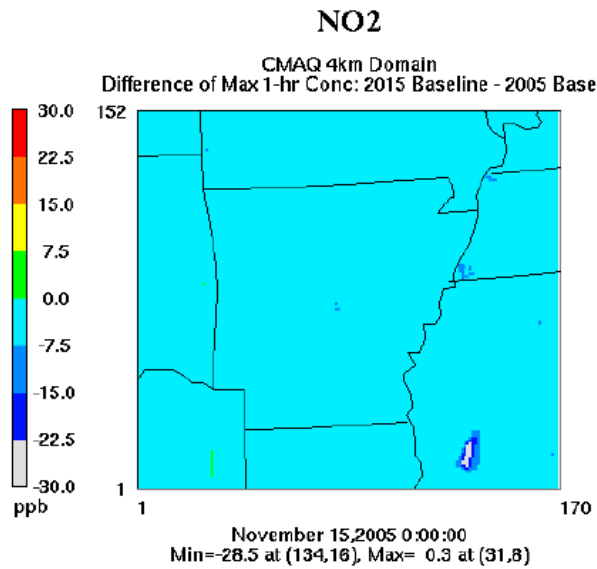
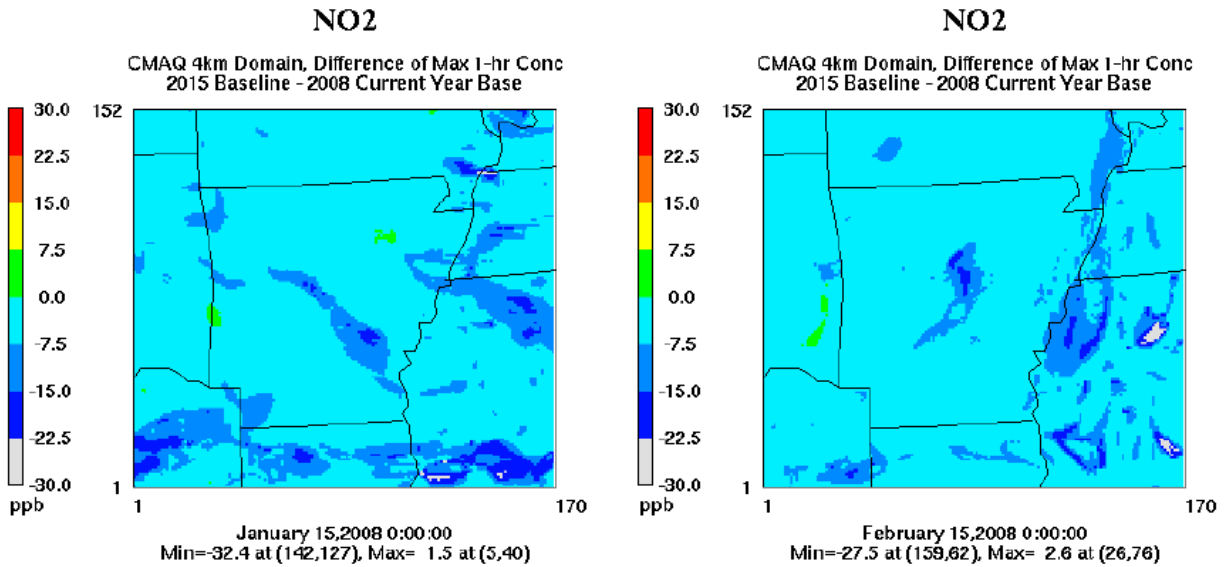
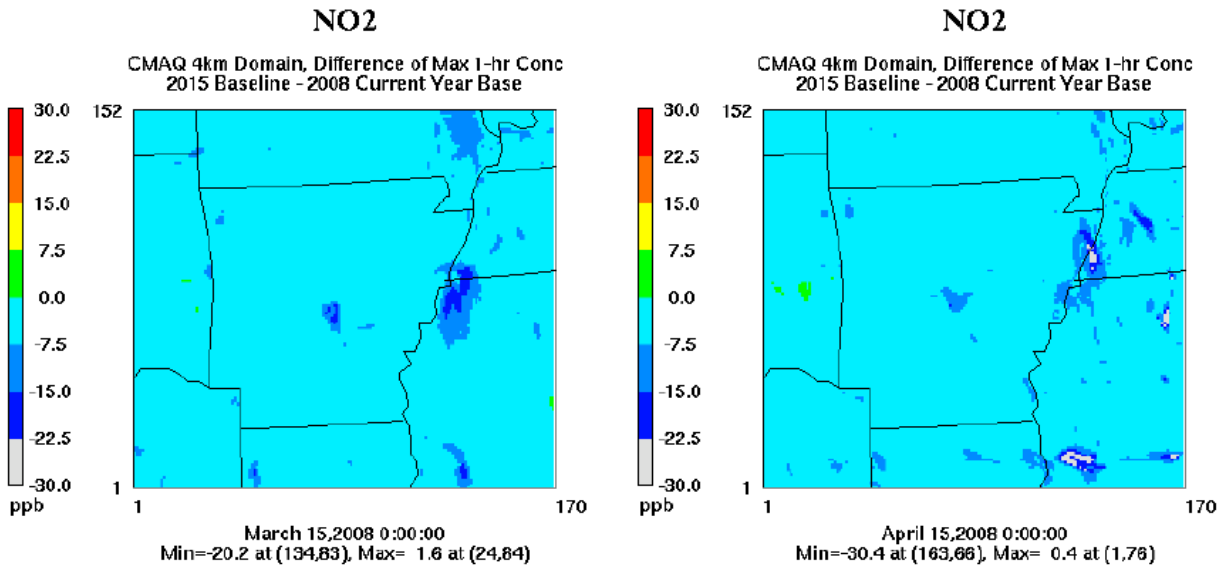


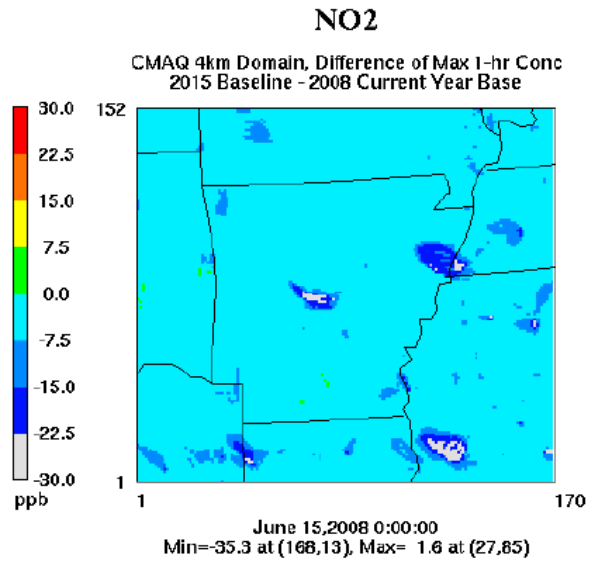
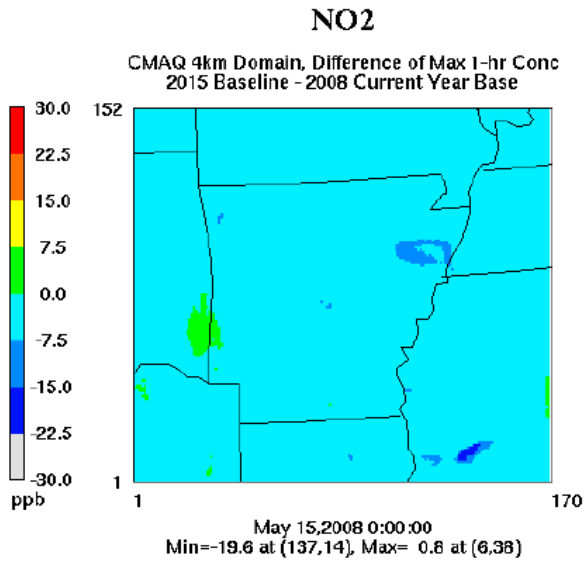
Figure 9: 4-km resolution of simulated 2008/2015 differences for 1-hour NO₂ (ppb)
 January/February



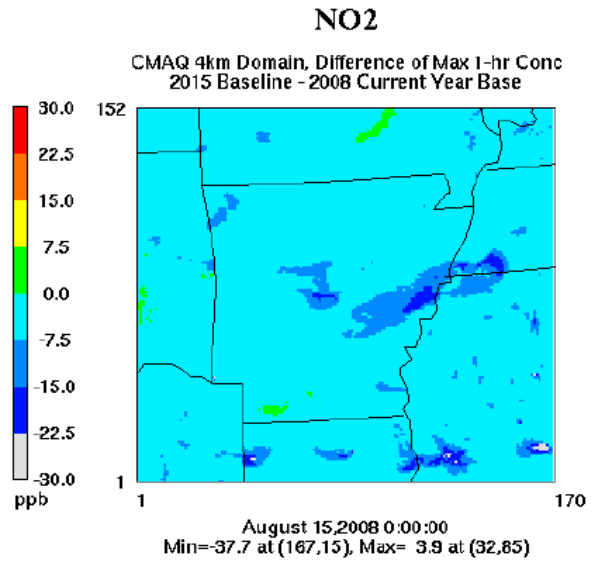
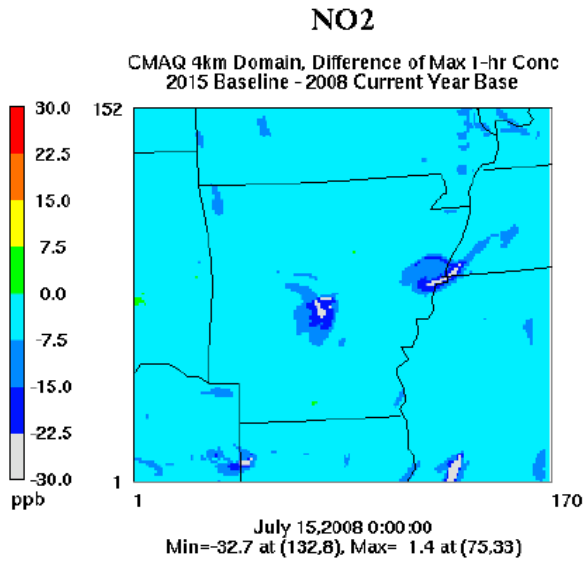
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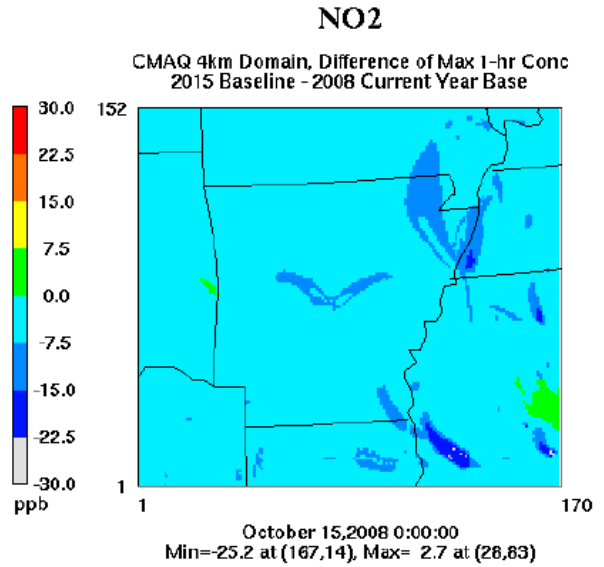
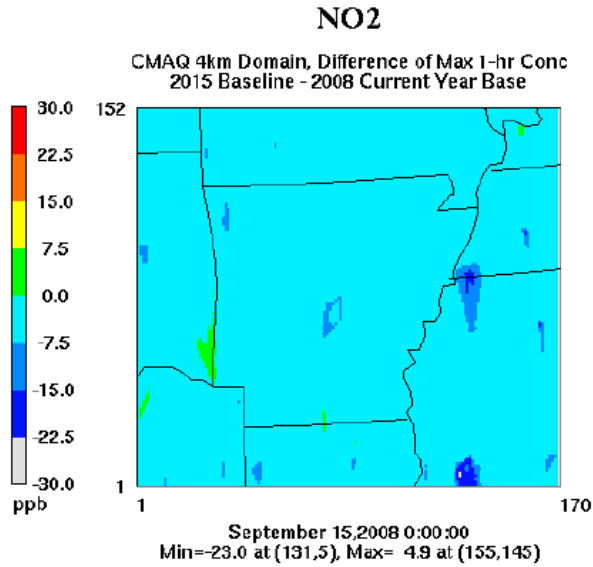
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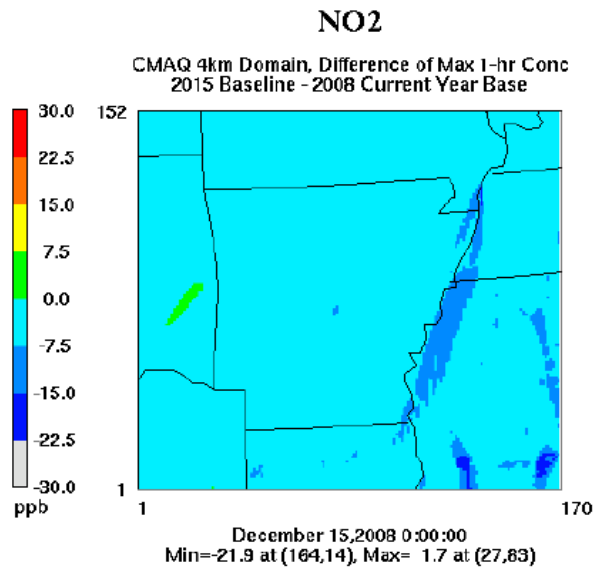
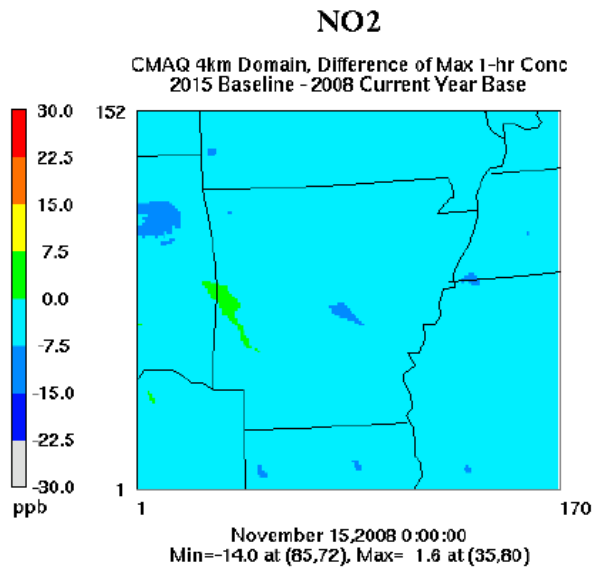
July/August



September/October



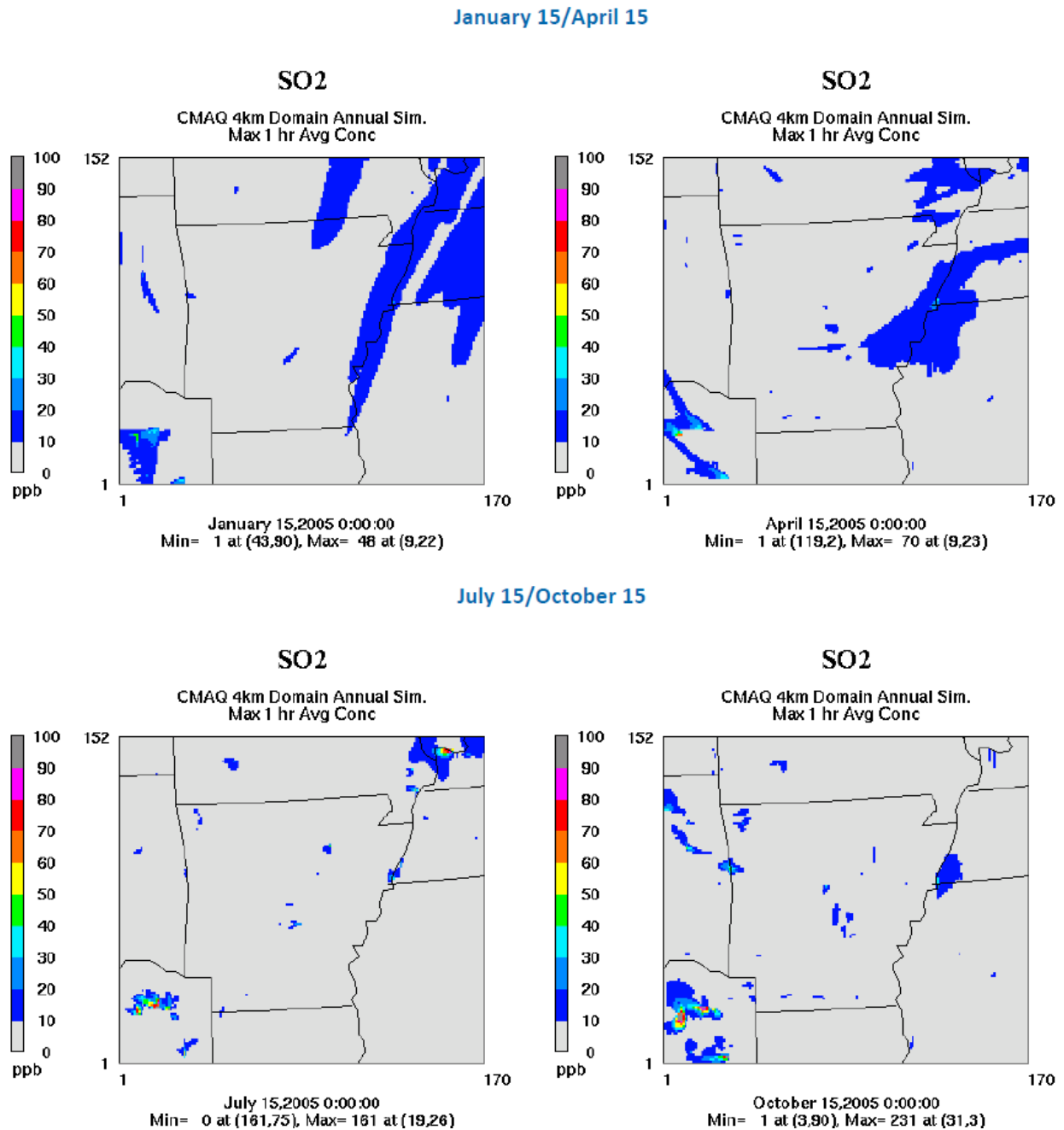
November/December



SO₂

For the 2005 simulation, SO₂ concentrations in the 4-km grid are calculated as a daily maximum 1-hour and depicted quarterly (Figure 10). Concentrations are generally low with the highest concentrations in northeastern Texas and southern Illinois, beyond the potential transport distance of 50 km from Arkansas.

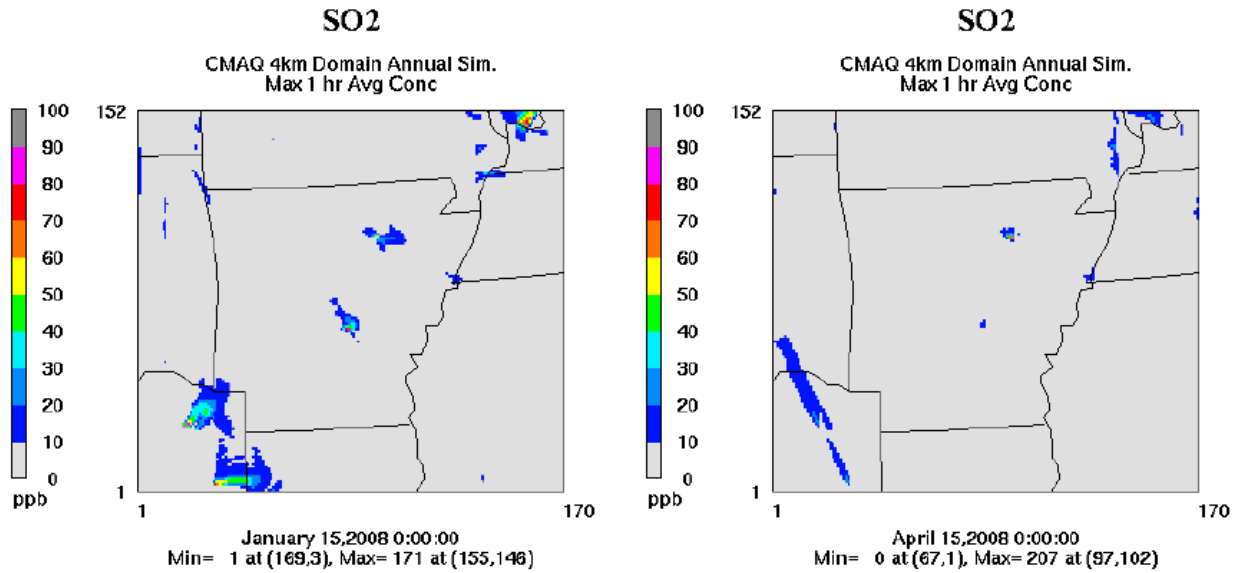
Figure 10: 4-km resolution of simulated 2005 concentrations for 1-hour SO₂ (ppb)



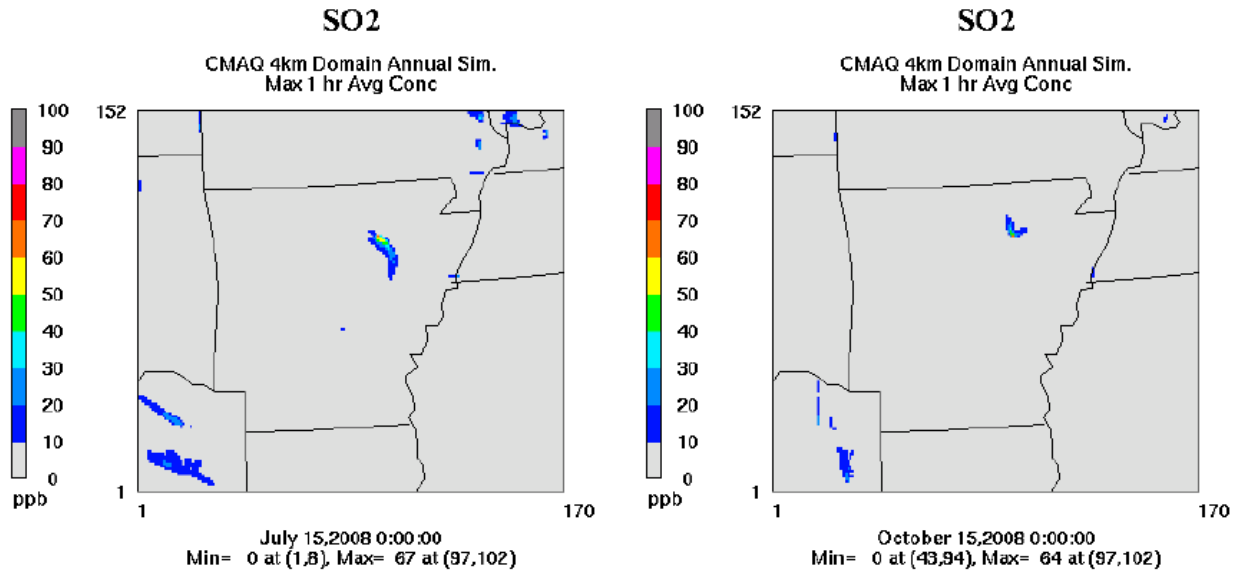
For the 2008 simulation, SO₂ concentrations in the 4-km grid are calculated as a daily maximum 1-hour and depicted quarterly (Figure 11). Like 2005, concentrations are generally low with the highest concentrations in northeastern Texas, southern Illinois and north-central Arkansas.

Figure 11: 4-km resolution of simulated 2008 concentrations for 1-hour SO₂ (ppb)

January 15/April 15

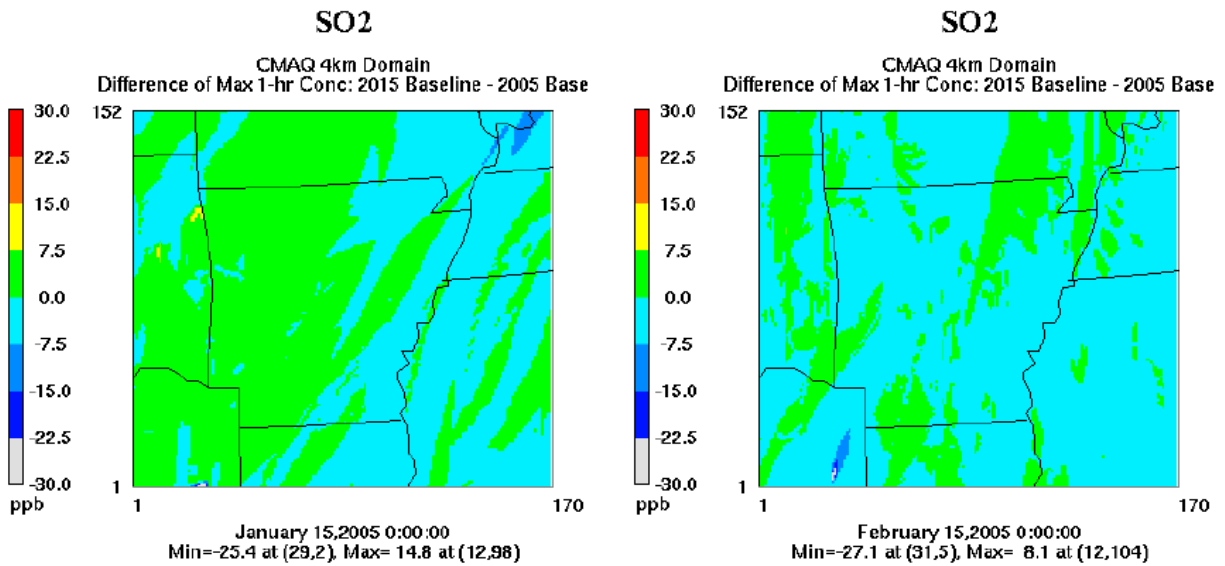


July 15/October 15

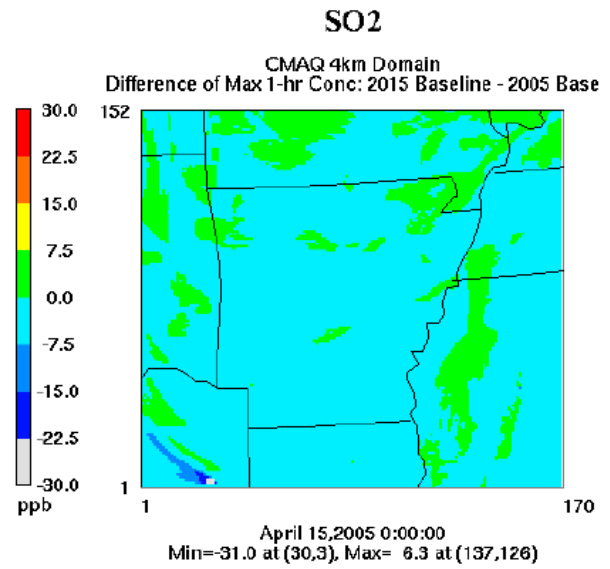
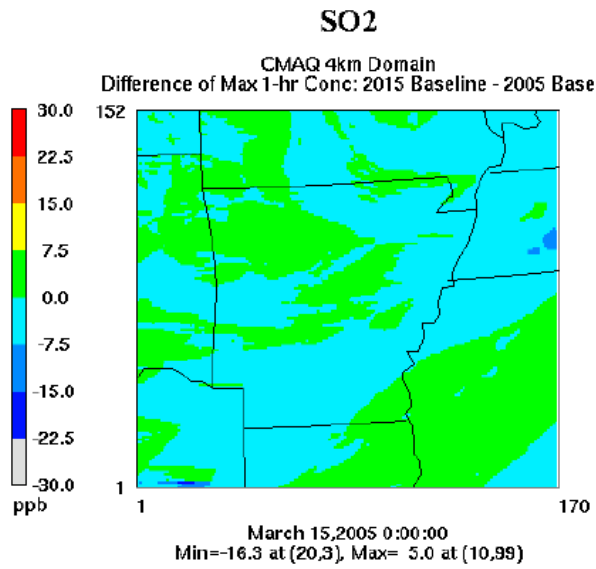


The 2005/2015 differences (Figure 12) and the 2008/2015 differences (Figure 13) at the 4-km resolution of simulated SO₂ 1-hour concentrations are presented monthly. For SO₂, areas of both increase and decrease are realized although the decreases tend to be greater than the increases. Furthermore, the 2008/2015 concentrations are lower than the 2005/2015 concentrations.

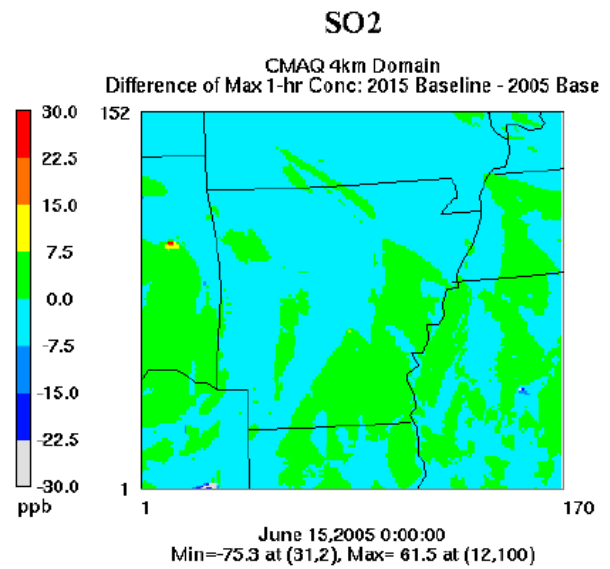
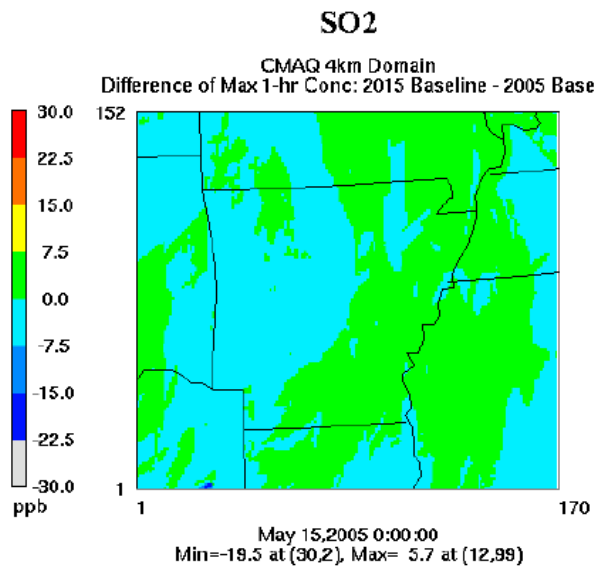
Figure 12: 4-km resolution of simulated 2005/2015 differences for 1-hour SO₂ (ppb)
 January/February



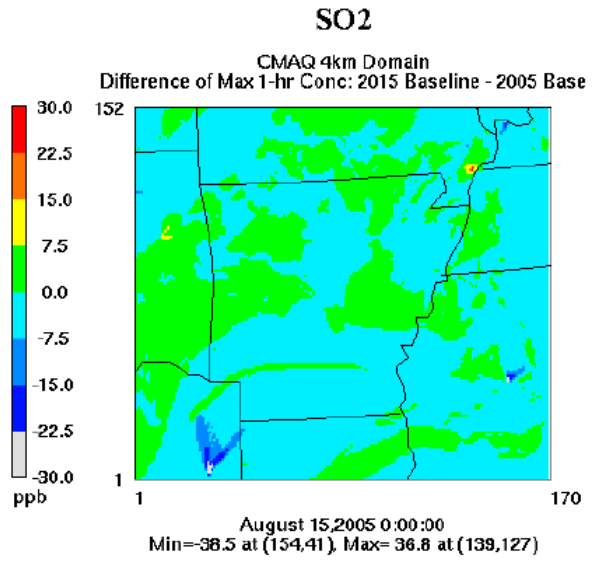
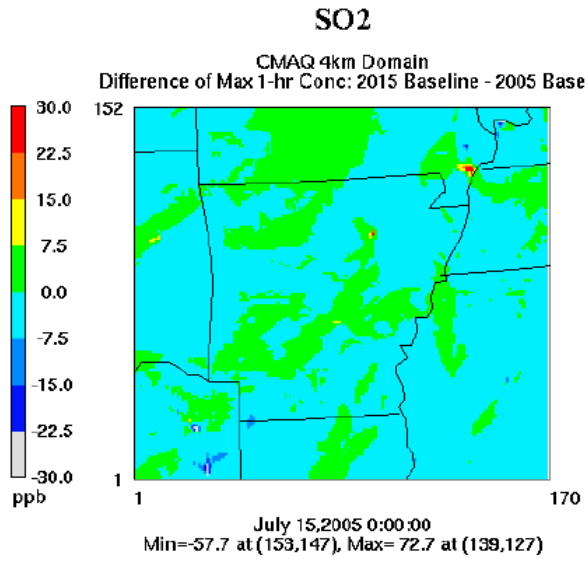
March/April



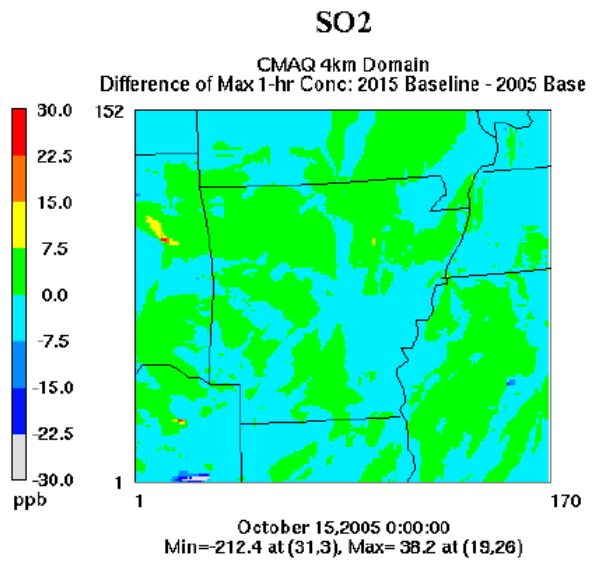
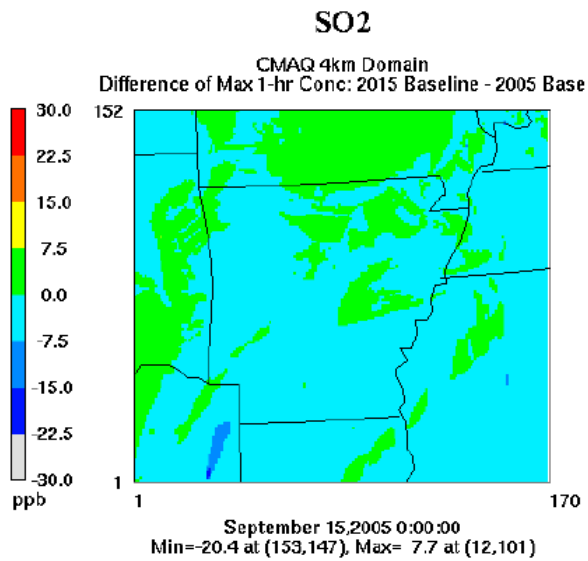
May/June



July/August



September/October



November/December

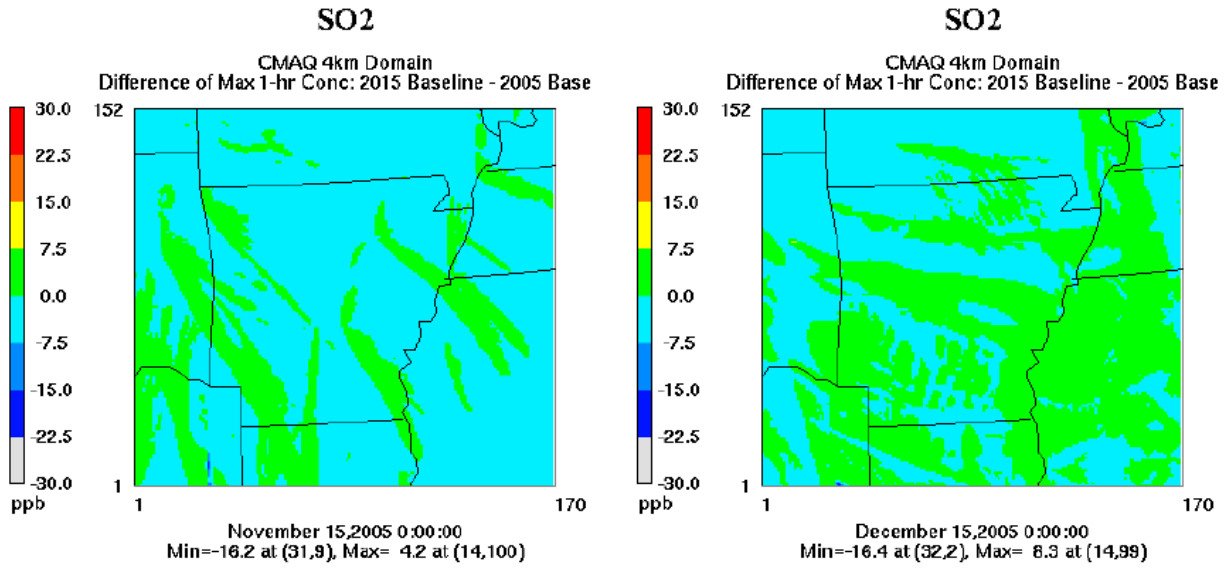
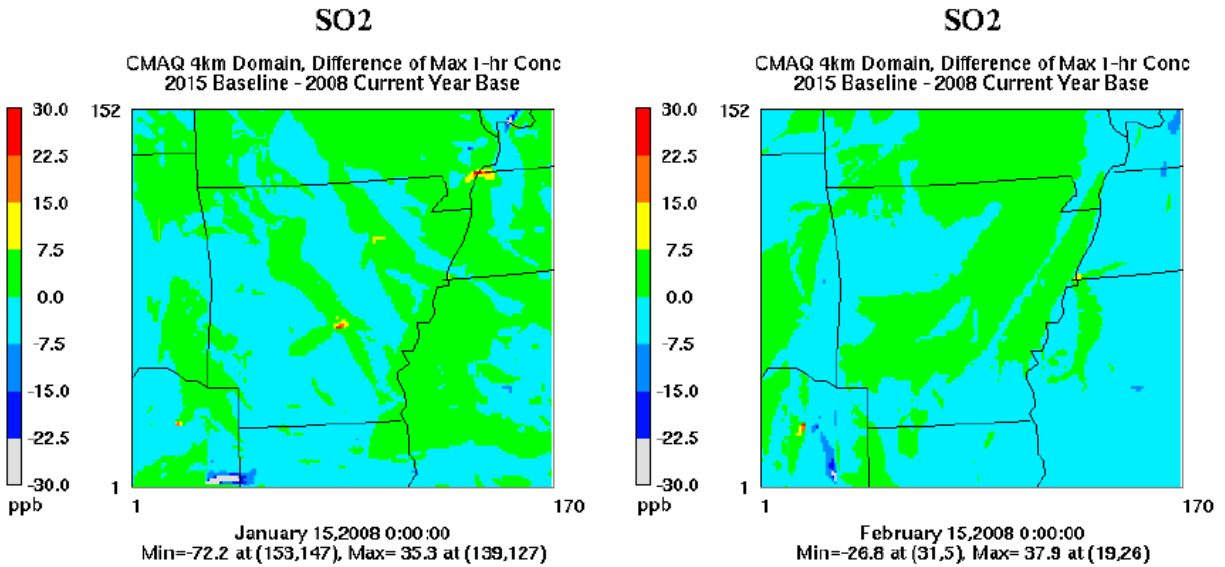
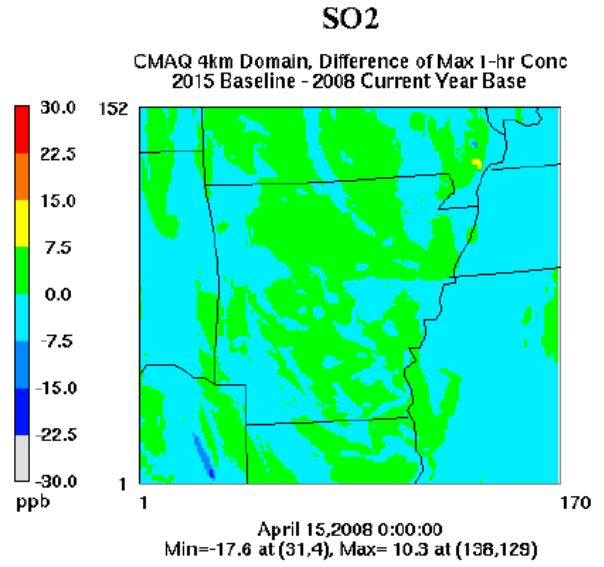
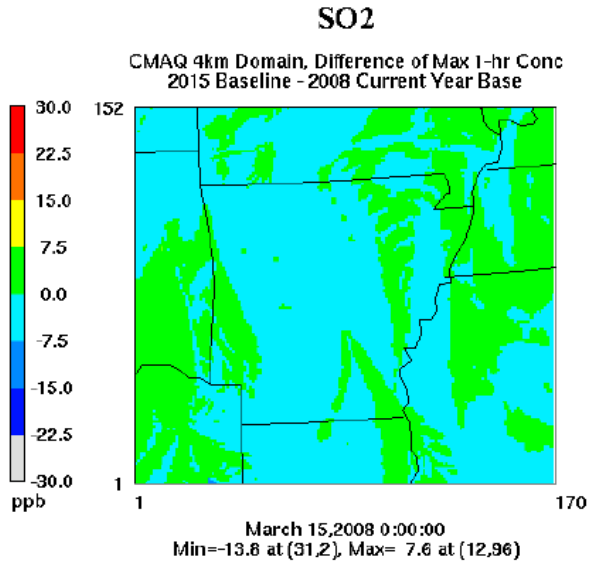


Figure 13: 4-km resolution of simulated 2005/2015 differences for 1-hour SO₂ (ppb)

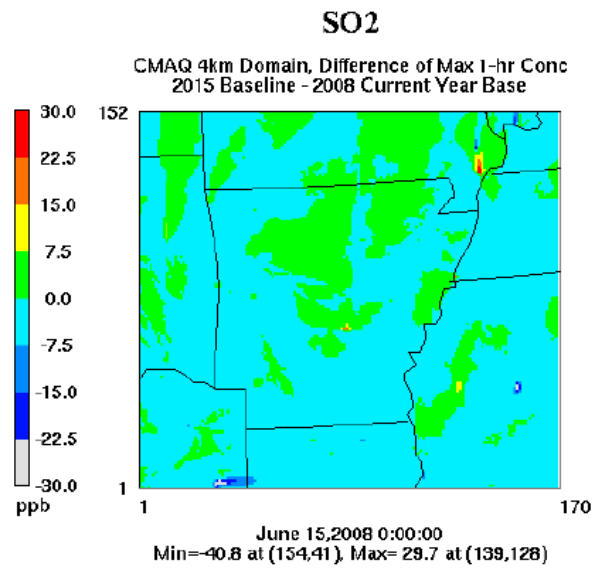
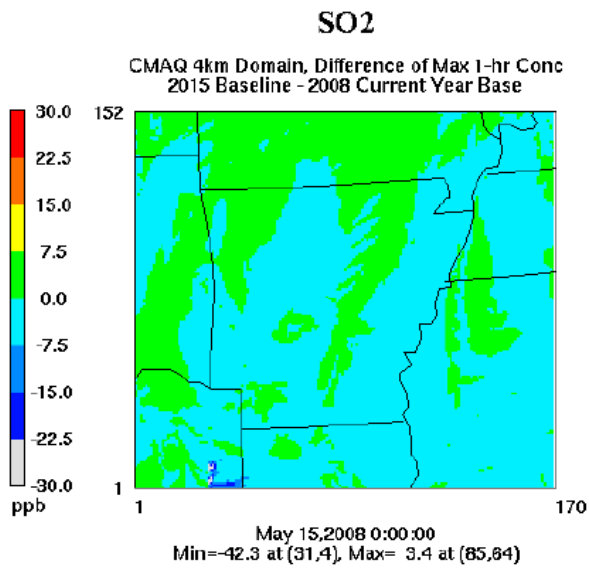
January/February



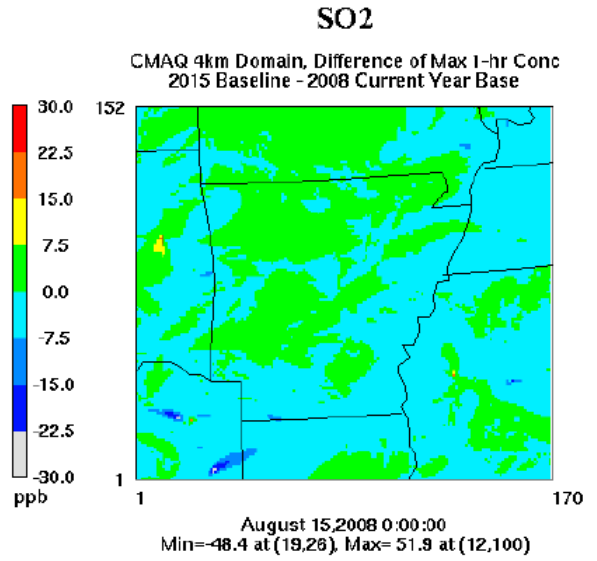
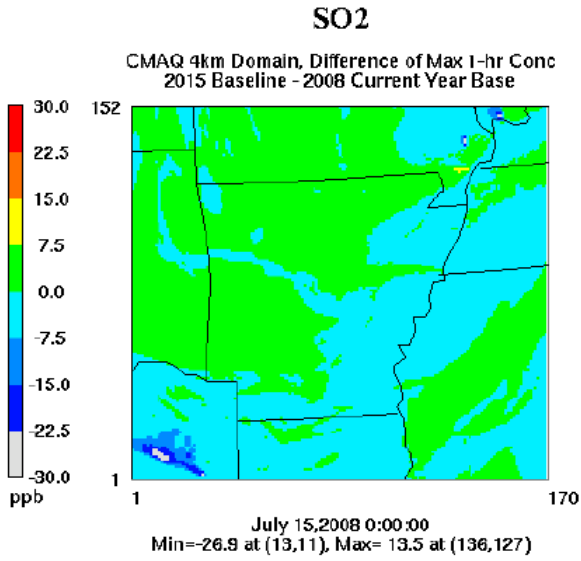
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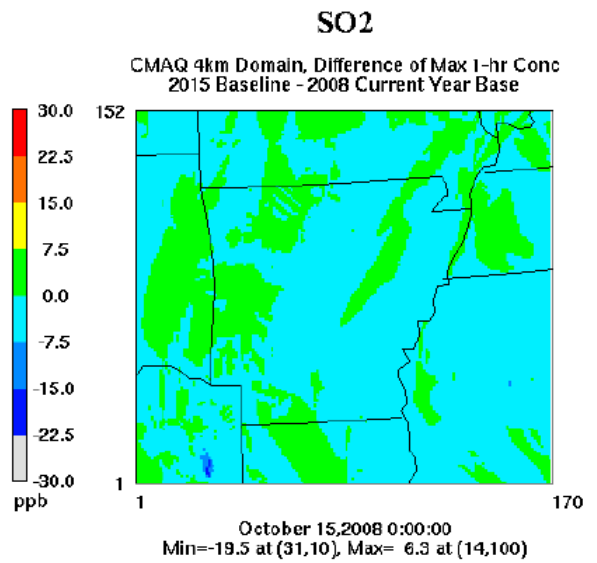
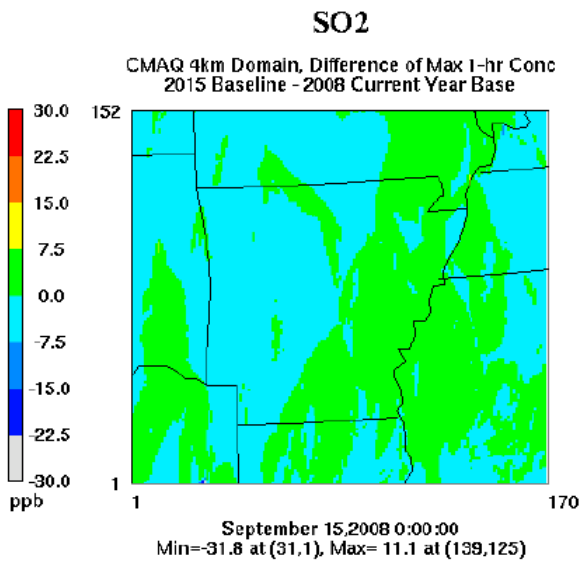
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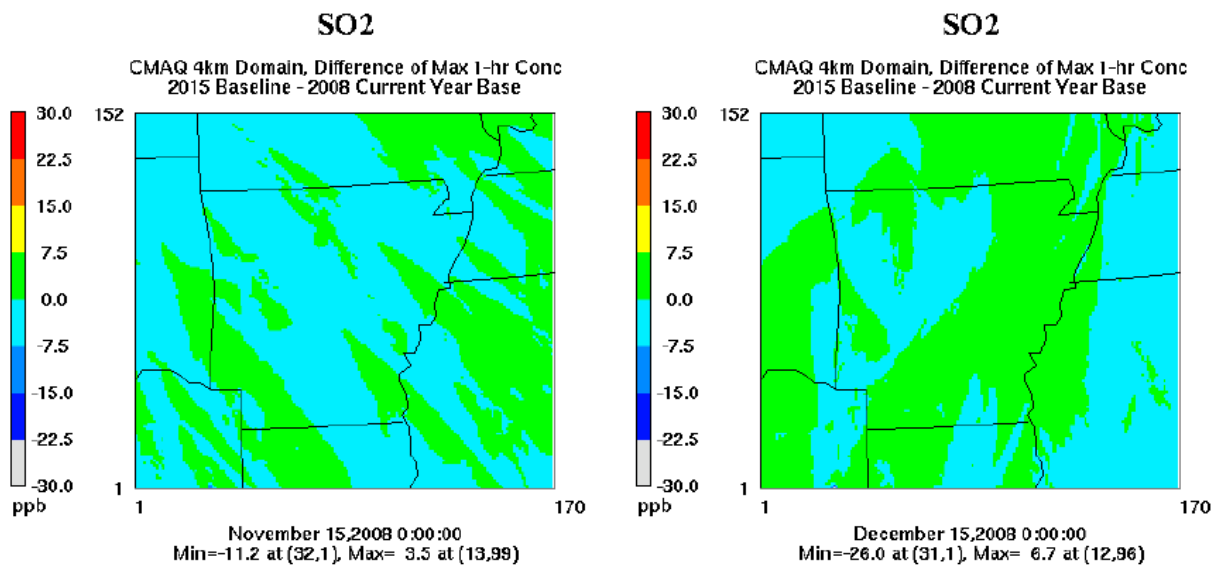
July/August



September/October



November/December



CONCLUSIONS

As illustrated in the high-resolution CMAQ 4-km inner grid encompassing the entire state of Arkansas and the adjacent portions of all of the surrounding states, this study demonstrates that Arkansas does not significantly contribute to any NAAQS nonattainment or interfere with any NAAQS maintenance in any other state for PM_{2.5}, NO₂ and SO₂. For PM_{2.5}, base year/future year differences decreased and are below the NAAQS annual standard of 12 $\mu\text{g}/\text{m}^3$. For the 1-hour NO₂ NAAQS of 100 ppb, all areas in and adjacent to Arkansas are below the standard. For SO₂, any areas identified in this study in Arkansas that are above the standard of 75 ppb are not close enough to an adjacent state to significantly contribute nonattainment or interfere with maintenance in any adjacent state. For example, the FutureFuel Chemical Company, which is the source of the depicted “plume” visible in the 4-km July 2008 simulation panel of Figure 11 is 85 km from Missouri and 125 km from Tennessee, which is beyond the transport distance for SO₂. Other SO₂ higher values occur in and around southern Illinois, which is beyond the potential for Arkansas’ emissions to be the contributing sources.

Appendix I

NAAQS Evaluation Requirements Threshold
Technical Support Document

NAAQS Evaluation Requirements

Threshold Technical Support Document

Introduction

Pursuant to Ark. Code Ann. § 8-4-318, the Arkansas Department of Environmental Quality (ADEQ or Department) included pollutant-specific national ambient air quality standard (NAAQS) evaluation requirements in the NAAQS state implementation plan (SIP) for non-PSD (Minor NSR) permitting actions under the authority in SIP-approved Reg. 19.402 and Reg. 19.405. The Department determined that it was necessary to require NAAQS evaluations for Minor NSR permitting involving construction of stationary sources with relatively large proposed emissions of PM₁₀, SO₂, and NO_x and minor NSR permitting involving modification of stationary sources with relatively large proposed net emission increases of PM₁₀, SO₂, and NO_x. As such, the Department selected a threshold of 100 tpy above which to require modeling or source-oriented monitoring Minor NSR permitting actions for PM₁₀, SO₂, and NO_x. This threshold was selected based on the definition of major source.

Although this threshold for NAAQS evaluation requirements was set at the 100 tpy level based on the definition of major source, the Department found it prudent to evaluate modeling to support this threshold. The Department contracted with ICF International, LLC (ICF) to model the potential impacts of emission increases equal to 100 tpy for PM₁₀, SO₂, and NO_x. ICF's full report, which includes a modeling demonstration in support of the 100 tpy threshold, has been included with this technical support document and the results are summarized below.

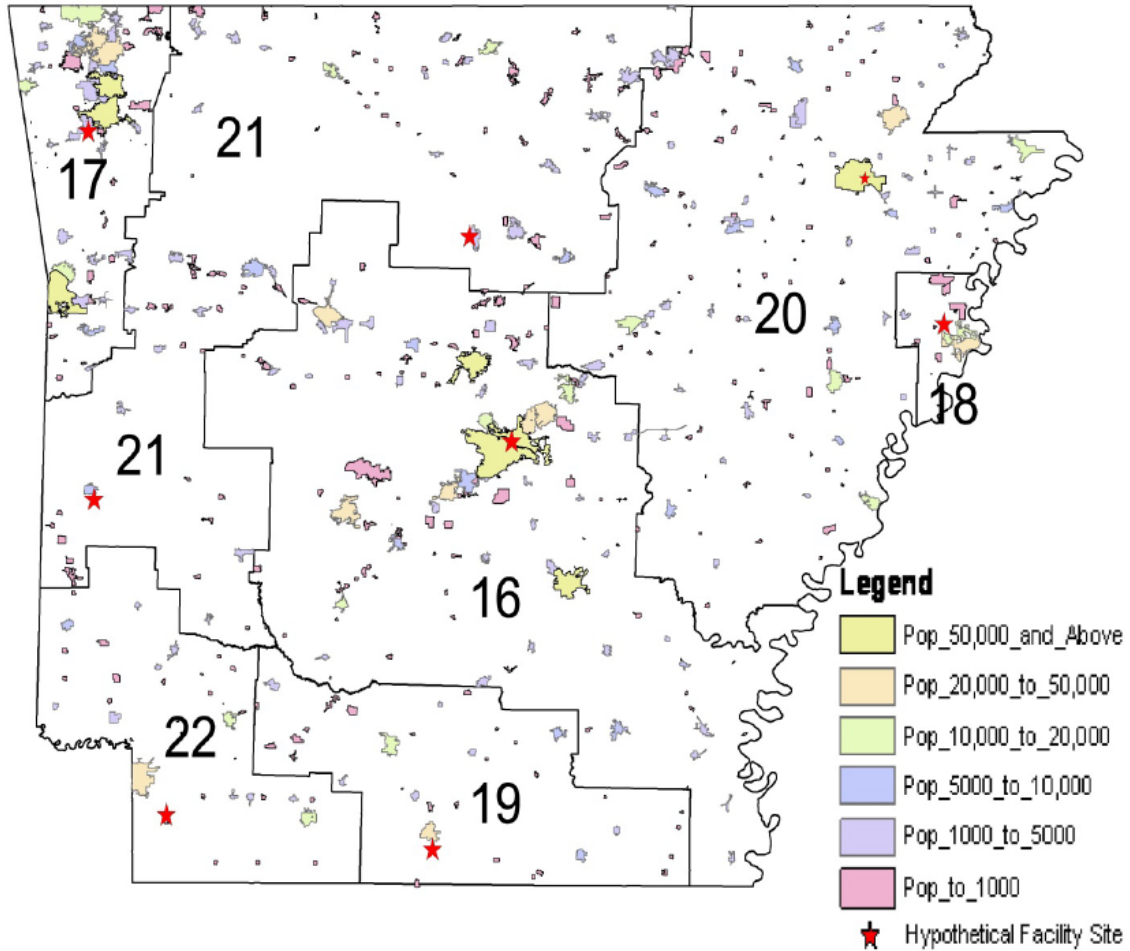
Modeling Analysis Summary

ICF conducted a combined AERMOD/Community Multiscale Air Quality (CMAQ) analysis, using CMAQ modeling for the 2008 base year and the 2018/2015 future year from the Arkansas statewide modeling effort¹, to assess potential nearfield impacts from new or existing sources with emission increases of 100 tpy of PM₁₀, SO₂, and NO_x. For each pollutant, AERMOD was applied at eight locations in Arkansas to cover each air quality control region (AQCR) and provide coverage across distinct geographical areas. These locations are identified in Figure 1. For this analysis, two sets of stack parameters, based on the 90th and 50th (median) percentile stack parameters for the top 10 Arkansas emission sources with emissions less than 100 tpy, were used to evaluate hypothetical 100 tpy PM₁₀, SO₂, and NO_x sources. These parameters are listed in Table 1 below. A

¹ ICF (2014). "Criteria Pollutant Modeling Analysis for Arkansas." Prepared for the Arkansas Department of Environmental Quality, North Little Rock, Arkansas (14-003).

list of the top 10 Arkansas emission sources with emissions less than 100 tpy for each of the three pollutants and their stack characteristics have been included with this technical support document.

Figure 1. Hypothetical Minor Point Source Facility Locations



Arkansas' Air Quality Control Regions (AQCR) and hypothetical minor point source facility locations (AQCR 16, Pulaski County; AQCR 17, Washington County; AQCR 18, Crittenden County; AQCR 19, Union County; AQCR 20, Craighead County; AQCR 21, Van Buren and Polk Counties; AQCR 22, Miller County) in relation to human population density.

Table 1. 50th and 90th Percentile Stack Parameters

Pollutant	Percentile	Stack Height (ft)	Diameter (ft)	Temperature (°F)	Exit Velocity (ft/s)
NO _x	90 th	128.5	9.9	876.5	52.47
	50 th	73	4	500	41
SO ₂	90 th	119.4	12.3	590	87.96
	50 th	74.5	4.25	367.5	66.6
PM ₁₀	90 th	129.5	18.01	455	90.3
	50 th	80	6.75	206.5	50.61

The maximum and average AERMOD-derived impacts over all locations were calculated for the 1-hour NO₂ NAAQS, the annual NO₂ NAAQS, the 1-hour SO₂ NAAQS, and the 24-hour PM₁₀ NAAQS. The daily maximum AERMOD-derived impacts were added to simulated CMAQ-derived concentrations for each day and 2015 future design values (FDVs) were determined based upon the form of the standard. The annual NO₂ NAAQS was not included in this analysis because the impacts for the 1-hour NO₂ NAAQS are expected to be larger than for the annual averaging period. ICF also performed sensitivity tests examining the effects of variable stack parameters and terrain.

Modeling Results Summary

NO₂

The worst-case near-field impacts of a 100 tpy emission increase of NO_x for the 1-hour NO₂ NAAQS for the 50th percentile and 90th percentile stack parameters are small and FDVs calculated at monitoring sites including the worst-case impacts are nowhere near the 100 ppb level of the 1-hour NO₂ NAAQS. These results are presented in Tables 2 and 3.

Table 2. Estimated Future-Year 1-Hour NO₂ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 50th Percentile Stack Parameters

Site/Location	County	Base-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline FDV (ppb)	AERMOD + Background FDV (ppb)	Difference in FDV (ppb)
North Little Rock (Pike Ave)	Pulaski	43.7	29.9	32.2	2.3
Marion	Crittenden	48.3	38.6	41.5	2.9

Table 2. Estimated Future-Year 1-Hour NO₂ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 90th Percentile Stack Parameters

Site/Location	County	Base-Year 1-Hr NO ₂ Design Values (ppb)	2015 Baseline FDV (ppb)	AERMOD + Background FDV (ppb)	Difference in FDV (ppb)
North Little Rock (Pike Ave)	Pulaski	43.7	29.9	30.3	2.3
Marion	Crittenden	48.3	38.6	39.0	2.9

SO₂

The worst-case near-field impacts of a 100 tpy emission increase of SO₂ for the 1-hour SO₂ NAAQS for the 50th percentile represents between a 15 and 22 % increase in future design value at each monitoring location. This increase is much smaller for the 90th percentile stack characteristics, approximately 3 – 4 % of the 1-hour SO₂ NAAQS. The worst-case impact future design values for hypothetical sources under both the 90th percentile and 50th percentile stack characteristics scenarios were well under the 1-hour SO₂ NAAQS of 75 ppb. These results are presented in Tables 4 and 5.

Table 4. Estimated Future-Year 1-Hour SO₂ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 50th Percentile Stack Parameters

Site/Location	County	Base-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline FDV (ppb)	AERMOD + Background FDV (ppb)	Difference in FDV (ppb)
North Little Rock (Pike Ave)	Pulaski	12.3	9.3	20	11.6
El Dorado	Union	26.0	23.2	39.6	16.4

Table 5. Estimated Future-Year 1-Hour SO₂ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 90th Percentile Stack Parameters

Site/Location	County	Base-Year 1-Hr SO ₂ Design Values (ppb)	2015 Baseline FDV (ppb)	AERMOD + Background FDV (ppb)	Difference in FDV (ppb)
North Little Rock (Pike Ave)	Pulaski	12.3	9.3	12.0	2.7
El Dorado	Union	26.0	23.2	26.3	3.1

PM₁₀

The worst-case near-field impacts of a 100 tpy emission increase of PM₁₀ for the 24-hour PM₁₀ NAAQS for the 50th percentile and 90th percentile stack parameters are small, and FDVs calculated at monitoring sites including the worst-case impacts are nowhere near the 150 µg/m³ level of the 24-hour PM₁₀ NAAQS. For the 90th percentile stack characteristics, the addition of a 100 tpy source made no impact on the FDV. These results are presented in Tables 6 and 7.

Table 6. Estimated Future-Year 24-Hour PM₁₀ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 50th Percentile Stack Parameters

Site/Location	County	Base-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	AERMOD + Background FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	41.0	34.6	35.6	1

Table 7. Estimated Future-Year 24-Hour PM₁₀ Design values (ppb) for Monitoring Sites within Arkansas Considering Worst-Case Near-Field Impacts: 90th Percentile Stack Parameters

Site/Location	County	Base-Year 24-Hr PM ₁₀ Design Values (µg/m ³)	2015 Baseline FDV (µg/m ³)	AERMOD + Background FDV (µg/m ³)	Difference in FDV (µg/m ³)
North Little Rock (Pike Ave)	Pulaski	41.0	34.6	34.6	0

Sensitivity Analysis

In addition to the 90th and 50th percentile values, ICF also ran a sensitivity analysis using the 10th percentile stack characteristics and examined the effects of adjusting those 10th percentile characteristics by 50 % and the effect of using flat terrain. The 10th percentile stack characteristics for each pollutant are listed in Table 8. Although it is unlikely that any facility emitting 100 tpy would have all stack characteristics falling at or below the 10th percentile, the 10th percentile stack characteristics results are useful in identifying which stack characteristics have the most significant effect on modeled concentrations.

Table 8. 10th Percentile Stack Parameters

Pollutant	Percentile	Stack Height (ft)	Diameter (ft)	Temperature (°F)	Exit Velocity (ft/s)
NO _x	10 th	42.30	1.29	194.00	30.85
SO ₂	10 th	57.50	1.84	174.00	23.84
PM ₁₀	10 th	31.82	2.58	119.45	16.39

In order to test the sensitivity of the model to variations in individual stack parameters, ICF ran sensitivity tests in which a single stack characteristic corresponding to the 10th percentile stack characteristic values was increased by 50 %. Another sensitivity test was run with the 10th percentile stack characteristics and flat terrain. The results are summarized in tables 9 – 11. Concentrations greater than the corresponding NAAQS are highlighted in bold.

Table 9. AERMOD-Derived 8th High Daily Maximum 1-Hour NO₂ Concentrations for Varying Stack Parameters: Modified 10th Percentile Stack Parameters and Flat Terrain

Scenario	8 th High Daily Maximum 1-Hour NO ₂ Concentration (ppb)							
	AQCR 16 (Pulaski)	AQCR 17 (Washington)	AQCR 18 (Crittenden)	AQCR 19 (Union)	AQCR 20 (Craighead)	AQCR 21 (Van Buren)	AQCR 21 (Polk)	AQCR 22 (Miller)
10 th %ile	129.1	105.8	94.8	124.5	105.8	121.4	128.6	123.3
10 th %ile +Stack Height	94.7	56.7	57.6	69.4	63.1	122.5	97.5	65.3
10 th %ile +Stack Diameter	91.8	88.6	76.4	109.1	90.2	101.0	108.9	99.3
10 th %ile +Temperature	90.6	87.2	77.2	106.4	87.6	100.7	108.5	95.6
10 th %ile +Exit Velocity	108.8	95.1	85.3	117.1	98.6	116.0	119.2	109.0
Flat Terrain	87.9	105.7	97.0	124.5	105.8	120.2	128.8	124.7

Table 10. AERMOD-Derived 4th High Daily Maximum 1-Hour SO₂ Concentrations for Varying Stack Parameters: Modified 10th Percentile Stack Parameters and Flat Terrain.

Scenario	4 th High Daily Maximum 1-Hour SO ₂ Concentration (ppb)							
	AQCR 16 (Pulaski)	AQCR 17 (Washington)	AQCR 18 (Crittenden)	AQCR 19 (Union)	AQCR 20 (Craighead)	AQCR 21 (Van Buren)	AQCR 21 (Polk)	AQCR 22 (Miller)
10 th %ile	75.7	52.8	58.0	64.6	58.4	109.9	122.4	65.3
10 th %ile +Stack Height	38.2	58.5	32.3	37.1	33.5	36.6	105.8	32.9
10 th %ile +Stack Diameter	53.3	54.3	43.4	54.1	47.9	61.5	90.6	53.4
10 th %ile +Temp- erature	50.1	51.0	38.2	49.8	43.4	46.4	90.5	48.8
10 th %ile +Exit Velocity	55.5	57.9	46.0	56.1	49.8	69.2	99.6	55.1
Flat Terrain	66.8	53.7	58.2	64.8	59.1	64.1	64.6	65.8

Table 11. AERMOD-Derived 2nd High 24-Hour PM₁₀ Concentrations for Varying Stack Parameters: Modified 10th Percentile Stack Parameters and Flat Terrain.

Scenario	2nd High 24-Hour PM ₁₀ Concentration (µg/m ³)							
	AQCR 16 (Pulaski)	AQCR 17 (Washington)	AQCR 18 (Crittenden)	AQCR 19 (Union)	AQCR 20 (Craighead)	AQCR 21 (Van Buren)	AQCR 21 (Polk)	AQCR 22 (Miller)
10 th %ile	255.1	304.1	358.7	321.5	393.0	323.8	269.4	336.4
10 th %ile +Stack Height	95.6	127.1	124.1	210.4	141.8	160.7	194.7	141.2
10 th %ile +Stack Diameter	208.5	287.6	338.1	306.3	330.8	263.6	247.4	300.0
10 th %ile +Temp- erature	156.7	238.3	218.1	241.4	240.4	223.8	228.6	223.1

10 th %ile +Exit Velocity	197.5	257.4	287.5	306.0	292.8	282.6	252.1	285.3
Flat Terrain	268.8	337.8	358.7	321.5	395.4	307.7	270.8	339.5

Among the four stack parameter characteristics, the modeled concentrations were most sensitive to stack height for PM₁₀, SO₂, and NO_x. On average over all areas, a 50 % increase in stack height above the 10th percentile resulted in a 33 % reduction in NO₂, a 37 % reduction in SO₂, and a 53 % reduction in PM₁₀. Modeled concentrations were somewhat sensitive to a 50 % increase in temperature (19 %, 29 %, and 30 % reduction for NO₂, SO₂, and PM₁₀, respectively). Modeled concentrations for NO₂ and SO₂ are least sensitive to exit velocity and modeled concentrations of PM₁₀ are least sensitive to stack diameter. The effect of using flat terrain rather than local terrain from the hypothetical locations was variable.

Although the sensitivity analysis using the 10th percentile stack characteristics results are useful in identifying which stack characteristics have the most significant effect on modeled concentrations, it is unlikely that any facility emitting 100 tpy would have all stack characteristics falling at or below the 10th percentile. The average stack characteristics for facilities on the PM₁₀, SO₂, and NO_x lists of the top 10 plants with emissions up to 100 tpy fall between the 50th and 90th percentile. No facilities on the top ten lists of emitters under 100 tpy had more than two stack characteristic that fall at or below the 10th percentile stack characteristic for that pollutant. One facility on the top 10 NO_x sources list has two stack parameters that fall below the 10th percentile mark; however, that facilities emissions (53.39 tpy NO_x) are nowhere near the 100 tpy threshold examined in this analysis. Only one facility with a single characteristic falling below the 10th percentile for NO_x emitted more than 90 tpy. One facility on the top 10 PM₁₀ sources list has two stack parameters that fall below the 10th percentile mark; however, that facilities emissions are only 76.32 tpy PM₁₀. No facilities on the SO₂ top ten sources list had more than one stack characteristic that fell at or below the 10th percentile mark. Of those facilities that had one stack characteristic at or below the 10th percentile mark, no facility emitted more than 66 tpy SO₂.

Conclusion

Based on the results of this analysis, the Department finds that setting NAAQS evaluation requirements for Minor NSR permitting actions at the 100 tpy threshold for PM₁₀, SO₂, and NO_x, based on the definition of major source, is supported by the modeling data. The Department will continue to evaluate ambient concentrations of NAAQS pollutants in the State and regional scale modeling updates to evaluate whether the modeling thresholds included in this SIP submittal continue to be appropriate and protective of the NAAQS. This analysis also informs the Department about which stack characteristics are most influential in determining the potential impact of

emission increases for PM₁₀, SO₂, and NO_x. If the Department determines that it is necessary and appropriate to revise or create new NAAQS evaluation requirements for Minor NSR permitting, the Department may expand on this modeling to identify appropriate thresholds for modeling requirements. Any revisions to Minor NSR NAAQS evaluation requirements would be made through a NAAQS SIP revision, as required under Ark. Code Ann. § 8-4-318.

Tab C:

Evidence of Adoption of the Revised Plan into Regulations No. 19 and 26

-Signed Minute Orders

-Arkansas Register Transmittal Sheets

ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION

SUBJECT: Adoption of
Revisions to Regulation 19,
Regulations of the Arkansas Plan
of Implementation for Air
Pollution Control

DOCKET NO. 14 - 010 - R

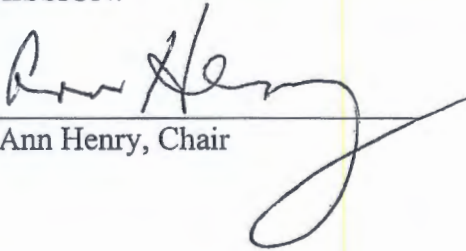
MINUTE ORDER NO. 16 - 04

PAGE 1 OF 1




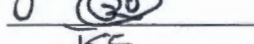

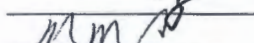
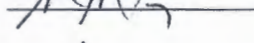
Pursuant to public notice and hearing, and in consideration of comments received, the Arkansas Pollution Control and Ecology Commission hereby adopts changes to Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control.

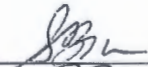
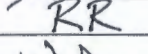
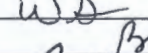
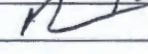

PROMULGATED THIS 26th DAY OF FEBRUARY, 2016, BY ORDER OF THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION.

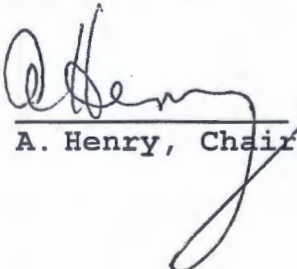
BY:


Ann Henry, Chair

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A. Henry, Chair

SUBMITTED BY: Stewart Spencer

PASSED: 02/26/16

ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION

SUBJECT: Adoption of
Revisions to Regulation 26,
Regulations of the Arkansas
Operating Air Permit Program

DOCKET NO. 14 - 011 - R

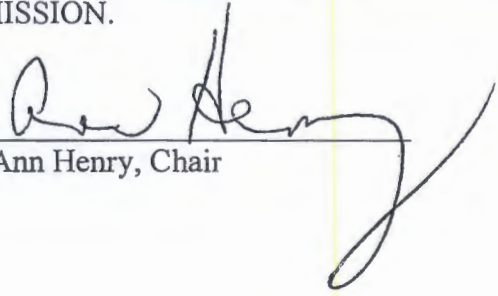
MINUTE ORDER NO. 16 - 05

PAGE 1 OF 1





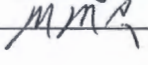
Pursuant to public notice and hearing, and in consideration of comments received, the Arkansas Pollution Control and Ecology Commission hereby adopts changes to Regulation No. 26, Regulations of the Arkansas Operating Air Permit Program.

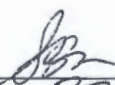


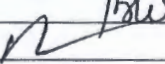
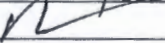
PROMULGATED THIS 26th DAY OF FEBRUARY, 2016, BY ORDER OF THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION.

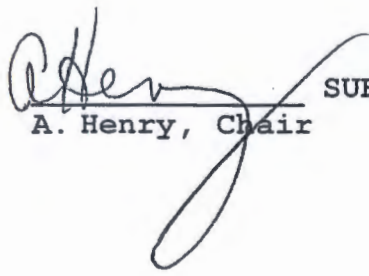
BY:


Ann Henry, Chair

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A. Henry, Chair

SUBMITTED BY: Stewart Spencer

PASSED: 02/26/16

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Secretary of State
Mark Martin
State Capitol, Suite 026
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For Office
Use Only:

Effective Date _____ Code Number _____

Name of Agency Arkansas Pollution Control & Ecology Commission

Department Arkansas Department of Environmental Quality

Contact Stewart Spencer E-mail spencer@adeq.state.ar.us Phone 501-682-0750

Statutory Authority for Promulgating Rules Ark. Code Ann. §8-1-203(b) and (1)

Rule Title: Regulation No. 19, Regulations of The AR Plan of Implementation for Air Pollution Control; Docket No. 14-010-R; Minute Order No. 16-04
Intended Effective Date _____ Date _____
(Check One)

- | | | |
|---|---------------------------------|-----------------|
| <input type="checkbox"/> Emergency (ACA 25-15-204) | Legal Notice Published | <u>12/10/14</u> |
| <input type="checkbox"/> 30 Days After Filing (ACA 25-15-204) | Final Date for Public Comment | <u>02/17/15</u> |
| <input checked="" type="checkbox"/> Other <u>10 days after filing</u>
(Must be more than 30 days after filing date.) | Reviewed by Legislatice Council | <u>01/12/16</u> |
| | Adopted by State Agency | <u>02/26/16</u> |

Electronic Copy of Rule submitted under ACA 25-15-218 by:

Contact Person _____ E-mail Address _____ Date _____

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 the Arkansas Administrative Procedures Act. (ACA 25-15-201 et. seq.)

Charles Moulton
Signature

(501) 682-7890 moulton@adeq.state.ar.us
Phone Number E-mail Address

Administrative Law Judge
Title

03/04/16
Date

FILED

MAR 04 2016

**Arkansas
Secretary of State**

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Transmittal Sheet

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Effective Date _____ Code Number _____

Name of Agency Arkansas Pollution Control & Ecology Commission

Department Arkansas Department of Environmental Quality

Contact Stewart Spencer E-mail spencer@adeq.state.ar.us Phone 501-682-0750

Statutory Authority for Promulgating Rules Ark. Code Ann. §8-1-203(b) and (1)

Rule Title: Regulation No. 26, Regulations of the Arkansas Operating Air

Permit Program; Docket No. 14-011-R; Minute Order No. 16-05

Intended Effective Date

(Check One)

- Emergency (ACA 25-15-204)
- 30 Days After Filing (ACA 25-15-204)
- Other 10 days after filing
(Must be more than 30 days after filing date.)

Legal Notice Published

12/10/14

Final Date for Public Comment

02/17/15

Reviewed by Legislative Council

01/12/16

Adopted by State Agency

02/26/16

Electronic Copy of Rule submitted under ACA 25-15-218 by:

Contact Person

E-mail Address

Date

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 the Arkansas Administrative Procedures Act. (ACA 25-15-201 et. seq.)

Chloe Moulton
Signature

(501) 682-7890 moulton@adeq.state.ar.us

Phone Number

E-mail Address

Administrative Law Judge

Title

03/04/16

Date

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MAR 04 2016

**Arkansas
Secretary of State**

Tab D:

Legal Authority to Adopt and
Implement the Plan

State's Legal Authority to Adopt and Implement the Plan

The State's legal authority to adopt and implement this State Implementation Plan revision can be found in Arkansas Code Annotated (Ark. Code Ann.) §§ 8-1-203(b)(1), 8-4-311(a)(1), 8-4-317.

Ark. Code Ann. § 8-1-203

8-1-203. Powers and responsibilities of the Arkansas Pollution Control and Ecology Commission.

(a) The Arkansas Pollution Control and Ecology Commission shall meet regularly in publicly noticed open meetings to discuss and rule upon matters of environmental concern.

(b) The commission's powers and duties shall be as follows:

(1) (A) Promulgation of rules and regulations implementing the substantive statutes charged to the Arkansas Department of Environmental Quality for administration.

(B) In promulgation of such rules and regulations, prior to the submittal to public comment and review of any rule, regulation, or change to any rule or regulation that is more stringent than the federal requirements, the commission shall duly consider the economic impact and the environmental benefit of such rule or regulation on the people of the State of Arkansas, including those entities that will be subject to the regulation.

(C) The commission shall promptly initiate rulemaking proceedings to further implement the analysis required under subdivision (b)(1)(B) of this section.

(D) The extent of the analysis required under subdivision (b)(1)(B) of this section shall be defined in the commission's rulemaking required under subdivision (b)(1)(C) of this section. It will include a written report which shall be available for public review along with the proposed rule in the public comment period.

(E) Upon completion of the public comment period, the commission shall compile a rulemaking record or response to comments demonstrating a reasoned evaluation of the relative impact and benefits of the more stringent regulation;

(2) Promulgation of rules, regulations, and procedures not otherwise governed by applicable law that the commission deems necessary to secure public participation in environmental decision-making processes;

(3) Promulgation of rules and regulations governing administrative procedures for challenging or contesting department actions;

(4) In the case of permitting or grants decisions, providing the right to appeal a permitting or grants decision rendered by the Director of the Arkansas Department of Environmental Quality or his or her delegatee;

(5) In the case of an administrative enforcement or emergency action, providing the right to contest any such action initiated by the director;

(6) Instruct the director to prepare such reports or perform such studies as will advance the cause of environmental protection in the state;

(7) Make recommendations to the director regarding overall policy and administration of the department. However, the director shall always remain within the plenary authority of the Governor; and

(8) Upon a majority vote, initiate review of any director's decision.

(c) (1) In providing for adjudicatory review as contemplated by subdivisions (b)(4) and (5) of this section, the commission may appoint one (1) or more administrative hearing officers. The administrative hearing officers shall at all times serve as agents of the commission.

(2) In hearings upon appeals of permitting or grants decisions by the director or contested administrative enforcement or emergency actions initiated by the director, the administrative hearing officer shall administer the hearing in accordance with procedures adopted by the commission and, after due deliberation, submit his or her recommended decision to the commission.

(3) (A) (i) Commission review of any appealed or contested matter shall be upon the record compiled by the administrative hearing officer and his or her recommended decision.

(ii) Commission review shall be de novo. However, no additional evidence need be received unless the commission so decides in accordance with established administrative procedures.

(B) The commission may afford the opportunity for oral argument to all parties of the adjudicatory hearing.

(C) (i) By the majority vote of a quorum, the commission may affirm, reverse and dismiss, or reverse and remand to the director.

(ii) If the commission votes to affirm or reverse, such decision shall constitute final agency action for purposes of appeal.

(4) Any party aggrieved by the commission decision may appeal as provided by applicable

law.

(d) The chair of the Arkansas Pollution Control and Ecology Commission may appoint one (1) or more committees composed of commission members to act in an advisory capacity to the full commission.

HISTORY: Acts 1991, No. 1230, § 1; 1993, No. 163, § 7; 1993, No. 165, § 7; 1993, No. 1264, § 2; 1995, No. 117, § 1.

Ark. Code Ann. § 8-4-311

8-4-311. Powers generally.

(a) The Arkansas Department of Environmental Quality or its successor shall have the power to:

- (1) Develop and effectuate a comprehensive program for the prevention and control of all sources of pollution of the air of this state;
- (2) Advise, consult, and cooperate with other agencies of the state, political subdivisions, industries, other states, the federal government, and with affected groups in the furtherance of the purposes of this chapter;
- (3) Encourage and conduct studies, investigations, and research relating to air pollution and its causes, prevention, control, and abatement as it may deem advisable and necessary;
- (4) Collect and disseminate information relative to air pollution and its prevention and control;
- (5) Consider complaints and make investigations;
- (6) Encourage voluntary cooperation by the people, municipalities, counties, industries, and others in preserving and restoring the purity of the air within the state;
- (7) Administer and enforce all laws and regulations relating to pollution of the air;
- (8) Represent the state in all matters pertaining to plans, procedures, or negotiations for interstate compacts in relation to air pollution control;
- (9) (A) Cooperate with and receive moneys from the federal government or any other source for the study and control of air pollution.

(B) The department is designated as the official state air pollution control agency for such purposes;
- (10) Make, issue, modify, revoke, and enforce orders prohibiting, controlling, or abating air pollution and requiring the adoption of remedial measures to prevent, control, or abate air pollution;
- (11) Institute court proceedings to compel compliance with the provisions of this chapter and rules, regulations, and orders issued pursuant to this chapter;
- (12) Exercise all of the powers in the control of air pollution granted to the department for the control of water pollution under §§ 8-4-101 -- 8-4-106 and 8-4-201 -- 8-4-229; and
- (13) Develop and implement state implementation plans provided that the commission shall retain all powers and duties regarding promulgation of rules and regulations under this chapter.

(b) The Arkansas Pollution Control and Ecology Commission shall have the power to:

(1) (A) Promulgate rules and regulations for implementing the substantive statutes charged to the department for administration.

(B) In promulgation of such rules and regulations, prior to the submittal to public comment and review of any rule, regulation, or change to any rule or regulation that is more stringent than federal requirements, the commission shall duly consider the economic impact and the environmental benefit of such rule or regulation on the people of the State of Arkansas, including those entities that will be subject to the regulation.

(C) The commission shall promptly initiate rulemaking to further implement the analysis required under subdivision (b)(1)(B) of this section.

(D) The extent of the analysis required under subdivision (b)(1)(B) of this section shall be defined in the commission's rulemaking required under subdivision (b)(1)(C) of this section. It will include a written report that shall be available for public review along with the proposed rule in the public comment period.

(E) Upon completion of the public comment period, the commission shall compile a rulemaking record or response to comments demonstrating a reasoned evaluation of the relative impact and benefits of the more stringent regulation;

(2) Promulgate rules, regulations, and procedures not otherwise governed by applicable law that the commission deems necessary to secure public participation in environmental decision-making processes;

(3) Promulgate rules and regulations governing administrative procedures for challenging or contesting department actions;

(4) In the case of permitting or grants decisions, provide the right to appeal a permitting or grants decision rendered by the Director of the Arkansas Department of Environmental Quality or his or her delegatee;

(5) In the case of an administrative enforcement or emergency action, providing the right to contest any such action initiated by the director;

(6) Instruct the director to prepare such reports or perform such studies as will advance the cause of environmental protection in the state;

(7) Make recommendations to the director regarding overall policy and administration of the department, provided, however, that the director shall always remain within the plenary authority of the Governor;

(8) Upon a majority vote, initiate review of any director's decision;

(9) Adopt, after notice and public hearing, reasonable and nondiscriminatory rules and regulations requiring the registration of and the filing of reports by persons engaged in operations that may result in air pollution;

(10) (A) Adopt, after notice and public hearing, reasonable and nondiscriminatory rules and regulations, including requiring a permit or other regulatory authorization from the department, before any equipment causing the issuance of air contaminants may be built, erected, altered, replaced, used, or operated, except in the case of repairs or maintenance of equipment for which a permit has been previously used, and revoke or modify any permit issued under this chapter or deny any permit when it is necessary, in the opinion of the department, to prevent, control, or abate air pollution.

(B) A permit shall be issued for the operation or use of any equipment or any facility in existence upon the effective date of any rule or regulation requiring a permit if proper application is made for the permit.

(C) No such permit shall be modified or revoked without prior notice and hearing as provided in this section.

(D) Any person that is denied a permit by the department or that has such permit revoked or modified shall be afforded an opportunity for a hearing in connection therewith upon written application made within thirty (30) days after service of notice of such denial, revocation, or modification.

(E) The operation of any existing equipment or facility for which a proper permit application has been made shall not be interrupted pending final action thereon.

(F) (i) An applicant or permit holder that has had a complete application for a permit or for a modification of a permit pending longer than the time specified in the state regulations promulgated pursuant to Title V of the Clean Air Act Amendments of 1990, or any person that participated in the public participation process, and any other person that could obtain judicial review of such actions under state laws, may petition the commission for relief from department inaction.

(ii) The commission will either deny or grant the petition within forty-five (45) days of its submittal.

(iii) For the purposes of judicial review, either a commission denial or the failure of the department to render a final decision within thirty (30) days after the commission has granted a petition shall constitute final agency action;

(11) (A) Establish through its rulemaking authority, either alone or in conjunction with the appropriate state or local agencies, a system for the banking and trading of air emissions designed to maintain both the state's attainment status with the national ambient air quality standards mandated by the Clean Air Act and the overall air quality of the state.

(B) The commission may consider differential valuation of emission credits as necessary to achieve primary and secondary national ambient air quality standards, and may consider establishing credits for air pollutants other than those designated as criteria air pollutants by the United States Environmental Protection Agency.

(C) Any regulation proposed pursuant to this authorization shall be reported to the House Interim Committee on Public Health, Welfare, and Labor and the Senate Interim Committee on Public Health, Welfare, and Labor or appropriate subcommittees thereof prior to its final promulgation; and

(12) In the case of a state implementation plan, provide the right to appeal a final decision rendered by the Director of the Arkansas Department of Environmental Quality or his or her delegate under § 8-4-317.

HISTORY: Acts 1949, No. 472, [Part 2], § 5, as added by Acts 1965, No. 183, § 7; A.S.A. 1947, § 82-1935; Acts 1993, No. 994, § 1; 1995, No. 895, § 4; 1997, No. 179, § 1; 1997, No. 1219, § 6; 1999, No. 1164, § 31; 2013, No. 1302, §§ 2, 3.

Ark. Code Ann. § 8-4-317

8-4-317. State implementation plans generally.

(a) In developing and implementing a state implementation plan, the Arkansas Department of Environmental Quality shall consider and take into account the factors specified in § 8-4-312 and the Clean Air Act, 42 U.S.C. § 7401 et seq., as applicable.

(b) (1) (A) Whenever the department proposes to finalize a state implementation plan submittal for review and approval by the United States Environmental Protection Agency, it shall cause notice of its proposed action to be published in a newspaper of general circulation in the state.

(B) The notice required under subdivision (b)(1)(A) of this section shall afford any interested party at least thirty (30) calendar days in which to submit comments on the proposed state implementation plan submittal in its entirety.

(C) (i) In the case of any emission limit, work practice or operational standard, environmental standard, analytical method, air dispersion modeling requirement, or monitoring requirement that is incorporated as an element of the proposed state implementation plan submittal, the record of the proposed action shall include a written explanation of the rationale for the proposal, demonstrating the reasoned consideration of the factors in § 8-4-312 as applicable, the need for each measure in attaining or maintaining the National Ambient Air Quality Standards, and that any requirements or standards are based upon generally accepted scientific knowledge and engineering practices.

(ii) For any standard or requirement that is identical to an applicable federal regulation, the demonstration required under subdivision (b)(1)(C)(i) of this section may be satisfied by reference to the regulation. In all other cases, the department shall provide its own justification with appropriate reference to the scientific and engineering literature considered or the written studies conducted by the department.

(2) (A) At the conclusion of the public comment period and before transmittal to the Governor for submittal to the United States Environmental Protection Agency, the department shall provide written notice of its final decision regarding the state implementation plan submittal to all persons who submitted public comments.

(B) (i) The department's final decision shall include a response to each issue raised in any public comments received during the public comment period. The response shall manifest reasoned consideration of the issues raised by the public comments and shall be supported by appropriate legal, scientific, or practical reasons for accepting or rejecting the substance of the

comment in the department's final decision.

(ii) For the purposes of this section, response to comments by the department should serve the roles of both developing the record for possible judicial review of a state implementation plan decision and serving as a record for the public's review of the department's technical and legal interpretations on long-range regulatory issues.

(iii) This section does not limit the department's authority to raise all relevant issues of regulatory concern upon adjudicatory review by the Arkansas Pollution Control and Ecology Commission of a particular state implementation plan decision.

(c) (1) Only those persons that submit comments on the record during the public comment period have standing to appeal the final decision of the department to the commission upon written application made within thirty (30) days after service of the notice under subdivision (b)(2)(A) of this section.

(2) An appeal under subdivision (c)(1) of this section shall be processed as a permit appeal under § 8-4-205. However, the decision of the Director of the Arkansas Department of Environmental Quality shall remain in effect during the appeal.

HISTORY: Acts 2013, No. 1302, § 4.

Tab E:
Regulations with Changes Indicated
 (“Proposed”)

-Proposed APC&EC Regulation No. 19 as initiated for Revisions December 5, 2014

-Proposed APC&EC Regulation No. 26 as initiated for Revisions December 5, 2014

-Proposed APC&EC Regulation No. 19 after consideration of Public Comments

-Proposed APC&EC Regulation No. 26 after consideration of Public Comments

VISUAL KEY TO REGULATION REVISION MARK-UP

Single Underline Red = originally proposed new language

~~Single Strikethrough Red~~ = originally proposed deletion of language

Double Underline Red = proposed addition of language after Public Comment

~~Double Strikethrough Red~~ = proposed language withdrawn after Public Comment

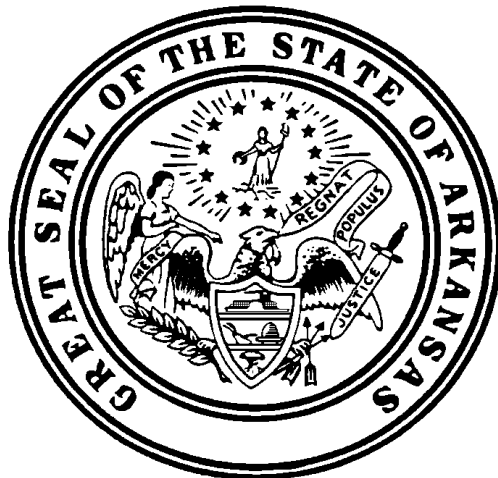
Examples of Combined Revision Mark-ups:

Originally proposed new language, ~~this part withdrawn after Public Comment.~~

~~Originally proposed deletion of language, this part added or retained after Public Comment.~~

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 19
REGULATIONS OF THE ARKANSAS PLAN OF
IMPLEMENTATION FOR AIR POLLUTION
CONTROL**



INITIAL DRAFT

Submitted to the PC&E Commission in December, 2014

EXHIBIT A

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CHAPTER 1: TITLE, INTENT, AND PURPOSE

Reg. 19.101 Title

The following rules and regulations, adopted in accordance with the provisions of Subchapter 2 of the Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (~~A.C.A. Ark. Code Ann.~~) §§ 8-4-201– *et seq.*, shall be known as “Regulations of the Arkansas Plan of Implementation of Air Pollution Control,” hereinafter referred to as the “Regulations of the Plan,” and “Regulation 19.”

Reg. 19.102 Applicability

These regulations are applicable to any stationary source which has the potential to emit any federally regulated air pollutant.

Reg. 19.103 Intent and Construction

- (A) The purpose and intent of Regulation 19, as amended, is to provide a clear delineation of those regulations that are promulgated by the Commission in satisfaction of certain requirements of the federal Clean Air Act, 42 United States Code (U.S.C.) §§ 7401 *et seq.*, as of July 1, 1997, and the federal regulations stemming therefrom. Federal programs that the Department is responsible for administering include, but are not limited to, the attainment and maintenance of the National Ambient Air Quality Standards (40 Code of Federal Regulations [~~CFRC.F.R.~~] Part 50), certain delegated subparts of the New Source Performance Standards (40 ~~CFRC.F.R.~~ Part 60), provisions designed for the Prevention of Significant Deterioration (40 ~~CFRC.F.R.~~ § 52.21), minor new source review as described in Chapter 4 (40 ~~CFRC.F.R.~~ Part 51), and certain delegated subparts of the National Emission Standards for Hazardous Air Pollutants (40 ~~CFRC.F.R.~~ Parts 61 and 63) as of July 1, 1997. This subsection shall not be construed as limiting the future delegation of federal programs to the Department for administration.
- (B) Regulation 19, as amended, is further intended to limit the federal enforceability of its requirements to only those mandated by federal law. Regulation 19, as amended, is also intended to facilitate a permit system for stationary sources within the State, which permit

shall provide which provisions are federally enforceable and which provisions are state enforceable.

- (C) Regulation 19, as amended, presumes a single-permit system, encompassing both federal and state requirements. A regulated facility which is subject to permitting under Regulation 19 shall be required to apply for and comply with only one permit, even though that permit may contain conditions derived from the federal mandates contained in Regulation 19, as well as conditions predicated solely on state law. Regulation 19, through construction or implication, shall not support the conclusion that all conditions of a permit have become federally enforceable because the permit contains provisions derived from Regulation 19. Permits or permit conditions issued under the authority of state law, or enforcement issues arising out of state law, shall not be federally enforceable.
- (D) To the extent consistent with state law and efficient protection of the State's air quality, Regulation 19 shall be construed in a manner that promotes a streamlined permitting process, mitigation of regulatory costs, and flexibility in maintaining compliance with federal mandates. Any applicable documents (e.g. "White Papers," regulatory preambles, or interpretive memoranda) issued by the ~~Environmental Protection Agency~~ EPA which are consistent with this policy and the legislative intent of state laws governing air pollution control (~~A.C.A.~~ Ark. Code Ann. § 8-4-301 *et seq.*) are aids for construing the requirements of Regulation 19. Any procedure applicable to major sources that promotes operational flexibility are presumed to be authorized by this regulation unless manifestly inconsistent with its substantive terms.
- (E) Nothing in Regulation 19 shall be construed as curtailing the Department's or Commission's authority under state law.

Reg. 19.104 Severability

If any provision of Regulation 19 is determined to be invalid, such invalidity shall not affect other provisions of Regulation 19.

If federal legislation or a federal court stays, invalidates, delays the effective date of, or otherwise renders unenforceable, in whole or in part, EPA's regulation of greenhouse gases, then the provisions of Regulation 19 concerning greenhouse gases based thereon shall be stayed and

shall not be enforceable until such time as the Commission makes a final decision on whether or not to revise Regulation 19 due to the federal legislation or federal court order.

CHAPTER 2: DEFINITIONS

Terms and phrases used in this regulation which are not explicitly defined herein shall have the same meaning as those terms which are used in the federal Clean Air Act. For purposes of this regulation:

“12-month period” means a period of 12 consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

“Actual emissions” means the quantity of federally regulated air pollutants emitted from a stationary source considering emissions control equipment and actual hours of source operation or amount of material processed.

“CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed by multiplying the mass amount of emissions tpy, for each of the six greenhouse gases in the pollutant GHGs, by the gas’s associated global warming potential published at Table A - 1 to ~~s~~Subpart A of 40 ~~CFRC.F.R.~~ Part 98 - Global Warming Potentials (which is incorporated by reference as of the effective date of the federal final rule published~~finalized~~ by EPA in the Federal Register on-as-of November 29, 2013~~October 30, 2009 [78 FR 71948]~~), and summing the resultant value for each to compute a tpy CO₂ equivalent emissions. ~~For purposes of this definition, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).~~

“Commission” means the Arkansas Pollution Control and Ecology Commission.

“Construction” means fabrication, erection, or installation of equipment. See also 40 ~~CFRC.F.R.~~ § 60.2, 40 ~~CFRC.F.R.~~ § 51.165, and 40 ~~CFRC.F.R.~~ § 52.21.

“Control apparatus” means any device which prevents, controls, detects or records the emission of any federally regulated air pollutants.

“Department” means the Arkansas Department of Environmental Quality, or its successor. When reference is made in this regulation to actions taken by or with reference to the Department, the reference is to the staff of the Department acting at the direction of the Director.

“Director” means the Director of the Arkansas Department of Environmental Quality, or its successor, acting directly or through the staff of the Department.

“Emission increase” means the calculated sum for each federally regulated air pollutant, based on the difference between the sum of the proposed permitted rates for all emissions units and the sum of the previously permitted emission rates for all emissions units.

“Emission limitation” and **“emission standard”** mean a requirement established by the Department or the Administrator of the ~~United States Environmental Protection Agency~~ EPA which limits the emissions of federally regulated air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.

“Emission unit” means any article, machine, equipment, operation, or contrivance that emits or has the potential to emit any federally regulated air pollutant.

“EPA” means the United States Environmental Protection Agency.

“Equipment” means any device, except equipment used for any mode of vehicular transportation, capable of causing the emission of a federally regulated air pollutant into the open air, and any stack, conduit, flue, duct, vent, or similar device connected or attached to or serving the equipment.

“Federal Clean Air Act” or **“Clean Air Act”** or **“FCAA”** or **“the Act”** means the federal Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and its implementing regulations as of the effective date of this regulation.

“Federally regulated air pollutant” means the following:

- (A) Nitrogen oxides or any volatile organic compounds;
- (B) Any pollutant for which a National Ambient Air Quality Standard has been promulgated;
- (C) Except as provided in (E), any pollutant that is subject to any standard promulgated under 42 U.S.C. §§ 7401, *et seq.*, as of the effective date of this regulation;
- (D) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Clean Air Act, 42 U.S.C. §§ 7401, *et seq.* as amended as of July 1, 1997.
- (E) GHGs, except that GHGs shall not be a Federally Regulated Air Pollutant unless the GHG emissions are:
 - (1) from a stationary source emitting or having the potential to emit 75,000 tpy CO₂e emissions or more; and
 - (2) regulated under Chapter 9 of this Regulation 19.

“Fugitive emissions” means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Those emissions are those that, according to customary and good engineering practice, considering technological and economic feasibility, could not pass through a stack, chimney, vent or other functionally-equivalent opening, except that the Department will utilize the definition of fugitive emissions for those industries for which an approved EPA definition exist under federal law or regulation and which are meeting that law or regulation.

“Greenhouse gases” (GHGs) means the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

“Hazardous Air Pollutant” or **“HAP”** means any air pollutant listed pursuant to § 112 of the Clean Air Act, as amended, 42 U.S.C. §§ 7401, *et seq.*, as of the effective date of this regulation.

“Modification” means any physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any federally regulated air pollutant over permitted rates or which results in the emission of a federally regulated air pollutant not previously emitted, except that:

- (A) Routine maintenance, repair, and replacement shall not be considered a physical change, and
- (B) The following shall not be considered a change in the method of operation:
 - (1) Any change in the production rate, if such change does not exceed the permitted operating capacity of the source;
 - (2) Any change in the hours of operation, as long as it does not violate applicable air permit conditions; or
 - (3) The use of an alternate fuel or raw material, as long as it does not violate applicable air permit conditions.
- (C) *De Minimis* changes, as defined in Reg. 19.407(C), and changes in ownership shall not be considered.

“National Ambient Air Quality Standards” or **“NAAQS,”** means those ambient air quality standards promulgated by the EPA in 40 ~~CFR~~C.F.R. Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012~~January 15, 2013 (78 FR 3086)~~, as set forth in Appendix B of Regulation 19.

“NAAQS state implementation plan or “NAAQS SIP” (as defined by Ark. Code Ann. § 8-4-303) means a state implementation plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 et seq., for the attainment and maintenance of a specified NAAQS in each air quality control region or portion of an air quality control region within the state.

“Opacity” means the degree to which air emissions reduce the transmission of light and obscure the view of an object in the background.

“Operator” means any person who leases, operates, controls, or supervises any equipment affected by these regulations.

“Owner” means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

“Particulate matter” or “PM” means any airborne finely divided solid or liquid material with an aerodynamic diameter equal to or less than 100 micrometers.

“Particulate matter emissions” means all particulate matter, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternate method, specified in 40 [CFR C.F.R.](#) Part 60 Appendix A as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257), or by a test method specified in these regulations or any supplement thereto, with the exception of condensable particulate matter.

“Person” means any individual or other legal entity or their legal representative or assignee.

“Plan” means the Arkansas Plan of Implementation for Air Pollution Control.

“PM_{2.5}” means particulate matter with an aerodynamic diameter less than or equal to a nominal two and one-half (2.5) micrometers as measured by a reference method based on Appendix L of 40 [CFR C.F.R.](#) Part 50 as of ~~July 27, 2012~~ the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2006 (71 FR 61226), or by an approved regional method designated in accordance with Appendix C of 40 [CFR C.F.R.](#) Part 53.

“PM_{2.5} emissions” means PM_{2.5} emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 [CFR C.F.R.](#) Part 51, Appendix M as of ~~the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012~~ April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal ~~ten (10)~~ micrometers as measured by a reference method based on Appendix J of 40 [CFR C.F.R.](#)

Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on August 7, 1987 (52 FR 29467), or by an equivalent method designated in accordance with 40 ~~CFR~~C.F.R. Part 53 as of December 8, 1984.

“PM₁₀ emissions” means PM₁₀ emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 ~~CFR~~C.F.R. Part 51, Appendix M as of the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“Potential to emit” means the maximum capacity of a stationary source to emit a federally regulated air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a federally regulated air pollutant, including, but not, limited to, air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is enforceable to the extent it is regulated by the federal Clean Air Act, 42 U.S.C. § 7401 *et seq.* as of February 15, 1999. Secondary air emissions do not count in determining the potential to emit of a stationary source.

“Responsible official” means one of the following:

- (A) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative or such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (1) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 United States dollars); or
 - (2) The delegation of authority to such representative is approved in advance by the Department;

- (B) For partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (C) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this regulation, a principal executive officer of a federal agency includes the chief executive officer —having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or
- (D) For acid rain sources:
 - (1) The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and
 - (2) The designated representative for any other purposes under Part 70.

“Secondary emissions” means those emissions of federally regulated air pollutants which, although associated with a source, are not emitted from the source itself.

“Shutdown” means the cessation of operation of equipment.

“Startup” means the setting in operation of equipment.

“State implementation plan” or “SIP” (as defined at Ark. Code Ann. § 8-4-303), means a plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, and that is developed by the department and submitted to the EPA for review and approval.

“Stationary source” means any building, structure, facility, or installation which emits or may emit any federally regulated air pollutant.

“Title I modification” means any modification as defined under any regulation promulgated pursuant to Title I of the federal Clean Air Act. *De minimis* changes under Regulation 19, changes to state only permit requirements, administrative permit amendments, and changes to the insignificant activities list are not Title I modifications.

“Volatile organic compounds” or “VOC” means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(A) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity:

acetone;
methane;
ethane;
methylene chloride (dichloromethane);
1,1,1- trichloroethane (methyl chloroform);
tetrachloroethylene (perchloroethylene);
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
trichlorofluoromethane (CFC-11);
dichlorodifluoromethane (CFC-12);
chlorodifluoromethane (HCFC-22);
trifluoromethane (HFC-23);
1,2-dichloro 1,1, 2, 2-tetrafluoroethane (CFC-114);
chloropentafluoroethane (CFC-115);
1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);
1,1,1,2-tetrafluoroethane (HFC-134a);
1,1-dichloro 1-fluoroethane (HCFC-141b);
1-chloro 1,1-difluoroethane (HCFC-142b);
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
pentafluoroethane (HFC-125);
1,1,2,2-tetrafluoroethane (HFC-134);
1,1,1-trifluoroethane (HFC-143a);
1,1-difluoroethane (HFC-152a);
parachlorobenzotrifluoride (PCBTf);
cyclic, branched, or linear completely methylated siloxanes;
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
difluoromethane (HFC-32);
ethylfluoride (HFC-161);
1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
1,1,2,2,3-pentafluoropropane (HFC-245ca);
1,1,2,3,3-pentafluoropropane (HFC 245ea);
1,1,1,2,3-pentafluoropropane (HFC-245eb);
1,1,1,3,3-pentafluoropropane (HFC-245fa);
1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
1,1,1,3,3-pentafluorobutane (HFC-365mfc);

chlorofluoromethane (HCFC-31);
 1 chloro-1-fluoroethane (HCFC-151a);
 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃ or HFE-7100);
 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane
 ((CF₃)₂CFCF₂OCH₃);
 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅ or HFE 7200);
 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane
 ((CF₃)₂CFCF₂OC₂H₅);
 methyl acetate;
 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000);
 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane
 (HFE-7500);
 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea);
 methyl formate (HCOOCH₃);
 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300);
propylene carbonate;
dimethyl carbonate;
trans-1,3,3,3-tetrafluoropropene (HFO-1234ze);
HCF₂OCF₂H (HFE-134);
HCF₂OCF₂OCF₂H (HFE-236cal2);
HCF₂OCF₂CF₂OCF₂H (HFE-338pcc13);
HCF₂OCF₂OCF₂CF₂OCF₂H (H-Galden 1040x or H-Galden ZT 130 [or 150 or
 180]);
trans- 1-chloro-3,3,3-triflouoroprop-1-ene;
2,3,3,3-tetraflouoropropene;
2-amino-2-methyl-1-propanol;

and perfluorocarbon compounds which fall into these classes:

- (1) cyclic, branched, or linear, completely fluorinated alkanes;
 - (2) cyclic, branched, or linear, completely fluorinated ethers with no —unsaturations;
 - (3) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
 - (4) sulfur containing perfluorocarbons with no saturations and with sulfur bonds only to carbon and fluorine.
- (B) For purposes of determining compliance with emission limits, VOC will be measured by the test methods in the approved State Implementation Plan (SIP) or 40 CFR C.F.R. Part

60, Appendix A, as of July 1, 1997, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the Department.

- (C) As a precondition to excluding these compounds as VOC or at any time thereafter, the Department may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Department, the amount of negligibly-reactive compounds in the source's emissions.
- (D) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

CHAPTER 3: PROTECTION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS

Reg. 19.301 Purpose

The purpose of this chapter is to state the responsibilities of the Department and regulated sources in meeting and maintaining the NAAQS ~~contained in 40 CFR Part 50~~. If any area of the state is determined to be in violation of the NAAQS, all applicable requirements contained in the Clean Air Act, as amended, and all regulations promulgated thereto shall be met by the Department.

Reg. 19.302 Department Responsibilities

The Department shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) Ambient air monitoring in any area that can reasonably be expected to be in excess of the NAAQS.
- (B) Computer modeling of regulated air pollutant emissions for any area that can reasonably be expected to be in excess of the NAAQS, and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. All computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS.

Reg. 19.303 Regulated Sources Responsibilities

Any source subject to the provisions of this Plan shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) When required by law or this regulation, obtaining a permit from the Department prior to construction of a new source of federally regulated air pollutant emissions or prior to the modification of an existing source of air emissions.

- (B) Operating equipment in such a manner as to meet any applicable permit requirement or any applicable regulations.
- (C) Repairing malfunctioning equipment and pollution control equipment as quickly as possible. If the malfunctioning equipment is causing, or contributing to, a violation of the NAAQS, as determined by computer modeling, the source is responsible for ceasing operations of the affected equipment until such time that it is repaired.

Reg. 19.304 Delegated Federal Programs

Sources subject to this regulation shall also comply with all Federal programs that the Department is responsible for administering including certain delegated subparts of the New Source Performance Standards (40 ~~CFR~~CFR.F.R. Part 60), provisions designed for the Prevention of Significant Deterioration (40 ~~CFR~~CFR.F.R. § 52.21), and certain delegated subparts of the National Emissions Standards for Hazardous Air Pollutants (40 ~~CFR~~CFR.F.R. Parts 61 and 63), which were promulgated as of January 27, 2006. These delegated subparts only apply to major sources. (There are subparts that apply to minor sources, but the Department has not requested delegation of them as of April 28, 2006.)

Reg. 19.305 NAAQS Air Quality Analysis for Issuance of Permits

The Department shall consider potential ambient air quality impacts from a proposed increase in emissions for any pollutant for which a NAAQS is in effect prior to issuing a permit for the construction of a new stationary source or the modification of an existing stationary source subject to this regulation, as those terms are defined in Regulation 19, Chapter 2. This consideration shall take the form of an air quality analysis which shall be conducted as follows:

- (A) For construction of a new stationary source or modification to an existing stationary source involving emission increases, over permitted rates, of less than the pollutant-specific amounts established in 19.407(C), the resulting environmental impact is trivial and no further air quality analysis is required for each such pollutant for the modification.
- (B) Notwithstanding 19.305(A), for any permit application involving the construction of a new stationary source or the modification of an existing stationary source subject to permitting pursuant to Regulation 31, Nonattainment New Source Review Requirements (Regulation 31), compliance with the requirements of Regulation 31 shall constitute the

necessary air quality analysis under this section. No further air quality analysis shall be required for any such pollutant subject to such review under Regulation 31.

(C) Notwithstanding 19.305(A) and 19.305(B), for any permit involving the construction of a new major stationary source or the modification of an existing stationary source subject to Chapter 9 of this regulation, compliance with the requirements of 40 CFR § 52.21 as adopted by the Commission under 19.904 shall constitute the necessary air quality analysis under this section. No further air quality analysis shall be required for any such pollutant subject to such review under Chapter 9 of this regulation.

(D) For all other permits not described in 19.305(A) through 19.305(C) for the construction of a new stationary source or the modification of an existing stationary source, the air quality analysis may be qualitative in nature and may consider such factors as the nature, type, location, and emission parameters of the source, the existing attainment status of the area, the level of the proposed emissions increase relative to the area's permitted emission rates, the existing ambient air levels of the pollutant based on the state monitoring network, and historical monitored trends in ambient air levels of the federally regulated air pollutant.

(1) Where the need has been demonstrated and specific criteria adopted on a pollutant- or facility-specific basis in the applicable NAAQS SIP, the Director may conduct air dispersion modeling for such an air quality analysis, to ensure that the issuance of the proposed permit will not interfere with the attainment or maintenance of a NAAQS.

(2) The demonstration of need and the specific criteria adopted for when such modeling is conducted may be based on those factors listed in 19.305(D), together with other available and pertinent information such as the results of regional airshed modeling performed for NAAQS SIP development.

(E) Notwithstanding paragraphs 19.305(A) through 19.305(D), changes at existing stationary sources which qualify as *De Minimis* changes pursuant to 19.407(C) and changes to a source's insignificant activities list are not modifications, and are not subject to the requirements of this section.

CHAPTER 4: MINOR SOURCE REVIEW

Reg. 19.401 General Applicability

No person shall cause or permit the operation, construction, or modification of a stationary source, whose actual emissions are:

Seventy-five (75) tons per year or more of carbon monoxide;

Forty (40) tons per year or more of nitrogen oxides;

Forty (40) tons per year or more of sulfur dioxide;

Forty (40) tons per year or more of volatile organic compounds;

Ten (10) tons per year or more of direct PM_{2.5};

Fifteen (15) tons per year or more of PM₁₀;

One-half (0.5) tons per year or more of lead;

Two (2.0) tons per year or more of any single hazardous air pollutant; or

Five (5.0) tons per year or more of any combination of hazardous air pollutants

without first obtaining a permit from the Department pursuant to the provisions of this chapter.

Reg. 19.402 Approval Criteria

No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.

Reg. 19.403 Owner/Operator's Responsibilities

Issuance of a permit by the Department does not affect the responsibility of the owner/operator to comply with applicable portions of this regulation.

Reg. 19.404 Required Information

(A) General

Application for a permit shall be made on such forms and contain such information as the Department may reasonably require, including but not limited to:

- (1) information on the nature and amounts of federally regulated air pollutants to be emitted by the stationary source; and
- (2) such information on the location, design, and operation of stationary source as the Department may reasonably require.

(B) Duty to Supplement Submittal

If, while processing an application that has been determined to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, the Department may request such information in writing and set a reasonable deadline for a response.

(C) Duty to Correct Submittal

Any owner/operator who fails to submit any relevant facts or who has submitted incorrect information, shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any relevant requirements that become applicable to the stationary source before final action is taken on its application.

Reg. 19.405 Action on Application

(A) Technical Review

The Department will review the application submitted under this chapter in order to ensure to

their reasonable satisfaction that:

- (1) the stationary source will be constructed or modified to operate without interfering with attainment or maintenance of a national ambient air quality standard;
- (2) the stationary source will be constructed or modified to operate without violating any applicable regulation adopted by the ~~U.S. Environmental Protection Agency~~ EPA pursuant to §§ 111, 112, and 114 of the Clean Air Act as amended;
- (3) the stationary source will be constructed or modified to operate without resulting in a violation of any applicable provisions of this regulation;
- (4) the emission rate calculations are complete and accurate; and
- (5) if the facility wishes to measure and/or monitor operating parameters rather than actual emissions, the application describes a process which will be used to ensure that the calculations are translated into enforceable limits on operational parameters rather than emissions.

(B) Proposed Action

- (1) If the Department initially determines the requirements of Reg. 19.405(A) are met, they shall prepare a draft permit which:
 - (a) contains such conditions as are necessary to comply with this Regulation;
 - (b) addresses all federally regulated air pollutant emissions and all federally regulated air pollutant emitting equipment at the stationary source except pollutants or equipment specifically exempt or as specifically provided for in paragraph (c) below; and
 - (c) establishes Best Available Control Technology (BACT) permitted emission rates, emission limitations or other enforceable conditions for GHG emissions pursuant to Chapter 9 of this Regulation, if applicable. Draft permits for facilities not subject to a BACT determination in regard to GHG emissions pursuant to the provisions at Chapter 9 of this

Regulation shall not contain permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions. However, the applicant may request that the Department include permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions in the draft permit in order to set enforceable limits for the purpose of establishing synthetic minor status. In the event any provision of Regulation 19 is found to be in conflict with this Section 19.405(B)(1), this Section shall take precedence.

- (2) If the Department initially determines the requirements of this chapter are not met, they shall prepare a notice of intent to deny. This notice will state the reasons for the Department's denial of the stationary source's submittal.
- (3) Except as provided in Reg. 19.407, the public shall have an opportunity to comment on the Department's proposed permit decision in accordance with Reg. 19.406.
- (4) Within 90 days of receipt by the Department of an initial permit application, or an application for a major modification which contains such information as required by the Department (unless said period is extended by mutual agreement between the Department and the applicant), the Department shall notify the applicant in writing of its draft permitting decision. If the Department fails to take action of the application within the prescribed time frames, the aggrieved applicant may petition the Commission for relief from Department inaction. The Commission shall either grant or deny the petition within 45 days of its submittal.

(C) Final Action

The Department shall take final action on a permit application after the close of the public comment period. The Department shall notify in writing the owner/operator and any person that submitted a written comment, of the Department's final action and the Department's reasons for its final action.

Reg. 19.406 Public Participation

(A) General

No permit shall be issued, denied, or modified unless the public has first had an opportunity to comment on the information submitted by the owner/operator and the Department's analysis, as demonstrated by the permit record, of the effect of construction or modification on ambient air quality, including the Department's proposed approval or disapproval of the permit.

(B) Public Availability of Information

For purposes of this section, opportunity to comment shall include, at a minimum:

- (1) Availability for the public inspection in at least one location in the area where the source is located, or proposes to locate, and in the Department's central offices of the Department's draft decision, information submitted by the owner/operator, and any information developed by the Department in support of its draft permit decision;
- (2) A 30-day period for submittal of public comment (beginning on the date of the latest newspaper notice, ending on the date 30 days later);
- (3) A publication in a newspaper of general circulation in the area where the source is located or proposes to locate, and in a State publication designed to give general public notice. Such notice shall, as a minimum, describe the locations at which the information submitted by the owner/operator and the Department's analysis of this information, may be inspected and the procedure for submitting public comment;
- (4) A copy of the notice, required pursuant to this subsection, shall be sent to the owner/operator and to the:
 - (a) Regional Administrator of the ~~EPA United States Environmental Protection Agency~~;
 - (b) mayor of the community where the stationary source is proposed to be constructed or modified;
 - (c) county judge of the county where the equipment is proposed to be constructed or modified; and

- (d) appropriate air pollution control agencies of adjoining states if the construction or modification of the source will impact air quality in adjoining states.
- (5) Public comments addressing the technical merits of the permit application and the Department's analysis of the effect of the proposed emissions on air quality submitted in accordance with procedures in the public notice shall be considered by the Department prior to taking final action on the permit application.

Reg. 19.407 Permit Amendments

(A) Administrative Permit Amendments

- (1) An administrative permit amendment is a permit revision that:
 - (a) corrects a typographical error;
 - (b) identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change in the source;
 - (c) requires more frequent monitoring or reporting by the permittee;
 - (d) incorporates a change in the permit involving the retiring of equipment or emission units, or the decrease of permitted emissions from equipment or emission units; or
 - (e) incorporates a change to the facility's insignificant activities list.
- (2) The Department shall revise the permit as expeditiously as practicable and may incorporate such revisions without providing notice to the public.
- (3) The applicant may implement the changes addressed in the request for an administrative amendment immediately upon approval.

(B) Change in Ownership

- (1) Permits issued under this regulation shall remain freely transferable, provided the applicant for the transfer:
 - (a) ~~the applicant for the transfer~~ notifies the Director at least thirty (30) days in advance of the proposed transfer date on such forms as the Director may reasonably require, and
 - (b) submits a disclosure statement in accordance with Commission Regulation 8, Administrative Procedures, or other such documents as required by the Department.
- (2) The Director may deny the issuance or transfer of any permit, license, certification, or operational authority if he or she finds, based upon the disclosure statement and other investigation which he or she deems appropriate, that:
 - (a) The applicant has a history of non-compliance with the environmental laws or regulations of this state or any other jurisdiction;
 - (b) An applicant which owns or operates other facilities in the state is not in substantial compliance with, or on a legally enforceable schedule that will result in compliance with, the environmental laws or regulations of this state; or
 - (c) A person with a history of non-compliance with environmental laws or regulations of this state or any other jurisdiction is affiliated with the applicant to the extent of being capable of significantly influencing the practices or operations of the applicant which could have an impact upon the environment.
- (3) Public notice requirements shall not apply to changes in ownership or changes in name.

~~(A)(C)~~ *De Minimis* Changes

- (1) A proposed change to a facility will be considered *De Minimis* if:

- (a) minimal judgment is required to establish the permit requirements for the change; and
 - (b) the change will result in a trivial environmental impact.
- (2) The environmental impact of a proposed change generally will be considered trivial if the ~~potential emissions increase from the change alone, without taking into account any corresponding emission reductions,~~ will:
- (a) be less than the following amounts:
 - i. Seventy-five (75) tons per year of carbon monoxide;
 - ii. Forty (40) tons per year of nitrogen dioxides, sulfur dioxides, or volatile organic compounds;
 - iii. Twenty-five (25) tons per year of particulate matter emissions;
 - iv. Ten (10) tons per year of direct PM_{2.5};
 - ~~iv. v.~~ Fifteen (15) tons per year of PM₁₀ emissions; and
 - ~~v. vi.~~ One-half (0.5) a ton per year of lead;
 - (b) or, result in an air quality impact less than:

Pollutant	<i>De Minimis</i> Concentration	Averaging Time
carbon monoxide	500 $\mu\text{g}/\text{m}^3$	8-hour
nitrogen dioxide	10 $\mu\text{g}/\text{m}^3$	Annual
<u>PM_{2.5}</u>	<u>2 $\mu\text{g}/\text{m}^3$</u>	<u>24-hour</u>
PM ₁₀	8 $\mu\text{g}/\text{m}^3$	24-hour
sulfur dioxide	18 $\mu\text{g}/\text{m}^3$	24-hour
lead	0.1 $\mu\text{g}/\text{m}^3$	3-month

- (3) A proposed change will be considered *De Minimis* if the increases are less than 75,000 tpy of CO₂e and other pollutant emission increases otherwise qualify as *De Minimis* under this section.
- (4) The following changes will not be considered *De Minimis* changes:
- (a) any increase in the permitted emission rate at a stationary source without a corresponding physical change or change in the method of operation at the source;
 - (b) any change which would result in a violation of the Clean Air Act;
 - (c) any change seeking to change a case-by-case determination of an emission limitation established pursuant to Best Available Control Technology (BACT), §112(g), §112(i)(5), §112(j), or §111(d) of the Clean Air Act as amended as of February 15, 1999;
 - (d) a change that would result in a violation of any provision of this regulation;
 - (e) any change in a permit term, condition, or limit that a source has assumed to avoid an applicable requirement to which the source would otherwise be subject;
 - (f) any significant change or relaxation to existing testing, monitoring, reporting, or recordkeeping requirements; or
 - (g) any proposed change which requires more than minimal judgment to determine eligibility.
- (5) A source may not submit multiple applications for *De Minimis* changes that are designed to conceal a larger modification that would not be considered a *De Minimis* change. The Department will require such multiple applications be processed as a permit modification with public notice and reconstruction requirements. Deliberate misrepresentation may be grounds for permit revocation.

- (6) The applicant may implement *De Minimis* changes immediately upon approval by the Department.
- (7) The Department shall revise the permit as expeditiously as practicable and may incorporate *De Minimis* changes without providing notice to the public. The applicant may implement *De Minimis* changes immediately upon approval by the Department.

Reg. 19.408 Exemption from Permitting

(A) Insignificant Activities

Stationary sources and activities listed in Appendix A of this regulation shall be considered to be insignificant and will not require a permit under this chapter or be included in a source's permit.

(B) Grandfathering

Stationary sources operating prior to June 30, 1975, and which have not been modified since, will not be required to obtain a permit under this chapter.

Reg. 19.409 Transition

Facilities which are now subject to this regulation which were not previously subject to this regulation shall be in full compliance within 180 days of the effective date of this regulation. Facilities which are now subject to permitting under this regulation which were not previously subject to permitting under this regulation shall submit a complete application within 180 days of the effective date of this regulation. The Director may extend this compliance period on a case-by-case basis provided that the total compliance period does not exceed one year.

Reg. 19.410 Permit Revocation and Cancellation

(A) Revocation

Any permit issued under this regulation is subject to revocation, suspension, or modification in whole or in part, for cause, including without limitation:

- (1) Violation of any condition of the permit;

- (2) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or
- (3) Change in any applicable regulation or change in any pre-existing condition affecting the nature of the emission that requires either a temporary or permanent reduction or elimination of the permitted emission.

(B) Cancellation

The Director may cancel a permit if the construction or modification is not begun within 18 months from the date of the permit issuance or if the work involved in the construction or modification is suspended for a total of 18 months or more.

Reg. 19.411 General Permits

(A) General Authority

The Department may, after notice and opportunity for public participation provided under this chapter, issue a general permit covering numerous similar sources. The criteria for the review and approval of permits under this chapter shall be used for general permits as well. Any general permit shall comply with all requirements applicable to other permits and shall identify criteria by which sources may qualify for the general permit. They shall also include enforceable emission limitations or other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this regulation. To sources that qualify, the Department shall grant the conditions and terms of the general permit. The source shall be subject to enforcement action for operation without a permit if the source is later determined not to qualify for the conditions and terms of the general permit.

(B) Application

Sources that would qualify for a general permit must apply to the Department for coverage under the terms of the general permit or must apply for permit consistent with this chapter. The Department may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

- (1) When any application for the issuance of a new permit or a modification of an existing permit is filed with the Department, the Department shall cause notice of the application to be published in a newspaper of general circulation in the county in which the proposed facility is to be located.
- (2) The notice required by Reg. 19.411(B)(1) shall advise that any interested person may request a public hearing on the permit application by giving the Department a written request within ten (10) days of the publication of the notice.
- (3) Should a hearing be deemed necessary by the Department, or in the event the Department desires such a hearing, the Department shall schedule a public hearing and shall, by first class mail, notify the applicant and all persons who have submitted comments of the date, time, and place thereof.

Reg. 19.412 Dispersion Modeling

The following shall apply when dispersion or other air quality modeling is used to meet the requirements of this chapter.

(A) General

All applications of air quality modeling involved in this chapter shall be based on the applicable models, data bases, and other requirements specified in Appendix W of 40 ~~CFR~~C.F.R. Part 51 (Guideline on Air Quality Models) as of the effective date of the federal final rule published by EPA in the Federal Register on November 9, 2005 (70 FR 68228).

(B) Substitution

Where an air quality model specified in the Guideline on Air Quality Models is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific pollutant or type of stationary source. Written approval of the Administrator of the EPA must be obtained for any modification or substitution.

Reg. 19.413 Confidentiality

Information which constitutes a trade secret shall be held confidential and segregated from the public files of the Department if requested in writing by the permit applicant in accordance with this subsection.

(A) For purposes of this subsection, “Trade Secret” means any information, including formula, pattern, compilation, program, device, method, technique, process, or rate of production that:

- (1) Derives independent economic value (actual or potential) from not being generally known to, and not being readily ascertainable through, proper means by other persons who can obtain economic value from its disclosure or use, and
- (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(B) In order to establish entitlement to confidentiality, the applicant must submit a sworn affidavit to the Department that is subject to public scrutiny which describes in a manner that does not reveal trade secrets, the processes or market conditions that supports the applicant’s confidentiality claim in the terms of Reg. 19.413(A)(1) and (2). This affidavit must also recite the following:

“The applicant agrees to act as an indispensable party and to exercise extraordinary diligence in any legal action arising from the Department’s denial of public access to the documents or information claimed herein to be a trade secret.”

If an applicant anticipates numerous permit modifications that may involve regulatory review of trade secrets, it may submit an omnibus affidavit establishing the prerequisites of Reg. 19.413(A)(1) and (2) and reference this document in future confidentiality claims.

(C) Confidentiality claims shall be afforded interim protected status until the Department determines whether the requirements of Reg. 19.413(B) are satisfied. The Department

shall make such determination prior to the issuance of any permit or publication of any draft permit. In the event the Department does not make such determination prior to permit issuance, the information shall be deemed confidential until a request is made. If a third party request to review information claimed as confidential is received before the Department provides its written determination concerning the claim, the Department shall not release such information before notifying the applicant of the request. The Department shall notify the applicant of the request and the Department's determination on the confidentiality claim at least two business days before releasing the information, at which time the applicant may choose to supplement its affidavit supporting confidentiality or seek legal recourse.

- (D) For any permit application submitted subject to a claim of trade secret, the applicant shall provide two copies of the application; one prominently marked as confidential and another that is subject to public review with confidential information excised. The Department will not accept applications that are deemed totally confidential except under extraordinary circumstances guaranteeing future disclosure at a meaningful time for public review.

Reg. 19.414 Operational Flexibility-Applicant's Duty to Apply for Alternative Scenarios

Any operating scenario allowed for in a permit may be implemented by the facility without the need for any permit revision or any notification to the Department. It is incumbent upon the permit applicant to apply for any reasonably anticipated alternative facility operating scenarios at the time of permit application. The Department shall include approved alternative operating scenarios in the permit.

Reg. 19.415 Changes Resulting in No Emissions Increases

A permitted source may make changes within the facility that contravene permit terms without a permit revision if the changes:

- (A) Are not modifications under any provision of Title I of the Act;
- (B) Do not exceed emissions allowable under the permit (whether expressed therein as a rate of emissions or in the terms of total emissions);

- (C) Do not violate applicable requirements; and
- (D) Do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

provided that the facility provides the Department with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days, or such shorter time frame that the Department allows for emergencies. The source and the Department shall attach each such notice to their copy of the relevant permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

Reg. 19.416 Permit Flexibility

- (A) The Department may grant an extension to any testing, compliance or other dates in the permit. No extensions shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
 - (1) The permittee of the facility makes such a request in writing at least 15 days in advance of the deadline specified in the facility's permit;
 - (2) The extension does not violate a federal requirement;
 - (3) The permittee of the facility demonstrates the need for the extension; and
 - (4) The permittee of the facility documents that all reasonable measures have been taken to meet the current deadline and documents reasons the current deadline cannot be met.
- (B) The Department may grant a request to allow temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:

- (1) The permittee of the facility makes such a request in writing at least 30 days in advance of the date that temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit;
 - (2) Such a request does not violate a federal requirement;
 - (3) Such a request is temporary in nature;
 - (4) Such a request will not result in a condition of air pollution;
 - (5) The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date and time such emission will occur;
 - (6) Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - (7) The permittee of the facility maintains records of the dates and results of such temporary emissions and/or testing.
- (C) The Department may grant a request to allow an alternative to the monitoring specified in a facility's operating permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
- (1) The permittee operator of the facility makes such a request in writing at least 30 days in advance of the first date that the monitoring alternative will be used at the facility;
 - (2) Such a request does not violate a federal requirement;
 - (3) The monitoring alternative provides an equivalent or greater degree of actual monitoring to the requirements in the facility's operating permit; and

- (4) Any such request, if approved by the Department, is incorporated into the next permit modification application by the permittee of the facility.

Reg. 19.417 Registration

- (A) Sources currently holding permits issued pursuant to Regulation 19 but whose emissions are below the permitting thresholds of 19.401, and above the registration thresholds of Reg. 18.315 may elect to continue to operate under their existing Regulation 19 permit or they may submit a registration under Reg. 18.315 and request their Regulation 19 permit to be terminated. The Regulation 19 permit shall remain in effect until terminated. If a source takes no action, the Regulation 19 permit shall remain in effect.
- (B) A source otherwise subject to registration under Reg. 18.315 may elect to instead operate under a permit issued in accordance with Reg. 19.402.

CHAPTER 5: GENERAL EMISSIONS LIMITATIONS APPLICABLE TO EQUIPMENT

Reg. 19.501 Purpose

The purpose of this chapter is to define the general federally regulated air pollutant emissions limitations applicable to all equipment subject to the Plan. Stricter specific limitations may be required in applicable permits if such limitations are necessary to comply with federal law or regulations which are in effect as of the effective date of this regulation.

Reg. 19.502 General Regulations

No person shall cause or permit the construction or modification of equipment which would cause or allow the following standards or limitations to be exceeded:

- (A) Any National Ambient Air Quality Standard as defined herein;
- (B) Any ambient air increment pursuant to Chapter 9 of this Regulation;
- (C) Any applicable emission limitation promulgated by the ~~EPA United States Environmental Protection Agency~~; or
- (D) Any applicable emission limitation promulgated by the Department in this regulation.

Reg. 19.503 Visible Emission Regulations

- (A) No person shall cause or permit visible emissions (other than uncombined water vapor) from equipment identified ~~herein~~hereunder and which was installed and in operation, or for which a permit had been issued by the Department prior to January 30, 1972, to exceed the following limitations:
 - (1) Emissions shall not exceed 40% opacity, except that emissions greater than 40% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.

- (B) No person shall cause or permit visible emissions (other than uncombined water vapor) from new equipment identified ~~hereinunder~~hereunder which was installed or permitted by the Department after January 30, 1972, to exceed the following limitations or to exceed any applicable visible emission limitations of the New Source Performance Standards promulgated by the EPA:
- (1) For incinerators and fuel burning equipment, exclusively, emissions shall not exceed 20% opacity except that emissions greater than 20% opacity but not exceeding 60% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.
 - (2) For equipment used in a manufacturing process, emissions shall not exceed 20%.
- (C) Opacity of visible emissions shall be determined using EPA Method 9 (40 ~~CFRC.F.R.~~CFR.C.F.R. Part 60, Appendix A).

Reg. 19.504 Stack Height/Dispersion Regulations

The stack height provisions of 40 ~~CFRC.F.R.~~CFR.C.F.R. § 51.118 are incorporated by reference. The definition of “stack,” “a stack in existence,” “dispersion technique,” “good engineering practice,” “nearby,” and “excessive concentration” are defined in 40 ~~CFRC.F.R.~~CFR.C.F.R. §§ 51.100 (ff) through (kk) are incorporated into this chapter by reference as of September 12, 1986.

Reg. 19.505 Revised Emissions Limitation

The emissions limitations contained within the Plan and applicable permits are for the purpose of assuring the attainment and maintenance of the NAAQS and have been established within the framework of information presently available to the Department. As additional and more precise information becomes available, the emission limitations and reporting procedures of this chapter may be amended as described below:

- (A) More restrictive limitations to protect the NAAQS. In accordance with the provisions of the federal Clean Air Act, as amended, and the federal regulations promulgated pursuant to the Clean Air Act, as amended, the emission limitations and reporting procedures of this chapter or any applicable permits may be further amended and made more restrictive

where the Director finds more restrictive measures are necessary to assure maintenance of the NAAQS.

- (B) Less restrictive limitations. Any person subject to the emission limitations contained in this Plan or in a permit may petition the Director for a less stringent limitation on the grounds that the existing limitation cannot be met when considering physical, economical, or technological constraints. In no case shall the Director approve a less stringent limitation if it would cause a violation of the NAAQS. The Director shall not approve a less stringent limitation if it violates a federal emission standard or regulation, unless approved according to applicable federal regulations.

The Director shall take into account the following factors when making such determinations:

- (1) The process, fuels, and raw materials available and to be employed in the facility involved;
 - (2) The engineering aspects of the application of various types of control techniques which have been adequately demonstrated;
 - (3) Process and fuel changes;
 - (4) The respective costs of the application of all such control techniques, process changes, alternative fuels, etc.; and
 - (5) Locational and siting considerations.
- (C) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (D) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

CHAPTER 6: UPSET AND EMERGENCY CONDITIONS

Reg. 19.601 Upset Conditions

For purposes of this paragraph, “upset condition” shall be defined as exceedences of applicable emission limitations lasting 30 or more minutes, in the aggregate, during a 24-hour period, unless otherwise specified in an applicable permit or regulation (such as New Source Performance Standards [NSPS] regulations). All upset conditions, resulting in violation of an applicable permit or regulation, shall be reported to the Department. Any source exceeding an emission limit established by the Plan or applicable permit shall be deemed in violation of said Plan or permit and shall be subject to enforcement action. The Department may forego enforcement action for federally regulated air pollutant emissions given that the person responsible for the source of the excess emissions does the following:

- (A) Demonstrates to the satisfaction of the Department that the emissions resulted from:
 - (1) equipment malfunction or upset and are not the result of negligence or improper maintenance; or
 - (2) physical constraints on the ability of a source to comply with the emission standard, limitation or rate during startup or shutdown;

And that all reasonable measures have been taken to immediately minimize or eliminate the excess emissions.

- (B) Reports such occurrence or upset or breakdown of equipment to the Department by the end of the next business day after the discovery of the occurrence.
- (C) Submits to the Department, at its request, a full report of such occurrence, including the identification of and location of the process and control equipment involved in the upset and including a statement of all known causes and the scheduling and nature of the actions to be taken to eliminate future occurrences or to minimize the amount by which said limits are exceeded and to reduce the length of time for which said limits are exceeded.

Reg. 19.602 Emergency Conditions

An “emergency” means any situation arising from the sudden and reasonably unforeseeable events beyond the control of the source, including natural disasters, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the upset condition. An emergency shall not include non-compliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

- (A) An emergency constitutes a complete affirmative defense to an action brought for non-compliance with such technology-based limitations if the following conditions are met. The affirmative defense of emergency shall demonstrate through properly signed contemporaneous operating logs, or such other relevant evidence that:
- (1) An emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
 - (4) The permittee submitted notice of the upset to the Department by the end of the next business day after the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- (B) [RESERVED]

CHAPTER 7: SAMPLING, MONITORING, AND REPORTING REQUIREMENTS

Reg. 19.701 Purpose

The purpose of this chapter is to generally define the powers of the Department in requiring sampling, monitoring, and reporting requirements at stationary sources. The Department shall enforce all properly incorporated and delegated federal testing requirements at a minimum. Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations.

Reg. 19.702 Air Emissions Sampling

Any stationary source subject to this regulation shall be subject to the following requirements:

(A) Sampling Ports

To provide any sampling ports, at the request of the Department, required for federally regulated air pollutant emissions sampling, including safe and easy access to such ports.

(B) Sampling

To conduct federally regulated air pollutant emissions sampling, at the request of the Department, to determine the rate, opacity, composition, and/or contaminant concentration of the emissions. All compliance testing shall be done at the expense of the permittee by an independent firm, unless otherwise approved by the Department. Sampling shall not be required for those pollutants with continuous emissions monitors.

(C) Averaging Times

All compliance testing averaging times shall be consistent with the averaging times of the applicable federally regulated air pollutant emissions limitations stated in the applicable permit, which in no case shall be greater than the minimum averaging times of the applicable NAAQS.

(D) Process Rates

Unless otherwise approved by the Department, all federally regulated air pollutant emissions sampling shall be performed with the equipment being tested operating at least at 90% of its permitted capacity. Emissions results shall be extrapolated to correlate with 100% of permitted capacity to determine compliance.

(E) Testing Time Frames

Any equipment that is to be tested, at the request of the Department, shall be tested in accordance with the following time frames:

- (1) Equipment to be constructed or modified shall be tested within 60 days after achieving its maximum permitted production rate, but no later than 180 days after its initial start-up;
- (2) Equipment already operating shall be tested according to the time frames set forth by the Department.

(F) Testing Methods and Records

The Department shall require that all applicable testing be performed using the methods described in 40 C.F.R. Part 51, Appendix M, as of the effective date of the federal final rule published by EPA in the Federal Register on April 2, 2014 (79 FR 18452); 40 ~~CFRC~~C.F.R. Part 60, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257); as of August 30, 1992 40 C.F.R. Part 61, Appendix B, as of the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2000 (65 FR 62161); and 40 C.F.R. Part 63, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on December 29, 1992 (57 FR 62002). The Department, with the concurrence of the EPA, may approve, at its discretion, alternate sampling methods that are equivalent to the specified methods. The results of such tests shall be submitted to the Department within the time frames and on such forms as required by the Department and federal regulations. The owner or operator of the equipment shall retain the results of such tests for at least five (5) years, and shall make the results available to any agents of the Department or the EPA during regular business hours.

Reg. 19.703 Continuous Emissions Monitoring

Any stationary source subject to this regulation shall, as required by federal law and upon request of the Department:

- (A) Install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with applicable performance specifications in 40 CFR.F.R. Part 60 Appendix B as of August 30, 1992 the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11271), and quality assurance procedures in 40 CFR.F.R. Part 60 Appendix F as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11274)~~August 30, 1992~~, and other methods and conditions that the Department, with the concurrence of the EPA, shall prescribe. Any source listed in a category in 40 CFR.F.R. Part 51 Appendix P as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675)~~August 30, 1992~~, or in 40 CFR.F.R. Part 60 as of August 30, 1992, shall adhere to all continuous emissions monitoring or alternative continuous emission monitoring requirements stated therein, if applicable.
- (B) Report the data collected by the monitoring equipment to the Department at such intervals and on such forms as the Department shall prescribe, in accordance with 40 CFR.F.R. Part 51, Appendix P, Section 4.0 (Minimum Data Requirements) as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675)~~August 30, 1992~~, and any other applicable reporting requirements promulgated by the EPA.

Reg. 19.704 Notice of Completion

For equipment for which a new permit or major permit modification is required, the Department shall be notified in writing within 30 days of the following events;

- (A) The date of commencement of construction or modification; and
- (B) The date of commencement of operation of the equipment.

Reg. 19.705 Record Keeping and Reporting Requirements

Any stationary source subject to this regulation shall, upon request by the Department:

- (A) Maintain records on the nature and amounts of federally regulated air pollutants emitted to the air by the equipment in question. All records, including compliance status reports and excess emissions measurements shall be retained for at least five (5) years, and shall be made available to any agent of the Department or EPA during regular business hours.
- (B) Supply the following information, correlated in units of the applicable emissions limitations, to the Department:
 - (1) General process information related to the emissions of federally regulated air pollutants into the air.
 - (2) Emissions data obtained through sampling or continuous emissions monitoring.
- (C) Information and data shall be submitted to the Department by a responsible official on such forms and at such time intervals as prescribed by applicable federal regulations or the Department. Reporting periods shall be a 12 month period.
- (D) Each emission inventory is to be accompanied by a certifying statement, signed by the owner(s) or operator(s) and attesting that the information contained in the inventory is true and accurate to the best knowledge of the certifying official. The certification shall include the full name, title, signature, date of signature, and telephone number of the certifying official.

Reg. 19.706 Public Availability of Emissions Data

Emissions data obtained by the Department shall be correlated in units of applicable emissions limitations and be made available to the public at the Department's central offices during normal business hours.

CHAPTER 9: PREVENTION OF SIGNIFICANT DETERIORATION

Reg. 19.901 Title

The following rules and regulations of the Arkansas Pollution Control and Ecology Commission, adopted in accordance with the provisions of Part II of the Arkansas Water and Air Pollution Control Act at [A.C.A. Ark. Code Ann. §§ 8-4-101 et seq.](#), shall be known as the Prevention of Significant Deterioration Regulations of the Arkansas Plan of Implementation for Air Pollution Control, hereinafter referred to, respectively, as the “PSD Regulations.”

Reg. 19.902 Purposes

Promulgation and enforcement of these PSD Regulations is intended to further the purposes of the Plan and the Regulations of the Plan, including, but not limited to, acceptance of delegation by the EPA of authority for enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Class I federal areas.

Reg. 19.903 Definitions

- (A) “Advance notification” (of a permit application) means any written communication which establishes the applicant's intention to construct, and which provides the Department with sufficient information to determine that the proposed source may constitute a major new source or major modification, and that such source may affect any mandatory Class I federal area, including, but not limited to, submittal of a draft or partial permit application, a PSD monitoring plan, or a sufficiently detailed letter. “Advance notification” does not include general inquiries about the Department’s regulations.
- (B) “Regulated NSR Pollutant,” for purposes of this chapter, means the following:
 - (1) Any pollutant for which a national ambient air quality standard has been adopted under Chapter 2 of this Regulation and any pollutant identified under this paragraph (B)(1) as a constituent or precursor for such pollutant. Precursors identified by the Department for purposes of NSR are the following:

- (a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.
 - (b) Sulfur dioxide is a precursor to PM_{2.5} in all attainment and unclassifiable areas.
 - (c) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all attainment and unclassifiable areas, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM_{2.5} concentrations.
 - (d) Volatile organic compounds are presumed not to be precursors to PM_{2.5} in any attainment or unclassifiable area, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations.
- (2) Any pollutant that is subject to any standard promulgated under Section 111 of the Act as of July 27, 2012;
 - (3) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act;
 - (4) Any pollutant that otherwise is subject to regulation under the Act;
 - (5) Notwithstanding paragraphs (B)(1) through (4) of this section, the term *regulated NSR pollutant* shall not include any or all hazardous air pollutants either listed in Section 112 of the Act, or added to the list pursuant to Section 112(b)(2) of the Act, and which have not been delisted pursuant to Section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under Section 108 of the Act as of July 27, 2012; and
 - (6) PM_{2.5} emissions and PM₁₀ emissions shall include gaseous emissions from a

source or activity, which condense to form particulate matter at ambient temperatures. As of the effective date of the federal final rule published by EPA in the Federal Register on Thursday, October 25, 2012 (77 FR 65107)~~the rulemaking action initiated by the Commission on September 28, 2012~~, such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM_{2.5}, and PM₁₀ in PSD permits. Compliance with emissions limitations for PM_{2.5}, and PM₁₀ issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this chapter.

- (C) For the purpose of this chapter, “subject to regulation” means, for any air pollutant, that the pollutant is subject to either a provision of the federal Clean Air Act, or a nationally-applicable regulation codified by the Administrator pursuant to 40 ~~CFRC.F.R.~~, Chapter 1, Subchapter C and adopted herein, that requires actual control of the quantity of emissions of that pollutant and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity.
- (D) All other terms used herein shall have the same meaning as set forth in Chapter 2 of Regulation 19 or in 40 ~~CFRC.F.R.~~ § 52.21(b) [PSD] and 40 ~~CFRC.F.R.~~ § 51.301 [Protection of Visibility] as of October 20, 2010, and adopted in Reg. 19.904, unless manifestly inconsistent with the context in which they are used. Wherever there is a difference between the definitions in Chapter 2 of Regulation 19 and those listed in 40 ~~CFRC.F.R.~~ § 52.21(b) and ~~CFRC.F.R.~~ § 51.301, the federal definitions as listed in 40 ~~CFRC.F.R.~~ § 52.21(b), as adopted in Reg. 19.904 and Reg. 19.903(A), (B) and (C), and 40 ~~CFRC.F.R.~~ § 51.301 as of October 20, 2010, shall apply.
- (E) The definition for “routine maintenance, repair and replacement” in 40 ~~CFRC.F.R.~~ § 52.21(b)(2)(iii)(a) is not incorporated.

Reg. 19.904 Adoption of Regulations

(A) Except where manifestly inconsistent with the provisions of the Clean Air Act, as amended, or with federal regulations adopted pursuant thereto, and as amended specifically herein by paragraphs (B), (C), (D), (E), (F), and (G) of Reg. 19.904, the Arkansas Department of Environmental Quality shall have those responsibilities and that authority, with reference to the State of Arkansas, granted to the Administrator of the EPA under 40 ~~C.F.R.~~ § 52.21 (a)(2) through (bb), as in effect on November 29, 2005, which are hereby incorporated herein by reference with the exception of:

- (1) 40 C.F.R. § 52.21(aa), which is incorporated by reference as in effect on August 13, 2012, except for instances in the sections of 40 C.F.R. § 52.21(aa) where 40 C.F.R. § 52.21(b)(49) is referenced. In those instances, paragraph (G) of Reg. 19.904 shall apply;
- (2) 40 C.F.R. § 52.21(r)(6), which is incorporated by reference as of the effective date of the federal final rule published by EPA in the Federal Register on December 21, 2007 (72 FR 72607);
- ~~(2)(3)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(23),– 52.21(i)(5)(ii), and 52.21(i)(5)(iii), which are incorporated by reference as of May 16, 2008;
- ~~(3)(4)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(14)(i) [Major Source Baseline Date], 52.21(b)(14)(ii) [Minor Source Baseline Date], 52.21(b)(14)(iii), 52.21(b)(15) [Baseline Area], 52.21(c) [Ambient Air Increments], 52.21(k)(1) [Source Impact Analysis Requirements], and 52.21(p) [Requirements for Sources Impacting Federal Class I areas], which are incorporated herein by reference as of October 20, 2010;
- ~~(4)(5)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i)(9), and 52.21(cc), which are not incorporated herein.

In the absence of a specific imposition of responsibility or grant of authority, the Department shall be deemed to have that responsibility and authority necessary to attain the purposes of the Plan, these PSD Regulations, and the applicable federal regulations, as incorporated herein by reference.

- (B) Exclusions from the consumption of increments, as provided in 40 ~~CFRC.F.R.~~ § 51.166(f)(1)(iii) as of November 29, 2005, shall be effective immediately. Submission of this Plan under the Governor's signature constitutes a request by the Governor for this exclusion.
- (C) In addition to the requirements of 40 ~~CFRC.F.R.~~ § 52.21(o) as of November 29, 2005, the following requirements [designated as Reg. 19.904(C)(1),(2),(3) and (4)] shall also apply:
- (1) Where air quality impact analyses required under this part indicate that the issuance of a permit for any major stationary source or for any major modification would result in the consumption of more than fifty percent (50%) of any available annual increment or eighty percent (80%) of any short term increment, the person applying for such a permit shall submit to the Department an assessment of the following factors:
 - (a) Effects that the proposed consumption would have upon the industrial and economic development within the area of the proposed source; and
 - (b) Alternatives to such consumption, including alternative siting of the proposed source or portions thereof.
 - (2) The assessment required under subparagraph (41) above shall be made part of the application for permit and shall be made available for public inspection as provided in 40 ~~CFRC.F.R.~~ § 52.21(q) as of November 29, 2005.
 - (3) The assessment required under subparagraph (41) above shall be in detail commensurate with the degree of proposed increment consumption, both in terms of the percentage of increment consumed and the area affected.
 - (4) The assessment required under subparagraph (41) above may be made effective where a proposed source would cause an increment consumption less than that specified in said subparagraph if the Director finds that unusual circumstances exist in the area of the proposed source which warrant such an assessment. The Director shall notify the applicant in writing of those circumstances which warrant said assessment. The Commission may rescind or modify the Director's

action, upon a showing by the applicant that the circumstances alleged by the Director either do not exist or do not warrant the aforementioned assessment.

- (D) In addition to the requirements of 40 ~~CFRC.F.R.~~ § 52.21(p)(1) as of October 20, 2010, the following requirements shall also apply:

Impacts on mandatory Class I federal areas include impacts on visibility. The preliminary determination that a source may affect air quality or visibility in a mandatory Class I federal area shall be made by the Department, based on screening criteria agreed upon by the Department and the Federal Land Manager.

- (E) In all instances wherein the aforesaid 40 ~~CFRC.F.R.~~ § 51.301 and 40 ~~CFRC.F.R.~~ § 52.21 refer to the Administrator or the Environmental Protection Agency, the reference, for the purposes of paragraph (A) of Reg. 19.904, shall be deemed to mean the Arkansas Department of Environmental Quality, unless the context plainly dictates otherwise, except in the following sections:

- (1) Exclusion from increment consumption: 40 ~~CFRC.F.R.~~ §§ 52.21(f)(1)(v), (f)(3), and (f)(4)(I);
- (2) Redesignation: 40 ~~CFRC.F.R.~~ §§ 52.21(g)(1), (g)(2), (g)(4), (g)(5), and (g)(6);
- (3) Air quality models: 40 ~~CFRC.F.R.~~ § 52.21(l)(2).

- (F) Redesignation of air quality areas in Arkansas shall comply with Ark~~ansas~~ Code Ann.~~otated 1987 Section~~ § 8-3-101 *et seq.*

- (G) For the purpose of the regulation of GHGs, only the standards and requirements promulgated by EPA as of June 3, 2010, related to the permitting of GHG emissions shall apply to the requirements of 40 ~~CFRC.F.R.~~ § 52.21, as of November 29, 2005, incorporated by reference at Reg.19.904(A). The following definitions and requirements shall also apply:

- (1) “Greenhouse gases” (GHGs) means the air pollutant defined as the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be

subject to regulation except as provided in Reg. 19.904(G)(4) through Reg.19.904(G)(5), and shall not be subject to regulation if the stationary source:

- (a) Maintains its total source-wide emissions below the GHG plantwide applicability limitations (hereinafter “PAL”) level;
 - (b) Meets the requirements in 40 § C.F.R 52.21(aa)(1) through 40 C.F.R. § 52.21(aa)(15) as outlined in Reg. 19.904(A)(1); and
 - (c) Complies with the PAL permit containing the GHG PAL.
- (2) For purposes of Reg. 19.904(G)(3) through Reg.19.904(G)(5):
- (a) The term tons per year (tpy) “CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed as follows:
 - (i) Multiplying the mass amount of emissions in tpy, for each of the six greenhouse gases in the pollutant GHGs, by each gas’s associated global warming potential published at Table A - 1 to ~~s~~Subpart A of 40 ~~CFRC~~.F.R. ~~p~~Part 98 - Global Warming Potentials (as of the effective date of the federal final rule published by EPA in the Federal Register on November 29, 2013 [78 FR 71948]~~October 30, 2009~~); and
 - (ii) Sum the resultant values from Reg. 19.904(G)(2)(a) for each gas to compute a tpy CO₂e.
 - ~~(b) For purposes of this definition, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).~~

- (3) The term “emissions increase” as used in Reg. 19.904(G)(4) through Reg. 19.904(G)(5) shall mean that both a significant emissions increase (as calculated using the procedures in 40 ~~CFRC.F.R.~~ § 52.21(a)(2)(iv), as of November 29, 2005), and a significant net emissions increase (as defined in 40 ~~CFRC.F.R.~~ § 52.21(b)(3), as of November 29, 2005, and 40 ~~CFRC.F.R.~~ § 52.21(b)(23), as of November 29, 2005), occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO₂e, and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and “significant” is defined as 75,000 tpy CO₂e instead of applying the value in 40 ~~CFRC.F.R.~~ § 52.21(b)(23)(ii), as of November 29, 2005.
- (4) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:
- (a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit GHGs at 75,000 tpy CO₂e or more; or
 - (b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of GHGs of 75,000 tpy CO₂e or more.
- (5) Beginning July 1, 2011, in addition to the provisions in Reg.19.904(G)(4) of this section, the pollutant GHGs shall also be subject to regulation:
- (a) At a new stationary source that will emit or have the potential to emit 100,000 tpy CO₂e or more; or
 - (b) At an existing stationary source that emits or has the potential to emit 100,000 tpy CO₂e or more, when such stationary source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more.

CHAPTER 10: REGULATIONS FOR THE CONTROL OF VOLATILE ORGANIC COMPOUNDS IN PULASKI COUNTY

Reg. 19.1001 Title

This chapter, adopted in accordance with the provisions of the Arkansas Water and Air Pollution Control Act [Arkansas Code Annotated Sections 8-4-101 *et seq.*, as amended] and pursuant to the provisions of the federal Clean Air Act, shall be known as the Regulations for the Control of Volatile Organic Compounds.

Reg. 19.1002 Purpose

The Regulations for the Control of Volatile Organic Compounds are designed to provide for the attainment and maintenance of the National Ambient Air Quality Standards for ozone in those areas of Arkansas which have been designated as nonattainment areas by the EPA pursuant to the federal Clean Air Act and are further designed to bring the Arkansas Plan of Implementation for Air Pollution Control into compliance with the provisions of said Act.

Reg. 19.1003 Definitions

When used in these Regulations for the Control of Volatile Organic Compounds, the following definitions apply. Terms and phrases used in this chapter which are not explicitly defined herein shall have the same meaning as those terms used in Chapter 2 of Regulation 19 or, if not defined in Chapter 2 of Regulation 19, as those terms defined in the federal Clean Air Act.

Unless manifestly inconsistent therewith, terms and phrases used herein shall have the same meaning as used in the Arkansas Water and Air Pollution Control Act and the federal Clean Air Act.

"Clear coat" means a coating which lacks color and opacity.

"Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating.

"Control Technique Guideline" means any of the guideline series documents describing an emission control technology for a specific source or category of sources; which documents being published by the EPA.

"Cutback asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluent). Upon exposure to atmospheric conditions, the diluents evaporate, leaving the asphalt cement to perform its function.

"Crude oil" means a naturally occurring mixture consisting of hydrocarbons and/or sulfur, nitrogen, and/or oxygen derivatives of hydrocarbons and which is a liquid in the reservoir and at standard conditions.

"Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

"Delivery vessel" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary tanks of gasoline dispensing facilities.

"Existing source" means any source of volatile organic compounds other than a new source.

"External floating roof" means a storage vessel cover in an open tank top consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

"Extreme performance coating" means coatings designed for harsh exposure or extreme environmental conditions.

"Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kilopascals (kPa) (4 pounds per square inch [psi]) or greater that is used as fuel for internal combustion engines.

"Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

"Gasoline tank truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks or to gasoline bulk facilities.

"Liquid-mounted" means a primary seal mounted so the bottom of the seal covers the liquid surface between the tank shell and the floating roof.

"Low solvent coating" means coatings which contain less organic solvent than the conventional coatings used by the industry. Low solvent coatings include water borne, high solids, electrodeposition and powder coatings.

"Lowest Achievable Emission Rate" (LAER) means for any source, that rate of emissions which reflects the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable New Source Standards of Performance.

"Major source" means any stationary source which has the potential to emit 100 tons or more per year of volatile organic compounds.

"Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any volatile organic compound emitted by such source or which results in the emission of any other volatile organic compound not previously emitted.

"New source" means any stationary source of volatile organic compounds, the construction or modification of which is commenced after July 1, 1979.

"New Source Standard of Performance" (NSPS) means those standards which are adopted by the EPA pursuant to the provisions of Section 111 of the federal Clean Air Act [NSPS, 40 CFR Part 60].

"Operator" means any person who leases, operates, controls, or supervises any source, facility or equipment affected by these regulations.

"Owner" means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

"Person" means any individual or other legal entity or their legal representative or assignee.

"Prime coat" means the first of two or more films of coating applied to a metal surface.

"Reasonably Available Control Technology" (RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical source categories.

"Single coat" means one film coating applied to a metal surface.

"Top coat" means the final film or series of films or coatings applied in a two coat (or more) operation.

"True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute (API) Bulletin 2517, Evaporation Loss from External Floating Roof Tanks, 1980. The API procedure may not be applicable to some high viscosity or high pour crudes. Available estimates of true vapor pressure may be used in special cases such as these.

"Vapor collection system" means a vapor transport system which used direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

"Vapor control system" means a system that prevents release to the atmosphere of gasoline vapors in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per liter).

"Vapor-mounted" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof.

Reg. 19.1004 General Provisions

(A) Applicability and Effective Dates

- (1) Sources which are subject to provisions of the Regulations for the Control of Volatile Organic Compounds include:
 - (a) Any source for which controls are governed by Reg. 19.1005 hereof;
 - (b) Any source which is subject to the terms of a Commission order issued pursuant to Reg. 19.1004(D)(1) hereof, and
 - (c) Any new major source.
- (2) The provisions of Chapter 10, the Regulations for the Control of Volatile Organic Compounds, shall be limited to sources located in Pulaski County, except as provided in Reg. 19.1004(D)(1) and shall go into full force and effect on the effective date provided, however, that the provisions of Reg. 19.1004(D)(1) shall go into full force and effect on April 1, 1979. The effective date for Reg. 19.1005(A)(B) and (C) is July 1, 1979, and for Reg. 19.1005(D) and (E) is October 1, 1980. The effective date for Reg. 19.1005(F) is April 1, 1981.

(B) Exemptions and Variances

- (1) [RESERVED]
- (2) The requirements of Reg. 19.1005 are based upon information presented in the Control Technique Guidelines as published by the EPA and are intended to be consistent with Reasonably Available Control Technology. The owner or operator of equipment affected by the provisions of Reg. 19.1005 may be granted a variance from the specific provisions of such section provided that such owner or operator can demonstrate to the reasonable satisfaction of the Commission that full and strict compliance is technologically or economically infeasible or that alternative techniques to be employed by such owner or operator will result in substantially the same environmental benefits as would be achieved with full and strict compliance with the provisions of Reg. 19.1005. In no event, however, shall the Commission issue variances from the requirements of Reg. 19.1005 if

such variances will prevent reasonable further progress for the attainment and maintenance of the National Ambient Air Quality Standards for ozone.

(C) Toxic Compounds

The Regulations for the Control of Volatile Organic Compounds are not intended as appropriate controls for sources which emit volatile organic compounds which are hazardous air pollutants.

(D) Determination of Reasonably Available Control Technology

- (1) Where the Department proposes the existence of Reasonably Available Control Technology for existing sources, other than the sources for which the provisions of Reg. 19.1005 are applicable, the Department shall give public notice of such determination and shall, in such notice, describe the nature of such technology and shall list by size, type, source, category or by individual source name, the affected sources. The public notice shall also give notice of public hearing concerning the subject proposals. If, after review of the information produced through the public hearing process, the Department determines that such technology does exist and that the application of such technology is necessary to maintain reasonable further progress toward the attainment and maintenance of the National Ambient Air Quality Standards for ozone, the Department shall issue an order requiring the installation of such technology.
- (2) Any order issued pursuant to Reg. 19.1004(D)(1) above may require the owner or operator of sources affected by such order to file such schedules and reports as the Department feels necessary to assure that the subject technology is placed into operation as expeditiously as practicable. The terms of such orders may be modified where the Department finds that such modifications are necessary to avoid economic hardship and where such modification would not interfere with reasonable further progress toward the attainment of the previously cited standards.

(E) Permits and Compliance Schedules

- (1) Existing Sources:

- (a) No person shall cause or permit the operation or use of an existing source to which any provision of Reg. 19.1005 applies unless the owner or operator of such source shall have submitted to the Department, prior to the applicable date below, a compliance schedule indicating what steps have been, or will be taken to bring the operation of such source into compliance with the provisions of Reg. 19.1005. The compliance schedule shall be of such form and contain such information as the Department may reasonably require. The applicable date for Reg. 19.1005(A)(B) and (C) is October 1, 1979. The applicable date for Reg. 19.1005(D) and (E) is January 1, 1981. The applicable date for Reg. 19.1005(F) is May 15, 1981.
- (b) No person shall cause the operation or use of an existing source which is affected by any provision of Reg. 19.1005 after the approval date if a compliance schedule of such source under Subsection (a) above has been disapproved by the Department. No compliance schedule for any source shall be approved by the Department unless the Department finds that the controls proposed by the owner or operator will be installed, placed in operation, and that the source will be in compliance with the provisions of Reg. 19.1005 prior to the final compliance date. Extensions beyond the final compliance date may be granted by the Department provided the Department finds that such extensions are necessary to avoid economic hardship and that such extensions will not prevent reasonable further progress toward the attainment of the National Ambient Air Quality Standards for ozone. The approval date for Reg. 19.1005(A)(B) and (C) is February 1, 1981 and for Reg. 19.1005(D)(E) and (F) is February 1, 1982. The final compliance date for Reg. 19.1005(A)(B) and (C) is June 1, 1981, for Reg. 19.1005(D) is March 1, 1982, and for Reg. 19.1005(E) and (F) is July 1, 1982.
- (c) No person shall cause or permit the operation of an existing source in a manner which violates the terms of a compliance schedule which has been approved or amended by the Department or which violates the terms of a Department order issued pursuant to the provisions of Reg. 19.1004(D)(1).

(2) New Sources:

Except as provided herein, no person shall commence the construction, installation, or modification of a new source after July 1, 1979, unless that person has first received a permit from the Department. Application for permit shall be of such form and contain such information as the Department may reasonably require.

(a) New Major Sources: No permit shall be issued for the construction, installation or modification of a new major source after July 1, 1979, unless the Department determines the following conditions to have been met:

- (i) The emissions resulting from the proposed source when considered together with all other existing and proposed emissions of volatile organic compounds in Pulaski County will not cause or contribute to emission levels which exceed the allowance permitted for volatile organic compounds under the Arkansas Plan of Implementation for Air Pollution Control, as revised to comply with the provisions of the Clean Air Act.
- (ii) The emissions resulting from the proposed new major source will comply with the requirements of the FCAA which are in effect as of the effective date of this regulation.
- (iii) The owner or operator of the proposed new or modified major source has demonstrated that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in Arkansas are in compliance, or on a schedule of compliance with all applicable emission limitations and standards under the federal Clean Air Act, including the Arkansas Plan of Implementation for Air Pollution Control.
- (iv) A permit may be issued to a new major source which would otherwise cause or contribute to emission levels which exceed the

allowable levels for Pulaski County, as described in the State Implementation Plan for Air Pollution Control, as amended, if the owner or operator of that source first submits legally binding agreements to the Department which reflect emission reductions from other sources in Pulaski County, or from sources within seventy-two (72) miles of the North Little Rock Municipal Airport, which would more than offset the emissions from such proposed new major source. Emission reductions claimed by such owner or operator may not include those emission reductions in Pulaski County which are necessary to reduce the total volatile organic compound emission to the allowable level in Pulaski County.

(b) Other New Sources:

- (i) No permit shall be issued for a new source of the size, type, class, or category for which the provisions of Reg. 19.1005 apply unless the Department finds that such new source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by the source and that, as a minimum, the source will be designed, constructed and operated such that the emissions therefrom, will not exceed the allowable emission rate provided by such section for existing sources.
- (ii) No permit shall be issued for a new source of the size, type, class or category for which a Department Order has been issued pursuant to Reg. 19.1004(D)(1), unless the Department finds that such source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by such source and that, as a minimum, the source will be designed, constructed, and operated such that the emissions therefrom will not exceed the rate required of existing sources by such order.

(F) Testing and Reporting Requirements

- (1) Any person owning or operating sources which are affected by the provisions of the Regulations for the Control of Volatile Organic Compounds shall, upon the request of the Director, furnish such information as may be required to demonstrate compliance with said Regulations. For purposes of this chapter, the provisions of Chapter 7 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control shall apply.
- (2) For purposes of administering the provisions of the Regulations for the Control of Volatile Organic Compounds, the Director shall not be limited to the results obtained from emission tests but may, where appropriate, determine the compliance status of any source with respect to the emission limitations contained herein by the results of engineering evaluations, by inspection reports or by such information submitted, and certified, by the source owner or operator. For purposes of this chapter, a source may be deemed to be in compliance with the emission limitations of said Regulations if the equipment of such source is designed and operated in accordance with the provisions of Reg. 19.1005 or, where Reg. 19.1005 is not applicable, is designed and operated in accordance with the provisions of a Department Order or a permit issued hereunder, provided however, where an emission limitation is applicable to a certain source and where emission testing has been conducted in a manner approved by the Department and where such test demonstrate compliance with such limitations, the source shall be deemed to be in compliance with such limitations.
- (3) To test the leak tightness of gasoline tank trucks as required in Reg. 19.1005(D), the following method and procedures should be followed:
 - (a) The owner or operator shall, at his or her own expense demonstrate compliance with Reg. 19.1005(D) by the methods of Part 3 of this subsection or an alternative method approved by the Director.
 - (b) The owner or operator of a tank truck subject to this regulation must notify the Director in writing of the date and location of a certification test at least thirty (30) days before the anticipated test date.

- (c) Test procedures to determine compliance with Reg. 19.1005(D) must be approved by the Director and consistent with the test procedures described in Appendix A or C of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
- (d) Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
- (4) To test for compliance with Reg. 19.1005(E) procedures outlined in EPA guideline series document "Measurement of Volatile Organic Compounds," EPA-450/2-78-041 and Appendix A of "Control of Volatile Organics from Existing Stationary Sources--Volume II--Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles and Light Trucks," EPA 450/2-77-008 shall be used.
- (5) To test for compliance with Reg. 19.1005(F) a visual inspection must be conducted at an interval not to exceed one year. For tanks with vapor mounted primary seals, the secondary seal gap area should be determined by measuring the length and width of the gaps around the entire circumference of the secondary seal. Only gaps greater than or equal to 0.32 centimeter (cm) (1/8 inch) shall be used in computing the gap area. The area of the gaps shall be accumulated to determine the compliance with Reg. 19.1005(F)(1)(b). This data along with records of the throughput and type of volatile petroleum liquids for each vessel should be maintained by the owner or operator.

(G) Circumvention

- (1) No owner or operator subject to these Regulations may build, erect, install, or use any article, machine, equipment, process or method, the use of which conceals an emission which would otherwise constitute a violation of these Regulations.
- (2) The provisions of Reg. 19.1004(G)(1) above include, but are not limited to, the

use of gaseous diluents to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a Regulation that applies only to operations larger than a specified size.

(H) Malfunctions, Breakdowns, Upsets

(1) Emissions in excess of these Regulations which are temporary and result solely from a sudden and unavoidable breakdown, malfunction or upset of process or emission control equipment, or sudden and unavoidable upset of operation will not be considered a violation of these Regulations provided:

- (a) the owner or operator notifies the Department of any such occurrence by the end of the next business day of the occurrence; and
- (b) the owner or operator demonstrates to the Director that the suggested period of time for correction is as expeditious as practicable; and
- (c) the breakdown or upset is determined by the Director to be unavoidable and not the result of negligence; and
- (d) within five (5) days after the beginning of the occurrence, a written report is submitted to the Director which includes the cause and nature of the event, estimated quantity of volatile organic compounds emitted, time of emission and to prevent recurrence; and
- (e) the Director is immediately notified when corrective measures have been accomplished.

(2) [RESERVED]

Reg. 19.1005 Provisions for Specific Processes

(A) Gasoline Storage and Marketing

- (1) No person shall cause or permit the loading of gasoline into a storage tank of a gasoline storage or marketing facility with a monthly throughput in excess of 10,000 gallons except through a submerged fill pipe or by bottom loading. This provision shall not apply to storage tanks of less than 4,000 liter capacity (approximately 1,000 gallons).
- (2) No person shall cause or permit the operation of a gasoline bulk facility of less than 87,000 liters (23,000 gallons) per day throughput unless all gasoline delivery vessels are loaded by submerged fill pipe or bottom filling.
- (3) No person shall cause or permit the operation of a gasoline bulk facility having a daily throughput equal to greater than 87,000 liters (23,000 gallons) per day unless a vapor control system is in place, is properly maintained and is used to prevent gasoline vapors from being emitted into the atmosphere at a rate in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per gallon).

(B) Petroleum Liquid Storage

- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilopascals (1.52 pounds-force per square inch [psia]) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) unless such tanks:
 - (a) meet the equipment specifications and maintenance requirements of the federal Standards of Performance for New Stationary Sources—Storage Vessels for Petroleum Liquids, 40 CFR 60.110, as amended by proposed rule change, *Federal Register*, May 18, 1978, pages 21617 through 21625; or
 - (b) are retrofitted with a floating roof or internal floating cover using a non-metallic resilient seal as a primary seal which meets the equipment specifications in the federal standards referred to in Reg. 19.1005(B)(1)(a), or its equivalent, or

- (c) have a covered floating roof or internal floating cover which is maintained in effective working order and which meets the manufacturer's equipment specifications in effect at the time it was installed.
- (2) All seals necessary to meet the requirements of Reg. 191005(B)(1)(b) and (c) are to be maintained in good operating condition.
- (3) All openings, except stub drains and those related to safety, are to be sealed with suitable closures when not in use.

(C) Cutback Asphalt

No person shall mix, use or apply cutback asphalt for roadway paving except where the cutback asphalt is used solely as a penetrating prime coat or when the maximum ambient temperature on the day of application is less than 15 degrees Celsius ($^{\circ}\text{C}$) (59 degrees Fahrenheit [$^{\circ}\text{F}$]).

(D) Gasoline Tank Trucks and Vapor Collection Systems

- (1) No person shall allow a gasoline tank truck subject to this regulation to be filled or emptied unless the gasoline tank truck:
 - (a) is tested on a schedule acceptable to the Director according to the test procedure referenced in Reg. 19.1004(F)(3);
 - (b) sustains a pressure change of no more than 750 pascals (3 inches of water [in. of H_2O]) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H_2O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H_2O) during the testing required in Reg. 19.1005(D)(1)(a); and
 - (c) is repaired by the owner or operator and retested within 15 days of testing if it does not meet the criteria of Reg. 19.1005(D)(1)(b). subparagraph (1)(b) of this chapter.
- (2) The owner or operator of a vapor collection system subject to this regulation shall:

- (a) Design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:
 - (i) Gauge pressure from exceeding 4,500 pascals (18 in. of H₂O) and vacuum from exceeding 1,500 pascals (6 in. of H₂O) in the gasoline tank truck;
 - (ii) A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from all points on the perimeter of a potential leak source when measured by the method referenced in Reg. 19.1004(F)(3) during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and
 - (iii) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals.
 - (b) Within 15 days, repair and retest a vapor collection or control system that exceeds the limit in supporting Reg. 19.1005(D)(2)(a)(ii) above.
 - (3) The Director may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system by the method referenced in Reg. 19.1004(F)(3) to confirm continuing compliance with Reg. 19.1005(D)(1) or (2) of this section.
- (E) Surface Coating of Metal Parts and Products
- (1) No owner or operator of a major source engaged in the surface coating of miscellaneous metal parts and products may operate a coating application system subject to this regulation that emits VOC in excess of:
 - (a) 0.52 kg/liter (l) 4.3 pounds per gallon [lb/gal]) of coating, excluding water, delivered to a coating applicator that applies clear coatings;
 - (b) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator in a coating application system that utilizes air or forced air dryers;

- (c) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings;
 - (d) 0.36 kg/l (3.0 lb/gal) of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems; and
 - (e) The above emission limitations shall include all VOC emissions from both coating and solvent washing unless the solvent is directed into containers that prevent evaporation.
- (2) If more than one emission limitation in Reg. 19.1005(E)(1) applies to a specific coating, then the most stringent emission limitation shall be applied.
- (3) The emission limits set forth in Reg. 19.1005(E)(1) shall be achieved by:
- (a) The application of low solvent coating technology;
 - (b) An incineration system which oxidizes at least 90.0 percent of the non-methane VOC measured as total combustible carbon to carbon dioxide and water; or
 - (c) An equivalent means of VOC removal. The equivalent means must be certified by the owner or operator and approved by the Director.
- (4) A capture system must be used in conjunction with the emission control system in Reg. 19.1005(E)(3)(b) and (c). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall VOC emission reduction efficiency of at least 80 percent.
- (F) External Floating Roof
- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilo pascals (1.52 psia) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) equipped with an external floating roof unless:

- (a) The storage tank has been fitted with a continuous secondary seal extending from the floating roof to the tank wall (rim mounted) or an control device with an effectiveness equal to or greater than the secondary seal;
 - (b) All seal closure devices meet the following requirements:
 - (i) There shall be no visible holes, tears, or other openings in the seals or seals fabric;
 - (ii) The seals must be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank walls; and
 - (iii) For vapor mounted seals, the gap area between the secondary seal and the tank wall shall not exceed 21.2 square centimeters per meter of inside tank diameter (1.0 square inch per foot of inside tank diameter);
 - (c) All openings in the external floating roof except for automatic bleeder vents, rim space vents, and leg sleeves provide a projection below the liquid surface and are sealed with a suitable closure when not in use;
 - (d) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (e) Rim vents are set to open only when the roof is being floated off the leg supports or at the manufacturer's recommended settings; and
 - (f) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.
- (2) The following are specifically exempted from the requirements of this subsection:

- (a) External floating roof tanks having capacities less than 1,600,000 liters (10,000 barrels [bbls]) used to store produced crude oil and condensate prior to custody transfer;
- (b) A metallic-type shoe seal in a welded tank which has a secondary seal from the top of the shoe to the tank wall (a shoe-mounted secondary); and
- (c) External floating roof tanks storing waxy, heavy pour crudes.

Reg. 19.1006 Severability

If any provision of the Regulations for the Control of Volatile Organic Compounds or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the Regulations for the Control of Volatile Organic Compounds which can be given effect without the invalid provision or application, and to this end, the provisions of the Regulations for the Control of Volatile Organic Compounds are declared to be severable.

CHAPTER 11: MAJOR SOURCE PERMITTING PROCEDURES

Facilities subject to Arkansas Pollution Control and Ecology Commission's; Regulation 26, Regulations of the Arkansas Operating Air Permit Program, ~~Regulation 26~~ (Regulation 26) shall be required to have their permit applications processed in accordance with the procedures contained in Regulation 26 which are hereby incorporated by reference.

CHAPTER 13: STAGE I VAPOR RECOVERY

Reg. 19.1301 Purpose

The purpose of this chapter is to limit emissions of VOC from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks.

Reg. 19.1302 Applicability

This rule applies to all gasoline dispensing facilities and gasoline service stations and to delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station in a nonattainment area; and this rule applies to all persons owning or operating a gasoline distribution facility or gasoline service station in a nonattainment area.

Reg. 19.1303 Definitions

- (A) “Coaxial system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tanks occurs through a single coaxial fill tube, which is a tube within a tube. Product is delivered through the inner tube, and vapor is recovered through the annular space between the walls of the inner tube and outer tube.
- (B) “Delivery vessel” means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.
- (C) “Dual point system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tank occurs through two separate openings in the storage tank and two separate hoses between the tank truck and the stationary storage tank.
- (D) “Gasoline” means any petroleum distillate or blend of petroleum distillates with other combustible liquids that is used as a fuel for internal combustion engines and has a Reid vapor pressure of 4.0 psi or greater. This does not include diesel fuel or liquefied petroleum gas (LPG).

- (E) “Gasoline dispensing facility” means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.
- (F) “Gasoline service station” means any gasoline dispensing facility where gasoline is sold to the motoring public from stationary storage tanks.
- (G) “Independent small business marketer” means a person engaged in the marketing of gasoline unless such person:
- (1) (a) is a refiner, or
 - (b) controls, is controlled by, or is under common control with, a refiner, or
 - (c) is otherwise directly or indirectly affiliated with a refiner or with a person who controls, is controlled by, or is under common control with a refiner, unless the sole affiliation referred to is by means of a supply contract or an agreement or contract to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner or any such person; or
- (2) receives less than 50 percent of his ~~o~~for her annual income from refining or marketing of gasoline.
- (3) For purposes of this regulation, the term “refiner” shall not include any refiner whose total refinery capacity (including the refinery capacity of any person who controls, is controlled by, or is under common control with, such refiner) does not exceed 65,000 barrels per day. For purposes of this section, “control” of a corporation means ownership of more than 50 percent of its stock.
- (H) “Leak free” means a condition in which there is no liquid gasoline escape or seepage of more than three (3) drops per minute from gasoline storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.
- (I) “Line” means any pipe suitable for transferring gasoline.
- (J) “Nonattainment area” means a county or counties designated by EPA as not meeting the NAAQS for ozone.

- (K) “Operator” means any person who leases, operates, controls, or supervises a facility at which gasoline is dispensed.
- (L) “Owner” means any person who has legal or equitable title to the gasoline storage tank at a facility.
- (M) “Poppeted vapor recovery adaptor” means a vapor recovery adaptor that automatically and immediately closes itself when the vapor return line is disconnected and maintains a tight seal when the vapor return line is not connected.
- (N) “Stationary storage tank” means a gasoline storage container that is a permanent fixture.
- (O) “Submerged fill pipe” means any fill pipe with a discharge opening which is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid, or which is entirely submerged when the level of the liquid is:
 - (1) Six inches above the bottom of the tank if the tank does not have a vapor recovery adaptor; or
 - (2) Twelve inches above the bottom of the tank if the tank has a vapor recovery adaptor. If the opening of the submerged fill pipe is cut at a slant, the distance is measured from the top of the slanted cut to the bottom of the tank.
- (P) “Throughput” means the amount of gasoline dispensed at a facility.
- (Q) “Vapor tight” means a condition in which an organic vapor analyzer or a combustible gas detector at a potential VOC leak source shows either less than 10,000 ppm when calibrated with methane, or less than 20% of the lower explosive limit when calibrated and operated according to the manufacturer’s specifications.

Reg. 19.1304 Exemptions

This rule does not apply to:

- (A) Transfers made to storage tanks at gasoline dispensing facilities or gasoline service stations equipped with floating roofs or their equivalent.

- (B) Stationary storage tanks with a capacity of not more than 550 gallons, if the tanks are equipped with a submerged fill pipe.
- (C) Stationary storage tanks used exclusively for the fueling of implements of normal farm operations.
- (D) Facilities selling less than 10,000 gallons of gasoline per month.
- (E) Independent small business marketers of gasoline selling less than 50,000 gallons per month.
- (F) Any other facility or use exempted by state or federal statute.

Reg. 19.1305 Prohibited Activities

No person may cause, allow or permit the transfer of gasoline from any delivery vessel into any stationary storage tank unless such transfer complies with the following requirements:

- (A) The stationary storage tank is equipped with a submerged fill pipe and the vapors displaced from the tank during filling are controlled by a vapor control system as described herein;
- (B) The vapor control system is in good working order and is connected and operating with a vapor tight connection;
- (C) The vapor control system is properly maintained and any damaged or malfunctioning components or elements of design have been repaired, replaced or modified;
- (D) Gauges, meters, or other specified testing devices are maintained in proper working order;
- (E) All loading lines and vapor lines of delivery vessels and vapor collection systems are equipped with fittings which are leak tight and vapor tight;
- (F) All hatches on the delivery vessel are kept closed and securely fastened; and
- (G) The stationary storage tank has been tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.

Reg. 19.1306 Record Keeping

The following records shall be maintained for not less than two (2) years and the same shall be made available for inspection by the Department:

- (A) The scheduled date for maintenance and testing, and the date that a malfunction was detected;
- (B) The date the maintenance and testing was performed or the malfunction corrected; and
- (C) The date the component or element of design of the control system was repaired, replaced, or modified.
- (D) Monthly totals of gallons of gasoline sold by the facility.

Reg. 19.1307 Inspections

- (A) The premises of any gasoline dispensing facility or gasoline service station shall be available for inspection by representatives of the Department.
- (B) The process of transfer of gasoline from any delivery vessel into any stationary storage tank shall be subject to observation and inspection by representatives of the Department.

Reg. 19.1308 Vapor Recovery Systems

- (A) The vapor control system required by Reg. 19.1305 of this rule shall include one or more of the following:
 - (1) A vapor-tight line from the stationary storage tank to the delivery vessel and:
 - (a) For a coaxial vapor recovery system, either a poppeted or unpoppeted vapor recovery adaptor;
 - (b) For a dual point vapor recovery system, a poppeted vapor recovery adaptor;

- (2) A refrigeration-condensation system or equivalent designed to recover or destroy at least 90 percent by weight of the organic compounds in the displaced vapor.
- (B) If an unpopeted vapor recovery adaptor is used, the tank liquid fill connection shall remain covered either with a vapor-tight cap or a vapor return line except when the vapor return line is being connected or disconnected.
- (C) If an unpopeted vapor recovery adaptor is used, the unpopeted vapor recovery adaptor shall be replaced with a poppeted vapor recovery adaptor when the tank is replaced or upgraded.
- (D) Where vapor lines from the storage tanks are manifolded, poppeted vapor recovery adapters shall be used. No more than one tank is to be loaded at a time if the manifold vapor lines have a nominal pipe size of less than three (3) inches. If the manifold vapor lines have a nominal pipe size of three (3) inches or larger, then two tanks at a time may be loaded.
- (E) Vent lines on stationary storage tanks shall have pressure release valves or restrictors.

Reg. 19.1309 Gasoline Delivery Vessels

- (A) Gasoline delivery vessels shall be designed and maintained to be vapor-tight during loading and unloading operations and during transport.
- (B) Gasoline delivery vessels shall be tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.
- (C) Gasoline delivery vessels shall sustain a pressure change of no more than 750 pascals (3 in. of H₂O) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H₂O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H₂O) during testing.

Reg. 19.1310 Owner/Operator Responsibility

- (A) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to assure compliance with this rule and to disallow the transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.

- (B) It shall be the responsibility of owners, operators and drivers of delivery vessels to assure compliance with this rule and to refuse to transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.
- (C) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to properly maintain, repair, replace, modify, and test the vapor recovery system components of stationary storage tanks regulated herein.
- (D) It shall be the responsibility of owners and operators of gasoline dispensing facilities, gasoline service stations, and gasoline delivery vehicles to repair and retest equipment within (15) days of a test that exceeds the limitations set forth herein.

Reg. 19.1311 Test Methods

- (A) Test method for leak detection:
 - (1) Within four (4) hours prior to monitoring, the organic vapor analyzer or combustible gas detector shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20% of the lower explosive limit response, or calibrated with methane for a 10,000 ppm response.
 - (2) The probe inlet shall be 2.5 centimeters or less from the potential leak source when searching for leaks.
 - (3) The highest detector reading and location for each incident of detected leakage shall be recorded, along with the date, time and name of the person performing the testing. If no gasoline vapor is detected, that fact shall be recorded.
- (B) Control efficiency of vapor recovery systems and vapor collection/processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B. EPA Method 2B shall be used for vapor incineration devices.
- (C) Vapor pressure of gasoline shall be determined using American Society for Testing and Materials (ASTM) Method D323-94 or ASTM Method D4953-93. Method D323-94 shall be used for gasoline either containing no oxygenates or MTBE (methyl ethyl butyl ether) as the sole oxygenate. Method D-4953-93 shall be used for oxygenated gasoline.

Reg. 19.1312 Effective Date

- (A) The requirements of this rule shall be effective within nonattainment areas one (1) year after the designation by EPA of an area as a nonattainment area.
- (B) In the case of an independent small business marketer with sales of 50,000 gallons or more per month, this rule shall be phased-in as follows:
 - (1) 33 percent of facilities shall be in compliance at the end of the first year;
 - (2) 66 percent at the end of the second year; and,
 - (3) 100 percent at the end of the third year.

CHAPTER 14: CAIR NO_x OZONE SEASON TRADING PROGRAM GENERAL PROVISIONS

Reg. 19.1401 Adoption of Regulations

40 ~~CFR~~C.F.R. Part 96, Subparts AAAA-HHHH for the CAIR NO_x Ozone Season Trading Program, as finalized by the ~~U.S. Environmental Protection Agency~~ (EPA) on May 12, 2005, and further revised by EPA on April 28, 2006, with correcting amendments on December 13, 2006, and on October 19, 2007, are herein incorporated by reference with the exception of Subpart EEEE (CAIR NO_x Ozone Season Allowance Allocations) and all references to CAIR NO_x Ozone Season Opt-in Units, which, along with Subpart IIII (CAIR NO_x Ozone Season Opt-in Units), are not incorporated. The following regulations replace 40 ~~CFR~~C.F.R. § 96 Subpart EEEE.

Reg. 19.1402 State Trading Budget

The Arkansas State trading budgets for annual allocations for CAIR NO_x Ozone Season allowances have been set by EPA as follows: for the control periods of 2009 through 2014, 11,515 tons per control period; and for the control periods for 2015 and beyond, 9,596 tons per control period. The total number of allowances allocated by the State of Arkansas shall not exceed these budgets for their respective control periods.

Reg. 19.1403 Timing Requirements for CAIR NO_x Ozone Season Allowance Allocations

- (A) For EGUs allocated allowances under Reg. 19.1404(B) and (C), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by April 30, 2007, for 2009, 2010, and 2011 and by October 31, 2008, and October 31 of each year thereafter for the 4th year after the notification deadline.
- (B) For EGUs allocated allowances under Reg. 19.1404(D), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by July 31 of the year for which the CAIR NO_x Ozone Season allowances are allocated.

Reg. 19.1404 CAIR NO_x Ozone Season Allowance Allocations

- (A) The baseline gross electric generation (in MWh) used with respect to CAIR NO_x Ozone Season allowance allocations under Reg. 19.1404(B) for each CAIR NO_x Ozone Season unit that has operated each calendar year during a period of five (5) or more consecutive calendar years, the average of the three (3) highest amounts of the unit's control period gross electrical output over the five (5) years immediately preceding the year in which allocations are due to EPA, provided that gross electrical output of a generator served by two or more units will be attributed to each unit in proportion to each unit's share of the total control period heat input of such units for the year. For the allocations allocated for 2009, 2010, 2011, baseline data will be determined using gross electrical output for years 2000 through 2004.
- (B) With regard to the timing requirements contained in Reg. 19.1403, for each control period in 2009 and thereafter, the Department will allocate to all CAIR NO_x Ozone Season units in the State that have baseline gross electric generation (as determined under Reg. 19.1404(A)) a total amount of CAIR NO_x Ozone Season allowances equal to 95 percent for a control period, of the tons of NO_x emissions in the State trading budget under Reg. 19.1402 (except as provided in Reg. 19.1404(E)).
- (C) The Department will allocate CAIR NO_x Ozone Season allowances to each CAIR NO_x Ozone Season unit under Reg. 19.1404(B) in an amount determined by multiplying the total amount of CAIR NO_x Ozone Season allowances allocated under Reg. 19.1404(B) paragraph (B) of this section by the ratio of the baseline gross electric generation of such CAIR NO_x Ozone Season unit to the total amount of baseline gross electric generation of all such CAIR NO_x Ozone Season units in the State and rounding to the nearest whole allowances as appropriate.
- (D) For each control period in 2009 and thereafter, the Department will allocate CAIR NO_x Ozone Season allowances to CAIR NO_x Ozone Season units in the State that do not yet have a baseline gross electric generation (as determined under Reg. 19.1404(A)), in accordance with the following procedures:
- (1) The Department will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NO_x Ozone Season allowances equal to five percent (5%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402.

- (2) The CAIR designated representative of such a CAIR NO_x Ozone Season unit may submit to the Department a request, in a format specified by the Department, to be allocated CAIR NO_x Ozone Season allowances, starting with the later of the control period in 2009 or the first control period after the control period in which the CAIR NO_x Ozone Season unit commences commercial operation and until the first control period for the which the unit is allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404(B). The CAIR NO_x Ozone Season allowance allocation request must be submitted on or before January 1 of the first control period for which the CAIR NO_x Ozone Season allowances are requested and after the date on which the CAIR NO_x Ozone Season unit commences commercial operation.
- (3) In a CAIR NO_x Ozone Season allowance allocation request under Reg.19.1404(D)(2), the CAIR designated representative may request for a control period CAIR NO_x Ozone Season allowances in an amount not exceeding the CAIR NO_x Ozone Season unit's total tons of NO_x emissions during the control period immediately before such control period.
- (4) The Department will review each CAIR NO_x Ozone Season allowance allocation request under Reg. 19.1404(D)(2) and will allocate CAIR NO_x Ozone Season allowances for each control period pursuant to such request as follows:
 - (a) The Department will accept an allowance allocation request only if the request meets, or is adjusted by the Department as necessary to meet, the requirements of Reg. 19.1404(D)(2) and (3).
 - (b) On or after February 1 of the control period, the Department will determine the sum of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404(D)(4)(a)) for the control period.
 - (c) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is greater than or equal to the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate the amount of CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)) to each CAIR NO_x Ozone Season unit covered by Reg. 19.1404 (D)(4)(a).

- (d) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is less than the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate to each CAIR NO_x Ozone Season unit covered by an allowance allocation request accepted under Reg. 19.1404 (D)(4)(a) the amount of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)), multiplied by the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period, divided by the sum determined under Reg. 19.1404 (D)(4)(b), and rounded to the nearest whole allowance as appropriate.
 - (e) The Department will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO_x Ozone Season allowances (if any) allocated for the control period to the CAIR NO_x Ozone Season unit covered by the request.
- (E) If, after completion of the procedures under Reg. 19.1404(D)(4) for a control period, any unallocated CAIR NO_x Ozone Season allowances remain in the new unit set-aside for the control period, the Department will allocate to each CAIR NO_x Ozone Season unit that was allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404 (B) an amount of CAIR NO_x Ozone Season allowances equal to the total amount of such remaining unallocated CAIR NO_x Ozone Season allowances, multiplied by the unit's allocation under Reg. 19.1404(B), divided by ~~95~~ninety-five percent (95%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402, and rounded to the nearest whole allowance as appropriate.

CHAPTER 15: REGIONAL HAZE

Reg. 19.1501 Purpose

The purpose of this chapter is to establish regional haze program requirements.

Reg. 19.1502 Definitions

For purposes of this chapter only the definitions contained in 40 ~~CFR~~C.F.R. § 51.301 as in effect on June 22, 2007, are hereby incorporated by reference.

Reg. 19.1503 BART Eligible Sources

The following are BART-eligible sources:

BART Source Category Number and Name	Facility Name	AFIN	Unit ID	Unit Description	
1. Fossil fuel-fired Electric Plants > 250 million British thermal units (MMbtu)/hour – Electric Generating Units (EGUs)	Arkansas Electric Coop – Carl E. Bailey	74-00024	SN-01	Boiler	
	Arkansas Electric Coop – John L. McClelland Generating Station	52-00055	SN-01	Boiler	
	Entergy Arkansas, Inc. – Lake Catherine Plant	30-00011	SN-03	Unit 4 Boiler	
	Entergy Arkansas – Ritchie	54-00017	SN-02	Unit 2	
	Entergy Arkansas, Inc. – White Bluff		35-00110	SN-01	Unit 1 Boiler
				SN-02	Unit 2 Boiler
				SN-05	Auxiliary Boiler
SWEPCO Flint Creek Power Plant	04-00107	SN-01	Boiler		

3. Kraft Pulp Mills	Domtar Industries, Inc. – Ashdown Mill	41-00002	SN-03	#1 Power Boiler
			SN-05	#2 Power Boiler
	Delta Natural Kraft and Mid America Packaging, LLC.	35-00017	SN-02	Recovery Boiler
	Evergreen Packaging Inc., Pine Bluff Mill	35-00016	SN-04	#4 Recovery Boiler
	Georgia-Pacific Corporation – Crossett Paper Operations	02-00013	SN-19	6A Boiler
			SN-22	9A Boiler
	Green Bay Packaging, Inc. – Arkansas Kraft Division	15-00001	SN-05A	Recovery Boiler
Potlatch Forest Products Corporation – Cypress Bend Mill	21-00036	SN-04	Power Boiler	
11. Petroleum Refineries	Lion Oil Company	70-00016	SN-809	#7 Catalyst Regenerator
15. Sulfur Recovery Plant	Albermarle Corporation – South Plant	14-00028	SR-01	Tail Gas Incinerator
19. Sintering Plants	Big River Industries	18-00082	SN-01	Kiln A
21. Chemical Processing Plants	Albermarle Corporation – South Plant	14-00028	BH-01	Boiler #1
			BH-02	Boiler #2
	FutureFuels Chemical Co.	32-00036	6M01-01	3 Coal Boilers
	El Dorado Chemical Company	70-00040	SN-08	West Nitric Acid Plant
			SN-09	East Nitric Acid Plant
		SN-10	Nitric Acid Concentrator	

Reg. 19.1504 Facilities Subject-to-BART

(A) The following sources are subject-to-BART:

AFIN	Facility Name	Source #	Source Name
74-00024	Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station	SN-01	Boiler
52-00055	Arkansas Electric Cooperative Corporation John L. McClellan Generating Station	SN-01	Boiler
41-00002	Domtar Industries, Inc. Ashdown Mill	SN-03	#1 Power Boiler
		SN-05	#2 Power Boiler
30-00011	Entergy Arkansas, Inc. – Lake Catherine Plant	SN-03	Unit 4 Boiler
35-00110	Entergy Arkansas, Inc. – White Bluff	SN-01	Unit 1 Boiler
		SN-02	Unit 2 Boiler
		SN-05	Auxiliary Boiler
04-00107	SWEPCO Flint Creek Power Plant	SN-01	Boiler

(B) Each source subject-to-BART shall install and operate BART as expeditiously as practicable, but in no event later than 6 years after the effective date of this regulation or five (5) years after EPA approval of the Arkansas Regional Haze State Implementation Plan, whichever comes first.

(C) Each source subject-to-BART shall maintain the control equipment required by this chapter and establish procedures to ensure such equipment is properly operated and maintained.

Reg. 19.1505 BART Requirements

(A) On or before the compliance date required under Reg. 19.1504(B), SWEPCO Flint Creek Power Plant, SN-01 shall comply with BART by meeting the following emission limits:

- (1) 0.15 pounds of sulfur dioxide (SO₂) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.23 pounds of nitrogen oxides (NO_x) per million Btu of heat input (0.23 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit satisfies the BART particulate matter requirement.
- (A) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (B) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation John L. McClellan Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (C) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #1 Power Boiler, SN-03 shall comply with BART by meeting the following emission limits:
- (1) 1.12 pounds of SO₂ per million Btu of heat input (1.12 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.46 pounds of NO_x per million Btu of heat input (0.46 lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.07 pounds of PM₁₀ per million Btu of heat input (0.07 lb/MMBtu) on a 30-day rolling average.
- (D) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #2 Power Boiler, SN-05 shall comply with BART by meeting the following emission limits:
- (1) 1.20 pounds of SO₂ per million Btu of heat input (1.20 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.450 pounds of NO_x per million Btu of heat input (0.450lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.10 pounds of PM₁₀ per million Btu of heat input (0.10 lb/MMBtu) on a 30-day rolling average.
- (E) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning bituminous coal:

- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirement.
- (F) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (G) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 1 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (H) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (I) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

- (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (J) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 2 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (K) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, auxiliary boiler, SN-05 shall comply with BART by restricting operation to not more than 4360 hours annually.
- (L) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning natural gas:
- (1) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30 day rolling average; and
 - (2) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (M) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning oil:
- (1) 0.562 pounds of SO₂ per million Btu of heat input (0.562 lb/MMBtu) on a 30 day rolling average;
 - (2) 0.25 pounds of NO_x per million Btu of heat input (0.25 lb/MMBtu) on a 30 day rolling average; and
 - (3) 0.037 pounds of PM_{2.5} per million Btu of heat input (0.037 lb/MMBtu) on a 30 day rolling average.

Reg. 19.1506 Compliance Provisions

Each facility listed in Reg. 19.1504(A) as being subject to BART shall demonstrate compliance with the BART limits listed in 19.1505 in accordance with the provisions of Chapter 7 of this regulation.

Reg. 19.1507 Permit Reopening

The Part 70 permit of each facility subject-to-BART shall be subject to re-opening in accordance with section 26.1011(A) of Arkansas Pollution Control and Ecology Commission Regulation 26.

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



REGULATION NO. 19

APPENDIX A

INSIGNIFICANT ACTIVITIES LIST

APPENDIX A: INSIGNIFICANT ACTIVITIES LIST

The following types of activities or emissions are deemed insignificant on the basis of size, emission rate, production rate, or activity. Certain of these listed activities include qualifying statements intended to exclude many similar activities. By such listing, the Department exempts certain sources or types of sources from the requirements to obtain a permit or plan under this regulation. Listing in this part has no effect on any other law to which the activity may be subject. Any activity for which a state or federal applicable requirement applies (such as NSPS, National Emission Standards for Hazardous Air Pollutants [NESHAP], or Maximum Achievable Control Technology [MACT]) is not insignificant, even if this activity meets the criteria below.

Group A

The following emission units, operations, or activities must either be listed as insignificant or included in the permit application as sources to be permitted. ~~The listing of insignificant sources does not necessarily mean that the emissions from these sources must be quantified. The ton-per-year applicability levels are for all sources listed in the categories (i.e., cumulative total).~~

1. Fuel burning equipment with a design rate less than ten (10) MMBtu per hour, provided that the aggregate air pollutant specific emissions from all such units listed as insignificant do not exceed five (5) tons per year (tpy) of any combination of HAPs, 75,000 tpy carbon dioxide, and ten (10) tpy of any other air pollutant.
2. Storage tanks less than or equal to 250 gallons storing organic liquids having a true vapor pressure less than or equal to three and one-half (3.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
3. Storage tanks less than or equal to 10,000 gallons storing organic liquids having a true vapor pressure less than or equal to one-half (0.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
4. Caustic storage tanks that contain no VOCs.

5. Emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes provided that the aggregate air pollutant specific emissions from all such equipment/vents considered insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
6. Non-commercial water washing operations of empty drums less than or equal to fifty-five (55) gallons with less than three percent of the maximum container volume of material.
7. Welding or cutting equipment related to manufacturing activities that do not result in aggregate emissions of HAPs in excess of one-tenth (0.1) tpy.
8. Containers of less than or equal to five (5) gallons in capacity that do not emit any detectable VOCs or HAPs when closed. This includes filling, blending, or mixing of the contents of such containers by a retailer.
9. Equipment used for surface coating, painting, dipping, or spraying operations, provided the material used contains no more than four-tenths (0.4) lb/gal VOCs, no hexavalent chromium, and no more than one-tenth (0.1) tpy of all other HAPs.
10. Non-production equipment approved by the Department, used for waste treatability studies or other pollution prevention programs provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs.¹
11. Operation of groundwater remediation wells, including emissions from the pumps and collection activities provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs. This does not include emissions from air-stripping or storage.
12. Emergency use generators, boilers, or other fuel burning equipment that is of equal or smaller capacity than the primary operating unit, cannot be used in conjunction with the primary operating unit, and does not emit or have the potential to emit regulated air pollutants in excess of the primary operating unit and not operated more than ninety (90)

¹ The treatability study or pollution prevention program must be approved separately. The activity creating the emissions must also be determined to be insignificant as discussed in the introduction to this group.

days a year. This does not apply to generators which provide electricity to the distribution grid.

13. Other activities for which the facility demonstrates that no enforceable permit conditions are necessary to ensure compliance with any applicable law or regulation provided that the emissions are less than 75,000 tpy carbon dioxide, one (1) tpy of a single HAP or two and one-half (2.5) tpy of any combination of HAPs, or five (5) tpy of any other air pollutant regulated under this regulation. These emission limits apply to the sum of all activities listed under this group.

Group B

The following emission units, operations, or activities need not be included in a permit application:

1. Combustion emissions from propulsion of mobile sources and emissions from refueling these sources unless regulated by Title II and required to obtain a permit under Title V of the federal Clean Air Act, as amended. This does not include emissions from any transportable units, such as temporary compressors or boilers. This does not include emissions from loading racks or fueling operations covered under any applicable federal requirements.
2. Air conditioning and heating units used for comfort that do not have applicable requirements under Title VI of the Act.
3. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
4. Non-commercial food preparation or food preparation at restaurants, cafeterias, or caterers, etc.
5. Consumer use of office equipment and products, not including commercial printers or business primarily involved in photographic reproduction.
6. Janitorial services and consumer use of janitorial products.
7. Internal combustion engines used for landscaping purposes.
8. Laundry activities, except for dry-cleaning and steam boilers.

9. Bathroom/toilet emissions.
10. Emergency (backup) electrical generators at residential locations.
11. Tobacco smoking rooms and areas.
12. Blacksmith forges.
13. Maintenance of grounds or buildings, including: lawn care, weed control, pest control, and water washing activities.
14. Repair, up-keep, maintenance, or construction activities not related to the source's primary business activity, and not otherwise triggering a permit modification. This may include, but is not limited to such activities as general repairs, cleaning, painting, welding, woodworking, plumbing, re-tarring roofs, installing insulation, paved/paving parking lots, miscellaneous solvent use, application of refractory, or insulation, brazing, soldering, the use of adhesives, grinding, and cutting.²
15. Surface-coating equipment during miscellaneous maintenance and construction activities. This activity specifically does not include any facility whose primary business activity is surface-coating or includes surface-coating or products.
16. Portable electrical generators that can be "moved by hand" from one location to another.³
17. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.
18. Brazing or soldering equipment related to manufacturing activities that do not result in emission of HAPs.⁴

² Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must get a permit.

³ "Moved by hand" means that it can be moved by one person without assistance of any motorized or non-motorized vehicle, conveyance, or device.

⁴ Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production thresholds. Brazing, soldering, and welding equipment, and cutting torches related directly to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in

19. Air compressors and pneumatically operated equipment, including hand tools.
20. Batteries and battery charging stations, except at battery manufacturing plants.
21. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.⁵
22. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and no volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
23. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
24. Drop hammers or presses for forging or metalworking.
25. Equipment used exclusively to slaughter animals, but not including other equipment at slaughter-houses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
26. Vents from continuous emissions monitors and other analyzers.
27. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
28. Hand-held applicator equipment for hot melt adhesives with no VOCs in the adhesive.
29. Lasers used only on metals and other materials which do not emit HAPs in the process.
30. Consumer use of paper trimmers/binders.
31. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.

this appendix.

⁵ Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids are based on size and limits including storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.

32. Salt baths using non-volatile salts that do not result in emissions of any air pollutant covered by this regulation.
33. Laser trimmers using dust collection to prevent fugitive emissions.
34. Bench-scale laboratory equipment used for physical or chemical analysis not including lab fume hoods or vents.
35. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
36. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
37. Hydraulic and hydrostatic testing equipment.
38. Environmental chambers not using hazardous air pollutant gases.
39. Shock chambers, humidity chambers, and solar simulators.
40. Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
41. Process water filtration systems and demineralizers.
42. Demineralized water tanks and demineralizer vents.
43. Boiler water treatment operations, not including cooling towers.
44. Emissions from storage or use of water treatment chemicals, except for hazardous air pollutants or pollutants listed under regulations promulgated pursuant to Section 112(r) of the Act as of July 1, 1997, for use in cooling towers, drinking water systems, and boiler water/feed systems.
45. Oxygen scavenging (de-aeration) of water.
46. Ozone generators.
47. Fire suppression systems.

48. Emergency road flares.
49. Steam vents and safety relief valves.
50. Steam leaks.
51. Steam cleaning operations.
52. Steam and microwave sterilizers.
53. Site assessment work to characterize waste disposal or remediation sites.
54. Miscellaneous additions or upgrades of instrumentation.
55. Emissions from combustion controllers or combustion shutoff devices but not combustion units itself.
56. Use of products for the purpose of maintaining motor vehicles operated by the facility, not including air cleaning units of such vehicles (i.e. antifreeze, fuel additives).
57. Stacks or vents to prevent escape of sanitary sewer gases through the plumbing traps.
58. Emissions from equipment lubricating systems (i.e. oil mist), not including storage tanks, unless otherwise exempt.
59. Residential wood heaters, cookstoves, or fireplaces.
60. Barbecue equipment or outdoor fireplaces used in connection with any residence or recreation.
61. Log wetting areas and log flumes.
62. Periodic use of pressurized air for cleanup.
63. Solid waste dumpsters.
64. Emissions of wet lime from lime mud tanks, lime mud washers, lime mud piles, lime mud filter and filtrate tanks, and lime mud slurry tanks.
65. Natural gas odoring activities unless the Department determines that emissions constitute air pollution.

66. Emissions from engine crankcase vents.
67. Storage tanks used for the temporary containment of materials resulting from an emergency reporting to an unanticipated release.
68. Equipment used exclusively to mill or grind coatings in roll grinding rebuilding, and molding compounds where all materials charged are in paste form.
69. Mixers, blenders, roll mills, or calendars for rubber or plastic for which no materials in powder form are added and in which no hazardous air pollutants, organic solvents, diluents, or thinners are used or emitted.
70. The storage, handling, and handling equipment for bark and wood residues not subject to fugitive dispersion offsite (this applies to the equipment only).
71. Maintenance dredging of pulp and paper mill surface impoundments and ditches containing cellulosic and cellulosic derived biosolids and inorganic materials such as lime, ash, or sand.
72. Tall oil soap storage, skimming, and loading.
73. Water heaters used strictly for domestic (non-process) purposes.
74. Facility roads and parking areas, unless necessary to control offsite fugitive emissions.
75. Agricultural operations, including onsite grain storage, not including internal combustion engines or grain elevators.
76. ~~The following n~~Natural gas and oil exploration and production site equipment: not subject to a rule under 40 C.F.R. Parts 60, 61, or 63.~~separators, dehydration units, natural gas fired compressors, and pumping units. This does not include compressors located on natural gas transmission pipelines.~~

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



REGULATION NO. 19

APPENDIX B

**NATIONAL AMBIENT AIR QUALITY
STANDARDS LIST**

APPENDIX B: NATIONAL AMBIENT AIR QUALITY STANDARDS LIST

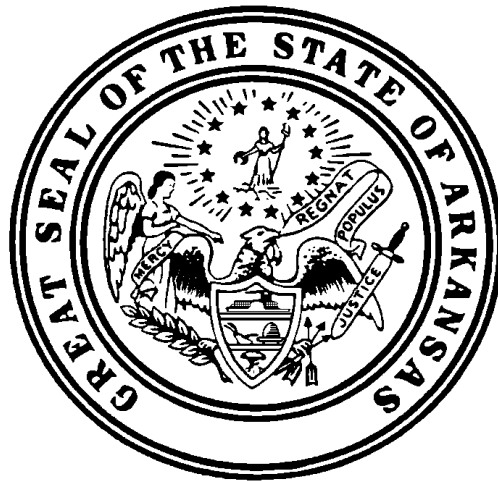
The National Ambient Air Quality Standards as adopted as of the effective date of this Regulation are listed below.

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Carbon Monoxide	76 FR 54294	August 31, 2011	Primary	8-hour	9 ppm	Not to be exceeded more than once per year	All Chapters
				1-hour	35 ppm		All Chapters
Lead	73 FR 66964	November 12, 2008	Primary and secondary	Rolling 3 month average	0.15 $\mu\text{g}/\text{m}^3$	Not to be exceeded-	All Chapters
Nitrogen Dioxide	75 FR 6474	February 9, 2010	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years	Chapter 9 All Chapters
	61 FR 52852	October 8, 1996	Primary and secondary	Annual	53 ppb	Annual Mean	All Chapters
Ozone	73 FR 16436	March 27, 2008	Primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	Chapter 9 All Chapters
Particle Pollution, PM _{2.5}	78 FR 3085	January 15, 2013	Primary	Annual	12 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years	Chapter 9 All Chapters
	71 FR 61144-	October 17, 2006	Secondary	Annual	15 $\mu\text{g}/\text{m}^3$		All Chapters
			Primary and secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years	Chapter 9 All Chapters

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Particle Pollution, PM ₁₀	71 FR 61144,	October 17, 2006	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years	All Chapters
Sulfur Dioxide	75 FR 35520	June 22, 2010	Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	Chapter 9 <u>All Chapters</u>
	38 FR 25678	September 14, 1973	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	All Chapters

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 26
REGULATIONS OF THE ARKANSAS
OPERATING AIR PERMIT PROGRAM**



INITIAL DRAFT

Submitted to the PC&E Commission: December, 2014

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CHAPTER 3: REQUIREMENT FOR A PERMIT, APPLICABILITY

Reg. 26.301 Requirement for a permit

- (A) No part 70 source may operate unless it is operating in compliance with a part 70 permit, or unless it has filed a timely and complete application for an initial or renewal permit as required under these regulations. Existing part 70 sources shall submit initial applications according to the provisions of section 4. If a part 70 source submits a timely and complete application for an initial or renewal permit, the source's failure to have a part 70 permit is not a violation of this regulation until the Department takes final action on the permit application, except as noted in this section. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information identified as being needed to process the application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.
- (B) No proposed new part 70 source shall begin construction prior to obtaining a part 70 permit, unless the applicable permit application was submitted prior to the effective date of these regulations and the Department's draft permitting decision for such source has already proceeded to public notice in accordance with Regulation No. 19.
- (C) No part 70 source shall begin construction of a new emissions unit or begin modifications to an existing emissions unit prior to obtaining a modified part 70 permit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit. An existing part 70 source shall be subject to the permit modification procedures of Regulation No. 19 until such time that an initial part 70 permit application is due from the source.

Reg. 26.302 Sources subject to permitting

The following sources shall be subject to permitting under these regulations, unless exempted by Reg. 26.303 below:

- (A) Any major source;
- (B) Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the Act (i.e., New Source Performance Standards [NSPS] regulations). However, non-major sources subject to section 111 of the Act are exempt from the obligation to obtain a part 70 permit until such time that the Administrator completes a rulemaking to determine how the program should be structured for non-major sources;
- (C) Any source, including an area source, subject to a standard or other requirement under section 112 of the Act (i.e., hazardous air pollutant regulations), except that a source is

not required to obtain a permit solely because it is subject to regulations or requirements under section 112(r) of the Act;

- (D) Any source subject to Arkansas Pollution Control and Ecology Commission's Regulation [No. 19, Chapter 9²²](#)
- (E) Any acid rain source (which shall be permitted in accordance with the provisions of the federal acid rain program); and
- (F) Any source in a source category designated by the Administrator pursuant to this section.

Reg. 26.303 Source category exemptions

The following source categories are exempted from the obligation to obtain a part 70 permit:

- (A) All sources listed in Reg. 26.302 that are not major sources, acid rain sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act, are exempted from the obligation to obtain a part 70 permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for non-major sources.
- (B) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 [CFR.C.F.R.](#) Part 60, Subpart AAA - Standards of Performance for New Residential Wood Heaters as of July 23, 1993; and
- (C) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 [CFR.C.F.R.](#) Part 61, Subpart M - National Emission Standard for Hazardous Air Pollutants for Asbestos, section 61.145, Standard for Demolition and Renovation as of July 23, 1993.
- (D) Any other non-major sources subject to a standard or other requirement under either section 111 or 112 of the Act exempted by the Administrator.

Reg. 26.304 Emissions units subject to permitting

The Department shall include in the part 70 permit all applicable requirements for all relevant emissions units in the part 70 source. Some equipment with very small emission rates is exempt from permitting requirements as per Chapter 4 and Appendix A of Regulation No. 19.

Reg. 26.305 Emissions subject to permitting

All regulated air pollutant emissions and recognized air contaminant emissions from a part 70 source shall be included in a part 70 permit, except that GHG emissions less than 100,000 tpy CO₂e shall not be included in a part 70 permit unless the part 70 source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more. Only regulated air pollutants may trigger the need for a part 70 permit or a part 70 permit modification process. A permit modification involving only air contaminants other than regulated air pollutants shall be permitted according to the procedure of Regulation

No. 19. Such permits shall be incorporated into the part 70 permit by administrative permit amendment.

Reg. 26.306 Fugitive emissions subject to permitting

Fugitive emissions from a part 70 source shall be included in the permit application and the part 70 permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

CHAPTER 4: APPLICATIONS FOR PERMITS

Reg. 26.401 Duty to apply

For each source subject to 40 ~~CFR~~C.F.R. Part 70, as promulgated June 3, 2010 (75 FR 31607), the owner or operator shall submit a timely and complete permit application (on forms supplied by the Department) in accordance with this section.

Reg. 26.402 Standard application form and required information

The Department shall provide a standard application form or forms and shall provide them to part 70 sources upon request. Information as described below for each emissions unit at a part 70 source shall be required by the application form and included by the applicant in the application.

- (A) Insignificant activities which are exempted because of size or production rate, a list of such insignificant activities must be included in the application.
- (B) An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to evaluate the fee amount required by the Arkansas Pollution Control and Ecology Commission's Regulation Number 9, Fee Regulation (~~Regulation 9~~ or Regulation No. 9). The Department may use discretion in developing application forms that best meet program needs and administrative efficiency. The forms and attachments chosen, however, shall include the elements specified below:
 - (1) Identifying information, including company name and address (or plant name and address if different from the company name), owner's name and agent, and telephone number and names of plant site manager/contact-;
 - (2) A description of the source's processes and products (by Standard Industrial Classification Code or the North American Industry Classification System) including any associated with alternate scenario identified by the source-;
 - (3) The following emission-related information:
 - (a) A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under Reg. 26.402(A). The Department shall require additional information related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source, and other information necessary to collect any permit fees owed under the fee schedule in Regulation No. 9.
 - (b) Identification and description of all points of emissions described above in sufficient detail to establish the basis for fees and applicability of requirements of the Act.

- (c) Emissions rate in tpy and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.
 - (d) The following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules.
 - (e) Identification and description of air pollution control equipment and compliance monitoring devices or activities.
 - (f) Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 70 source.
 - (g) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Act).
 - (h) Calculations on which the information in Reg. 26.402(B)(3) is based.
- (4) The following air pollution control requirements:
- (a) Citation and description of all applicable requirements, and
 - (b) Description of or reference to any applicable test method for determining compliance with each applicable requirement.
- (5) Other specific information that may be necessary to implement and enforce other applicable requirements of the Act, of this part or to determine the applicability of such requirements.
- (6) An explanation of any proposed exemptions from otherwise applicable requirements.
- (7) Additional information as determined to be necessary by the Department to define alternative operating scenarios identified by the source pursuant to Reg. 26.701(I) or to define permit terms and conditions implementing Reg. 26.802 or Reg. 26.701(J).
- (8) A compliance plan for all part 70 sources that contains all the following:
- (a) A description of the compliance status of the source with respect to all applicable requirements.
 - (b) A description as follows:

- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.
 - (iii) For requirements for which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.
- (c) A compliance schedule as follows:
- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed schedule is expressly required by the applicable requirement.
 - (iii) A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in non-compliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.
- (d) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.
- (e) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under title IV of the Act with regard to the schedule and

method(s) the source will use to achieve compliance with the acid rain emissions limitations.

- (9) Requirements for compliance certification, including the following:
 - (a) A certification of compliance with all applicable requirements by a responsible official consistent with Reg. 26.410 and section 114(a)(3) of the Act;
 - (b) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods;
 - (c) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the Department; and
 - (d) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.
- (10) The use of nationally-standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under title IV of the Act.

(C) Reserved

Reg. 26.403 Initial applications from existing part 70 sources

A timely application for an initial part 70 permit for an existing part 70 source is one that is submitted within 12 months after the source becomes subject to the permit program, or on or before such earlier date as the Department may establish. The earliest that the Department may require an initial application from such an existing part 70 source is 6 months after the Department notifies the source in writing of its duty to apply for an initial part 70 permit.

Reg. 26.404 Applications for proposed new part 70 sources

The owner or operator proposing to construct a new part 70 source shall apply for and obtain a part 70 permit prior to the construction of the source, unless the applicable permit application was submitted prior to the effective date of these Regulations and the Department's draft permitting decision for such source has already proceeded to public comment in accordance with Regulation No. 19.

Reg. 26.405 Applications for proposed significant modifications at part 70 sources

Part 70 sources proposing to construct a new emissions unit or modify an existing emissions unit shall apply for and obtain a modified part 70 permit prior to the construction or modification of

such emissions unit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit.

Reg. 26.406 Permit renewal applications

For purposes of permit renewal, a timely application is one that is received by the Department at least six (6) months prior to the date of permit expiration or such other longer time as may be approved by the Administrator that ensures that the term of the permit will not expire before the permit is renewed. In no event shall this time be greater than eighteen (18) months. Renewal permits are subject to the same procedural requirements that apply to initial permit issuance. Permit expiration terminates a part 70 source's right to operate unless a timely and complete renewal application has been received by the Department, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.

Reg. 26.407 Complete application

To be deemed complete, an application must provide all information required by Reg. 26.402, except that applications for permit revision need supply only that information related to the proposed change. Unless the Department determines that an application is not complete within sixty (60) days of receipt of the application, such application shall be deemed to be complete. If, while processing an application that has been determined or deemed to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, it may request such information in writing and set a reasonable deadline for a response.

Reg. 26.408 Confidential information

In the case where a source has submitted information to the State under a claim of confidentiality, the Department may also require the source to submit a copy of such information directly to the Administrator.

Reg. 26.409 Applicant's duty to supplement or correct application

Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

Reg. 26.410 Certification by responsible official

Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under these regulations shall state that, based on

information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

CHAPTER 5: ACTION ON APPLICATIONS

Reg. 26.501 Action on part 70 permit applications

A permit, permit modification, or permit renewal may be issued only if all of the following conditions have been met:

- (A) The Department has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit.
- (B) Except for modifications qualifying for minor permit modification procedures under Chapter 10 of Regulation No. 26, the Department has complied with the requirements under Chapter 6 of Regulation No. 26 for public participation and for notifying and responding to affected States.
- (C) The processing of the permit application and the conditions of the permit provide for compliance with all applicable requirements and the requirements of this regulation; and
- (D) The Administrator has received a copy of the proposed permit and any notices required under Chapter 6 of Regulation No. 26 and has not objected to issuance of the permit within the time period specified therein.

Reg. 26.502 Final action on permit application

The Department shall take final action on each permit application (including a request for permit modification or renewal) as expeditiously as practicable, but no later than eighteen (18) months after receiving a complete application, unless a different time period is provided for in these regulations (i.e., initial permitting of existing part 70 sources and minor permit modifications). Failure of the Department to act upon an application shall not constitute approval of the permit application. An aggrieved applicant may seek relief from Department inaction on a permit application in accordance with the procedures of Arkansas Ark. Code Ann.etated §§ 8-4-311 (b)(10)(F).

Reg. 26.503 Priority for application review

Priority shall be given by the Department to taking action on applications for construction and modification over applications for permit renewal to the extent practicable.

Reg. 26.504 Notification of application completeness

The Department shall promptly provide notice to the applicant of whether the application is complete. Unless the Department requests additional information or otherwise notifies the applicant of incompleteness within sixty (60) days of receipt of an application, the application shall be deemed complete. For modifications processed through minor permit modification procedures, the program shall not require a completeness determination, but shall be subject to an eligibility determination.

Reg. 26.505 Source's ability to operate prior to final permit action

A part 70 source's ability to operate without a permit prior to initial permit issuance (to existing part 70 sources) or permit renewal shall be in effect from the date the timely and complete application for initial permit or permit renewal is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the Department. However, the installation of new emissions units and the modification of existing emissions units may not commence until a final permit for such activity is issued, unless such activity involves equipment exempt from permitting requirements or modifications eligible to be processed through minor permit modification procedures.

Reg. 26.506 Basis for draft permit conditions

The Department shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The Department shall send this statement to EPA and to any other person who requests it.

CHAPTER 6: PERMIT REVIEW BY THE PUBLIC, AFFECTED STATES, AND EPA

Reg. 26.601 Applicability

All initial permits, renewal permits, and significant permit modifications shall meet the permit review requirements of this chapter.

Reg. 26.602 Public participation

All initial permit issuances, significant modifications, minor modifications, and renewals shall afford the public the opportunity to comment.

(A) Public notice shall be given:

- (1) By publication of notice of application receipt by the Department, in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with the Arkansas Pollution Control and Ecology Commission's Regulation Number 8, Administrative Procedures (Regulation No. 8) (minor permit modification applications are exempt from this requirement). In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
- (2) By the availability for public inspection in at least one location in the area where the source is located and in the Department's central offices of the permit application submitted by the owner or operator and the Department's draft permitting decision and analysis of the effect of the proposed emissions on air quality;
- (3) By publication of a notice of the Department's draft permitting decision in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with Regulation No. 8. In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
- (4) To the mayor of the community in which the source is located;
- (5) To the county judge of the county in which the source is located;
- (6) To persons on a mailing list developed by the Department, including those who request in writing to be on the list; and
- (7) By other means if necessary to assure adequate notice to the affected public.

(B) The notice of Reg. 26.602(A)(3) shall identify the affected facility; the name and address of the permittee; the name and address of the Department; the activity or activities involved in the permit action; the emissions change involved in any permit modification;

the name, address, and telephone number of a person from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials and all other materials available to the Department that are relevant to the permit decision; a brief description of the comment procedures required by this regulation; and a statement of procedures to request a hearing.

- (C) The Department shall provide such notice and opportunity for participation by affected States as is provided for in this section.
- (D) The Department shall provide at least thirty (30) days for public comment on its draft permitting decision and shall give notice of any public hearing at least thirty (30) days in advance of the hearing.
- (E) The Department shall keep a record of the commenters and also of the issues raised during the public participation process so that the Administrator may fulfill his obligation under section 505(b)(2) of the Act to determine whether a citizen petition may be granted, and such records shall be available to the public.

Reg. 26.603 Transmission of permit information to the Administrator

- (A) The Department shall provide to the Administrator a copy of each permit application (including any application for permit modification), each proposed permit, and each final part 70 permit. The applicant may be required by the Department to provide a copy of the permit application (including the compliance plan) directly to the Administrator. Upon agreement with the Administrator, the Department may submit to the Administrator a permit application summary form and any relevant portion of the permit application and compliance plan, in place of the complete permit application and compliance plan.
- (B) The Department shall keep for five (5) years such records and submit to the Administrator such information as the Administrator may reasonably require to ascertain whether the State program complies with the requirements of the Act or of 40 CFR C.F.R. Part 70, as promulgated July 21, 1992, and last modified November 27, 2004; June 3, 2010 (75 FR 31607).

Reg. 26.604 Review of draft permit by affected States

- (A) The Department shall give notice of each draft permit to any affected State on or before the time that the Department provides this notice to the public, except to the extent that minor permit modification procedures requires the timing of the notice to be different.
- (B) The Department, as part of the submittal of the proposed permit to the Administrator (or as soon as possible after the submittal for minor permit modification procedures), shall notify the Administrator and any affected State in writing of any refusal by the Department to accept all recommendations for the proposed permit that the affected State submitted during the public or affected State review period. The notice shall include the Department's reasons for not accepting any such recommendation. The Department is not required to accept recommendations that are not based on applicable requirements or

the requirements of 40 ~~CFR~~C.F.R. Part 70, as promulgated July 21, 1992, and last modified ~~November 27, 2004~~June 3, 2010 (75 FR 31607).

Reg. 26.605 EPA objection to proposed permit

- (A) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with applicable requirements or requirements under this regulation. No permit for which an application is required to be transmitted to the Administrator may be issued if the Administrator objects to its issuance in writing within forty-five (45) days of receipt of the proposed permit and all necessary supporting information.
- (B) Any EPA objection shall include a statement of the Administrator's reasons for objection and a description of the terms and conditions that the permit must include to respond to the objections. The Administrator will provide the permit applicant a copy of the objection.
- (C) Failure of the Department to follow proper permit issuance procedural requirements or to submit required information necessary to review the proposed permit also shall constitute grounds for an objection.
- (D) If the Department fails, within ninety (90) days after the date of an objection under Reg. 26.605(A) to revise and submit a proposed permit in response to the objection, the Administrator will issue or deny the permit in accordance with the requirements of the Federal program promulgated under title V of the Act.

Reg. 26.606 Public petitions to the Administrator

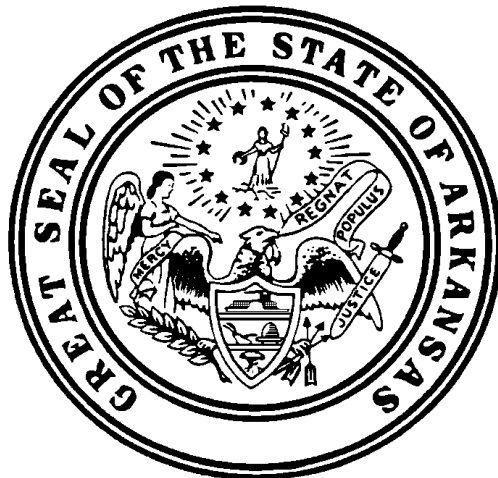
If the Administrator does not object in writing to a proposed part 70 permit, any person may petition the Administrator within sixty (60) days after the expiration of the Administrator's forty-five (45)-day review period to make such objection. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this subsection, the Department shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the Department has issued a permit prior to receipt of an EPA objection under this subsection, the Administrator will modify, terminate, or revoke such permit, and shall do so consistent with the procedures in Chapter 10 of Regulation No. 26 except in unusual circumstances, and the Department may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

Reg. 26.607 Prohibition on default issuance

No part 70 permit (including a permit renewal or modification) shall be issued until affected States and EPA have had an opportunity to review the proposed permit as required under this chapter.

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 19
REGULATIONS OF THE ARKANSAS PLAN OF
IMPLEMENTATION FOR AIR POLLUTION
CONTROL**



INITIAL DRAFT

Submitted to the PC&E Commission in December, 2014

Revised After Public Comment

EXHIBIT A

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CHAPTER 1: TITLE, INTENT, AND PURPOSE

Reg. 19.101 Title

The following rules and regulations, adopted in accordance with the provisions of Subchapter 2 of the Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (~~A.C.A. Ark. Code Ann.~~) §§ 8-4-201– *et seq.*, shall be known as “Regulations of the Arkansas Plan of Implementation of Air Pollution Control,” hereinafter referred to as the “Regulations of the Plan,” and “Regulation 19.”

Reg. 19.102 Applicability

These regulations are applicable to any stationary source which has the potential to emit any federally regulated air pollutant.

Reg. 19.103 Intent and Construction

- (A) The purpose and intent of Regulation 19, as amended, is to provide a clear delineation of those regulations that are promulgated by the Commission in satisfaction of certain requirements of the federal Clean Air Act, 42 United States Code (U.S.C.) §§ 7401 *et seq.*, as of July 1, 1997, and the federal regulations stemming therefrom. Federal programs that the Department is responsible for administering include, but are not limited to, the attainment and maintenance of the National Ambient Air Quality Standards (40 Code of Federal Regulations [~~CFRC.F.R.~~] Part 50), certain delegated subparts of the New Source Performance Standards (40 ~~CFRC.F.R.~~ Part 60), provisions designed for the Prevention of Significant Deterioration (40 ~~CFRC.F.R.~~ § 52.21), minor new source review as described in Chapter 4 (40 ~~CFRC.F.R.~~ Part 51), and certain delegated subparts of the National Emission Standards for Hazardous Air Pollutants (40 ~~CFRC.F.R.~~ Parts 61 and 63) as of July 1, 1997. This subsection shall not be construed as limiting the future delegation of federal programs to the Department for administration.
- (B) Regulation 19, as amended, is further intended to limit the federal enforceability of its requirements to only those mandated by federal law. Regulation 19, as amended, is also intended to facilitate a permit system for stationary sources within the State, which permit

shall provide which provisions are federally enforceable and which provisions are state enforceable.

- (C) Regulation 19, as amended, presumes a single-permit system, encompassing both federal and state requirements. A regulated facility which is subject to permitting under Regulation 19 shall be required to apply for and comply with only one permit, even though that permit may contain conditions derived from the federal mandates contained in Regulation 19, as well as conditions predicated solely on state law. Regulation 19, through construction or implication, shall not support the conclusion that all conditions of a permit have become federally enforceable because the permit contains provisions derived from Regulation 19. Permits or permit conditions issued under the authority of state law, or enforcement issues arising out of state law, shall not be federally enforceable.
- (D) To the extent consistent with state law and efficient protection of the State's air quality, Regulation 19 shall be construed in a manner that promotes a streamlined permitting process, mitigation of regulatory costs, and flexibility in maintaining compliance with federal mandates. Any applicable documents (e.g. "White Papers," regulatory preambles, or interpretive memoranda) issued by the ~~Environmental Protection Agency~~ EPA which are consistent with this policy and the legislative intent of state laws governing air pollution control (~~A.C.A.~~ Ark. Code Ann. § 8-4-301 *et seq.*) are aids for construing the requirements of Regulation 19. Any procedure applicable to major sources that promotes operational flexibility are presumed to be authorized by this regulation unless manifestly inconsistent with its substantive terms.
- (E) Nothing in Regulation 19 shall be construed as curtailing the Department's or Commission's authority under state law.

Reg. 19.104 Severability

If any provision of Regulation 19 is determined to be invalid, such invalidity shall not affect other provisions of Regulation 19.

If federal legislation or a federal court stays, invalidates, delays the effective date of, or otherwise renders unenforceable, in whole or in part, EPA's regulation of greenhouse gases, then the provisions of Regulation 19 concerning greenhouse gases based thereon shall be stayed and

shall not be enforceable until such time as the Commission makes a final decision on whether or not to revise Regulation 19 due to the federal legislation or federal court order.

CHAPTER 2: DEFINITIONS

Terms and phrases used in this regulation which are not explicitly defined herein shall have the same meaning as those terms which are used in the federal Clean Air Act. For purposes of this regulation:

“12-month period” means a period of 12 consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

“Actual emissions” means the quantity of federally regulated air pollutants emitted from a stationary source considering emissions control equipment and actual hours of source operation or amount of material processed.

“CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed by multiplying the mass amount of emissions tpy, for each of the six greenhouse gases in the pollutant GHGs, by the gas’s associated global warming potential published at Table A - 1 to ~~s~~Subpart A of 40 ~~CFRC.F.R.~~ Part 98 - Global Warming Potentials (which is incorporated by reference as of the effective date of the federal final rule published~~finalized~~ by EPA in the Federal Register on-as-of November 29, 2013~~October 30, 2009 [78 FR 71948]~~), and summing the resultant value for each to compute a tpy CO₂ equivalent emissions. ~~For purposes of this definition, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).~~

“Commission” means the Arkansas Pollution Control and Ecology Commission.

“Construction” means fabrication, erection, or installation of equipment. See also 40 ~~CFRC.F.R.~~ § 60.2, 40 ~~CFRC.F.R.~~ § 51.165, and 40 ~~CFRC.F.R.~~ § 52.21.

“Control apparatus” means any device which prevents, controls, detects or records the emission of any federally regulated air pollutants.

“Department” means the Arkansas Department of Environmental Quality, or its successor. When reference is made in this regulation to actions taken by or with reference to the Department, the reference is to the staff of the Department acting at the direction of the Director.

“Director” means the Director of the Arkansas Department of Environmental Quality, or its successor, acting directly or through the staff of the Department.

~~**“Emission increase”** means the calculated sum for each federally regulated air pollutant, based on the difference between the sum of the proposed permitted rates for all emissions units and the sum of the previously permitted emission rates for all emissions units.~~

“Emission limitation” and **“emission standard”** mean a requirement established by the Department or the Administrator of the ~~United States Environmental Protection Agency~~ EPA which limits the emissions of federally regulated air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.

“Emission unit” means any article, machine, equipment, operation, or contrivance that emits or has the potential to emit any federally regulated air pollutant.

“EPA” means the United States Environmental Protection Agency.

“Equipment” means any device, except equipment used for any mode of vehicular transportation, capable of causing the emission of a federally regulated air pollutant into the open air, and any stack, conduit, flue, duct, vent, or similar device connected or attached to or serving the equipment.

“Federal Clean Air Act” or **“Clean Air Act”** or **“FCAA”** or **“the Act”** means the federal Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and its implementing regulations as of the effective date of this regulation.

“Federally regulated air pollutant” means the following:

- (A) Nitrogen oxides or any volatile organic compounds;
- (B) Any pollutant for which a National Ambient Air Quality Standard has been promulgated;
- (C) Except as provided in (E), any pollutant that is subject to any standard promulgated under 42 U.S.C. §§ 7401, *et seq.*, as of the effective date of this regulation;
- (D) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Clean Air Act, 42 U.S.C. §§ 7401, *et seq.* as amended as of July 1, 1997.
- (E) GHGs, except that GHGs shall not be a Federally Regulated Air Pollutant unless the GHG emissions are:
 - (1) from a stationary source emitting or having the potential to emit 75,000 tpy CO₂e emissions or more; and
 - (2) regulated under Chapter 9 of this Regulation 19.

“Fugitive emissions” means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Those emissions are those that, according to customary and good engineering practice, considering technological and economic feasibility, could not pass through a stack, chimney, vent or other functionally-equivalent opening, except that the Department will utilize the definition of fugitive emissions for those industries for which an approved EPA definition exist under federal law or regulation and which are meeting that law or regulation.

“Greenhouse gases” (GHGs) means the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

“Hazardous Air Pollutant” or **“HAP”** means any air pollutant listed pursuant to § 112 of the Clean Air Act, as amended, 42 U.S.C. §§ 7401, *et seq.*, as of the effective date of this regulation.

“Modification” means any physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any federally regulated air pollutant over permitted rates or which results in the emission of a federally regulated air pollutant not previously emitted, except that:

- (A) Routine maintenance, repair, and replacement shall not be considered a physical change, and
- (B) The following shall not be considered a change in the method of operation:
 - (1) Any change in the production rate, if such change does not exceed the permitted operating capacity of the source;
 - (2) Any change in the hours of operation, as long as it does not violate applicable air permit conditions; or
 - (3) The use of an alternate fuel or raw material, as long as it does not violate applicable air permit conditions.
- (C) *De Minimis* changes, as defined in Reg. 19.407(C), and changes in ownership shall not be considered.

“National Ambient Air Quality Standards” or **“NAAQS,”** means those ambient air quality standards promulgated by the EPA in 40 ~~CFR~~C.F.R. Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012/January 15, 2013 (78 FR 3086), as set forth in Appendix B of Regulation 19.

“NAAQS state implementation plan or “NAAQS SIP” (as defined by Ark. Code Ann. § 8-4-303) means a state implementation plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, for the attainment and maintenance of a specified NAAQS in each air quality control region or portion of an air quality control region within the state.

“Opacity” means the degree to which air emissions reduce the transmission of light and obscure the view of an object in the background.

“Operator” means any person who leases, operates, controls, or supervises any equipment affected by these regulations.

“Owner” means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

“Particulate matter” or “PM” means any airborne finely divided solid or liquid material with an aerodynamic diameter equal to or less than 100 micrometers.

“Particulate matter emissions” means all particulate matter, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternate method, specified in 40 [CFRC.F.R.](#) Part 60 Appendix A as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257), or by a test method specified in these regulations or any supplement thereto, with the exception of condensable particulate matter.

“Person” means any individual or other legal entity or their legal representative or assignee.

“Plan” means the Arkansas Plan of Implementation for Air Pollution Control.

“PM_{2.5}” means particulate matter with an aerodynamic diameter less than or equal to a nominal two and one-half (2.5) micrometers as measured by a reference method based on Appendix L of 40 [CFRC.F.R.](#) Part 50 as of ~~July 27, 2012~~ the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2006 (71 FR 61226), or by an approved regional method designated in accordance with Appendix C of 40 [CFRC.F.R.](#) Part 53.

“PM_{2.5} emissions” means PM_{2.5} emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 [CFRC.F.R.](#) Part 51, Appendix M as of ~~the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012~~ April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal ~~ten (10)~~ micrometers as measured by a reference method based on Appendix J of 40 [CFRC.F.R.](#)

Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on August 7, 1987 (52 FR 29467), or by an equivalent method designated in accordance with 40 ~~CFR~~C.F.R. Part 53 as of December 8, 1984.

“PM₁₀ emissions” means PM₁₀ emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 ~~CFR~~C.F.R. Part 51, Appendix M as of the effective date of the federal final rule published by EPA in the Federal Register on July 27, 2012April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“Potential to emit” means the maximum capacity of a stationary source to emit a federally regulated air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a federally regulated air pollutant, including, but not, limited to, air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is enforceable to the extent it is regulated by the federal Clean Air Act, 42 U.S.C. § 7401 *et seq.* as of February 15, 1999. Secondary air emissions do not count in determining the potential to emit of a stationary source.

“Responsible official” means one of the following:

- (A) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative or such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (1) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 United States dollars); or
 - (2) The delegation of authority to such representative is approved in advance by the Department;

- (B) For partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (C) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this regulation, a principal executive officer of a federal agency includes the chief executive officer —having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or
- (D) For acid rain sources:
 - (1) The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and
 - (2) The designated representative for any other purposes under Part 70.

“Secondary emissions” means those emissions of federally regulated air pollutants which, although associated with a source, are not emitted from the source itself.

“Shutdown” means the cessation of operation of equipment.

“Startup” means the setting in operation of equipment.

“State implementation plan” or “SIP” (as defined at Ark. Code Ann. § 8-4-303), means a plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, and that is developed by the department and submitted to the EPA for review and approval.

“Stationary source” means any building, structure, facility, or installation which emits or may emit any federally regulated air pollutant.

“Title I modification” means any modification as defined under any regulation promulgated pursuant to Title I of the federal Clean Air Act. *De minimis* changes under Regulation 19, changes to state only permit requirements, administrative permit amendments, and changes to the insignificant activities list are not Title I modifications.

“Volatile organic compounds” or **“VOC”** means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(A) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity:

- acetone;
- methane;
- ethane;
- methylene chloride (dichloromethane);
- 1,1,1- trichloroethane (methyl chloroform);
- tetrachloroethylene (perchloroethylene);
- 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
- trichlorofluoromethane (CFC-11);
- dichlorodifluoromethane (CFC-12);
- chlorodifluoromethane (HCFC-22);
- trifluoromethane (HFC-23);
- 1,2-dichloro 1,1, 2, 2-tetrafluoroethane (CFC-114);
- chloropentafluoroethane (CFC-115);
- 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);
- 1,1,1,2-tetrafluoroethane (HFC-134a);
- 1,1-dichloro 1-fluoroethane (HCFC-141b);
- 1-chloro 1,1-difluoroethane (HCFC-142b);
- 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
- pentafluoroethane (HFC-125);
- 1,1,2,2-tetrafluoroethane (HFC-134);
- 1,1,1-trifluoroethane (HFC-143a);
- 1,1-difluoroethane (HFC-152a);
- parachlorobenzotrifluoride (PCBTF);
- cyclic, branched, or linear completely methylated siloxanes;
- 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
- 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
- 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
- difluoromethane (HFC-32);
- ethylfluoride (HFC-161);
- 1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
- 1,1,2,2,3-pentafluoropropane (HFC-245ca);
- 1,1,2,3,3-pentafluoropropane (HFC 245ea);
- 1,1,1,2,3-pentafluoropropane (HFC-245eb);
- 1,1,1,3,3-pentafluoropropane (HFC-245fa);
- 1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
- 1,1,1,3,3-pentafluorobutane (HFC-365mfc);

chlorofluoromethane (HCFC-31);
 1 chloro-1-fluoroethane (HCFC-151a);
 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃ or HFE-7100);
 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane
 ((CF₃)₂CF₂OCH₃);
 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅ or HFE 7200);
 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane
 ((CF₃)₂CF₂OC₂H₅);
 methyl acetate;
 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000);
 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane
 (HFE-7500);
 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea);
 methyl formate (HCOOCH₃);
 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300);
propylene carbonate;
dimethyl carbonate;
trans-1,3,3,3-tetrafluoropropene (HFO-1234ze);
HCF₂OCF₂H (HFE-134);
HCF₂OCF₂OCF₂H (HFE-236cal2);
HCF₂OCF₂CF₂OCF₂H (HFE-338pcc13);
HCF₂OCF₂OCF₂CF₂OCF₂H (H-Galden 1040x or H-Galden ZT 130 [or 150 or
 180]);
trans- 1-chloro-3,3,3-triflouroprop-1-ene;
2,3,3,3-tetraflouropropene;
2-amino-2-methyl-1-propanol;

and perfluorocarbon compounds which fall into these classes:

- (1) cyclic, branched, or linear, completely fluorinated alkanes;
 - (2) cyclic, branched, or linear, completely fluorinated ethers with no —unsaturations;
 - (3) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
 - (4) sulfur containing perfluorocarbons with no un saturations and with sulfur bonds only to carbon and fluorine.
- (B) For purposes of determining compliance with emission limits, VOC will be measured by the test methods in the approved State Implementation Plan (SIP) or 40 CFR C.F.R. Part

60, Appendix A, as of July 1, 1997, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the Department.

- (C) As a precondition to excluding these compounds as VOC or at any time thereafter, the Department may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Department, the amount of negligibly-reactive compounds in the source's emissions.
- (D) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

CHAPTER 3: PROTECTION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS

Reg. 19.301 Purpose

The purpose of this chapter is to state the responsibilities of the Department and regulated sources in meeting and maintaining the NAAQS ~~contained in 40 CFR Part 50~~. If any area of the state is determined to be in violation of the NAAQS, all applicable requirements contained in the Clean Air Act, as amended, and all regulations promulgated thereto shall be met by the Department.

Reg. 19.302 Department Responsibilities

The Department shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) Ambient air monitoring in any area that can reasonably be expected to be in excess of the NAAQS.
- (B) Computer modeling of regulated air pollutant emissions for any area that can reasonably be expected to be in excess of the NAAQS, and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. All computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS.

Reg. 19.303 Regulated Sources Responsibilities

Any source subject to the provisions of this Plan shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) When required by law or this regulation, obtaining a permit from the Department prior to construction of a new source of federally regulated air pollutant emissions or prior to the modification of an existing source of air emissions.

- (B) Operating equipment in such a manner as to meet any applicable permit requirement or any applicable regulations.
- (C) Repairing malfunctioning equipment and pollution control equipment as quickly as possible. If the malfunctioning equipment is causing, or contributing to, a violation of the NAAQS, as determined by computer modeling, the source is responsible for ceasing operations of the affected equipment until such time that it is repaired.

Reg. 19.304 Delegated Federal Programs

Sources subject to this regulation shall also comply with all Federal programs that the Department is responsible for administering including certain delegated subparts of the New Source Performance Standards (40 ~~CFRC.F.R.~~ Part 60), provisions designed for the Prevention of Significant Deterioration (40 ~~CFRC.F.R.~~ § 52.21), and certain delegated subparts of the National Emissions Standards for Hazardous Air Pollutants (40 ~~CFRC.F.R.~~ Parts 61 and 63), which were promulgated as of January 27, 2006. These delegated subparts only apply to major sources. (There are subparts that apply to minor sources, but the Department has not requested delegation of them as of April 28, 2006.)

~~Reg. 19.305 NAAQS Air Quality Analysis for Issuance of Permits~~

~~The Department shall consider potential ambient air quality impacts from a proposed increase in emissions for any pollutant for which a NAAQS is in effect prior to issuing a permit for the construction of a new stationary source or the modification of an existing stationary source subject to this regulation, as those terms are defined in Regulation 19, Chapter 2. This consideration shall take the form of an air quality analysis which shall be conducted as follows:~~

~~(A) For construction of a new stationary source or modification to an existing stationary source involving emission increases, over permitted rates, of less than the pollutant-specific amounts established in 19.407(C), the resulting environmental impact is trivial and no further air quality analysis is required for each such pollutant for the modification.~~

~~(B) Notwithstanding 19.305(A), for any permit application involving the construction of a new stationary source or the modification of an existing stationary source subject to permitting pursuant to Regulation 31, Nonattainment New Source Review Requirements (Regulation 31), compliance with the requirements of Regulation 31 shall constitute the~~

~~necessary air quality analysis under this section. No further air quality analysis shall be required for any such pollutant subject to such review under Regulation 31.~~

~~(C) Notwithstanding 19.305(A) and 19.305(B), for any permit involving the construction of a new major stationary source or the modification of an existing stationary source subject to Chapter 9 of this regulation, compliance with the requirements of 40 CFR § 52.21 as adopted by the Commission under 19.904 shall constitute the necessary air quality analysis under this section. No further air quality analysis shall be required for any such pollutant subject to such review under Chapter 9 of this regulation.~~

~~(D) For all other permits not described in 19.305(A) through 19.305(C) for the construction of a new stationary source or the modification of an existing stationary source, the air quality analysis may be qualitative in nature and may consider such factors as the nature, type, location, and emission parameters of the source, the existing attainment status of the area, the level of the proposed emissions increase relative to the area's permitted emission rates, the existing ambient air levels of the pollutant based on the state monitoring network, and historical monitored trends in ambient air levels of the federally regulated air pollutant.~~

~~(1) Where the need has been demonstrated and specific criteria adopted on a pollutant or facility specific basis in the applicable NAAQS SIP, the Director may conduct air dispersion modeling for such an air quality analysis, to ensure that the issuance of the proposed permit will not interfere with the attainment or maintenance of a NAAQS.~~

~~(2) The demonstration of need and the specific criteria adopted for when such modeling is conducted may be based on those factors listed in 19.305(D), together with other available and pertinent information such as the results of regional airshed modeling performed for NAAQS SIP development.~~

~~(E) Notwithstanding paragraphs 19.305(A) through 19.305(D), changes at existing stationary sources which qualify as *De Minimis* changes pursuant to 19.407(C) and changes to a source's insignificant activities list are not modifications, and are not subject to the requirements of this section.~~

CHAPTER 4: MINOR SOURCE REVIEW

Reg. 19.401 General Applicability

No person shall cause or permit the operation, construction, or modification of a stationary source, whose actual emissions are:

Seventy-five (75) tons per year or more of carbon monoxide;

Forty (40) tons per year or more of nitrogen oxides;

Forty (40) tons per year or more of sulfur dioxide;

Forty (40) tons per year or more of volatile organic compounds;

Ten (10) tons per year or more of direct PM_{2.5};

Fifteen (15) tons per year or more of PM₁₀;

One-half (0.5) tons per year or more of lead;

Two (2.0) tons per year or more of any single hazardous air pollutant; or

Five (5.0) tons per year or more of any combination of hazardous air pollutants

without first obtaining a permit from the Department pursuant to the provisions of this chapter.

Reg. 19.402 Approval Criteria

No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.

Reg. 19.403 Owner/Operator's Responsibilities

Issuance of a permit by the Department does not affect the responsibility of the owner/operator to comply with applicable portions of this regulation.

Reg. 19.404 Required Information

(A) General

Application for a permit shall be made on such forms and contain such information as the Department may reasonably require, including but not limited to:

- (1) information on the nature and amounts of federally regulated air pollutants to be emitted by the stationary source; and
- (2) such information on the location, design, and operation of stationary source as the Department may reasonably require.

(B) Duty to Supplement Submittal

If, while processing an application that has been determined to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, the Department may request such information in writing and set a reasonable deadline for a response.

(C) Duty to Correct Submittal

Any owner/operator who fails to submit any relevant facts or who has submitted incorrect information, shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any relevant requirements that become applicable to the stationary source before final action is taken on its application.

Reg. 19.405 Action on Application

(A) Technical Review

The Department will review the application submitted under this chapter in order to ensure to

their reasonable satisfaction that:

- (1) the stationary source will be constructed or modified to operate without interfering with attainment or maintenance of a national ambient air quality standard;
- (2) the stationary source will be constructed or modified to operate without violating any applicable regulation adopted by the ~~U.S. Environmental Protection Agency~~ EPA pursuant to §§ 111, 112, and 114 of the Clean Air Act as amended;
- (3) the stationary source will be constructed or modified to operate without resulting in a violation of any applicable provisions of this regulation;
- (4) the emission rate calculations are complete and accurate; and
- (5) if the facility wishes to measure and/or monitor operating parameters rather than actual emissions, the application describes a process which will be used to ensure that the calculations are translated into enforceable limits on operational parameters rather than emissions.

(B) Proposed Action

- (1) If the Department initially determines the requirements of Reg. 19.405(A) are met, they shall prepare a draft permit which:
 - (a) contains such conditions as are necessary to comply with this Regulation;
 - (b) addresses all federally regulated air pollutant emissions and all federally regulated air pollutant emitting equipment at the stationary source except pollutants or equipment specifically exempt or as specifically provided for in paragraph (c) below; and
 - (c) establishes Best Available Control Technology (BACT) permitted emission rates, emission limitations or other enforceable conditions for GHG emissions pursuant to Chapter 9 of this Regulation, if applicable. Draft permits for facilities not subject to a BACT determination in regard to GHG emissions pursuant to the provisions at Chapter 9 of this

Regulation shall not contain permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions. However, the applicant may request that the Department include permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions in the draft permit in order to set enforceable limits for the purpose of establishing synthetic minor status. In the event any provision of Regulation 19 is found to be in conflict with this Section 19.405(B)(1), this Section shall take precedence.

- (2) If the Department initially determines the requirements of this chapter are not met, they shall prepare a notice of intent to deny. This notice will state the reasons for the Department's denial of the stationary source's submittal.
- (3) Except as provided in Reg. 19.407, the public shall have an opportunity to comment on the Department's proposed permit decision in accordance with Reg. 19.406.
- (4) Within 90 days of receipt by the Department of an initial permit application, or an application for a major modification which contains such information as required by the Department (unless said period is extended by mutual agreement between the Department and the applicant), the Department shall notify the applicant in writing of its draft permitting decision. If the Department fails to take action of the application within the prescribed time frames, the aggrieved applicant may petition the Commission for relief from Department inaction. The Commission shall either grant or deny the petition within 45 days of its submittal.

(C) Final Action

The Department shall take final action on a permit application after the close of the public comment period. The Department shall notify in writing the owner/operator and any person that submitted a written comment, of the Department's final action and the Department's reasons for its final action.

Reg. 19.406 Public Participation

(A) General

No permit shall be issued, denied, or modified unless the public has first had an opportunity to comment on the information submitted by the owner/operator and the Department's analysis, as demonstrated by the permit record, of the effect of construction or modification on ambient air quality, including the Department's proposed approval or disapproval of the permit.

(B) Public Availability of Information

For purposes of this section, opportunity to comment shall include, at a minimum:

- (1) Availability for the public inspection in at least one location in the area where the source is located, or proposes to locate, and in the Department's central offices of the Department's draft decision, information submitted by the owner/operator, and any information developed by the Department in support of its draft permit decision;
- (2) A 30-day period for submittal of public comment (beginning on the date of the latest newspaper notice, ending on the date 30 days later);
- (3) A publication in a newspaper of general circulation in the area where the source is located or proposes to locate, and in a State publication designed to give general public notice. Such notice shall, as a minimum, describe the locations at which the information submitted by the owner/operator and the Department's analysis of this information, may be inspected and the procedure for submitting public comment;
- (4) A copy of the notice, required pursuant to this subsection, shall be sent to the owner/operator and to the:
 - (a) Regional Administrator of the ~~EPA United States Environmental Protection Agency~~;
 - (b) mayor of the community where the stationary source is proposed to be constructed or modified;
 - (c) county judge of the county where the equipment is proposed to be constructed or modified; and

- (d) appropriate air pollution control agencies of adjoining states if the construction or modification of the source will impact air quality in adjoining states.
- (5) Public comments addressing the technical merits of the permit application and the Department's analysis of the effect of the proposed emissions on air quality submitted in accordance with procedures in the public notice shall be considered by the Department prior to taking final action on the permit application.

Reg. 19.407 Permit Amendments

(A) Administrative Permit Amendments

- (1) An administrative permit amendment is a permit revision that:
 - (a) corrects a typographical error;
 - (b) identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change in the source;
 - (c) requires more frequent monitoring or reporting by the permittee;
 - (d) incorporates a change in the permit involving the retiring of equipment or emission units, or the decrease of permitted emissions from equipment or emission units; or
 - (e) incorporates a change to the facility's insignificant activities list.
- (2) The Department shall revise the permit as expeditiously as practicable and may incorporate such revisions without providing notice to the public.
- (3) The applicant may implement the changes addressed in the request for an administrative amendment immediately upon approval.

(B) Change in Ownership

- (1) Permits issued under this regulation shall remain freely transferable, provided the applicant for the transfer:
 - (a) ~~the applicant for the transfer~~ notifies the Director at least thirty (30) days in advance of the proposed transfer date on such forms as the Director may reasonably require, and
 - (b) submits a disclosure statement in accordance with Commission Regulation 8, Administrative Procedures, or other such documents as required by the Department.
- (2) The Director may deny the issuance or transfer of any permit, license, certification, or operational authority if he or she finds, based upon the disclosure statement and other investigation which he or she deems appropriate, that:
 - (a) The applicant has a history of non-compliance with the environmental laws or regulations of this state or any other jurisdiction;
 - (b) An applicant which owns or operates other facilities in the state is not in substantial compliance with, or on a legally enforceable schedule that will result in compliance with, the environmental laws or regulations of this state; or
 - (c) A person with a history of non-compliance with environmental laws or regulations of this state or any other jurisdiction is affiliated with the applicant to the extent of being capable of significantly influencing the practices or operations of the applicant which could have an impact upon the environment.
- (3) Public notice requirements shall not apply to changes in ownership or changes in name.

~~(A)(C)~~ *De Minimis* Changes

- (1) A proposed change to a facility will be considered *De Minimis* if:

- (a) minimal judgment is required to establish the permit requirements for the change; and
 - (b) the change will result in a trivial environmental impact.
- (2) The environmental impact of a proposed change generally will be considered trivial if the ~~potential~~-emissions increase, based on the differences between the sum of the proposed permitted rates for all emissions units and the sum of previously permitted emission rates for all units from the change alone, without taking into account any corresponding emission reductions, will either:
- (a) be less than the following amounts:
 - i. Seventy-five (75) tons per year of carbon monoxide;
 - ii. Forty (40) tons per year of nitrogen dioxides, sulfur dioxides, or volatile organic compounds;
 - iii. Twenty-five (25) tons per year of particulate matter emissions;
 - iv. Ten (10) tons per year of direct PM_{2.5};
 - ~~iv.~~ v. Fifteen (15) tons per year of PM₁₀ emissions; and
 - ~~v.~~ vi. One-half (0.5) a ton per year of lead;
 - (b) or, result in an air quality impact less than:

Pollutant	<i>De Minimis</i> Concentration	Averaging Time
carbon monoxide	500 $\mu\text{g}/\text{m}^3$	8-hour
nitrogen dioxide	10 $\mu\text{g}/\text{m}^3$	Annual
<u>PM_{2.5}</u>	<u>2 $\mu\text{g}/\text{m}^3$</u>	<u>24-hour</u>
PM ₁₀	8 $\mu\text{g}/\text{m}^3$	24-hour
sulfur dioxide	18 $\mu\text{g}/\text{m}^3$	24-hour

lead	0.1 $\mu\text{g}/\text{m}^3$	3-month
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- (3) A proposed change will be considered *De Minimis* if the increases are less than 75,000 tpy of CO₂e and other pollutant emission increases otherwise qualify as *De Minimis* under this section.
- (4) The following changes will not be considered *De Minimis* changes:
- (a) any increase in the permitted emission rate at a stationary source without a corresponding physical change or change in the method of operation at the source;
 - (b) any change which would result in a violation of the Clean Air Act;
 - (c) any change seeking to change a case-by-case determination of an emission limitation established pursuant to Best Available Control Technology (BACT), §112(g), §112(i)(5), §112(j), or §111(d) of the Clean Air Act as amended as of February 15, 1999;
 - (d) a change that would result in a violation of any provision of this regulation;
 - (e) any change in a permit term, condition, or limit that a source has assumed to avoid an applicable requirement to which the source would otherwise be subject;
 - (f) any significant change or relaxation to existing testing, monitoring, reporting, or recordkeeping requirements; or
 - (g) any proposed change which requires more than minimal judgment to determine eligibility.
- (5) A source may not submit multiple applications for *De Minimis* changes that are designed to conceal a larger modification that would not be considered a *De Minimis* change. The Department will require such multiple applications be processed as a permit modification with public notice and reconstruction

requirements. Deliberate misrepresentation may be grounds for permit revocation.

- (6) The applicant may implement *De Minimis* changes immediately upon approval by the Department.
- (7) The Department shall revise the permit as expeditiously as practicable and may incorporate *De Minimis* changes without providing notice to the public. The applicant may implement *De Minimis* changes immediately upon approval by the Department.

Reg. 19.408 Exemption from Permitting

(A) Insignificant Activities

Stationary sources and activities listed in Appendix A of this regulation shall be considered to be insignificant and will not require a permit under this chapter or be included in a source's permit.

(B) Grandfathering

Stationary sources operating prior to June 30, 1975, and which have not been modified since, will not be required to obtain a permit under this chapter.

Reg. 19.409 Transition

Facilities which are now subject to this regulation which were not previously subject to this regulation shall be in full compliance within 180 days of the effective date of this regulation. Facilities which are now subject to permitting under this regulation which were not previously subject to permitting under this regulation shall submit a complete application within 180 days of the effective date of this regulation. The Director may extend this compliance period on a case-by-case basis provided that the total compliance period does not exceed one year.

Reg. 19.410 Permit Revocation and Cancellation

(A) Revocation

Any permit issued under this regulation is subject to revocation, suspension, or modification in whole or in part, for cause, including without limitation:

- (1) Violation of any condition of the permit;
- (2) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or
- (3) Change in any applicable regulation or change in any pre-existing condition affecting the nature of the emission that requires either a temporary or permanent reduction or elimination of the permitted emission.

(B) Cancellation

The Director may cancel a permit if the construction or modification is not begun within 18 months from the date of the permit issuance or if the work involved in the construction or modification is suspended for a total of 18 months or more.

Reg. 19.411 General Permits

(A) General Authority

The Department may, after notice and opportunity for public participation provided under this chapter, issue a general permit covering numerous similar sources. The criteria for the review and approval of permits under this chapter shall be used for general permits as well. Any general permit shall comply with all requirements applicable to other permits and shall identify criteria by which sources may qualify for the general permit. They shall also include enforceable emission limitations or other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this regulation. To sources that qualify, the Department shall grant the conditions and terms of the general permit. The source shall be subject to enforcement action for operation without a permit if the source is later determined not to qualify for the conditions and terms of the general permit.

(B) Application

Sources that would qualify for a general permit must apply to the Department for coverage under the terms of the general permit or must apply for permit consistent with this chapter. The Department may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

- (1) When any application for the issuance of a new permit or a modification of an existing permit is filed with the Department, the Department shall cause notice of the application to be published in a newspaper of general circulation in the county in which the proposed facility is to be located.
- (2) The notice required by Reg. 19.411(B)(1) shall advise that any interested person may request a public hearing on the permit application by giving the Department a written request within ten (10) days of the publication of the notice.
- (3) Should a hearing be deemed necessary by the Department, or in the event the Department desires such a hearing, the Department shall schedule a public hearing and shall, by first class mail, notify the applicant and all persons who have submitted comments of the date, time, and place thereof.

Reg. 19.412 Dispersion Modeling

The following shall apply when dispersion or other air quality modeling is used to meet the requirements of this chapter.

(A) General

All applications of air quality modeling involved in this chapter shall be based on the applicable models, data bases, and other requirements specified in Appendix W of 40 ~~CFR~~C.F.R. Part 51 (Guideline on Air Quality Models) as of the effective date of the federal final rule published by EPA in the Federal Register on November 9, 2005 (70 FR 68228).

(B) Substitution

Where an air quality model specified in the Guideline on Air Quality Models is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific pollutant or type of stationary source. Written approval of the Administrator of the EPA must be obtained for any modification or substitution.

Reg. 19.413 Confidentiality

Information which constitutes a trade secret shall be held confidential and segregated from the public files of the Department if requested in writing by the permit applicant in accordance with this subsection.

(A) For purposes of this subsection, “Trade Secret” means any information, including formula, pattern, compilation, program, device, method, technique, process, or rate of production that:

- (1) Derives independent economic value (actual or potential) from not being generally known to, and not being readily ascertainable through, proper means by other persons who can obtain economic value from its disclosure or use, and
- (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(B) In order to establish entitlement to confidentiality, the applicant must submit a sworn affidavit to the Department that is subject to public scrutiny which describes in a manner that does not reveal trade secrets, the processes or market conditions that supports the applicant’s confidentiality claim in the terms of Reg. 19.413(A)(1) and (2). This affidavit must also recite the following:

“The applicant agrees to act as an indispensable party and to exercise extraordinary diligence in any legal action arising from the Department’s denial of public access to the documents or information claimed herein to be a trade secret.”

If an applicant anticipates numerous permit modifications that may involve regulatory review of trade secrets, it may submit an omnibus affidavit establishing the prerequisites of Reg. 19.413(A)(1) and (2) and reference this document in future confidentiality claims.

(C) Confidentiality claims shall be afforded interim protected status until the Department determines whether the requirements of Reg. 19.413(B) are satisfied. The Department

shall make such determination prior to the issuance of any permit or publication of any draft permit. In the event the Department does not make such determination prior to permit issuance, the information shall be deemed confidential until a request is made. If a third party request to review information claimed as confidential is received before the Department provides its written determination concerning the claim, the Department shall not release such information before notifying the applicant of the request. The Department shall notify the applicant of the request and the Department's determination on the confidentiality claim at least two business days before releasing the information, at which time the applicant may choose to supplement its affidavit supporting confidentiality or seek legal recourse.

- (D) For any permit application submitted subject to a claim of trade secret, the applicant shall provide two copies of the application; one prominently marked as confidential and another that is subject to public review with confidential information excised. The Department will not accept applications that are deemed totally confidential except under extraordinary circumstances guaranteeing future disclosure at a meaningful time for public review.

Reg. 19.414 Operational Flexibility-Applicant's Duty to Apply for Alternative Scenarios

Any operating scenario allowed for in a permit may be implemented by the facility without the need for any permit revision or any notification to the Department. It is incumbent upon the permit applicant to apply for any reasonably anticipated alternative facility operating scenarios at the time of permit application. The Department shall include approved alternative operating scenarios in the permit.

Reg. 19.415 Changes Resulting in No Emissions Increases

A permitted source may make changes within the facility that contravene permit terms without a permit revision if the changes:

- (A) Are not modifications under any provision of Title I of the Act;
- (B) Do not exceed emissions allowable under the permit (whether expressed therein as a rate of emissions or in the terms of total emissions);

- (C) Do not violate applicable requirements; and
- (D) Do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

provided that the facility provides the Department with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days, or such shorter time frame that the Department allows for emergencies. The source and the Department shall attach each such notice to their copy of the relevant permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

Reg. 19.416 Permit Flexibility

- (A) The Department may grant an extension to any testing, compliance or other dates in the permit. No extensions shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
 - (1) The permittee of the facility makes such a request in writing at least 15 days in advance of the deadline specified in the facility's permit;
 - (2) The extension does not violate a federal requirement;
 - (3) The permittee of the facility demonstrates the need for the extension; and
 - (4) The permittee of the facility documents that all reasonable measures have been taken to meet the current deadline and documents reasons the current deadline cannot be met.
- (B) The Department may grant a request to allow temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:

- (1) The permittee of the facility makes such a request in writing at least 30 days in advance of the date that temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit;
 - (2) Such a request does not violate a federal requirement;
 - (3) Such a request is temporary in nature;
 - (4) Such a request will not result in a condition of air pollution;
 - (5) The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date and time such emission will occur;
 - (6) Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - (7) The permittee of the facility maintains records of the dates and results of such temporary emissions and/or testing.
- (C) The Department may grant a request to allow an alternative to the monitoring specified in a facility's operating permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
- (1) The permittee operator of the facility makes such a request in writing at least 30 days in advance of the first date that the monitoring alternative will be used at the facility;
 - (2) Such a request does not violate a federal requirement;
 - (3) The monitoring alternative provides an equivalent or greater degree of actual monitoring to the requirements in the facility's operating permit; and

- (4) Any such request, if approved by the Department, is incorporated into the next permit modification application by the permittee of the facility.

Reg. 19.417 Registration

- (A) Sources currently holding permits issued pursuant to Regulation 19 but whose emissions are below the permitting thresholds of 19.401, and above the registration thresholds of Reg. 18.315 may elect to continue to operate under their existing Regulation 19 permit or they may submit a registration under Reg. 18.315 and request their Regulation 19 permit to be terminated. The Regulation 19 permit shall remain in effect until terminated. If a source takes no action, the Regulation 19 permit shall remain in effect.
- (B) A source otherwise subject to registration under Reg. 18.315 may elect to instead operate under a permit issued in accordance with Reg. 19.402.

CHAPTER 5: GENERAL EMISSIONS LIMITATIONS APPLICABLE TO EQUIPMENT

Reg. 19.501 Purpose

The purpose of this chapter is to define the general federally regulated air pollutant emissions limitations applicable to all equipment subject to the Plan. Stricter specific limitations may be required in applicable permits if such limitations are necessary to comply with federal law or regulations which are in effect as of the effective date of this regulation.

Reg. 19.502 General Regulations

No person shall cause or permit the construction or modification of equipment which would cause or allow the following standards or limitations to be exceeded:

- (A) Any National Ambient Air Quality Standard as defined herein;
- (B) Any ambient air increment pursuant to Chapter 9 of this Regulation;
- (C) Any applicable emission limitation promulgated by the ~~EPA United States Environmental Protection Agency~~; or
- (D) Any applicable emission limitation promulgated by the Department in this regulation.

Reg. 19.503 Visible Emission Regulations

- (A) No person shall cause or permit visible emissions (other than uncombined water vapor) from equipment identified ~~herein~~hereunder and which was installed and in operation, or for which a permit had been issued by the Department prior to January 30, 1972, to exceed the following limitations:
 - (1) Emissions shall not exceed 40% opacity, except that emissions greater than 40% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.

- (B) No person shall cause or permit visible emissions (other than uncombined water vapor) from new equipment identified ~~herein~~hereunder which was installed or permitted by the Department after January 30, 1972, to exceed the following limitations or to exceed any applicable visible emission limitations of the New Source Performance Standards promulgated by the EPA:
- (1) For incinerators and fuel burning equipment, exclusively, emissions shall not exceed 20% opacity except that emissions greater than 20% opacity but not exceeding 60% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.
 - (2) For equipment used in a manufacturing process, emissions shall not exceed 20%.
- (C) Opacity of visible emissions shall be determined using EPA Method 9 (40 ~~CFR~~CFR.C.F.R. Part 60, Appendix A).

Reg. 19.504 Stack Height/Dispersion Regulations

The stack height provisions of 40 ~~CFR~~CFR.C.F.R. § 51.118 are incorporated by reference. The definition of “stack,” “a stack in existence,” “dispersion technique,” “good engineering practice,” “nearby,” and “excessive concentration” are defined in 40 ~~CFR~~CFR.C.F.R. §§ 51.100 (ff) through (kk) are incorporated into this chapter by reference as of September 12, 1986.

Reg. 19.505 Revised Emissions Limitation

The emissions limitations contained within the Plan and applicable permits are for the purpose of assuring the attainment and maintenance of the NAAQS and have been established within the framework of information presently available to the Department. As additional and more precise information becomes available, the emission limitations and reporting procedures of this chapter may be amended as described below:

- (A) More restrictive limitations to protect the NAAQS. In accordance with the provisions of the federal Clean Air Act, as amended, and the federal regulations promulgated pursuant to the Clean Air Act, as amended, the emission limitations and reporting procedures of this chapter or any applicable permits may be further amended and made more restrictive

where the Director finds more restrictive measures are necessary to assure maintenance of the NAAQS.

- (B) Less restrictive limitations. Any person subject to the emission limitations contained in this Plan or in a permit may petition the Director for a less stringent limitation on the grounds that the existing limitation cannot be met when considering physical, economical, or technological constraints. In no case shall the Director approve a less stringent limitation if it would cause a violation of the NAAQS. The Director shall not approve a less stringent limitation if it violates a federal emission standard or regulation, unless approved according to applicable federal regulations.

The Director shall take into account the following factors when making such determinations:

- (1) The process, fuels, and raw materials available and to be employed in the facility involved;
 - (2) The engineering aspects of the application of various types of control techniques which have been adequately demonstrated;
 - (3) Process and fuel changes;
 - (4) The respective costs of the application of all such control techniques, process changes, alternative fuels, etc.; and
 - (5) Locational and siting considerations.
- (C) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (D) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

CHAPTER 6: UPSET AND EMERGENCY CONDITIONS

Reg. 19.601 Upset Conditions

For purposes of this paragraph, “upset condition” shall be defined as exceedences of applicable emission limitations lasting 30 or more minutes, in the aggregate, during a 24-hour period, unless otherwise specified in an applicable permit or regulation (such as New Source Performance Standards [NSPS] regulations). All upset conditions, resulting in violation of an applicable permit or regulation, shall be reported to the Department. Any source exceeding an emission limit established by the Plan or applicable permit shall be deemed in violation of said Plan or permit and shall be subject to enforcement action. The Department may forego enforcement action for federally regulated air pollutant emissions given that the person responsible for the source of the excess emissions does the following:

- (A) Demonstrates to the satisfaction of the Department that the emissions resulted from:
 - (1) equipment malfunction or upset and are not the result of negligence or improper maintenance; or
 - (2) physical constraints on the ability of a source to comply with the emission standard, limitation or rate during startup or shutdown;

And that all reasonable measures have been taken to immediately minimize or eliminate the excess emissions.

- (B) Reports such occurrence or upset or breakdown of equipment to the Department by the end of the next business day after the discovery of the occurrence.
- (C) Submits to the Department, at its request, a full report of such occurrence, including the identification of and location of the process and control equipment involved in the upset and including a statement of all known causes and the scheduling and nature of the actions to be taken to eliminate future occurrences or to minimize the amount by which said limits are exceeded and to reduce the length of time for which said limits are exceeded.

Reg. 19.602 Emergency Conditions

An “emergency” means any situation arising from the sudden and reasonably unforeseeable events beyond the control of the source, including natural disasters, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the upset condition. An emergency shall not include non-compliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

- (A) An emergency constitutes a complete affirmative defense to an action brought for non-compliance with such technology-based limitations if the following conditions are met. The affirmative defense of emergency shall demonstrate through properly signed contemporaneous operating logs, or such other relevant evidence that:
- (1) An emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
 - (4) The permittee submitted notice of the upset to the Department by the end of the next business day after the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- (B) [RESERVED]

CHAPTER 7: SAMPLING, MONITORING, AND REPORTING REQUIREMENTS

Reg. 19.701 Purpose

The purpose of this chapter is to generally define the powers of the Department in requiring sampling, monitoring, and reporting requirements at stationary sources. The Department shall enforce all properly incorporated and delegated federal testing requirements at a minimum. Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations.

Reg. 19.702 Air Emissions Sampling

Any stationary source subject to this regulation shall be subject to the following requirements:

(A) Sampling Ports

To provide any sampling ports, at the request of the Department, required for federally regulated air pollutant emissions sampling, including safe and easy access to such ports.

(B) Sampling

To conduct federally regulated air pollutant emissions sampling, at the request of the Department, to determine the rate, opacity, composition, and/or contaminant concentration of the emissions. All compliance testing shall be done at the expense of the permittee by an independent firm, unless otherwise approved by the Department. Sampling shall not be required for those pollutants with continuous emissions monitors.

(C) Averaging Times

All compliance testing averaging times shall be consistent with the averaging times of the applicable federally regulated air pollutant emissions limitations stated in the applicable permit, which in no case shall be greater than the minimum averaging times of the applicable NAAQS.

(D) Process Rates

Unless otherwise approved by the Department, all federally regulated air pollutant emissions sampling shall be performed with the equipment being tested operating at least at 90% of its permitted capacity. Emissions results shall be extrapolated to correlate with 100% of permitted capacity to determine compliance.

(E) Testing Time Frames

Any equipment that is to be tested, at the request of the Department, shall be tested in accordance with the following time frames:

- (1) Equipment to be constructed or modified shall be tested within 60 days after achieving its maximum permitted production rate, but no later than 180 days after its initial start-up;
- (2) Equipment already operating shall be tested according to the time frames set forth by the Department.

(F) Testing Methods and Records

The Department shall require that all applicable testing be performed using the methods described in 40 C.F.R. Part 51, Appendix M, as of the effective date of the federal final rule published by EPA in the Federal Register on April 2, 2014 (79 FR 18452); 40 ~~CFRC~~C.F.R. Part 60, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257); as of August 30, 1992 40 C.F.R. Part 61, Appendix B, as of the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2000 (65 FR 62161); and 40 C.F.R. Part 63, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on December 29, 1992 (57 FR 62002). The Department, with the concurrence of the EPA, may approve, at its discretion, alternate sampling methods that are equivalent to the specified methods. The results of such tests shall be submitted to the Department within the time frames and on such forms as required by the Department and federal regulations. The owner or operator of the equipment shall retain the results of such tests for at least five (5) years, and shall make the results available to any agents of the Department or the EPA during regular business hours.

Reg. 19.703 Continuous Emissions Monitoring

Any stationary source subject to this regulation shall, as required by federal law and upon request of the Department:

- (A) Install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with applicable performance specifications in 40 ~~CFRC.F.R.~~ Part 60 Appendix B as of ~~August 30, 1992~~ the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11271), and quality assurance procedures in 40 ~~CFRC.F.R.~~ Part 60 Appendix F as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11274)~~August 30, 1992~~, and other methods and conditions that the Department, with the concurrence of the EPA, shall prescribe. Any source listed in a category in 40 ~~CFRC.F.R.~~ Part 51 Appendix P as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675)~~August 30, 1992~~, or in 40 ~~CFRC.F.R.~~ Part 60 as of August 30, 1992, shall adhere to all continuous emissions monitoring or alternative continuous emission monitoring requirements stated therein, if applicable.
- (B) Report the data collected by the monitoring equipment to the Department at such intervals and on such forms as the Department shall prescribe, in accordance with 40 ~~CFRC.F.R.~~ Part 51, Appendix P, Section 4.0 (Minimum Data Requirements) as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675)~~August 30, 1992~~, and any other applicable reporting requirements promulgated by the EPA.

Reg. 19.704 Notice of Completion

For equipment for which a new permit or major permit modification is required, the Department shall be notified in writing within 30 days of the following events;

- (A) The date of commencement of construction or modification; and
- (B) The date of commencement of operation of the equipment.

Reg. 19.705 Record Keeping and Reporting Requirements

Any stationary source subject to this regulation shall, upon request by the Department:

- (A) Maintain records on the nature and amounts of federally regulated air pollutants emitted to the air by the equipment in question. All records, including compliance status reports and excess emissions measurements shall be retained for at least five (5) years, and shall be made available to any agent of the Department or EPA during regular business hours.
- (B) Supply the following information, correlated in units of the applicable emissions limitations, to the Department:
 - (1) General process information related to the emissions of federally regulated air pollutants into the air.
 - (2) Emissions data obtained through sampling or continuous emissions monitoring.
- (C) Information and data shall be submitted to the Department by a responsible official on such forms and at such time intervals as prescribed by applicable federal regulations or the Department. Reporting periods shall be a 12 month period.
- (D) Each emission inventory is to be accompanied by a certifying statement, signed by the owner(s) or operator(s) and attesting that the information contained in the inventory is true and accurate to the best knowledge of the certifying official. The certification shall include the full name, title, signature, date of signature, and telephone number of the certifying official.

Reg. 19.706 Public Availability of Emissions Data

Emissions data obtained by the Department shall be correlated in units of applicable emissions limitations and be made available to the public at the Department's central offices during normal business hours.

CHAPTER 9: PREVENTION OF SIGNIFICANT DETERIORATION

Reg. 19.901 Title

The following rules and regulations of the Arkansas Pollution Control and Ecology Commission, adopted in accordance with the provisions of Part II of the Arkansas Water and Air Pollution Control Act at [A.C.A. Ark. Code Ann. §§ 8-4-101 et seq.](#), shall be known as the Prevention of Significant Deterioration Regulations of the Arkansas Plan of Implementation for Air Pollution Control, hereinafter referred to, respectively, as the “PSD Regulations.”

Reg. 19.902 Purposes

Promulgation and enforcement of these PSD Regulations is intended to further the purposes of the Plan and the Regulations of the Plan, including, but not limited to, acceptance of delegation by the EPA of authority for enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Class I federal areas.

Reg. 19.903 Definitions

- (A) “Advance notification” (of a permit application) means any written communication which establishes the applicant's intention to construct, and which provides the Department with sufficient information to determine that the proposed source may constitute a major new source or major modification, and that such source may affect any mandatory Class I federal area, including, but not limited to, submittal of a draft or partial permit application, a PSD monitoring plan, or a sufficiently detailed letter. “Advance notification” does not include general inquiries about the Department’s regulations.
- (B) “Regulated NSR Pollutant,” for purposes of this chapter, means the following:
 - (1) Any pollutant for which a national ambient air quality standard has been adopted under Chapter 2 of this Regulation and any pollutant identified under this paragraph (B)(1) as a constituent or precursor for such pollutant. Precursors identified by the Department for purposes of NSR are the following:

- (a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.
 - (b) Sulfur dioxide is a precursor to PM_{2.5} in all attainment and unclassifiable areas.
 - (c) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all attainment and unclassifiable areas, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM_{2.5} concentrations.
 - (d) Volatile organic compounds are presumed not to be precursors to PM_{2.5} in any attainment or unclassifiable area, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations.
- (2) Any pollutant that is subject to any standard promulgated under Section 111 of the Act as of July 27, 2012;
 - (3) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act;
 - (4) Any pollutant that otherwise is subject to regulation under the Act;
 - (5) Notwithstanding paragraphs (B)(1) through (4) of this section, the term *regulated NSR pollutant* shall not include any or all hazardous air pollutants either listed in Section 112 of the Act, or added to the list pursuant to Section 112(b)(2) of the Act, and which have not been delisted pursuant to Section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under Section 108 of the Act as of July 27, 2012; and
 - (6) PM_{2.5} emissions and PM₁₀ emissions shall include gaseous emissions from a

source or activity, which condense to form particulate matter at ambient temperatures. As of the effective date of the federal final rule published by EPA in the Federal Register on Thursday, October 25, 2012 (77 FR 65107)~~the rulemaking action initiated by the Commission on September 28, 2012~~, such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM_{2.5}, and PM₁₀ in PSD permits. Compliance with emissions limitations for PM_{2.5}, and PM₁₀ issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this chapter.

- (C) For the purpose of this chapter, “subject to regulation” means, for any air pollutant, that the pollutant is subject to either a provision of the federal Clean Air Act, or a nationally-applicable regulation codified by the Administrator pursuant to 40 ~~CFRC.F.R.~~, Chapter 1, Subchapter C and adopted herein, that requires actual control of the quantity of emissions of that pollutant and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity.
- (D) All other terms used herein shall have the same meaning as set forth in Chapter 2 of Regulation 19 or in 40 ~~CFRC.F.R.~~ § 52.21(b) [PSD] and 40 ~~CFRC.F.R.~~ § 51.301 [Protection of Visibility] as of October 20, 2010, and adopted in Reg. 19.904, unless manifestly inconsistent with the context in which they are used. Wherever there is a difference between the definitions in Chapter 2 of Regulation 19 and those listed in 40 ~~CFRC.F.R.~~ § 52.21(b) and ~~CFRC.F.R.~~ § 51.301, the federal definitions as listed in 40 ~~CFRC.F.R.~~ § 52.21(b), as adopted in Reg. 19.904 and Reg. 19.903(A), (B) and (C), and 40 ~~CFRC.F.R.~~ § 51.301 as of October 20, 2010, shall apply.
- (E) The definition for “routine maintenance, repair and replacement” in 40 ~~CFRC.F.R.~~ § 52.21(b)(2)(iii)(a) is not incorporated.

Reg. 19.904 Adoption of Regulations

(A) Except where manifestly inconsistent with the provisions of the Clean Air Act, as amended, or with federal regulations adopted pursuant thereto, and as amended specifically herein by paragraphs (B), (C), (D), (E), (F), and (G) of Reg. 19.904, the Arkansas Department of Environmental Quality shall have those responsibilities and that authority, with reference to the State of Arkansas, granted to the Administrator of the EPA under 40 ~~C.F.R.~~ § 52.21 (a)(2) through (bb), as in effect on November 29, 2005, which are hereby incorporated herein by reference with the exception of:

- (1) 40 C.F.R. § 52.21(aa), which is incorporated by reference as in effect on August 13, 2012, except for instances in the sections of 40 C.F.R. § 52.21(aa) where 40 C.F.R. § 52.21(b)(49) is referenced. In those instances, paragraph (G) of Reg. 19.904 shall apply;
- (2) 40 C.F.R. § 52.21(r)(6), which is incorporated by reference as of the effective date of the federal final rule published by EPA in the Federal Register on December 21, 2007 (72 FR 72607);
- ~~(2)(3)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(23),– 52.21(i)(5)(ii), and 52.21(i)(5)(iii), which are incorporated by reference as of May 16, 2008;
- ~~(3)(4)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(14)(i) [Major Source Baseline Date], 52.21(b)(14)(ii) [Minor Source Baseline Date], 52.21(b)(14)(iii), 52.21(b)(15) [Baseline Area], 52.21(c) [Ambient Air Increments], 52.21(k)(1) [Source Impact Analysis Requirements], and 52.21(p) [Requirements for Sources Impacting Federal Class I areas], which are incorporated herein by reference as of October 20, 2010;
- ~~(4)(5)~~ 40 ~~C.F.R.~~ §§ 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i)(9), and 52.21(cc), which are not incorporated herein.

In the absence of a specific imposition of responsibility or grant of authority, the Department shall be deemed to have that responsibility and authority necessary to attain the purposes of the Plan, these PSD Regulations, and the applicable federal regulations, as incorporated herein by reference.

- (B) Exclusions from the consumption of increments, as provided in 40 ~~CFRC.F.R.~~ § 51.166(f)(1)(iii) as of November 29, 2005, shall be effective immediately. Submission of this Plan under the Governor's signature constitutes a request by the Governor for this exclusion.
- (C) In addition to the requirements of 40 ~~CFRC.F.R.~~ § 52.21(o) as of November 29, 2005, the following requirements [designated as Reg. 19.904(C)(1),(2),(3) and (4)] shall also apply:
- (1) Where air quality impact analyses required under this part indicate that the issuance of a permit for any major stationary source or for any major modification would result in the consumption of more than fifty percent (50%) of any available annual increment or eighty percent (80%) of any short term increment, the person applying for such a permit shall submit to the Department an assessment of the following factors:
 - (a) Effects that the proposed consumption would have upon the industrial and economic development within the area of the proposed source; and
 - (b) Alternatives to such consumption, including alternative siting of the proposed source or portions thereof.
 - (2) The assessment required under subparagraph (41) above shall be made part of the application for permit and shall be made available for public inspection as provided in 40 ~~CFRC.F.R.~~ § 52.21(q) as of November 29, 2005.
 - (3) The assessment required under subparagraph (41) above shall be in detail commensurate with the degree of proposed increment consumption, both in terms of the percentage of increment consumed and the area affected.
 - (4) The assessment required under subparagraph (41) above may be made effective where a proposed source would cause an increment consumption less than that specified in said subparagraph if the Director finds that unusual circumstances exist in the area of the proposed source which warrant such an assessment. The Director shall notify the applicant in writing of those circumstances which warrant said assessment. The Commission may rescind or modify the Director's

action, upon a showing by the applicant that the circumstances alleged by the Director either do not exist or do not warrant the aforementioned assessment.

- (D) In addition to the requirements of 40 CFRC.F.R. § 52.21(p)(1) as of October 20, 2010, the following requirements shall also apply:

Impacts on mandatory Class I federal areas include impacts on visibility. The preliminary determination that a source may affect air quality or visibility in a mandatory Class I federal area shall be made by the Department, based on screening criteria agreed upon by the Department and the Federal Land Manager.

- (E) In all instances wherein the aforesaid 40 CFRC.F.R. § 51.301 and 40 CFRC.F.R. § 52.21 refer to the Administrator or the Environmental Protection Agency, the reference, for the purposes of paragraph (A) of Reg. 19.904, shall be deemed to mean the Arkansas Department of Environmental Quality, unless the context plainly dictates otherwise, except in the following sections:

- (1) Exclusion from increment consumption: 40 CFRC.F.R. §§ 52.21(f)(1)(v), (f)(3), and (f)(4)(I);
- (2) Redesignation: 40 CFRC.F.R. §§ 52.21(g)(1), (g)(2), (g)(4), (g)(5), and (g)(6);
- (3) Air quality models: 40 CFRC.F.R. § 52.21(l)(2).

- (F) Redesignation of air quality areas in Arkansas shall comply with Ark~~ansas~~ Code Ann.~~otated 1987 Section~~§ 8-3-101 *et seq.*

- (G) For the purpose of the regulation of GHGs, only the standards and requirements promulgated by EPA as of June 3, 2010, related to the permitting of GHG emissions shall apply to the requirements of 40 CFRC.F.R. § 52.21, as of November 29, 2005, incorporated by reference at Reg.19.904(A). The following definitions and requirements shall also apply:

- (1) “Greenhouse gases” (GHGs) means the air pollutant defined as the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be

subject to regulation except as provided in Reg. 19.904(G)(4) through Reg.19.904(G)(5), and shall not be subject to regulation if the stationary source:

- (a) Maintains its total source-wide emissions below the GHG plantwide applicability limitations (hereinafter “PAL”) level;
 - (b) Meets the requirements in 40 § C.F.R 52.21(aa)(1) through 40 C.F.R. § 52.21(aa)(15) as outlined in Reg. 19.904(A)(1); and
 - (c) Complies with the PAL permit containing the GHG PAL.
- (2) For purposes of Reg. 19.904(G)(3) through Reg.19.904(G)(5):
- (a) The term tons per year (tpy) “CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed as follows:
 - (i) Multiplying the mass amount of emissions in tpy, for each of the six greenhouse gases in the pollutant GHGs, by each gas’s associated global warming potential published at Table A - 1 to ~~s~~Subpart A of 40 C.F.R. pPart 98 - Global Warming Potentials (as of the effective date of the federal final rule published by EPA in the Federal Register on November 29, 2013 [78 FR 71948]~~October 30, 2009~~); and
 - (ii) Sum the resultant values from Reg. 19.904(G)(2)(a) for each gas to compute a tpy CO₂e.
 - ~~(b) For purposes of this definition, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).~~

- (3) The term “emissions increase” as used in Reg. 19.904(G)(4) through Reg. 19.904(G)(5) shall mean that both a significant emissions increase (as calculated using the procedures in 40 ~~CFRC.F.R.~~ § 52.21(a)(2)(iv), as of November 29, 2005), and a significant net emissions increase (as defined in 40 ~~CFRC.F.R.~~ § 52.21(b)(3), as of November 29, 2005, and 40 ~~CFRC.F.R.~~ § 52.21(b)(23), as of November 29, 2005), occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO₂e, and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and “significant” is defined as 75,000 tpy CO₂e instead of applying the value in 40 ~~CFRC.F.R.~~ § 52.21(b)(23)(ii), as of November 29, 2005.
- (4) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:
- (a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit GHGs at 75,000 tpy CO₂e or more; or
 - (b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of GHGs of 75,000 tpy CO₂e or more.
- (5) Beginning July 1, 2011, in addition to the provisions in Reg.19.904(G)(4) of this section, the pollutant GHGs shall also be subject to regulation:
- (a) At a new stationary source that will emit or have the potential to emit 100,000 tpy CO₂e or more; or
 - (b) At an existing stationary source that emits or has the potential to emit 100,000 tpy CO₂e or more, when such stationary source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more.

CHAPTER 10: REGULATIONS FOR THE CONTROL OF VOLATILE ORGANIC COMPOUNDS IN PULASKI COUNTY

Reg. 19.1001 Title

This chapter, adopted in accordance with the provisions of the Arkansas Water and Air Pollution Control Act [Arkansas Code Annotated Sections 8-4-101 *et seq.*, as amended] and pursuant to the provisions of the federal Clean Air Act, shall be known as the Regulations for the Control of Volatile Organic Compounds.

Reg. 19.1002 Purpose

The Regulations for the Control of Volatile Organic Compounds are designed to provide for the attainment and maintenance of the National Ambient Air Quality Standards for ozone in those areas of Arkansas which have been designated as nonattainment areas by the EPA pursuant to the federal Clean Air Act and are further designed to bring the Arkansas Plan of Implementation for Air Pollution Control into compliance with the provisions of said Act.

Reg. 19.1003 Definitions

When used in these Regulations for the Control of Volatile Organic Compounds, the following definitions apply. Terms and phrases used in this chapter which are not explicitly defined herein shall have the same meaning as those terms used in Chapter 2 of Regulation 19 or, if not defined in Chapter 2 of Regulation 19, as those terms defined in the federal Clean Air Act.

Unless manifestly inconsistent therewith, terms and phrases used herein shall have the same meaning as used in the Arkansas Water and Air Pollution Control Act and the federal Clean Air Act.

"Clear coat" means a coating which lacks color and opacity.

"Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating.

"Control Technique Guideline" means any of the guideline series documents describing an emission control technology for a specific source or category of sources; which documents being published by the EPA.

"Cutback asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluent). Upon exposure to atmospheric conditions, the diluents evaporate, leaving the asphalt cement to perform its function.

"Crude oil" means a naturally occurring mixture consisting of hydrocarbons and/or sulfur, nitrogen, and/or oxygen derivatives of hydrocarbons and which is a liquid in the reservoir and at standard conditions.

"Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

"Delivery vessel" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary tanks of gasoline dispensing facilities.

"Existing source" means any source of volatile organic compounds other than a new source.

"External floating roof" means a storage vessel cover in an open tank top consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

"Extreme performance coating" means coatings designed for harsh exposure or extreme environmental conditions.

"Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kilopascals (kPa) (4 pounds per square inch [psi]) or greater that is used as fuel for internal combustion engines.

"Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

"Gasoline tank truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks or to gasoline bulk facilities.

"Liquid-mounted" means a primary seal mounted so the bottom of the seal covers the liquid surface between the tank shell and the floating roof.

"Low solvent coating" means coatings which contain less organic solvent than the conventional coatings used by the industry. Low solvent coatings include water borne, high solids, electrodeposition and powder coatings.

"Lowest Achievable Emission Rate" (LAER) means for any source, that rate of emissions which reflects the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable New Source Standards of Performance.

"Major source" means any stationary source which has the potential to emit 100 tons or more per year of volatile organic compounds.

"Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any volatile organic compound emitted by such source or which results in the emission of any other volatile organic compound not previously emitted.

"New source" means any stationary source of volatile organic compounds, the construction or modification of which is commenced after July 1, 1979.

"New Source Standard of Performance" (NSPS) means those standards which are adopted by the EPA pursuant to the provisions of Section 111 of the federal Clean Air Act [NSPS, 40 CFR Part 60].

"Operator" means any person who leases, operates, controls, or supervises any source, facility or equipment affected by these regulations.

"Owner" means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

"Person" means any individual or other legal entity or their legal representative or assignee.

"Prime coat" means the first of two or more films of coating applied to a metal surface.

"Reasonably Available Control Technology" (RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical source categories.

"Single coat" means one film coating applied to a metal surface.

"Top coat" means the final film or series of films or coatings applied in a two coat (or more) operation.

"True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute (API) Bulletin 2517, Evaporation Loss from External Floating Roof Tanks, 1980. The API procedure may not be applicable to some high viscosity or high pour crudes. Available estimates of true vapor pressure may be used in special cases such as these.

"Vapor collection system" means a vapor transport system which used direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

"Vapor control system" means a system that prevents release to the atmosphere of gasoline vapors in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per liter).

"Vapor-mounted" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof.

Reg. 19.1004 General Provisions

(A) Applicability and Effective Dates

- (1) Sources which are subject to provisions of the Regulations for the Control of Volatile Organic Compounds include:
 - (a) Any source for which controls are governed by Reg. 19.1005 hereof;
 - (b) Any source which is subject to the terms of a Commission order issued pursuant to Reg. 19.1004(D)(1) hereof, and
 - (c) Any new major source.
- (2) The provisions of Chapter 10, the Regulations for the Control of Volatile Organic Compounds, shall be limited to sources located in Pulaski County, except as provided in Reg. 19.1004(D)(1) and shall go into full force and effect on the effective date provided, however, that the provisions of Reg. 19.1004(D)(1) shall go into full force and effect on April 1, 1979. The effective date for Reg. 19.1005(A)(B) and (C) is July 1, 1979, and for Reg. 19.1005(D) and (E) is October 1, 1980. The effective date for Reg. 19.1005(F) is April 1, 1981.

(B) Exemptions and Variances

- (1) [RESERVED]
- (2) The requirements of Reg. 19.1005 are based upon information presented in the Control Technique Guidelines as published by the EPA and are intended to be consistent with Reasonably Available Control Technology. The owner or operator of equipment affected by the provisions of Reg. 19.1005 may be granted a variance from the specific provisions of such section provided that such owner or operator can demonstrate to the reasonable satisfaction of the Commission that full and strict compliance is technologically or economically infeasible or that alternative techniques to be employed by such owner or operator will result in substantially the same environmental benefits as would be achieved with full and strict compliance with the provisions of Reg. 19.1005. In no event, however, shall the Commission issue variances from the requirements of Reg. 19.1005 if

such variances will prevent reasonable further progress for the attainment and maintenance of the National Ambient Air Quality Standards for ozone.

(C) Toxic Compounds

The Regulations for the Control of Volatile Organic Compounds are not intended as appropriate controls for sources which emit volatile organic compounds which are hazardous air pollutants.

(D) Determination of Reasonably Available Control Technology

- (1) Where the Department proposes the existence of Reasonably Available Control Technology for existing sources, other than the sources for which the provisions of Reg. 19.1005 are applicable, the Department shall give public notice of such determination and shall, in such notice, describe the nature of such technology and shall list by size, type, source, category or by individual source name, the affected sources. The public notice shall also give notice of public hearing concerning the subject proposals. If, after review of the information produced through the public hearing process, the Department determines that such technology does exist and that the application of such technology is necessary to maintain reasonable further progress toward the attainment and maintenance of the National Ambient Air Quality Standards for ozone, the Department shall issue an order requiring the installation of such technology.
- (2) Any order issued pursuant to Reg. 19.1004(D)(1) above may require the owner or operator of sources affected by such order to file such schedules and reports as the Department feels necessary to assure that the subject technology is placed into operation as expeditiously as practicable. The terms of such orders may be modified where the Department finds that such modifications are necessary to avoid economic hardship and where such modification would not interfere with reasonable further progress toward the attainment of the previously cited standards.

(E) Permits and Compliance Schedules

- (1) Existing Sources:

- (a) No person shall cause or permit the operation or use of an existing source to which any provision of Reg. 19.1005 applies unless the owner or operator of such source shall have submitted to the Department, prior to the applicable date below, a compliance schedule indicating what steps have been, or will be taken to bring the operation of such source into compliance with the provisions of Reg. 19.1005. The compliance schedule shall be of such form and contain such information as the Department may reasonably require. The applicable date for Reg. 19.1005(A)(B) and (C) is October 1, 1979. The applicable date for Reg. 19.1005(D) and (E) is January 1, 1981. The applicable date for Reg. 19.1005(F) is May 15, 1981.
- (b) No person shall cause the operation or use of an existing source which is affected by any provision of Reg. 19.1005 after the approval date if a compliance schedule of such source under Subsection (a) above has been disapproved by the Department. No compliance schedule for any source shall be approved by the Department unless the Department finds that the controls proposed by the owner or operator will be installed, placed in operation, and that the source will be in compliance with the provisions of Reg. 19.1005 prior to the final compliance date. Extensions beyond the final compliance date may be granted by the Department provided the Department finds that such extensions are necessary to avoid economic hardship and that such extensions will not prevent reasonable further progress toward the attainment of the National Ambient Air Quality Standards for ozone. The approval date for Reg. 19.1005(A)(B) and (C) is February 1, 1981 and for Reg. 19.1005(D)(E) and (F) is February 1, 1982. The final compliance date for Reg. 19.1005(A)(B) and (C) is June 1, 1981, for Reg. 19.1005(D) is March 1, 1982, and for Reg. 19.1005(E) and (F) is July 1, 1982.
- (c) No person shall cause or permit the operation of an existing source in a manner which violates the terms of a compliance schedule which has been approved or amended by the Department or which violates the terms of a Department order issued pursuant to the provisions of Reg. 19.1004(D)(1).

(2) New Sources:

Except as provided herein, no person shall commence the construction, installation, or modification of a new source after July 1, 1979, unless that person has first received a permit from the Department. Application for permit shall be of such form and contain such information as the Department may reasonably require.

(a) New Major Sources: No permit shall be issued for the construction, installation or modification of a new major source after July 1, 1979, unless the Department determines the following conditions to have been met:

- (i) The emissions resulting from the proposed source when considered together with all other existing and proposed emissions of volatile organic compounds in Pulaski County will not cause or contribute to emission levels which exceed the allowance permitted for volatile organic compounds under the Arkansas Plan of Implementation for Air Pollution Control, as revised to comply with the provisions of the Clean Air Act.
- (ii) The emissions resulting from the proposed new major source will comply with the requirements of the FCAA which are in effect as of the effective date of this regulation.
- (iii) The owner or operator of the proposed new or modified major source has demonstrated that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in Arkansas are in compliance, or on a schedule of compliance with all applicable emission limitations and standards under the federal Clean Air Act, including the Arkansas Plan of Implementation for Air Pollution Control.
- (iv) A permit may be issued to a new major source which would otherwise cause or contribute to emission levels which exceed the

allowable levels for Pulaski County, as described in the State Implementation Plan for Air Pollution Control, as amended, if the owner or operator of that source first submits legally binding agreements to the Department which reflect emission reductions from other sources in Pulaski County, or from sources within seventy-two (72) miles of the North Little Rock Municipal Airport, which would more than offset the emissions from such proposed new major source. Emission reductions claimed by such owner or operator may not include those emission reductions in Pulaski County which are necessary to reduce the total volatile organic compound emission to the allowable level in Pulaski County.

(b) Other New Sources:

- (i) No permit shall be issued for a new source of the size, type, class, or category for which the provisions of Reg. 19.1005 apply unless the Department finds that such new source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by the source and that, as a minimum, the source will be designed, constructed and operated such that the emissions therefrom, will not exceed the allowable emission rate provided by such section for existing sources.
- (ii) No permit shall be issued for a new source of the size, type, class or category for which a Department Order has been issued pursuant to Reg. 19.1004(D)(1), unless the Department finds that such source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by such source and that, as a minimum, the source will be designed, constructed, and operated such that the emissions therefrom will not exceed the rate required of existing sources by such order.

(F) Testing and Reporting Requirements

- (1) Any person owning or operating sources which are affected by the provisions of the Regulations for the Control of Volatile Organic Compounds shall, upon the request of the Director, furnish such information as may be required to demonstrate compliance with said Regulations. For purposes of this chapter, the provisions of Chapter 7 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control shall apply.
- (2) For purposes of administering the provisions of the Regulations for the Control of Volatile Organic Compounds, the Director shall not be limited to the results obtained from emission tests but may, where appropriate, determine the compliance status of any source with respect to the emission limitations contained herein by the results of engineering evaluations, by inspection reports or by such information submitted, and certified, by the source owner or operator. For purposes of this chapter, a source may be deemed to be in compliance with the emission limitations of said Regulations if the equipment of such source is designed and operated in accordance with the provisions of Reg. 19.1005 or, where Reg. 19.1005 is not applicable, is designed and operated in accordance with the provisions of a Department Order or a permit issued hereunder, provided however, where an emission limitation is applicable to a certain source and where emission testing has been conducted in a manner approved by the Department and where such test demonstrate compliance with such limitations, the source shall be deemed to be in compliance with such limitations.
- (3) To test the leak tightness of gasoline tank trucks as required in Reg. 19.1005(D), the following method and procedures should be followed:
 - (a) The owner or operator shall, at his or her own expense demonstrate compliance with Reg. 19.1005(D) by the methods of Part 3 of this subsection or an alternative method approved by the Director.
 - (b) The owner or operator of a tank truck subject to this regulation must notify the Director in writing of the date and location of a certification test at least thirty (30) days before the anticipated test date.

- (c) Test procedures to determine compliance with Reg. 19.1005(D) must be approved by the Director and consistent with the test procedures described in Appendix A or C of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
- (d) Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
- (4) To test for compliance with Reg. 19.1005(E) procedures outlined in EPA guideline series document "Measurement of Volatile Organic Compounds," EPA-450/2-78-041 and Appendix A of "Control of Volatile Organics from Existing Stationary Sources--Volume II--Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles and Light Trucks," EPA 450/2-77-008 shall be used.
- (5) To test for compliance with Reg. 19.1005(F) a visual inspection must be conducted at an interval not to exceed one year. For tanks with vapor mounted primary seals, the secondary seal gap area should be determined by measuring the length and width of the gaps around the entire circumference of the secondary seal. Only gaps greater than or equal to 0.32 centimeter (cm) (1/8 inch) shall be used in computing the gap area. The area of the gaps shall be accumulated to determine the compliance with Reg. 19.1005(F)(1)(b). This data along with records of the throughput and type of volatile petroleum liquids for each vessel should be maintained by the owner or operator.

(G) Circumvention

- (1) No owner or operator subject to these Regulations may build, erect, install, or use any article, machine, equipment, process or method, the use of which conceals an emission which would otherwise constitute a violation of these Regulations.
- (2) The provisions of Reg. 19.1004(G)(1) above include, but are not limited to, the

use of gaseous diluents to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a Regulation that applies only to operations larger than a specified size.

(H) Malfunctions, Breakdowns, Upsets

(1) Emissions in excess of these Regulations which are temporary and result solely from a sudden and unavoidable breakdown, malfunction or upset of process or emission control equipment, or sudden and unavoidable upset of operation will not be considered a violation of these Regulations provided:

- (a) the owner or operator notifies the Department of any such occurrence by the end of the next business day of the occurrence; and
- (b) the owner or operator demonstrates to the Director that the suggested period of time for correction is as expeditious as practicable; and
- (c) the breakdown or upset is determined by the Director to be unavoidable and not the result of negligence; and
- (d) within five (5) days after the beginning of the occurrence, a written report is submitted to the Director which includes the cause and nature of the event, estimated quantity of volatile organic compounds emitted, time of emission and to prevent recurrence; and
- (e) the Director is immediately notified when corrective measures have been accomplished.

(2) [RESERVED]

Reg. 19.1005 Provisions for Specific Processes

(A) Gasoline Storage and Marketing

- (1) No person shall cause or permit the loading of gasoline into a storage tank of a gasoline storage or marketing facility with a monthly throughput in excess of 10,000 gallons except through a submerged fill pipe or by bottom loading. This provision shall not apply to storage tanks of less than 4,000 liter capacity (approximately 1,000 gallons).
- (2) No person shall cause or permit the operation of a gasoline bulk facility of less than 87,000 liters (23,000 gallons) per day throughput unless all gasoline delivery vessels are loaded by submerged fill pipe or bottom filling.
- (3) No person shall cause or permit the operation of a gasoline bulk facility having a daily throughput equal to greater than 87,000 liters (23,000 gallons) per day unless a vapor control system is in place, is properly maintained and is used to prevent gasoline vapors from being emitted into the atmosphere at a rate in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per gallon).

(B) Petroleum Liquid Storage

- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilopascals (1.52 pounds-force per square inch [psia]) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) unless such tanks:
 - (a) meet the equipment specifications and maintenance requirements of the federal Standards of Performance for New Stationary Sources—Storage Vessels for Petroleum Liquids, 40 CFR 60.110, as amended by proposed rule change, *Federal Register*, May 18, 1978, pages 21617 through 21625; or
 - (b) are retrofitted with a floating roof or internal floating cover using a non-metallic resilient seal as a primary seal which meets the equipment specifications in the federal standards referred to in Reg. 19.1005(B)(1)(a), or its equivalent, or

- (c) have a covered floating roof or internal floating cover which is maintained in effective working order and which meets the manufacturer's equipment specifications in effect at the time it was installed.
- (2) All seals necessary to meet the requirements of Reg. 191005(B)(1)(b) and (c) are to be maintained in good operating condition.
- (3) All openings, except stub drains and those related to safety, are to be sealed with suitable closures when not in use.

(C) Cutback Asphalt

No person shall mix, use or apply cutback asphalt for roadway paving except where the cutback asphalt is used solely as a penetrating prime coat or when the maximum ambient temperature on the day of application is less than 15 degrees Celsius ($^{\circ}\text{C}$) (59 degrees Fahrenheit [$^{\circ}\text{F}$]).

(D) Gasoline Tank Trucks and Vapor Collection Systems

- (1) No person shall allow a gasoline tank truck subject to this regulation to be filled or emptied unless the gasoline tank truck:
 - (a) is tested on a schedule acceptable to the Director according to the test procedure referenced in Reg. 19.1004(F)(3);
 - (b) sustains a pressure change of no more than 750 pascals (3 inches of water [in. of H_2O]) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H_2O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H_2O) during the testing required in Reg. 19.1005(D)(1)(a); and
 - (c) is repaired by the owner or operator and retested within 15 days of testing if it does not meet the criteria of Reg. 19.1005(D)(1)(b). subparagraph (1)(b) of this chapter.
- (2) The owner or operator of a vapor collection system subject to this regulation shall:

- (a) Design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:
 - (i) Gauge pressure from exceeding 4,500 pascals (18 in. of H₂O) and vacuum from exceeding 1,500 pascals (6 in. of H₂O) in the gasoline tank truck;
 - (ii) A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from all points on the perimeter of a potential leak source when measured by the method referenced in Reg. 19.1004(F)(3) during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and
 - (iii) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals.
 - (b) Within 15 days, repair and retest a vapor collection or control system that exceeds the limit in supporting Reg. 19.1005(D)(2)(a)(ii) above.
 - (3) The Director may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system by the method referenced in Reg. 19.1004(F)(3) to confirm continuing compliance with Reg. 19.1005(D)(1) or (2) of this section.
- (E) Surface Coating of Metal Parts and Products
- (1) No owner or operator of a major source engaged in the surface coating of miscellaneous metal parts and products may operate a coating application system subject to this regulation that emits VOC in excess of:
 - (a) 0.52 kg/liter (l) 4.3 pounds per gallon [lb/gal]) of coating, excluding water, delivered to a coating applicator that applies clear coatings;
 - (b) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator in a coating application system that utilizes air or forced air dryers;

- (c) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings;
 - (d) 0.36 kg/l (3.0 lb/gal) of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems; and
 - (e) The above emission limitations shall include all VOC emissions from both coating and solvent washing unless the solvent is directed into containers that prevent evaporation.
 - (2) If more than one emission limitation in Reg. 19.1005(E)(1) applies to a specific coating, then the most stringent emission limitation shall be applied.
 - (3) The emission limits set forth in Reg. 19.1005(E)(1) shall be achieved by:
 - (a) The application of low solvent coating technology;
 - (b) An incineration system which oxidizes at least 90.0 percent of the non-methane VOC measured as total combustible carbon to carbon dioxide and water; or
 - (c) An equivalent means of VOC removal. The equivalent means must be certified by the owner or operator and approved by the Director.
 - (4) A capture system must be used in conjunction with the emission control system in Reg. 19.1005(E)(3)(b) and (c). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall VOC emission reduction efficiency of at least 80 percent.
- (F) External Floating Roof
- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilo pascals (1.52 psia) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) equipped with an external floating roof unless:

- (a) The storage tank has been fitted with a continuous secondary seal extending from the floating roof to the tank wall (rim mounted) or an control device with an effectiveness equal to or greater than the secondary seal;
 - (b) All seal closure devices meet the following requirements:
 - (i) There shall be no visible holes, tears, or other openings in the seals or seals fabric;
 - (ii) The seals must be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank walls; and
 - (iii) For vapor mounted seals, the gap area between the secondary seal and the tank wall shall not exceed 21.2 square centimeters per meter of inside tank diameter (1.0 square inch per foot of inside tank diameter);
 - (c) All openings in the external floating roof except for automatic bleeder vents, rim space vents, and leg sleeves provide a projection below the liquid surface and are sealed with a suitable closure when not in use;
 - (d) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (e) Rim vents are set to open only when the roof is being floated off the leg supports or at the manufacturer's recommended settings; and
 - (f) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.
- (2) The following are specifically exempted from the requirements of this subsection:

- (a) External floating roof tanks having capacities less than 1,600,000 liters (10,000 barrels [bbls]) used to store produced crude oil and condensate prior to custody transfer;
- (b) A metallic-type shoe seal in a welded tank which has a secondary seal from the top of the shoe to the tank wall (a shoe-mounted secondary); and
- (c) External floating roof tanks storing waxy, heavy pour crudes.

Reg. 19.1006 Severability

If any provision of the Regulations for the Control of Volatile Organic Compounds or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the Regulations for the Control of Volatile Organic Compounds which can be given effect without the invalid provision or application, and to this end, the provisions of the Regulations for the Control of Volatile Organic Compounds are declared to be severable.

CHAPTER 11: MAJOR SOURCE PERMITTING PROCEDURES

Facilities subject to Arkansas Pollution Control and Ecology Commission's; Regulation 26, Regulations of the Arkansas Operating Air Permit Program, ~~Regulation 26~~ (Regulation 26) shall be required to have their permit applications processed in accordance with the procedures contained in Regulation 26 which are hereby incorporated by reference.

CHAPTER 13: STAGE I VAPOR RECOVERY

Reg. 19.1301 Purpose

The purpose of this chapter is to limit emissions of VOC from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks.

Reg. 19.1302 Applicability

This rule applies to all gasoline dispensing facilities and gasoline service stations and to delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station in a nonattainment area; and this rule applies to all persons owning or operating a gasoline distribution facility or gasoline service station in a nonattainment area.

Reg. 19.1303 Definitions

- (A) “Coaxial system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tanks occurs through a single coaxial fill tube, which is a tube within a tube. Product is delivered through the inner tube, and vapor is recovered through the annular space between the walls of the inner tube and outer tube.
- (B) “Delivery vessel” means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.
- (C) “Dual point system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tank occurs through two separate openings in the storage tank and two separate hoses between the tank truck and the stationary storage tank.
- (D) “Gasoline” means any petroleum distillate or blend of petroleum distillates with other combustible liquids that is used as a fuel for internal combustion engines and has a Reid vapor pressure of 4.0 psi or greater. This does not include diesel fuel or liquefied petroleum gas (LPG).

- (E) “Gasoline dispensing facility” means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.
- (F) “Gasoline service station” means any gasoline dispensing facility where gasoline is sold to the motoring public from stationary storage tanks.
- (G) “Independent small business marketer” means a person engaged in the marketing of gasoline unless such person:
- (1) (a) is a refiner, or
 - (b) controls, is controlled by, or is under common control with, a refiner, or
 - (c) is otherwise directly or indirectly affiliated with a refiner or with a person who controls, is controlled by, or is under common control with a refiner, unless the sole affiliation referred to is by means of a supply contract or an agreement or contract to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner or any such person; or
- (2) receives less than 50 percent of his ~~o~~f her annual income from refining or marketing of gasoline.
- (3) For purposes of this regulation, the term “refiner” shall not include any refiner whose total refinery capacity (including the refinery capacity of any person who controls, is controlled by, or is under common control with, such refiner) does not exceed 65,000 barrels per day. For purposes of this section, “control” of a corporation means ownership of more than 50 percent of its stock.
- (H) “Leak free” means a condition in which there is no liquid gasoline escape or seepage of more than three (3) drops per minute from gasoline storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.
- (I) “Line” means any pipe suitable for transferring gasoline.
- (J) “Nonattainment area” means a county or counties designated by EPA as not meeting the NAAQS for ozone.

- (K) "Operator" means any person who leases, operates, controls, or supervises a facility at which gasoline is dispensed.
- (L) "Owner" means any person who has legal or equitable title to the gasoline storage tank at a facility.
- (M) "Poppeted vapor recovery adaptor" means a vapor recovery adaptor that automatically and immediately closes itself when the vapor return line is disconnected and maintains a tight seal when the vapor return line is not connected.
- (N) "Stationary storage tank" means a gasoline storage container that is a permanent fixture.
- (O) "Submerged fill pipe" means any fill pipe with a discharge opening which is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid, or which is entirely submerged when the level of the liquid is:
 - (1) Six inches above the bottom of the tank if the tank does not have a vapor recovery adaptor; or
 - (2) Twelve inches above the bottom of the tank if the tank has a vapor recovery adaptor. If the opening of the submerged fill pipe is cut at a slant, the distance is measured from the top of the slanted cut to the bottom of the tank.
- (P) "Throughput" means the amount of gasoline dispensed at a facility.
- (Q) "Vapor tight" means a condition in which an organic vapor analyzer or a combustible gas detector at a potential VOC leak source shows either less than 10,000 ppm when calibrated with methane, or less than 20% of the lower explosive limit when calibrated and operated according to the manufacturer's specifications.

Reg. 19.1304 Exemptions

This rule does not apply to:

- (A) Transfers made to storage tanks at gasoline dispensing facilities or gasoline service stations equipped with floating roofs or their equivalent.

- (B) Stationary storage tanks with a capacity of not more than 550 gallons, if the tanks are equipped with a submerged fill pipe.
- (C) Stationary storage tanks used exclusively for the fueling of implements of normal farm operations.
- (D) Facilities selling less than 10,000 gallons of gasoline per month.
- (E) Independent small business marketers of gasoline selling less than 50,000 gallons per month.
- (F) Any other facility or use exempted by state or federal statute.

Reg. 19.1305 Prohibited Activities

No person may cause, allow or permit the transfer of gasoline from any delivery vessel into any stationary storage tank unless such transfer complies with the following requirements:

- (A) The stationary storage tank is equipped with a submerged fill pipe and the vapors displaced from the tank during filling are controlled by a vapor control system as described herein;
- (B) The vapor control system is in good working order and is connected and operating with a vapor tight connection;
- (C) The vapor control system is properly maintained and any damaged or malfunctioning components or elements of design have been repaired, replaced or modified;
- (D) Gauges, meters, or other specified testing devices are maintained in proper working order;
- (E) All loading lines and vapor lines of delivery vessels and vapor collection systems are equipped with fittings which are leak tight and vapor tight;
- (F) All hatches on the delivery vessel are kept closed and securely fastened; and
- (G) The stationary storage tank has been tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.

Reg. 19.1306 Record Keeping

The following records shall be maintained for not less than two (2) years and the same shall be made available for inspection by the Department:

- (A) The scheduled date for maintenance and testing, and the date that a malfunction was detected;
- (B) The date the maintenance and testing was performed or the malfunction corrected; and
- (C) The date the component or element of design of the control system was repaired, replaced, or modified.
- (D) Monthly totals of gallons of gasoline sold by the facility.

Reg. 19.1307 Inspections

- (A) The premises of any gasoline dispensing facility or gasoline service station shall be available for inspection by representatives of the Department.
- (B) The process of transfer of gasoline from any delivery vessel into any stationary storage tank shall be subject to observation and inspection by representatives of the Department.

Reg. 19.1308 Vapor Recovery Systems

- (A) The vapor control system required by Reg. 19.1305 of this rule shall include one or more of the following:
 - (1) A vapor-tight line from the stationary storage tank to the delivery vessel and:
 - (a) For a coaxial vapor recovery system, either a poppeted or unpoppeted vapor recovery adaptor;
 - (b) For a dual point vapor recovery system, a poppeted vapor recovery adaptor;

- (2) A refrigeration-condensation system or equivalent designed to recover or destroy at least 90 percent by weight of the organic compounds in the displaced vapor.
- (B) If an unpopeted vapor recovery adaptor is used, the tank liquid fill connection shall remain covered either with a vapor-tight cap or a vapor return line except when the vapor return line is being connected or disconnected.
- (C) If an unpopeted vapor recovery adaptor is used, the unpopeted vapor recovery adaptor shall be replaced with a poppeted vapor recovery adaptor when the tank is replaced or upgraded.
- (D) Where vapor lines from the storage tanks are manifolded, poppeted vapor recovery adapters shall be used. No more than one tank is to be loaded at a time if the manifold vapor lines have a nominal pipe size of less than three (3) inches. If the manifold vapor lines have a nominal pipe size of three (3) inches or larger, then two tanks at a time may be loaded.
- (E) Vent lines on stationary storage tanks shall have pressure release valves or restrictors.

Reg. 19.1309 Gasoline Delivery Vessels

- (A) Gasoline delivery vessels shall be designed and maintained to be vapor-tight during loading and unloading operations and during transport.
- (B) Gasoline delivery vessels shall be tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.
- (C) Gasoline delivery vessels shall sustain a pressure change of no more than 750 pascals (3 in. of H₂O) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H₂O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H₂O) during testing.

Reg. 19.1310 Owner/Operator Responsibility

- (A) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to assure compliance with this rule and to disallow the transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.

- (B) It shall be the responsibility of owners, operators and drivers of delivery vessels to assure compliance with this rule and to refuse to transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.
- (C) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to properly maintain, repair, replace, modify, and test the vapor recovery system components of stationary storage tanks regulated herein.
- (D) It shall be the responsibility of owners and operators of gasoline dispensing facilities, gasoline service stations, and gasoline delivery vehicles to repair and retest equipment within (15) days of a test that exceeds the limitations set forth herein.

Reg. 19.1311 Test Methods

- (A) Test method for leak detection:
 - (1) Within four (4) hours prior to monitoring, the organic vapor analyzer or combustible gas detector shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20% of the lower explosive limit response, or calibrated with methane for a 10,000 ppm response.
 - (2) The probe inlet shall be 2.5 centimeters or less from the potential leak source when searching for leaks.
 - (3) The highest detector reading and location for each incident of detected leakage shall be recorded, along with the date, time and name of the person performing the testing. If no gasoline vapor is detected, that fact shall be recorded.
- (B) Control efficiency of vapor recovery systems and vapor collection/processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B. EPA Method 2B shall be used for vapor incineration devices.
- (C) Vapor pressure of gasoline shall be determined using American Society for Testing and Materials (ASTM) Method D323-94 or ASTM Method D4953-93. Method D323-94 shall be used for gasoline either containing no oxygenates or MTBE (methyl ethyl butyl ether) as the sole oxygenate. Method D-4953-93 shall be used for oxygenated gasoline.

Reg. 19.1312 Effective Date

- (A) The requirements of this rule shall be effective within nonattainment areas one (1) year after the designation by EPA of an area as a nonattainment area.
- (B) In the case of an independent small business marketer with sales of 50,000 gallons or more per month, this rule shall be phased-in as follows:
 - (1) 33 percent of facilities shall be in compliance at the end of the first year;
 - (2) 66 percent at the end of the second year; and,
 - (3) 100 percent at the end of the third year.

CHAPTER 14: CAIR NO_x OZONE SEASON TRADING PROGRAM GENERAL PROVISIONS

Reg. 19.1401 Adoption of Regulations

40 ~~CFR~~C.F.R. Part 96, Subparts AAAA-HHHH for the CAIR NO_x Ozone Season Trading Program, as finalized by the ~~U.S. Environmental Protection Agency (EPA)~~ on May 12, 2005, and further revised by EPA on April 28, 2006, with correcting amendments on December 13, 2006, and on October 19, 2007, are herein incorporated by reference with the exception of Subpart EEEE (CAIR NO_x Ozone Season Allowance Allocations) and all references to CAIR NO_x Ozone Season Opt-in Units, which, along with Subpart IIII (CAIR NO_x Ozone Season Opt-in Units), are not incorporated. The following regulations replace 40 ~~CFR~~C.F.R. § 96 Subpart EEEE.

Reg. 19.1402 State Trading Budget

The Arkansas State trading budgets for annual allocations for CAIR NO_x Ozone Season allowances have been set by EPA as follows: for the control periods of 2009 through 2014, 11,515 tons per control period; and for the control periods for 2015 and beyond, 9,596 tons per control period. The total number of allowances allocated by the State of Arkansas shall not exceed these budgets for their respective control periods.

Reg. 19.1403 Timing Requirements for CAIR NO_x Ozone Season Allowance Allocations

- (A) For EGUs allocated allowances under Reg. 19.1404(B) and (C), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by April 30, 2007, for 2009, 2010, and 2011 and by October 31, 2008, and October 31 of each year thereafter for the 4th year after the notification deadline.
- (B) For EGUs allocated allowances under Reg. 19.1404(D), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by July 31 of the year for which the CAIR NO_x Ozone Season allowances are allocated.

Reg. 19.1404 CAIR NO_x Ozone Season Allowance Allocations

- (A) The baseline gross electric generation (in MWh) used with respect to CAIR NO_x Ozone Season allowance allocations under Reg. 19.1404(B) for each CAIR NO_x Ozone Season unit that has operated each calendar year during a period of five (5) or more consecutive calendar years, the average of the three (3) highest amounts of the unit's control period gross electrical output over the five (5) years immediately preceding the year in which allocations are due to EPA, provided that gross electrical output of a generator served by two or more units will be attributed to each unit in proportion to each unit's share of the total control period heat input of such units for the year. For the allocations allocated for 2009, 2010, 2011, baseline data will be determined using gross electrical output for years 2000 through 2004.
- (B) With regard to the timing requirements contained in Reg. 19.1403, for each control period in 2009 and thereafter, the Department will allocate to all CAIR NO_x Ozone Season units in the State that have baseline gross electric generation (as determined under Reg. 19.1404(A)) a total amount of CAIR NO_x Ozone Season allowances equal to 95 percent for a control period, of the tons of NO_x emissions in the State trading budget under Reg. 19.1402 (except as provided in Reg. 19.1404(E)).
- (C) The Department will allocate CAIR NO_x Ozone Season allowances to each CAIR NO_x Ozone Season unit under Reg. 19.1404(B) in an amount determined by multiplying the total amount of CAIR NO_x Ozone Season allowances allocated under Reg. 19.1404(B) paragraph (B) of this section by the ratio of the baseline gross electric generation of such CAIR NO_x Ozone Season unit to the total amount of baseline gross electric generation of all such CAIR NO_x Ozone Season units in the State and rounding to the nearest whole allowances as appropriate.
- (D) For each control period in 2009 and thereafter, the Department will allocate CAIR NO_x Ozone Season allowances to CAIR NO_x Ozone Season units in the State that do not yet have a baseline gross electric generation (as determined under Reg. 19.1404(A)), in accordance with the following procedures:
- (1) The Department will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NO_x Ozone Season allowances equal to five percent (5%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402.

- (2) The CAIR designated representative of such a CAIR NO_x Ozone Season unit may submit to the Department a request, in a format specified by the Department, to be allocated CAIR NO_x Ozone Season allowances, starting with the later of the control period in 2009 or the first control period after the control period in which the CAIR NO_x Ozone Season unit commences commercial operation and until the first control period for the which the unit is allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404(B). The CAIR NO_x Ozone Season allowance allocation request must be submitted on or before January 1 of the first control period for which the CAIR NO_x Ozone Season allowances are requested and after the date on which the CAIR NO_x Ozone Season unit commences commercial operation.
- (3) In a CAIR NO_x Ozone Season allowance allocation request under Reg.19.1404(D)(2), the CAIR designated representative may request for a control period CAIR NO_x Ozone Season allowances in an amount not exceeding the CAIR NO_x Ozone Season unit's total tons of NO_x emissions during the control period immediately before such control period.
- (4) The Department will review each CAIR NO_x Ozone Season allowance allocation request under Reg. 19.1404(D)(2) and will allocate CAIR NO_x Ozone Season allowances for each control period pursuant to such request as follows:
 - (a) The Department will accept an allowance allocation request only if the request meets, or is adjusted by the Department as necessary to meet, the requirements of Reg. 19.1404(D)(2) and (3).
 - (b) On or after February 1 of the control period, the Department will determine the sum of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404(D)(4)(a)) for the control period.
 - (c) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is greater than or equal to the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate the amount of CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)) to each CAIR NO_x Ozone Season unit covered by Reg. 19.1404 (D)(4)(a).

- (d) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is less than the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate to each CAIR NO_x Ozone Season unit covered by an allowance allocation request accepted under Reg. 19.1404 (D)(4)(a) the amount of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)), multiplied by the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period, divided by the sum determined under Reg. 19.1404 (D)(4)(b), and rounded to the nearest whole allowance as appropriate.
 - (e) The Department will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO_x Ozone Season allowances (if any) allocated for the control period to the CAIR NO_x Ozone Season unit covered by the request.
- (E) If, after completion of the procedures under Reg. 19.1404(D)(4) for a control period, any unallocated CAIR NO_x Ozone Season allowances remain in the new unit set-aside for the control period, the Department will allocate to each CAIR NO_x Ozone Season unit that was allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404 (B) an amount of CAIR NO_x Ozone Season allowances equal to the total amount of such remaining unallocated CAIR NO_x Ozone Season allowances, multiplied by the unit's allocation under Reg. 19.1404(B), divided by ~~95~~ninety-five percent (95%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402, and rounded to the nearest whole allowance as appropriate.

CHAPTER 15: REGIONAL HAZE

Reg. 19.1501 Purpose

The purpose of this chapter is to establish regional haze program requirements.

Reg. 19.1502 Definitions

For purposes of this chapter only the definitions contained in 40 ~~CFR~~C.F.R. § 51.301 as in effect on June 22, 2007, are hereby incorporated by reference.

Reg. 19.1503 BART Eligible Sources

The following are BART-eligible sources:

BART Source Category Number and Name	Facility Name	AFIN	Unit ID	Unit Description	
1. Fossil fuel-fired Electric Plants > 250 million British thermal units (MMbtu)/hour – Electric Generating Units (EGUs)	Arkansas Electric Coop – Carl E. Bailey	74-00024	SN-01	Boiler	
	Arkansas Electric Coop – John L. McClelland Generating Station	52-00055	SN-01	Boiler	
	Entergy Arkansas, Inc. – Lake Catherine Plant	30-00011	SN-03	Unit 4 Boiler	
	Entergy Arkansas – Ritchie	54-00017	SN-02	Unit 2	
	Entergy Arkansas, Inc. – White Bluff		35-00110	SN-01	Unit 1 Boiler
				SN-02	Unit 2 Boiler
				SN-05	Auxiliary Boiler
SWEPCO Flint Creek Power Plant	04-00107	SN-01	Boiler		

3. Kraft Pulp Mills	Domtar Industries, Inc. – Ashdown Mill	41-00002	SN-03	#1 Power Boiler
			SN-05	#2 Power Boiler
	Delta Natural Kraft and Mid America Packaging, LLC.	35-00017	SN-02	Recovery Boiler
	Evergreen Packaging Inc., Pine Bluff Mill	35-00016	SN-04	#4 Recovery Boiler
	Georgia-Pacific Corporation – Crossett Paper Operations	02-00013	SN-19	6A Boiler
			SN-22	9A Boiler
	Green Bay Packaging, Inc. – Arkansas Kraft Division	15-00001	SN-05A	Recovery Boiler
Potlatch Forest Products Corporation – Cypress Bend Mill	21-00036	SN-04	Power Boiler	
11. Petroleum Refineries	Lion Oil Company	70-00016	SN-809	#7 Catalyst Regenerator
15. Sulfur Recovery Plant	Albermarle Corporation – South Plant	14-00028	SR-01	Tail Gas Incinerator
19. Sintering Plants	Big River Industries	18-00082	SN-01	Kiln A
21. Chemical Processing Plants	Albermarle Corporation – South Plant	14-00028	BH-01	Boiler #1
			BH-02	Boiler #2
	FutureFuels Chemical Co.	32-00036	6M01-01	3 Coal Boilers
	El Dorado Chemical Company	70-00040	SN-08	West Nitric Acid Plant
			SN-09	East Nitric Acid Plant
		SN-10	Nitric Acid Concentrator	

Reg. 19.1504 Facilities Subject-to-BART

(A) The following sources are subject-to-BART:

AFIN	Facility Name	Source #	Source Name
74-00024	Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station	SN-01	Boiler
52-00055	Arkansas Electric Cooperative Corporation John L. McClellan Generating Station	SN-01	Boiler
41-00002	Domtar Industries, Inc. Ashdown Mill	SN-03	#1 Power Boiler
		SN-05	#2 Power Boiler
30-00011	Entergy Arkansas, Inc. – Lake Catherine Plant	SN-03	Unit 4 Boiler
35-00110	Entergy Arkansas, Inc. – White Bluff	SN-01	Unit 1 Boiler
		SN-02	Unit 2 Boiler
		SN-05	Auxiliary Boiler
04-00107	SWEPCO Flint Creek Power Plant	SN-01	Boiler

- (B) Each source subject-to-BART shall install and operate BART as expeditiously as practicable, but in no event later than 6 years after the effective date of this regulation or five (5) years after EPA approval of the Arkansas Regional Haze State Implementation Plan, whichever comes first.
- (C) Each source subject-to-BART shall maintain the control equipment required by this chapter and establish procedures to ensure such equipment is properly operated and maintained.

Reg. 19.1505 BART Requirements

(A) On or before the compliance date required under Reg. 19.1504(B), SWEPCO Flint Creek Power Plant, SN-01 shall comply with BART by meeting the following emission limits:

- (1) 0.15 pounds of sulfur dioxide (SO₂) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.23 pounds of nitrogen oxides (NO_x) per million Btu of heat input (0.23 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit satisfies the BART particulate matter requirement.
- (A) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (B) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation John L. McClellan Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (C) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #1 Power Boiler, SN-03 shall comply with BART by meeting the following emission limits:
- (1) 1.12 pounds of SO₂ per million Btu of heat input (1.12 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.46 pounds of NO_x per million Btu of heat input (0.46 lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.07 pounds of PM₁₀ per million Btu of heat input (0.07 lb/MMBtu) on a 30-day rolling average.
- (D) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #2 Power Boiler, SN-05 shall comply with BART by meeting the following emission limits:
- (1) 1.20 pounds of SO₂ per million Btu of heat input (1.20 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.450 pounds of NO_x per million Btu of heat input (0.450lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.10 pounds of PM₁₀ per million Btu of heat input (0.10 lb/MMBtu) on a 30-day rolling average.
- (E) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning bituminous coal:

- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirement.
- (F) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (G) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 1 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (H) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (I) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

- (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (J) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 2 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (K) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, auxiliary boiler, SN-05 shall comply with BART by restricting operation to not more than 4360 hours annually.
- (L) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning natural gas:
- (1) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30 day rolling average; and
 - (2) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (M) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning oil:
- (1) 0.562 pounds of SO₂ per million Btu of heat input (0.562 lb/MMBtu) on a 30 day rolling average;
 - (2) 0.25 pounds of NO_x per million Btu of heat input (0.25 lb/MMBtu) on a 30 day rolling average; and
 - (3) 0.037 pounds of PM_{2.5} per million Btu of heat input (0.037 lb/MMBtu) on a 30 day rolling average.

Reg. 19.1506 Compliance Provisions

Each facility listed in Reg. 19.1504(A) as being subject to BART shall demonstrate compliance with the BART limits listed in 19.1505 in accordance with the provisions of Chapter 7 of this regulation.

Reg. 19.1507 Permit Reopening

The Part 70 permit of each facility subject-to-BART shall be subject to re-opening in accordance with section 26.1011(A) of Arkansas Pollution Control and Ecology Commission Regulation 26.

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



REGULATION NO. 19

APPENDIX A

INSIGNIFICANT ACTIVITIES LIST

APPENDIX A: INSIGNIFICANT ACTIVITIES LIST

The following types of activities or emissions are deemed insignificant on the basis of size, emission rate, production rate, or activity. Certain of these listed activities include qualifying statements intended to exclude many similar activities. By such listing, the Department exempts certain sources or types of sources from the requirements to obtain a permit or plan under this regulation. Listing in this part has no effect on any other law to which the activity may be subject. Any activity for which a state or federal applicable requirement applies (such as NSPS, National Emission Standards for Hazardous Air Pollutants [NESHAP], or Maximum Achievable Control Technology [MACT]) is not insignificant, even if this activity meets the criteria below.

Group A

The following emission units, operations, or activities must either be listed as insignificant or included in the permit application as sources to be permitted. ~~The listing of insignificant sources does not necessarily mean that the emissions from these sources must be quantified. The ton-per-year applicability levels are for all sources listed in the categories (i.e., cumulative total).~~

1. Fuel burning equipment with a design rate less than ten (10) MMBtu per hour, provided that the aggregate air pollutant specific emissions from all such units listed as insignificant do not exceed five (5) tons per year (tpy) of any combination of HAPs, 75,000 tpy carbon dioxide, and ten (10) tpy of any other air pollutant.
2. Storage tanks less than or equal to 250 gallons storing organic liquids having a true vapor pressure less than or equal to three and one-half (3.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
3. Storage tanks less than or equal to 10,000 gallons storing organic liquids having a true vapor pressure less than or equal to one-half (0.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
4. Caustic storage tanks that contain no VOCs.

5. Emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes provided that the aggregate air pollutant specific emissions from all such equipment/vents considered insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
6. Non-commercial water washing operations of empty drums less than or equal to fifty-five (55) gallons with less than three percent of the maximum container volume of material.
7. Welding or cutting equipment related to manufacturing activities that do not result in aggregate emissions of HAPs in excess of one-tenth (0.1) tpy.
8. Containers of less than or equal to five (5) gallons in capacity that do not emit any detectable VOCs or HAPs when closed. This includes filling, blending, or mixing of the contents of such containers by a retailer.
9. Equipment used for surface coating, painting, dipping, or spraying operations, provided the material used contains no more than four-tenths (0.4) lb/gal VOCs, no hexavalent chromium, and no more than one-tenth (0.1) tpy of all other HAPs.
10. Non-production equipment approved by the Department, used for waste treatability studies or other pollution prevention programs provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs.¹
11. Operation of groundwater remediation wells, including emissions from the pumps and collection activities provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs. This does not include emissions from air-stripping or storage.
12. Emergency use generators, boilers, or other fuel burning equipment that is of equal or smaller capacity than the primary operating unit, cannot be used in conjunction with the primary operating unit, and does not emit or have the potential to emit regulated air pollutants in excess of the primary operating unit and not operated more than ninety (90)

¹ The treatability study or pollution prevention program must be approved separately. The activity creating the emissions must also be determined to be insignificant as discussed in the introduction to this group.

days a year. This does not apply to generators which provide electricity to the distribution grid.

13. Other activities for which the facility demonstrates that no enforceable permit conditions are necessary to ensure compliance with any applicable law or regulation provided that the emissions are less than 75,000 tpy carbon dioxide, one (1) tpy of a single HAP or two and one-half (2.5) tpy of any combination of HAPs, or five (5) tpy of any other air pollutant regulated under this regulation. These emission limits apply to the sum of all activities listed under this group.

Group B

The following emission units, operations, or activities need not be included in a permit application:

1. Combustion emissions from propulsion of mobile sources and emissions from refueling these sources unless regulated by Title II and required to obtain a permit under Title V of the federal Clean Air Act, as amended. This does not include emissions from any transportable units, such as temporary compressors or boilers. This does not include emissions from loading racks or fueling operations covered under any applicable federal requirements.
2. Air conditioning and heating units used for comfort that do not have applicable requirements under Title VI of the Act.
3. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
4. Non-commercial food preparation or food preparation at restaurants, cafeterias, or caterers, etc.
5. Consumer use of office equipment and products, not including commercial printers or business primarily involved in photographic reproduction.
6. Janitorial services and consumer use of janitorial products.
7. Internal combustion engines used for landscaping purposes.
8. Laundry activities, except for dry-cleaning and steam boilers.

9. Bathroom/toilet emissions.
10. Emergency (backup) electrical generators at residential locations.
11. Tobacco smoking rooms and areas.
12. Blacksmith forges.
13. Maintenance of grounds or buildings, including: lawn care, weed control, pest control, and water washing activities.
14. Repair, up-keep, maintenance, or construction activities not related to the source's primary business activity, and not otherwise triggering a permit modification. This may include, but is not limited to such activities as general repairs, cleaning, painting, welding, woodworking, plumbing, re-tarring roofs, installing insulation, paved/paving parking lots, miscellaneous solvent use, application of refractory, or insulation, brazing, soldering, the use of adhesives, grinding, and cutting.²
15. Surface-coating equipment during miscellaneous maintenance and construction activities. This activity specifically does not include any facility whose primary business activity is surface-coating or includes surface-coating or products.
16. Portable electrical generators that can be "moved by hand" from one location to another.³
17. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.
18. Brazing or soldering equipment related to manufacturing activities that do not result in emission of HAPs.⁴

² Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must get a permit.

³ "Moved by hand" means that it can be moved by one person without assistance of any motorized or non-motorized vehicle, conveyance, or device.

⁴ Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production thresholds. Brazing, soldering, and welding equipment, and cutting torches related directly to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in

19. Air compressors and pneumatically operated equipment, including hand tools.
20. Batteries and battery charging stations, except at battery manufacturing plants.
21. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.⁵
22. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and no volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
23. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
24. Drop hammers or presses for forging or metalworking.
25. Equipment used exclusively to slaughter animals, but not including other equipment at slaughter-houses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
26. Vents from continuous emissions monitors and other analyzers.
27. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
28. Hand-held applicator equipment for hot melt adhesives with no VOCs in the adhesive.
29. Lasers used only on metals and other materials which do not emit HAPs in the process.
30. Consumer use of paper trimmers/binders.
31. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.

this appendix.

⁵ Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids are based on size and limits including storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.

32. Salt baths using non-volatile salts that do not result in emissions of any air pollutant covered by this regulation.
33. Laser trimmers using dust collection to prevent fugitive emissions.
34. Bench-scale laboratory equipment used for physical or chemical analysis not including lab fume hoods or vents.
35. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
36. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
37. Hydraulic and hydrostatic testing equipment.
38. Environmental chambers not using hazardous air pollutant gases.
39. Shock chambers, humidity chambers, and solar simulators.
40. Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
41. Process water filtration systems and demineralizers.
42. Demineralized water tanks and demineralizer vents.
43. Boiler water treatment operations, not including cooling towers.
44. Emissions from storage or use of water treatment chemicals, except for hazardous air pollutants or pollutants listed under regulations promulgated pursuant to Section 112(r) of the Act as of July 1, 1997, for use in cooling towers, drinking water systems, and boiler water/feed systems.
45. Oxygen scavenging (de-aeration) of water.
46. Ozone generators.
47. Fire suppression systems.

48. Emergency road flares.
49. Steam vents and safety relief valves.
50. Steam leaks.
51. Steam cleaning operations.
52. Steam and microwave sterilizers.
53. Site assessment work to characterize waste disposal or remediation sites.
54. Miscellaneous additions or upgrades of instrumentation.
55. Emissions from combustion controllers or combustion shutoff devices but not combustion units itself.
56. Use of products for the purpose of maintaining motor vehicles operated by the facility, not including air cleaning units of such vehicles (i.e. antifreeze, fuel additives).
57. Stacks or vents to prevent escape of sanitary sewer gases through the plumbing traps.
58. Emissions from equipment lubricating systems (i.e. oil mist), not including storage tanks, unless otherwise exempt.
59. Residential wood heaters, cookstoves, or fireplaces.
60. Barbecue equipment or outdoor fireplaces used in connection with any residence or recreation.
61. Log wetting areas and log flumes.
62. Periodic use of pressurized air for cleanup.
63. Solid waste dumpsters.
64. Emissions of wet lime from lime mud tanks, lime mud washers, lime mud piles, lime mud filter and filtrate tanks, and lime mud slurry tanks.
65. Natural gas odoring activities unless the Department determines that emissions constitute air pollution.

66. Emissions from engine crankcase vents.
67. Storage tanks used for the temporary containment of materials resulting from an emergency reporting to an unanticipated release.
68. Equipment used exclusively to mill or grind coatings in roll grinding rebuilding, and molding compounds where all materials charged are in paste form.
69. Mixers, blenders, roll mills, or calendars for rubber or plastic for which no materials in powder form are added and in which no hazardous air pollutants, organic solvents, diluents, or thinners are used or emitted.
70. The storage, handling, and handling equipment for bark and wood residues not subject to fugitive dispersion offsite (this applies to the equipment only).
71. Maintenance dredging of pulp and paper mill surface impoundments and ditches containing cellulosic and cellulosic derived biosolids and inorganic materials such as lime, ash, or sand.
72. Tall oil soap storage, skimming, and loading.
73. Water heaters used strictly for domestic (non-process) purposes.
74. Facility roads and parking areas, unless necessary to control offsite fugitive emissions.
75. Agricultural operations, including onsite grain storage, not including internal combustion engines or grain elevators.
76. ~~The following n~~Natural gas and oil exploration and production site equipment: not subject to a rule under 40 C.F.R. Parts 60, 61, or 63.~~separators, dehydration units, natural gas fired compressors, and pumping units. This does not include compressors located on natural gas transmission pipelines.~~

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



REGULATION NO. 19

APPENDIX B

**NATIONAL AMBIENT AIR QUALITY
STANDARDS LIST**

APPENDIX B: NATIONAL AMBIENT AIR QUALITY STANDARDS LIST

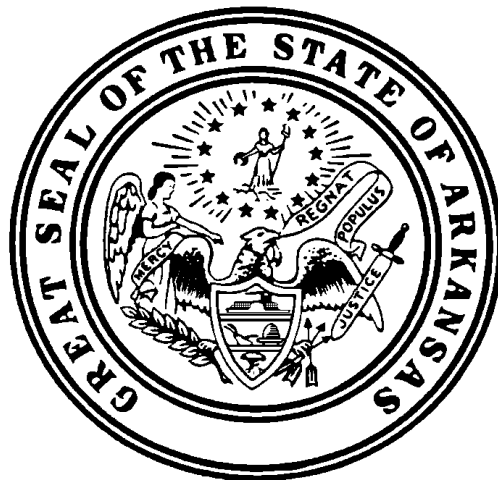
The National Ambient Air Quality Standards as adopted as of the effective date of this Regulation are listed below.

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Carbon Monoxide	76 FR 54294	August 31, 2011	Primary	8-hour	9 ppm	Not to be exceeded more than once per year	All Chapters
				1-hour	35 ppm		All Chapters
Lead	73 FR 66964	November 12, 2008	Primary and secondary	Rolling 3 month average	0.15 $\mu\text{g}/\text{m}^3$	Not to be exceeded-	All Chapters
Nitrogen Dioxide	75 FR 6474	February 9, 2010	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years	Chapter 9 All Chapters
	61 FR 52852	October 8, 1996	Primary and secondary	Annual	53 ppb	Annual Mean	All Chapters
Ozone	73 FR 16436	March 27, 2008	Primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	Chapter 9 All Chapters
Particle Pollution, PM _{2.5}	78 FR 3085	January 15, 2013	Primary	Annual	12 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years	Chapter 9 All Chapters
	71 FR 61144-	October 17, 2006	Secondary	Annual	15 $\mu\text{g}/\text{m}^3$		All Chapters
			Primary and secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years	Chapter 9 All Chapters

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Particle Pollution, PM ₁₀	71 FR 61144,	October 17, 2006	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years	All Chapters
Sulfur Dioxide	75 FR 35520	June 22, 2010	Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	Chapter 9 <u>All Chapters</u>
	38 FR 25678	September 14, 1973	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	All Chapters

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 26
REGULATIONS OF THE ARKANSAS
OPERATING AIR PERMIT PROGRAM**



INITIAL DRAFT

Submitted to the PC&E Commission: December, 2014

Revised After Public Comment

EXHIBIT A

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CHAPTER 3: REQUIREMENT FOR A PERMIT, APPLICABILITY

Reg. 26.301 Requirement for a permit

- (A) No part 70 source may operate unless it is operating in compliance with a part 70 permit, or unless it has filed a timely and complete application for an initial or renewal permit as required under these regulations. Existing part 70 sources shall submit initial applications according to the provisions of section 4. If a part 70 source submits a timely and complete application for an initial or renewal permit, the source's failure to have a part 70 permit is not a violation of this regulation until the Department takes final action on the permit application, except as noted in this section. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information identified as being needed to process the application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.
- (B) No proposed new part 70 source shall begin construction prior to obtaining a part 70 permit, unless the applicable permit application was submitted prior to the effective date of these regulations and the Department's draft permitting decision for such source has already proceeded to public notice in accordance with Regulation No. 19.
- (C) No part 70 source shall begin construction of a new emissions unit or begin modifications to an existing emissions unit prior to obtaining a modified part 70 permit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit. An existing part 70 source shall be subject to the permit modification procedures of Regulation No. 19 until such time that an initial part 70 permit application is due from the source.

Reg. 26.302 Sources subject to permitting

The following sources shall be subject to permitting under these regulations, unless exempted by Reg. 26.303 below:

- (A) Any major source;
- (B) Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the Act (i.e., New Source Performance Standards [NSPS] regulations). However, non-major sources subject to section 111 of the Act are exempt from the obligation to obtain a part 70 permit until such time that the Administrator completes a rulemaking to determine how the program should be structured for non-major sources;
- (C) Any source, including an area source, subject to a standard or other requirement under section 112 of the Act (i.e., hazardous air pollutant regulations), except that a source is

not required to obtain a permit solely because it is subject to regulations or requirements under section 112(r) of the Act;

- (D) Any source subject to Arkansas Pollution Control and Ecology Commission's Regulation No. 19, Chapter 9~~2~~²²
- (E) Any acid rain source (which shall be permitted in accordance with the provisions of the federal acid rain program); and
- (F) Any source in a source category designated by the Administrator pursuant to this section.

Reg. 26.303 Source category exemptions

The following source categories are exempted from the obligation to obtain a part 70 permit:

- (A) All sources listed in Reg. 26.302 that are not major sources, acid rain sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act, are exempted from the obligation to obtain a part 70 permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for non-major sources.
- (B) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR C.F.R. Part 60, Subpart AAA - Standards of Performance for New Residential Wood Heaters as of July 23, 1993; and
- (C) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR C.F.R. Part 61, Subpart M - National Emission Standard for Hazardous Air Pollutants for Asbestos, section 61.145, Standard for Demolition and Renovation as of July 23, 1993.
- (D) Any other non-major sources subject to a standard or other requirement under either section 111 or 112 of the Act exempted by the Administrator.

Reg. 26.304 Emissions units subject to permitting

The Department shall include in the part 70 permit all applicable requirements for all relevant emissions units in the part 70 source. Some equipment with very small emission rates is exempt from permitting requirements as per Chapter 4 and Appendix A of Regulation No. 19.

Reg. 26.305 Emissions subject to permitting

All regulated air pollutant emissions and recognized air contaminant emissions from a part 70 source shall be included in a part 70 permit, except that GHG emissions less than 100,000 tpy CO₂e shall not be included in a part 70 permit unless the part 70 source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more. Only regulated air pollutants may trigger the need for a part 70 permit or a part 70 permit modification process. A permit modification involving only air contaminants other than regulated air pollutants shall be permitted according to the procedure of Regulation

No. 19. Such permits shall be incorporated into the part 70 permit by administrative permit amendment.

Reg. 26.306 Fugitive emissions subject to permitting

Fugitive emissions from a part 70 source shall be included in the permit application and the part 70 permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

CHAPTER 4: APPLICATIONS FOR PERMITS

Reg. 26.401 Duty to apply

For each source subject to 40 ~~CFR~~C.F.R. Part 70, as promulgated June 3, 2010 (75 FR 31607), the owner or operator shall submit a timely and complete permit application (on forms supplied by the Department) in accordance with this section.

Reg. 26.402 Standard application form and required information

The Department shall provide a standard application form or forms and shall provide them to part 70 sources upon request. Information as described below for each emissions unit at a part 70 source shall be required by the application form and included by the applicant in the application.

- (A) Insignificant activities which are exempted because of size or production rate, a list of such insignificant activities must be included in the application.
- (B) An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to evaluate the fee amount required by the Arkansas Pollution Control and Ecology Commission's Regulation Number 9, Fee Regulation (~~Regulation 9 or~~ Regulation No. 9). The Department may use discretion in developing application forms that best meet program needs and administrative efficiency. The forms and attachments chosen, however, shall include the elements specified below:
 - (1) Identifying information, including company name and address (or plant name and address if different from the company name), owner's name and agent, and telephone number and names of plant site manager/contact-;
 - (2) A description of the source's processes and products (by Standard Industrial Classification Code or the North American Industry Classification System) including any associated with alternate scenario identified by the source-;
 - (3) The following emission-related information:
 - (a) A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under Reg. 26.402(A). The Department shall require additional information related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source, and other information necessary to collect any permit fees owed under the fee schedule in Regulation No. 9.
 - (b) Identification and description of all points of emissions described above in sufficient detail to establish the basis for fees and applicability of requirements of the Act.

- (c) Emissions rate in tpy and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.
 - (d) The following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules.
 - (e) Identification and description of air pollution control equipment and compliance monitoring devices or activities.
 - (f) Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 70 source.
 - (g) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Act).
 - (h) Calculations on which the information in Reg. 26.402(B)(3) is based.
- (4) The following air pollution control requirements:
- (a) Citation and description of all applicable requirements, and
 - (b) Description of or reference to any applicable test method for determining compliance with each applicable requirement.
- (5) Other specific information that may be necessary to implement and enforce other applicable requirements of the Act, of this part or to determine the applicability of such requirements.
- (6) An explanation of any proposed exemptions from otherwise applicable requirements.
- (7) Additional information as determined to be necessary by the Department to define alternative operating scenarios identified by the source pursuant to Reg. 26.701(I) or to define permit terms and conditions implementing Reg. 26.802 or Reg. 26.701(J).
- (8) A compliance plan for all part 70 sources that contains all the following:
- (a) A description of the compliance status of the source with respect to all applicable requirements.
 - (b) A description as follows:

- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.
 - (iii) For requirements for which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.
- (c) A compliance schedule as follows:
- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed schedule is expressly required by the applicable requirement.
 - (iii) A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in non-compliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.
- (d) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.
- (e) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under title IV of the Act with regard to the schedule and

method(s) the source will use to achieve compliance with the acid rain emissions limitations.

- (9) Requirements for compliance certification, including the following:
 - (a) A certification of compliance with all applicable requirements by a responsible official consistent with Reg. 26.410 and section 114(a)(3) of the Act;
 - (b) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods;
 - (c) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the Department; and
 - (d) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.
- (10) The use of nationally-standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under title IV of the Act.

(C) Reserved

Reg. 26.403 Initial applications from existing part 70 sources

A timely application for an initial part 70 permit for an existing part 70 source is one that is submitted within 12 months after the source becomes subject to the permit program, or on or before such earlier date as the Department may establish. The earliest that the Department may require an initial application from such an existing part 70 source is 6 months after the Department notifies the source in writing of its duty to apply for an initial part 70 permit.

Reg. 26.404 Applications for proposed new part 70 sources

The owner or operator proposing to construct a new part 70 source shall apply for and obtain a part 70 permit prior to the construction of the source, unless the applicable permit application was submitted prior to the effective date of these Regulations and the Department's draft permitting decision for such source has already proceeded to public comment in accordance with Regulation No. 19.

Reg. 26.405 Applications for proposed significant modifications at part 70 sources

Part 70 sources proposing to construct a new emissions unit or modify an existing emissions unit shall apply for and obtain a modified part 70 permit prior to the construction or modification of

such emissions unit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit.

Reg. 26.406 Permit renewal applications

For purposes of permit renewal, a timely application is one that is received by the Department at least six (6) months prior to the date of permit expiration or such other longer time as may be approved by the Administrator that ensures that the term of the permit will not expire before the permit is renewed. In no event shall this time be greater than eighteen (18) months. Renewal permits are subject to the same procedural requirements that apply to initial permit issuance. Permit expiration terminates a part 70 source's right to operate unless a timely and complete renewal application has been received by the Department, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.

Reg. 26.407 Complete application

To be deemed complete, an application must provide all information required by Reg. 26.402, except that applications for permit revision need supply only that information related to the proposed change. Unless the Department determines that an application is not complete within sixty (60) days of receipt of the application, such application shall be deemed to be complete. If, while processing an application that has been determined or deemed to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, it may request such information in writing and set a reasonable deadline for a response.

Reg. 26.408 Confidential information

In the case where a source has submitted information to the State under a claim of confidentiality, the Department may also require the source to submit a copy of such information directly to the Administrator.

Reg. 26.409 Applicant's duty to supplement or correct application

Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

Reg. 26.410 Certification by responsible official

Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under these regulations shall state that, based on

information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

CHAPTER 5: ACTION ON APPLICATIONS

Reg. 26.501 Action on part 70 permit applications

A permit, permit modification, or permit renewal may be issued only if all of the following conditions have been met:

- (A) The Department has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit.
- (B) Except for modifications qualifying for minor permit modification procedures under Chapter 10 of Regulation No. 26, the Department has complied with the requirements under Chapter 6 of Regulation No. 26 for public participation and for notifying and responding to affected States.
- (C) The processing of the permit application and the conditions of the permit provide for compliance with all applicable requirements and the requirements of this regulation; and
- (D) The Administrator has received a copy of the proposed permit and any notices required under Chapter 6 of Regulation No. 26 and has not objected to issuance of the permit within the time period specified therein.

Reg. 26.502 Final action on permit application

The Department shall take final action on each permit application (including a request for permit modification or renewal) as expeditiously as practicable, but no later than eighteen (18) months after receiving a complete application, unless a different time period is provided for in these regulations (i.e., initial permitting of existing part 70 sources and minor permit modifications). Failure of the Department to act upon an application shall not constitute approval of the permit application. An aggrieved applicant may seek relief from Department inaction on a permit application in accordance with the procedures of Arkansas Ark. Code Ann. etated §§ 8-4-311 (b)(10)(F).

Reg. 26.503 Priority for application review

Priority shall be given by the Department to taking action on applications for construction and modification over applications for permit renewal to the extent practicable.

Reg. 26.504 Notification of application completeness

The Department shall promptly provide notice to the applicant of whether the application is complete. Unless the Department requests additional information or otherwise notifies the applicant of incompleteness within sixty (60) days of receipt of an application, the application shall be deemed complete. For modifications processed through minor permit modification procedures, the program shall not require a completeness determination, but shall be subject to an eligibility determination.

Reg. 26.505 Source's ability to operate prior to final permit action

A part 70 source's ability to operate without a permit prior to initial permit issuance (to existing part 70 sources) or permit renewal shall be in effect from the date the timely and complete application for initial permit or permit renewal is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the Department. However, the installation of new emissions units and the modification of existing emissions units may not commence until a final permit for such activity is issued, unless such activity involves equipment exempt from permitting requirements or modifications eligible to be processed through minor permit modification procedures.

Reg. 26.506 Basis for draft permit conditions

The Department shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The Department shall send this statement to EPA and to any other person who requests it.

CHAPTER 6: PERMIT REVIEW BY THE PUBLIC, AFFECTED STATES, AND EPA

Reg. 26.601 Applicability

All initial permits, renewal permits, and significant permit modifications shall meet the permit review requirements of this chapter.

Reg. 26.602 Public participation

All initial permit issuances, significant modifications, minor modifications, and renewals shall afford the public the opportunity to comment.

- (A) Public notice shall be given:
- (1) By publication of notice of application receipt by the Department, in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with the Arkansas Pollution Control and Ecology Commission's Regulation Number 8, Administrative Procedures (Regulation No. 8) (minor permit modification applications are exempt from this requirement). In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
 - (2) By the availability for public inspection in at least one location in the area where the source is located and in the Department's central offices of the permit application submitted by the owner or operator and the Department's draft permitting decision and analysis of the effect of the proposed emissions on air quality;
 - (3) By publication of a notice of the Department's draft permitting decision in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with Regulation No. 8. In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
 - (4) To the mayor of the community in which the source is located;
 - (5) To the county judge of the county in which the source is located;
 - (6) To persons on a mailing list developed by the Department, including those who request in writing to be on the list; and
 - (7) By other means if necessary to assure adequate notice to the affected public.
- (B) The notice of Reg. 26.602(A)(3) shall identify the affected facility; the name and address of the permittee; the name and address of the Department; the activity or activities involved in the permit action; the emissions change involved in any permit modification;

the name, address, and telephone number of a person from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials and all other materials available to the Department that are relevant to the permit decision; a brief description of the comment procedures required by this regulation; and a statement of procedures to request a hearing.

- (C) The Department shall provide such notice and opportunity for participation by affected States as is provided for in this section.
- (D) The Department shall provide at least thirty (30) days for public comment on its draft permitting decision and shall give notice of any public hearing at least thirty (30) days in advance of the hearing.
- (E) The Department shall keep a record of the commenters and also of the issues raised during the public participation process so that the Administrator may fulfill his obligation under section 505(b)(2) of the Act to determine whether a citizen petition may be granted, and such records shall be available to the public.

Reg. 26.603 Transmission of permit information to the Administrator

- (A) The Department shall provide to the Administrator a copy of each permit application (including any application for permit modification), each proposed permit, and each final part 70 permit. The applicant may be required by the Department to provide a copy of the permit application (including the compliance plan) directly to the Administrator. Upon agreement with the Administrator, the Department may submit to the Administrator a permit application summary form and any relevant portion of the permit application and compliance plan, in place of the complete permit application and compliance plan.
- (B) The Department shall keep for five (5) years such records and submit to the Administrator such information as the Administrator may reasonably require to ascertain whether the State program complies with the requirements of the Act or of 40 CFR C.F.R. Part 70, as promulgated July 21, 1992, and last modified ~~November 27, 2004~~ June 3, 2010 (75 FR 31607).

Reg. 26.604 Review of draft permit by affected States

- (A) The Department shall give notice of each draft permit to any affected State on or before the time that the Department provides this notice to the public, except to the extent that minor permit modification procedures requires the timing of the notice to be different.
- (B) The Department, as part of the submittal of the proposed permit to the Administrator (or as soon as possible after the submittal for minor permit modification procedures), shall notify the Administrator and any affected State in writing of any refusal by the Department to accept all recommendations for the proposed permit that the affected State submitted during the public or affected State review period. The notice shall include the Department's reasons for not accepting any such recommendation. The Department is not required to accept recommendations that are not based on applicable requirements or

the requirements of 40 ~~CFR~~C.F.R. Part 70, as promulgated July 21, 1992, and last modified ~~November 27, 2004~~June 3, 2010 (75 FR 31607).

Reg. 26.605 EPA objection to proposed permit

- (A) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with applicable requirements or requirements under this regulation. No permit for which an application is required to be transmitted to the Administrator may be issued if the Administrator objects to its issuance in writing within forty-five (45) days of receipt of the proposed permit and all necessary supporting information.
- (B) Any EPA objection shall include a statement of the Administrator's reasons for objection and a description of the terms and conditions that the permit must include to respond to the objections. The Administrator will provide the permit applicant a copy of the objection.
- (C) Failure of the Department to follow proper permit issuance procedural requirements or to submit required information necessary to review the proposed permit also shall constitute grounds for an objection.
- (D) If the Department fails, within ninety (90) days after the date of an objection under Reg. 26.605(A) to revise and submit a proposed permit in response to the objection, the Administrator will issue or deny the permit in accordance with the requirements of the Federal program promulgated under title V of the Act.

Reg. 26.606 Public petitions to the Administrator

If the Administrator does not object in writing to a proposed part 70 permit, any person may petition the Administrator within sixty (60) days after the expiration of the Administrator's forty-five (45)-day review period to make such objection. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this subsection, the Department shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the Department has issued a permit prior to receipt of an EPA objection under this subsection, the Administrator will modify, terminate, or revoke such permit, and shall do so consistent with the procedures in Chapter 10 of Regulation No. 26 except in unusual circumstances, and the Department may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

Reg. 26.607 Prohibition on default issuance

No part 70 permit (including a permit renewal or modification) shall be issued until affected States and EPA have had an opportunity to review the proposed permit as required under this chapter.

Tab F:
Regulations with Changes Incorporated
("Final")

-Final APC&EC Regulation No. 19, Regulations of the
Arkansas Plan of Implementation for Air Pollution Control

-Final APC&EC Regulation No. 26, Regulations of the
Arkansas Operating Air Permit Program

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 19
REGULATIONS OF THE ARKANSAS PLAN OF
IMPLEMENTATION FOR AIR POLLUTION
CONTROL**



FILED

MAR 04 2016

**Arkansas
Secretary of State**

Approved by Arkansas Pollution Control and Ecology Commission

February 26, 2016

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CHAPTER 1: TITLE, INTENT, AND PURPOSE

Reg. 19.101 Title

The following rules and regulations, adopted in accordance with the provisions of Subchapter 2 of the Arkansas Water and Air Pollution Control Act, Arkansas Code Annotated (Ark. Code Ann.) § 8-4-201 *et seq.*, shall be known as “Regulations of the Arkansas Plan of Implementation of Air Pollution Control,” hereinafter referred to as the “Regulations of the Plan,” and “Regulation 19.”

Reg. 19.102 Applicability

These regulations are applicable to any stationary source which has the potential to emit any federally regulated air pollutant.

Reg. 19.103 Intent and Construction

- (A) The purpose and intent of Regulation 19, as amended, is to provide a clear delineation of those regulations that are promulgated by the Commission in satisfaction of certain requirements of the federal Clean Air Act, 42 United States Code (U.S.C.) § 7401 *et seq.*, as of July 1, 1997, and the federal regulations stemming therefrom. Federal programs that the Department is responsible for administering include, but are not limited to, the attainment and maintenance of the National Ambient Air Quality Standards (40 Code of Federal Regulations [C.F.R.] Part 50), certain delegated subparts of the New Source Performance Standards (40 C.F.R. Part 60), provisions designed for the Prevention of Significant Deterioration (40 C.F.R. § 52.21), minor new source review as described in Chapter 4 (40 C.F.R. Part 51), and certain delegated subparts of the National Emission Standards for Hazardous Air Pollutants (40 C.F.R. Parts 61 and 63) as of July 1, 1997. This subsection shall not be construed as limiting the future delegation of federal programs to the Department for administration.
- (B) Regulation 19, as amended, is further intended to limit the federal enforceability of its requirements to only those mandated by federal law. Regulation 19, as amended, is also intended to facilitate a permit system for stationary sources within the State, which permit

shall provide which provisions are federally enforceable and which provisions are state enforceable.

- (C) Regulation 19, as amended, presumes a single-permit system, encompassing both federal and state requirements. A regulated facility which is subject to permitting under Regulation 19 shall be required to apply for and comply with only one permit, even though that permit may contain conditions derived from the federal mandates contained in Regulation 19, as well as conditions predicated solely on state law. Regulation 19, through construction or implication, shall not support the conclusion that all conditions of a permit have become federally enforceable because the permit contains provisions derived from Regulation 19. Permits or permit conditions issued under the authority of state law, or enforcement issues arising out of state law, shall not be federally enforceable.
- (D) To the extent consistent with state law and efficient protection of the State's air quality, Regulation 19 shall be construed in a manner that promotes a streamlined permitting process, mitigation of regulatory costs, and flexibility in maintaining compliance with federal mandates. Any applicable documents (e.g. "White Papers," regulatory preambles, or interpretive memoranda) issued by the EPA which are consistent with this policy and the legislative intent of state laws governing air pollution control (Ark. Code Ann. § 8-4-301 *et seq.*) are aids for construing the requirements of Regulation 19. Any procedure applicable to major sources that promotes operational flexibility are presumed to be authorized by this regulation unless manifestly inconsistent with its substantive terms.
- (E) Nothing in Regulation 19 shall be construed as curtailing the Department's or Commission's authority under state law.

Reg. 19.104 Severability

If any provision of Regulation 19 is determined to be invalid, such invalidity shall not affect other provisions of Regulation 19.

If federal legislation or a federal court stays, invalidates, delays the effective date of, or otherwise renders unenforceable, in whole or in part, EPA's regulation of greenhouse gases, then the provisions of Regulation 19 concerning greenhouse gases based thereon shall be stayed and

shall not be enforceable until such time as the Commission makes a final decision on whether or not to revise Regulation 19 due to the federal legislation or federal court order.

CHAPTER 2: DEFINITIONS

Terms and phrases used in this regulation which are not explicitly defined herein shall have the same meaning as those terms which are used in the federal Clean Air Act. For purposes of this regulation:

“12-month period” means a period of 12 consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

“Actual emissions” means the quantity of federally regulated air pollutants emitted from a stationary source considering emissions control equipment and actual hours of source operation or amount of material processed.

“CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed by multiplying the mass amount of emissions tpy, for each of the six greenhouse gases in the pollutant GHGs, by the gas’s associated global warming potential published at Table A - 1 to Subpart A of 40 C.F.R. Part 98 - Global Warming Potentials (which is incorporated by reference as of the effective date of the federal final rule published by EPA in the Federal Register on November 29, 2013 [78 FR 71948]), and summing the resultant value for each to compute a tpy CO₂ equivalent emissions.

“Commission” means the Arkansas Pollution Control and Ecology Commission.

“Construction” means fabrication, erection, or installation of equipment. See also 40 C.F.R. § 60.2, 40 C.F.R. § 51.165, and 40 C.F.R. § 52.21.

“Control apparatus” means any device which prevents, controls, detects or records the emission of any federally regulated air pollutants.

“Department” means the Arkansas Department of Environmental Quality, or its successor. When reference is made in this regulation to actions taken by or with reference to the Department, the reference is to the staff of the Department acting at the direction of the Director.

“Director” means the Director of the Arkansas Department of Environmental Quality, or its successor, acting directly or through the staff of the Department.

“Emission limitation” and **“emission standard”** mean a requirement established by the Department or the Administrator of the EPA which limits the emissions of federally regulated air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.

“Emission unit” means any article, machine, equipment, operation, or contrivance that emits or has the potential to emit any federally regulated air pollutant.

“EPA” means the United States Environmental Protection Agency.

“Equipment” means any device, except equipment used for any mode of vehicular transportation, capable of causing the emission of a federally regulated air pollutant into the open air, and any stack, conduit, flue, duct, vent, or similar device connected or attached to or serving the equipment.

“Federal Clean Air Act” or **“Clean Air Act”** or **“FCAA”** or **“the Act”** means the federal Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and its implementing regulations as of the effective date of this regulation.

“Federally regulated air pollutant” means the following:

- (A) Nitrogen oxides or any volatile organic compounds;
- (B) Any pollutant for which a National Ambient Air Quality Standard has been promulgated;
- (C) Except as provided in (E), any pollutant that is subject to any standard promulgated under 42 U.S.C. § 7401, *et seq.*, as of the effective date of this regulation;
- (D) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Clean Air Act, 42 U.S.C. § 7401, *et seq.* as amended as of July 1, 1997.

- (E) GHGs, except that GHGs shall not be a Federally Regulated Air Pollutant unless the GHG emissions are:
- (1) from a stationary source emitting or having the potential to emit 75,000 tpy CO₂e emissions or more; and
 - (2) regulated under Chapter 9 of this Regulation 19.

“Fugitive emissions” means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Those emissions are those that, according to customary and good engineering practice, considering technological and economic feasibility, could not pass through a stack, chimney, vent or other functionally-equivalent opening, except that the Department will utilize the definition of fugitive emissions for those industries for which an approved EPA definition exist under federal law or regulation and which are meeting that law or regulation.

“Greenhouse gases” (GHGs) means the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

“Hazardous Air Pollutant” or **“HAP”** means any air pollutant listed pursuant to § 112 of the Clean Air Act, as amended, 42 U.S.C. § 7401, *et seq.*, as of the effective date of this regulation.

“Modification” means any physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any federally regulated air pollutant over permitted rates or which results in the emission of a federally regulated air pollutant not previously emitted, except that:

- (A) Routine maintenance, repair, and replacement shall not be considered a physical change, and
- (B) The following shall not be considered a change in the method of operation:
 - (1) Any change in the production rate, if such change does not exceed the permitted operating capacity of the source;

- (2) Any change in the hours of operation, as long as it does not violate applicable air permit conditions; or
 - (3) The use of an alternate fuel or raw material, as long as it does not violate applicable air permit conditions.
- (C) *De Minimis* changes, as defined in Reg. 19.407(C), and changes in ownership shall not be considered.

“National Ambient Air Quality Standards” or **“NAAQS,”** means those ambient air quality standards promulgated by the EPA in 40 C.F.R. Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on January 15, 2013 (78 FR 3086), as set forth in Appendix B of Regulation 19.

“NAAQS state implementation plan or “NAAQS SIP” (as defined by Ark. Code Ann. § 8-4-303) means a state implementation plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, for the attainment and maintenance of a specified NAAQS in each air quality control region or portion of an air quality control region within the state.

“Opacity” means the degree to which air emissions reduce the transmission of light and obscure the view of an object in the background.

“Operator” means any person who leases, operates, controls, or supervises any equipment affected by these regulations.

“Owner” means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

“Particulate matter” or “PM” means any airborne finely divided solid or liquid material with an aerodynamic diameter equal to or less than 100 micrometers.

“Particulate matter emissions” means all particulate matter, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternate method, specified in 40 C.F.R. Part 60 Appendix A as of the effective date of the

federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257), or by a test method specified in these regulations or any supplement thereto, with the exception of condensable particulate matter.

“Person” means any individual or other legal entity or their legal representative or assignee.

“Plan” means the Arkansas Plan of Implementation for Air Pollution Control.

“PM_{2.5}” means particulate matter with an aerodynamic diameter less than or equal to a nominal two and one-half (2.5) micrometers as measured by a reference method based on Appendix L of 40 C.F.R. Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2006 (71 FR 61226), or by an approved regional method designated in accordance with Appendix C of 40 C.F.R. Part 53.

“PM_{2.5} emissions” means PM_{2.5} emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 C.F.R. Part 51, Appendix M as of the effective date of the federal final rule published by EPA in the Federal Register on April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“PM₁₀” means particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers as measured by a reference method based on Appendix J of 40 C.F.R. Part 50 as of the effective date of the federal final rule published by EPA in the Federal Register on August 7, 1987 (52 FR 29467), or by an equivalent method designated in accordance with 40 C.F.R. Part 53 as of December 8, 1984.

“PM₁₀ emissions” means PM₁₀ emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 C.F.R. Part 51, Appendix M as of the effective date of the federal final rule published by EPA in the Federal Register on April 2, 2014 (79 FR 18452), or by a test method specified in these regulations or any supplement thereto.

“Potential to emit” means the maximum capacity of a stationary source to emit a federally regulated air pollutant under its physical and operational design. Any physical or operational

limitation on the capacity of the source to emit a federally regulated air pollutant, including, but not, limited to, air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is enforceable to the extent it is regulated by the federal Clean Air Act, 42 U.S.C. § 7401 *et seq.* as of February 15, 1999. Secondary air emissions do not count in determining the potential to emit of a stationary source.

“Responsible official” means one of the following:

- (A) For a corporation: a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative or such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (1) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 United States dollars); or
 - (2) The delegation of authority to such representative is approved in advance by the Department;
- (B) For partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (C) For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this regulation, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or
- (D) For acid rain sources:
 - (1) The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and

(2) The designated representative for any other purposes under Part 70.

“Secondary emissions” means those emissions of federally regulated air pollutants which, although associated with a source, are not emitted from the source itself.

“Shutdown” means the cessation of operation of equipment.

“Startup” means the setting in operation of equipment.

“State implementation plan” or “SIP” (as defined at Ark. Code Ann. § 8-4-303), means a plan that specifies measures to be used in the implementation of the state's duties under the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, and that is developed by the department and submitted to the EPA for review and approval.

“Stationary source” means any building, structure, facility, or installation which emits or may emit any federally regulated air pollutant.

“Title I modification” means any modification as defined under any regulation promulgated pursuant to Title I of the federal Clean Air Act. *De minimis* changes under Regulation 19, changes to state only permit requirements, administrative permit amendments, and changes to the insignificant activities list are not Title I modifications.

“Volatile organic compounds” or “VOC” means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(A) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity:

- acetone;
- methane;
- ethane;
- methylene chloride (dichloromethane);
- 1,1,1- trichloroethane (methyl chloroform);
- tetrachloroethylene (perchloroethylene);
- 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
- trichlorofluoromethane (CFC-11);

dichlorodifluoromethane (CFC-12);
chlorodifluoromethane (HCFC-22);
trifluoromethane (HFC-23);
1,2-dichloro 1,1, 2, 2-tetrafluoroethane (CFC-114);
chloropentafluoroethane (CFC-115);
1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);
1,1,1,2-tetrafluoroethane (HFC-134a);
1,1-dichloro 1-fluoroethane (HCFC-141b);
1-chloro 1,1-difluoroethane (HCFC-142b);
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
pentafluoroethane (HFC-125);
1,1,2,2-tetrafluoroethane (HFC-134);
1,1,1-trifluoroethane (HFC-143a);
1,1-difluoroethane (HFC-152a);
parachlorobenzotrifluoride (PCBTF);
cyclic, branched, or linear completely methylated siloxanes;
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
difluoromethane (HFC-32);
ethylfluoride (HFC-161);
1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
1,1,2,2,3-pentafluoropropane (HFC-245ca);
1,1,2,3,3-pentafluoropropane (HFC 245ea);
1,1,1,2,3-pentafluoropropane (HFC-245eb);
1,1,1,3,3-pentafluoropropane (HFC-245fa);
1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
1,1,1,3,3-pentafluorobutane (HFC-365mfc);
chlorofluoromethane (HCFC-31);
1 chloro-1-fluoroethane (HCFC-151a);
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃ or HFE-7100);
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane
((CF₃)₂CFCF₂OCH₃);
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅ or HFE 7200);
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane
((CF₃)₂CFCF₂OC₂H₅);
methyl acetate;
1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C₃F₇OCH₃ or HFE-7000);
3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane
(HFE-7500);
1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea);
methyl formate (HCOOCH₃);

1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethyl-pentane (HFE-7300);
propylene carbonate;
dimethyl carbonate;
trans-1,3,3,3-tetrafluoropropene (HFO-1234ze);
HCF₂OCF₂H (HFE-134);
HCF₂OCF₂OCF₂H (HFE-236cal2);
HCF₂OCF₂CF₂OCF₂H (HFE-338pcc13);
HCF₂OCF₂OCF₂CF₂OCF₂H (H-Galden 1040x or H-Galden ZT 130 [or 150 or
180]);
trans- 1-chloro-3,3,3-trifluoroprop-1-ene;
2,3,3,3-tetrafluoropropene;
2-amino-2-methyl-1-propanol;

and perfluorocarbon compounds which fall into these classes:

- (1) cyclic, branched, or linear, completely fluorinated alkanes;
 - (2) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
 - (3) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
 - (4) sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
- (B) For purposes of determining compliance with emission limits, VOC will be measured by the test methods in the approved State Implementation Plan (SIP) or 40 C.F.R. Part 60, Appendix A, as of July 1, 1997, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the Department.
- (C) As a precondition to excluding these compounds as VOC or at any time thereafter, the Department may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Department, the amount of negligibly-reactive compounds in the source's emissions.
- (D) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to

VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

CHAPTER 3: PROTECTION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS

Reg. 19.301 Purpose

The purpose of this chapter is to state the responsibilities of the Department and regulated sources in meeting and maintaining the NAAQS. If any area of the state is determined to be in violation of the NAAQS, all applicable requirements contained in the Clean Air Act, as amended, and all regulations promulgated thereto shall be met by the Department.

Reg. 19.302 Department Responsibilities

The Department shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) Ambient air monitoring in any area that can reasonably be expected to be in excess of the NAAQS.
- (B) Computer modeling of regulated air pollutant emissions for any area that can reasonably be expected to be in excess of the NAAQS, and review of the ambient air impacts of any new or modified source of federally regulated air emission that is the subject of the requirements of this Plan. All computer modeling shall be performed using EPA-approved models, and using averaging times commensurate with averaging times stated in the NAAQS.

Reg. 19.303 Regulated Sources Responsibilities

Any source subject to the provisions of this Plan shall be responsible for taking the following precautions to prevent the NAAQS from being exceeded:

- (A) When required by law or this regulation, obtaining a permit from the Department prior to construction of a new source of federally regulated air pollutant emissions or prior to the modification of an existing source of air emissions.
- (B) Operating equipment in such a manner as to meet any applicable permit requirement or any applicable regulations.

- (C) Repairing malfunctioning equipment and pollution control equipment as quickly as possible. If the malfunctioning equipment is causing, or contributing to, a violation of the NAAQS, as determined by computer modeling, the source is responsible for ceasing operations of the affected equipment until such time that it is repaired.

Reg. 19.304 Delegated Federal Programs

Sources subject to this regulation shall also comply with all Federal programs that the Department is responsible for administering including certain delegated subparts of the New Source Performance Standards (40 C.F.R. Part 60), provisions designed for the Prevention of Significant Deterioration (40 C.F.R. § 52.21), and certain delegated subparts of the National Emissions Standards for Hazardous Air Pollutants (40 C.F.R. Parts 61 and 63), which were promulgated as of January 27, 2006. These delegated subparts only apply to major sources. (There are subparts that apply to minor sources, but the Department has not requested delegation of them as of April 28, 2006.)

CHAPTER 4: MINOR SOURCE REVIEW

Reg. 19.401 General Applicability

No person shall cause or permit the operation, construction, or modification of a stationary source, whose actual emissions are:

Seventy-five (75) tons per year or more of carbon monoxide;

Forty (40) tons per year or more of nitrogen oxides;

Forty (40) tons per year or more of sulfur dioxide;

Forty (40) tons per year or more of volatile organic compounds;

Ten (10) tons per year or more of direct PM_{2.5};

Fifteen (15) tons per year or more of PM₁₀;

One-half (0.5) ton per year or more of lead;

Two (2) tons per year or more of any single hazardous air pollutant; or

Five (5) tons per year or more of any combination of hazardous air pollutants

without first obtaining a permit from the Department pursuant to the provisions of this chapter.

Reg. 19.402 Approval Criteria

No permit shall be granted or modified under this chapter unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.

Reg. 19.403 Owner/Operator's Responsibilities

Issuance of a permit by the Department does not affect the responsibility of the owner/operator to comply with applicable portions of this regulation.

Reg. 19.404 Required Information

(A) General

Application for a permit shall be made on such forms and contain such information as the Department may reasonably require, including but not limited to:

- (1) information on the nature and amounts of federally regulated air pollutants to be emitted by the stationary source; and
- (2) such information on the location, design, and operation of stationary source as the Department may reasonably require.

(B) Duty to Supplement Submittal

If, while processing an application that has been determined to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, the Department may request such information in writing and set a reasonable deadline for a response.

(C) Duty to Correct Submittal

Any owner/operator who fails to submit any relevant facts or who has submitted incorrect information, shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any relevant requirements that become applicable to the stationary source before final action is taken on its application.

Reg. 19.405 Action on Application

(A) Technical Review

The Department will review the application submitted under this chapter in order to ensure to

their reasonable satisfaction that:

- (1) the stationary source will be constructed or modified to operate without interfering with attainment or maintenance of a national ambient air quality standard;
- (2) the stationary source will be constructed or modified to operate without violating any applicable regulation adopted by the EPA pursuant to §§ 111, 112, and 114 of the Clean Air Act as amended;
- (3) the stationary source will be constructed or modified to operate without resulting in a violation of any applicable provisions of this regulation;
- (4) the emission rate calculations are complete and accurate; and
- (5) if the facility wishes to measure and/or monitor operating parameters rather than actual emissions, the application describes a process which will be used to ensure that the calculations are translated into enforceable limits on operational parameters rather than emissions.

(B) Proposed Action

- (1) If the Department initially determines the requirements of Reg. 19.405(A) are met, they shall prepare a draft permit which:
 - (a) contains such conditions as are necessary to comply with this Regulation;
 - (b) addresses all federally regulated air pollutant emissions and all federally regulated air pollutant emitting equipment at the stationary source except pollutants or equipment specifically exempt or as specifically provided for in paragraph (c) below; and
 - (c) establishes Best Available Control Technology (BACT) permitted emission rates, emission limitations or other enforceable conditions for GHG emissions pursuant to Chapter 9 of this Regulation, if applicable. Draft permits for facilities not subject to a BACT determination in regard to GHG emissions pursuant to the provisions at Chapter 9 of this

Regulation shall not contain permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions. However, the applicant may request that the Department include permitted emission rates, emission limitations or other enforceable conditions related to GHG emissions in the draft permit in order to set enforceable limits for the purpose of establishing synthetic minor status. In the event any provision of Regulation 19 is found to be in conflict with this Section 19.405(B)(1), this Section shall take precedence.

- (2) If the Department initially determines the requirements of this chapter are not met, they shall prepare a notice of intent to deny. This notice will state the reasons for the Department's denial of the stationary source's submittal.
- (3) Except as provided in Reg. 19.407, the public shall have an opportunity to comment on the Department's proposed permit decision in accordance with Reg. 19.406.
- (4) Within 90 days of receipt by the Department of an initial permit application, or an application for a major modification which contains such information as required by the Department (unless said period is extended by mutual agreement between the Department and the applicant), the Department shall notify the applicant in writing of its draft permitting decision. If the Department fails to take action of the application within the prescribed time frames, the aggrieved applicant may petition the Commission for relief from Department inaction. The Commission shall either grant or deny the petition within 45 days of its submittal.

(C) Final Action

The Department shall take final action on a permit application after the close of the public comment period. The Department shall notify in writing the owner/operator and any person that submitted a written comment, of the Department's final action and the Department's reasons for its final action.

Reg. 19.406 Public Participation

(A) General

No permit shall be issued, denied, or modified unless the public has first had an opportunity to comment on the information submitted by the owner/operator and the Department's analysis, as demonstrated by the permit record, of the effect of construction or modification on ambient air quality, including the Department's proposed approval or disapproval of the permit.

(B) Public Availability of Information

For purposes of this section, opportunity to comment shall include, at a minimum:

- (1) Availability for the public inspection in at least one location in the area where the source is located, or proposes to locate, and in the Department's central offices of the Department's draft decision, information submitted by the owner/operator, and any information developed by the Department in support of its draft permit decision;
- (2) A 30-day period for submittal of public comment (beginning on the date of the latest newspaper notice, ending on the date 30 days later);
- (3) A publication in a newspaper of general circulation in the area where the source is located or proposes to locate, and in a State publication designed to give general public notice. Such notice shall, as a minimum, describe the locations at which the information submitted by the owner/operator and the Department's analysis of this information, may be inspected and the procedure for submitting public comment;
- (4) A copy of the notice, required pursuant to this subsection, shall be sent to the owner/operator and to the:
 - (a) Regional Administrator of the EPA;
 - (b) mayor of the community where the stationary source is proposed to be constructed or modified;
 - (c) county judge of the county where the equipment is proposed to be constructed or modified; and

- (d) appropriate air pollution control agencies of adjoining states if the construction or modification of the source will impact air quality in adjoining states.
- (5) Public comments addressing the technical merits of the permit application and the Department's analysis of the effect of the proposed emissions on air quality submitted in accordance with procedures in the public notice shall be considered by the Department prior to taking final action on the permit application.

Reg. 19.407 Permit Amendments

(A) Administrative Permit Amendments

- (1) An administrative permit amendment is a permit revision that:
 - (a) corrects a typographical error;
 - (b) identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change in the source;
 - (c) requires more frequent monitoring or reporting by the permittee;
 - (d) incorporates a change in the permit involving the retiring of equipment or emission units, or the decrease of permitted emissions from equipment or emission units; or
 - (e) incorporates a change to the facility's insignificant activities list.
- (2) The Department shall revise the permit as expeditiously as practicable and may incorporate such revisions without providing notice to the public.
- (3) The applicant may implement the changes addressed in the request for an administrative amendment immediately upon approval.

(B) Change in Ownership

- (1) Permits issued under this regulation shall remain freely transferable, provided the applicant for the transfer:
 - (a) notifies the Director at least thirty (30) days in advance of the proposed transfer date on such forms as the Director may reasonably require, and
 - (b) submits a disclosure statement in accordance with Commission Regulation 8, Administrative Procedures, or other such documents as required by the Department.
 - (2) The Director may deny the issuance or transfer of any permit, license, certification, or operational authority if he or she finds, based upon the disclosure statement and other investigation which he or she deems appropriate, that:
 - (a) The applicant has a history of non-compliance with the environmental laws or regulations of this state or any other jurisdiction;
 - (b) An applicant which owns or operates other facilities in the state is not in substantial compliance with, or on a legally enforceable schedule that will result in compliance with, the environmental laws or regulations of this state; or
 - (c) A person with a history of non-compliance with environmental laws or regulations of this state or any other jurisdiction is affiliated with the applicant to the extent of being capable of significantly influencing the practices or operations of the applicant which could have an impact upon the environment.
 - (3) Public notice requirements shall not apply to changes in ownership or changes in name.
- (C) *De Minimis* Changes
- (1) A proposed change to a facility will be considered *De Minimis* if:
 - (a) minimal judgment is required to establish the permit requirements for the change; and

- (b) the change will result in a trivial environmental impact.
- (2) The environmental impact of a proposed change generally will be considered trivial if the emission increase, based on the differences between the sum of the proposed permitted rates for all emissions units and the sum of previously permitted emission rates for all units will either:
- (a) be less than the following amounts:
- i. Seventy-five (75) tons per year of carbon monoxide;
 - ii. Forty (40) tons per year of nitrogen dioxides, sulfur dioxides, or volatile organic compounds;
 - iii. Twenty-five (25) tons per year of particulate matter emissions;
 - iv. Ten (10) tons per year of direct PM_{2.5};
 - v. Fifteen (15) tons per year of PM₁₀ emissions; and
 - vi. One-half (0.5) a ton per year of lead;
- (b) or, result in an air quality impact less than:

Pollutant	<i>De Minimis</i> Concentration	Averaging Time
carbon monoxide	500 $\mu\text{g}/\text{m}^3$	8-hour
nitrogen dioxide	10 $\mu\text{g}/\text{m}^3$	Annual
PM _{2.5}	2 $\mu\text{g}/\text{m}^3$	24-hour
PM ₁₀	8 $\mu\text{g}/\text{m}^3$	24-hour
sulfur dioxide	18 $\mu\text{g}/\text{m}^3$	24-hour
lead	0.1 $\mu\text{g}/\text{m}^3$	3-month

- (3) A proposed change will be considered *De Minimis* if the increases are less than 75,000 tpy of CO₂e and other pollutant emission increases otherwise qualify as

De Minimis under this section.

- (4) The following changes will not be considered *De Minimis* changes:
 - (a) any increase in the permitted emission rate at a stationary source without a corresponding physical change or change in the method of operation at the source;
 - (b) any change which would result in a violation of the Clean Air Act;
 - (c) any change seeking to change a case-by-case determination of an emission limitation established pursuant to Best Available Control Technology (BACT), §112(g), §112(i)(5), §112(j), or §111(d) of the Clean Air Act as amended as of February 15, 1999;
 - (d) a change that would result in a violation of any provision of this regulation;
 - (e) any change in a permit term, condition, or limit that a source has assumed to avoid an applicable requirement to which the source would otherwise be subject;
 - (f) any significant change or relaxation to existing testing, monitoring, reporting, or recordkeeping requirements; or
 - (g) any proposed change which requires more than minimal judgment to determine eligibility.
- (5) A source may not submit multiple applications for *De Minimis* changes that are designed to conceal a larger modification that would not be considered a *De Minimis* change. The Department will require such multiple applications be processed as a permit modification with public notice and reconstruction requirements. Deliberate misrepresentation may be grounds for permit revocation.
- (6) The applicant may implement *De Minimis* changes immediately upon approval by the Department.

- (7) The Department shall revise the permit as expeditiously as practicable and may incorporate *De Minimis* changes without providing notice to the public. The applicant may implement *De Minimis* changes immediately upon approval by the Department.

Reg. 19.408 Exemption from Permitting

(A) Insignificant Activities

Stationary sources and activities listed in Appendix A of this regulation shall be considered to be insignificant and will not require a permit under this chapter or be included in a source's permit.

(B) Grandfathering

Stationary sources operating prior to June 30, 1975, and which have not been modified since, will not be required to obtain a permit under this chapter.

Reg. 19.409 Transition

Facilities which are now subject to this regulation which were not previously subject to this regulation shall be in full compliance within 180 days of the effective date of this regulation. Facilities which are now subject to permitting under this regulation which were not previously subject to permitting under this regulation shall submit a complete application within 180 days of the effective date of this regulation. The Director may extend this compliance period on a case-by-case basis provided that the total compliance period does not exceed one year.

Reg. 19.410 Permit Revocation and Cancellation

(A) Revocation

Any permit issued under this regulation is subject to revocation, suspension, or modification in whole or in part, for cause, including without limitation:

- (1) Violation of any condition of the permit;
- (2) Obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or

- (3) Change in any applicable regulation or change in any pre-existing condition affecting the nature of the emission that requires either a temporary or permanent reduction or elimination of the permitted emission.

(B) Cancellation

The Director may cancel a permit if the construction or modification is not begun within 18 months from the date of the permit issuance or if the work involved in the construction or modification is suspended for a total of 18 months or more.

Reg. 19.411 General Permits

(A) General Authority

The Department may, after notice and opportunity for public participation provided under this chapter, issue a general permit covering numerous similar sources. The criteria for the review and approval of permits under this chapter shall be used for general permits as well. Any general permit shall comply with all requirements applicable to other permits and shall identify criteria by which sources may qualify for the general permit. They shall also include enforceable emission limitations or other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this regulation. To sources that qualify, the Department shall grant the conditions and terms of the general permit. The source shall be subject to enforcement action for operation without a permit if the source is later determined not to qualify for the conditions and terms of the general permit.

(B) Application

Sources that would qualify for a general permit must apply to the Department for coverage under the terms of the general permit or must apply for permit consistent with this chapter. The Department may grant a source's request for authorization to operate under a general permit, but such a grant shall not be a final permit action for purposes of judicial review.

- (1) When any application for the issuance of a new permit or a modification of an existing permit is filed with the Department, the Department shall cause notice of

the application to be published in a newspaper of general circulation in the county in which the proposed facility is to be located.

- (2) The notice required by Reg. 19.411(B)(1) shall advise that any interested person may request a public hearing on the permit application by giving the Department a written request within ten (10) days of the publication of the notice.
- (3) Should a hearing be deemed necessary by the Department, or in the event the Department desires such a hearing, the Department shall schedule a public hearing and shall, by first class mail, notify the applicant and all persons who have submitted comments of the date, time, and place thereof.

Reg. 19.412 Dispersion Modeling

The following shall apply when dispersion or other air quality modeling is used to meet the requirements of this chapter.

(A) General

All applications of air quality modeling involved in this chapter shall be based on the applicable models, data bases, and other requirements specified in Appendix W of 40 C.F.R. Part 51 (Guideline on Air Quality Models) as of the effective date of the federal final rule published by EPA in the Federal Register on November 9, 2005 (70 FR 68228).

(B) Substitution

Where an air quality model specified in the Guideline on Air Quality Models is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis for a specific pollutant or type of stationary source. Written approval of the Administrator of the EPA must be obtained for any modification or substitution.

Reg. 19.413 Confidentiality

Information which constitutes a trade secret shall be held confidential and segregated from the public files of the Department if requested in writing by the permit applicant in accordance with this subsection.

- (A) For purposes of this subsection, “Trade Secret” means any information, including formula, pattern, compilation, program, device, method, technique, process, or rate of production that:
- (1) Derives independent economic value (actual or potential) from not being generally known to, and not being readily ascertainable through, proper means by other persons who can obtain economic value from its disclosure or use, and
 - (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.
- (B) In order to establish entitlement to confidentiality, the applicant must submit a sworn affidavit to the Department that is subject to public scrutiny which describes in a manner that does not reveal trade secrets, the processes or market conditions that supports the applicant’s confidentiality claim in the terms of Reg. 19.413(A)(1) and (2). This affidavit must also recite the following:

“The applicant agrees to act as an indispensable party and to exercise extraordinary diligence in any legal action arising from the Department’s denial of public access to the documents or information claimed herein to be a trade secret.”

If an applicant anticipates numerous permit modifications that may involve regulatory review of trade secrets, it may submit an omnibus affidavit establishing the prerequisites of Reg. 19.413(A)(1) and (2) and reference this document in future confidentiality claims.

- (C) Confidentiality claims shall be afforded interim protected status until the Department determines whether the requirements of Reg. 19.413(B) are satisfied. The Department shall make such determination prior to the issuance of any permit or publication of any draft permit. In the event the Department does not make such determination prior to permit issuance, the information shall be deemed confidential until a request is made. If a third party request to review information claimed as confidential is received before the Department provides its written determination concerning the claim, the Department shall

not release such information before notifying the applicant of the request. The Department shall notify the applicant of the request and the Department's determination on the confidentiality claim at least two business days before releasing the information, at which time the applicant may choose to supplement its affidavit supporting confidentiality or seek legal recourse.

- (D) For any permit application submitted subject to a claim of trade secret, the applicant shall provide two copies of the application; one prominently marked as confidential and another that is subject to public review with confidential information excised. The Department will not accept applications that are deemed totally confidential except under extraordinary circumstances guaranteeing future disclosure at a meaningful time for public review.

Reg. 19.414 Operational Flexibility-Applicant's Duty to Apply for Alternative Scenarios

Any operating scenario allowed for in a permit may be implemented by the facility without the need for any permit revision or any notification to the Department. It is incumbent upon the permit applicant to apply for any reasonably anticipated alternative facility operating scenarios at the time of permit application. The Department shall include approved alternative operating scenarios in the permit.

Reg. 19.415 Changes Resulting in No Emissions Increases

A permitted source may make changes within the facility that contravene permit terms without a permit revision if the changes:

- (A) Are not modifications under any provision of Title I of the Act;
- (B) Do not exceed emissions allowable under the permit (whether expressed therein as a rate of emissions or in the terms of total emissions);
- (C) Do not violate applicable requirements; and
- (D) Do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

provided that the facility provides the Department with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days, or such shorter time frame that the Department allows for emergencies. The source and the Department shall attach each such notice to their copy of the relevant permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

Reg. 19.416 Permit Flexibility

- (A) The Department may grant an extension to any testing, compliance or other dates in the permit. No extensions shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
 - (1) The permittee of the facility makes such a request in writing at least 15 days in advance of the deadline specified in the facility's permit;
 - (2) The extension does not violate a federal requirement;
 - (3) The permittee of the facility demonstrates the need for the extension; and
 - (4) The permittee of the facility documents that all reasonable measures have been taken to meet the current deadline and documents reasons the current deadline cannot be met.

- (B) The Department may grant a request to allow temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
 - (1) The permittee of the facility makes such a request in writing at least 30 days in advance of the date that temporary emissions and/or testing that would otherwise exceed a permitted emission rate, throughput requirement or other limit in a facility's permit;

- (2) Such a request does not violate a federal requirement;
 - (3) Such a request is temporary in nature;
 - (4) Such a request will not result in a condition of air pollution;
 - (5) The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date and time such emission will occur;
 - (6) Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
 - (7) The permittee of the facility maintains records of the dates and results of such temporary emissions and/or testing.
- (C) The Department may grant a request to allow an alternative to the monitoring specified in a facility's operating permit. No such activities shall be authorized until the permittee of the facility receives written approval from the Department. The Department may grant such a request, at its discretion, in the following circumstances:
- (1) The permittee operator of the facility makes such a request in writing at least 30 days in advance of the first date that the monitoring alternative will be used at the facility;
 - (2) Such a request does not violate a federal requirement;
 - (3) The monitoring alternative provides an equivalent or greater degree of actual monitoring to the requirements in the facility's operating permit; and
 - (4) Any such request, if approved by the Department, is incorporated into the next permit modification application by the permittee of the facility.

Reg. 19.417 Registration

- (A) Sources currently holding permits issued pursuant to Regulation 19 but whose emissions are below the permitting thresholds of 19.401, and above the registration thresholds of

Reg. 18.315 may elect to continue to operate under their existing Regulation 19 permit or they may submit a registration under Reg. 18.315 and request their Regulation 19 permit to be terminated. The Regulation 19 permit shall remain in effect until terminated. If a source takes no action, the Regulation 19 permit shall remain in effect.

- (B) A source otherwise subject to registration under Reg. 18.315 may elect to instead operate under a permit issued in accordance with Reg. 19.402.

CHAPTER 5: GENERAL EMISSIONS LIMITATIONS APPLICABLE TO EQUIPMENT

Reg. 19.501 Purpose

The purpose of this chapter is to define the general federally regulated air pollutant emissions limitations applicable to all equipment subject to the Plan. Stricter specific limitations may be required in applicable permits if such limitations are necessary to comply with federal law or regulations which are in effect as of the effective date of this regulation.

Reg. 19.502 General Regulations

No person shall cause or permit the construction or modification of equipment which would cause or allow the following standards or limitations to be exceeded:

- (A) Any National Ambient Air Quality Standard as defined herein;
- (B) Any ambient air increment pursuant to Chapter 9 of this Regulation;
- (C) Any applicable emission limitation promulgated by the EPA; or
- (D) Any applicable emission limitation promulgated by the Department in this regulation.

Reg. 19.503 Visible Emission Regulations

- (A) No person shall cause or permit visible emissions (other than uncombined water vapor) from equipment identified hereunder and which was installed and in operation, or for which a permit had been issued by the Department prior to January 30, 1972, to exceed the following limitations:
 - (1) Emissions shall not exceed 40% opacity, except that emissions greater than 40% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.
- (B) No person shall cause or permit visible emissions (other than uncombined water vapor) from new equipment identified hereunder which was installed or permitted by the

Department after January 30, 1972, to exceed the following limitations or to exceed any applicable visible emission limitations of the New Source Performance Standards promulgated by the EPA:

- (1) For incinerators and fuel burning equipment, exclusively, emissions shall not exceed 20% opacity except that emissions greater than 20% opacity but not exceeding 60% opacity will be allowed for not more than six (6) minutes in the aggregate in any consecutive 60-minute period, provided such emissions will not be permitted more than three (3) times during any 24-hour period.
 - (2) For equipment used in a manufacturing process, emissions shall not exceed 20%.
- (C) Opacity of visible emissions shall be determined using EPA Method 9 (40 C.F.R. Part 60, Appendix A).

Reg. 19.504 Stack Height/Dispersion Regulations

The stack height provisions of 40 C.F.R. § 51.118 are incorporated by reference. The definition of “stack,” “a stack in existence,” “dispersion technique,” “good engineering practice,” “nearby,” and “excessive concentration” are defined in 40 C.F.R. §§ 51.100 (ff) through (kk) are incorporated into this chapter by reference as of September 12, 1986.

Reg. 19.505 Revised Emissions Limitation

The emissions limitations contained within the Plan and applicable permits are for the purpose of assuring the attainment and maintenance of the NAAQS and have been established within the framework of information presently available to the Department. As additional and more precise information becomes available, the emission limitations and reporting procedures of this chapter may be amended as described below:

- (A) More restrictive limitations to protect the NAAQS. In accordance with the provisions of the federal Clean Air Act, as amended, and the federal regulations promulgated pursuant to the Clean Air Act, as amended, the emission limitations and reporting procedures of this chapter or any applicable permits may be further amended and made more restrictive where the Director finds more restrictive measures are necessary to assure maintenance of the NAAQS.

- (B) Less restrictive limitations. Any person subject to the emission limitations contained in this Plan or in a permit may petition the Director for a less stringent limitation on the grounds that the existing limitation cannot be met when considering physical, economical, or technological constraints. In no case shall the Director approve a less stringent limitation if it would cause a violation of the NAAQS. The Director shall not approve a less stringent limitation if it violates a federal emission standard or regulation, unless approved according to applicable federal regulations.

The Director shall take into account the following factors when making such determinations:

- (1) The process, fuels, and raw materials available and to be employed in the facility involved;
 - (2) The engineering aspects of the application of various types of control techniques which have been adequately demonstrated;
 - (3) Process and fuel changes;
 - (4) The respective costs of the application of all such control techniques, process changes, alternative fuels, etc.; and
 - (5) Locational and siting considerations.
- (C) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (D) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

CHAPTER 6: UPSET AND EMERGENCY CONDITIONS

Reg. 19.601 Upset Conditions

For purposes of this paragraph, “upset condition” shall be defined as exceedences of applicable emission limitations lasting 30 or more minutes, in the aggregate, during a 24-hour period, unless otherwise specified in an applicable permit or regulation (such as New Source Performance Standards [NSPS] regulations). All upset conditions, resulting in violation of an applicable permit or regulation, shall be reported to the Department. Any source exceeding an emission limit established by the Plan or applicable permit shall be deemed in violation of said Plan or permit and shall be subject to enforcement action. The Department may forego enforcement action for federally regulated air pollutant emissions given that the person responsible for the source of the excess emissions does the following:

- (A) Demonstrates to the satisfaction of the Department that the emissions resulted from:
 - (1) equipment malfunction or upset and are not the result of negligence or improper maintenance; or
 - (2) physical constraints on the ability of a source to comply with the emission standard, limitation or rate during startup or shutdown;

And that all reasonable measures have been taken to immediately minimize or eliminate the excess emissions.

- (B) Reports such occurrence or upset or breakdown of equipment to the Department by the end of the next business day after the discovery of the occurrence.
- (C) Submits to the Department, at its request, a full report of such occurrence, including the identification of and location of the process and control equipment involved in the upset and including a statement of all known causes and the scheduling and nature of the actions to be taken to eliminate future occurrences or to minimize the amount by which said limits are exceeded and to reduce the length of time for which said limits are exceeded.

Reg. 19.602 Emergency Conditions

An “emergency” means any situation arising from the sudden and reasonably unforeseeable events beyond the control of the source, including natural disasters, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the upset condition. An emergency shall not include non-compliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

- (A) An emergency constitutes a complete affirmative defense to an action brought for non-compliance with such technology-based limitations if the following conditions are met. The affirmative defense of emergency shall demonstrate through properly signed contemporaneous operating logs, or such other relevant evidence that:
- (1) An emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
 - (4) The permittee submitted notice of the upset to the Department by the end of the next business day after the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- (B) [RESERVED]

CHAPTER 7: SAMPLING, MONITORING, AND REPORTING REQUIREMENTS

Reg. 19.701 Purpose

The purpose of this chapter is to generally define the powers of the Department in requiring sampling, monitoring, and reporting requirements at stationary sources. The Department shall enforce all properly incorporated and delegated federal testing requirements at a minimum. Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations.

Reg. 19.702 Air Emissions Sampling

Any stationary source subject to this regulation shall be subject to the following requirements:

(A) Sampling Ports

To provide any sampling ports, at the request of the Department, required for federally regulated air pollutant emissions sampling, including safe and easy access to such ports.

(B) Sampling

To conduct federally regulated air pollutant emissions sampling, at the request of the Department, to determine the rate, opacity, composition, and/or contaminant concentration of the emissions. All compliance testing shall be done at the expense of the permittee by an independent firm, unless otherwise approved by the Department. Sampling shall not be required for those pollutants with continuous emissions monitors.

(C) Averaging Times

All compliance testing averaging times shall be consistent with the averaging times of the applicable federally regulated air pollutant emissions limitations stated in the applicable permit, which in no case shall be greater than the minimum averaging times of the applicable NAAQS.

(D) Process Rates

Unless otherwise approved by the Department, all federally regulated air pollutant emissions sampling shall be performed with the equipment being tested operating at least at 90% of its permitted capacity. Emissions results shall be extrapolated to correlate with 100% of permitted capacity to determine compliance.

(E) Testing Time Frames

Any equipment that is to be tested, at the request of the Department, shall be tested in accordance with the following time frames:

- (1) Equipment to be constructed or modified shall be tested within 60 days after achieving its maximum permitted production rate, but no later than 180 days after its initial startup;
- (2) Equipment already operating shall be tested according to the time frames set forth by the Department.

(F) Testing Methods and Records

The Department shall require that all applicable testing be performed using the methods described in 40 C.F.R. Part 51, Appendix M, as of the effective date of the federal final rule published by EPA in the Federal Register on April 2, 2014 (79 FR 18452); 40 C.F.R. Part 60, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11257); 40 C.F.R. Part 61, Appendix B, as of the effective date of the federal final rule published by EPA in the Federal Register on October 17, 2000 (65 FR 62161); and 40 C.F.R. Part 63, Appendix A, as of the effective date of the federal final rule published by EPA in the Federal Register on December 29, 1992 (57 FR 62002). The Department, with the concurrence of the EPA, may approve, at its discretion, alternate sampling methods that are equivalent to the specified methods. The results of such tests shall be submitted to the Department within the time frames and on such forms as required by the Department and federal regulations. The owner or operator of the equipment shall retain the results of such tests for at least five (5) years, and shall make the results available to any agents of the Department or the EPA during regular business hours.

Reg. 19.703 Continuous Emissions Monitoring

Any stationary source subject to this regulation shall, as required by federal law and upon request of the Department:

- (A) Install, calibrate, operate, and maintain equipment to continuously monitor or determine federally regulated air pollutant emissions in accordance with applicable performance specifications in 40 C.F.R. Part 60 Appendix B as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11271), and quality assurance procedures in 40 C.F.R. Part 60 Appendix F as of the effective date of the federal final rule published by EPA in the Federal Register on February 27, 2014 (79 FR 11274), and other methods and conditions that the Department, with the concurrence of the EPA, shall prescribe. Any source listed in a category in 40 C.F.R. Part 51 Appendix P as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675), or in 40 C.F.R. Part 60 as of August 30, 1992, shall adhere to all continuous emissions monitoring or alternative continuous emission monitoring requirements stated therein, if applicable.
- (B) Report the data collected by the monitoring equipment to the Department at such intervals and on such forms as the Department shall prescribe, in accordance with 40 C.F.R. Part 51, Appendix P, Section 4.0 (Minimum Data Requirements) as of the effective date of the federal final rule published by EPA in the Federal Register on November 7, 1986 (51 FR 40675), and any other applicable reporting requirements promulgated by the EPA.

Reg. 19.704 Notice of Completion

For equipment for which a new permit or major permit modification is required, the Department shall be notified in writing within 30 days of the following events;

- (A) The date of commencement of construction or modification; and
- (B) The date of commencement of operation of the equipment.

Reg. 19.705 Record Keeping and Reporting Requirements

Any stationary source subject to this regulation shall, upon request by the Department:

- (A) Maintain records on the nature and amounts of federally regulated air pollutants emitted to the air by the equipment in question. All records, including compliance status reports and excess emissions measurements shall be retained for at least five (5) years, and shall be made available to any agent of the Department or EPA during regular business hours.
- (B) Supply the following information, correlated in units of the applicable emissions limitations, to the Department:
 - (1) General process information related to the emissions of federally regulated air pollutants into the air.
 - (2) Emissions data obtained through sampling or continuous emissions monitoring.
- (C) Information and data shall be submitted to the Department by a responsible official on such forms and at such time intervals as prescribed by applicable federal regulations or the Department. Reporting periods shall be a 12 month period.
- (D) Each emission inventory is to be accompanied by a certifying statement, signed by the owner(s) or operator(s) and attesting that the information contained in the inventory is true and accurate to the best knowledge of the certifying official. The certification shall include the full name, title, signature, date of signature, and telephone number of the certifying official.

Reg. 19.706 Public Availability of Emissions Data

Emissions data obtained by the Department shall be correlated in units of applicable emissions limitations and be made available to the public at the Department's central offices during normal business hours.

CHAPTER 9: PREVENTION OF SIGNIFICANT DETERIORATION

Reg. 19.901 Title

The following rules and regulations of the Arkansas Pollution Control and Ecology Commission, adopted in accordance with the provisions of Part II of the Arkansas Water and Air Pollution Control Act at Ark. Code Ann. § 8-4-101 *et seq.*, shall be known as the Prevention of Significant Deterioration Regulations of the Arkansas Plan of Implementation for Air Pollution Control, hereinafter referred to, respectively, as the “PSD Regulations.”

Reg. 19.902 Purposes

Promulgation and enforcement of these PSD Regulations is intended to further the purposes of the Plan and the Regulations of the Plan, including, but not limited to, acceptance of delegation by the EPA of authority for enforcement of regulations governing the prevention of significant deterioration of air quality and regulations governing the protection of visibility in mandatory Class I federal areas.

Reg. 19.903 Definitions

- (A) “Advance notification” (of a permit application) means any written communication which establishes the applicant's intention to construct, and which provides the Department with sufficient information to determine that the proposed source may constitute a major new source or major modification, and that such source may affect any mandatory Class I federal area, including, but not limited to, submittal of a draft or partial permit application, a PSD monitoring plan, or a sufficiently detailed letter. “Advance notification” does not include general inquiries about the Department’s regulations.
- (B) “Regulated NSR Pollutant,” for purposes of this chapter, means the following:
 - (1) Any pollutant for which a national ambient air quality standard has been adopted under Chapter 2 of this Regulation and any pollutant identified under this paragraph (B)(1) as a constituent or precursor for such pollutant. Precursors identified by the Department for purposes of NSR are the following:

- (a) Volatile organic compounds and nitrogen oxides are precursors to ozone in all attainment and unclassifiable areas.
 - (b) Sulfur dioxide is a precursor to PM_{2.5} in all attainment and unclassifiable areas.
 - (c) Nitrogen oxides are presumed to be precursors to PM_{2.5} in all attainment and unclassifiable areas, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of nitrogen oxides from sources in a specific area are not a significant contributor to that area's ambient PM_{2.5} concentrations.
 - (d) Volatile organic compounds are presumed not to be precursors to PM_{2.5} in any attainment or unclassifiable area, unless Arkansas demonstrates to the Administrator's satisfaction or EPA demonstrates that emissions of volatile organic compounds from sources in a specific area are a significant contributor to that area's ambient PM_{2.5} concentrations.
- (2) Any pollutant that is subject to any standard promulgated under Section 111 of the Act as of July 27, 2012;
 - (3) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Act;
 - (4) Any pollutant that otherwise is subject to regulation under the Act;
 - (5) Notwithstanding paragraphs (B)(1) through (4) of this section, the term *regulated NSR pollutant* shall not include any or all hazardous air pollutants either listed in Section 112 of the Act, or added to the list pursuant to Section 112(b)(2) of the Act, and which have not been delisted pursuant to Section 112(b)(3) of the Act, unless the listed hazardous air pollutant is also regulated as a constituent or precursor of a general pollutant listed under Section 108 of the Act as of July 27, 2012; and
 - (6) PM_{2.5} emissions and PM₁₀ emissions shall include gaseous emissions from a

source or activity, which condense to form particulate matter at ambient temperatures. As of the effective date of the federal final rule published by EPA in the Federal Register on Thursday, October 25, 2012 (77 FR 65107), such condensable particulate matter shall be accounted for in applicability determinations and in establishing emissions limitations for PM_{2.5}, and PM₁₀ in PSD permits. Compliance with emissions limitations for PM_{2.5}, and PM₁₀ issued prior to this date shall not be based on condensable particulate matter unless required by the terms and conditions of the permit or the applicable implementation plan. Applicability determinations made prior to this date without accounting for condensable particulate matter shall not be considered in violation of this chapter.

- (C) For the purpose of this chapter, “subject to regulation” means, for any air pollutant, that the pollutant is subject to either a provision of the federal Clean Air Act, or a nationally-applicable regulation codified by the Administrator pursuant to 40 C.F.R., Chapter 1, Subchapter C and adopted herein, that requires actual control of the quantity of emissions of that pollutant and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity.
- (D) All other terms used herein shall have the same meaning as set forth in Chapter 2 of Regulation 19 or in 40 C.F.R. § 52.21(b) [PSD] and 40 C.F.R. § 51.301 [Protection of Visibility] as of October 20, 2010, and adopted in Reg. 19.904, unless manifestly inconsistent with the context in which they are used. Wherever there is a difference between the definitions in Chapter 2 of Regulation 19 and those listed in 40 C.F.R. § 52.21(b) and C.F.R. § 51.301, the federal definitions as listed in 40 C.F.R. § 52.21(b), as adopted in Reg. 19.904 and Reg. 19.903(A), (B) and (C), and 40 C.F.R. § 51.301 as of October 20, 2010, shall apply.
- (E) The definition for “routine maintenance, repair and replacement” in 40 C.F.R. § 52.21(b)(2)(iii)(a) is not incorporated.

Reg. 19.904 Adoption of Regulations

- (A) Except where manifestly inconsistent with the provisions of the Clean Air Act, as amended, or with federal regulations adopted pursuant thereto, and as amended specifically herein by paragraphs (B), (C), (D), (E), (F), and (G) of Reg. 19.904, the Arkansas Department of Environmental Quality shall have those responsibilities and that authority, with reference to the State of Arkansas, granted to the Administrator of the EPA under 40 C.F.R. § 52.21 (a)(2) through (bb), as in effect on November 29, 2005, which are hereby incorporated herein by reference with the exception of:
- (1) 40 C.F.R. § 52.21(aa), which is incorporated by reference as in effect on August 13, 2012, except for instances in the sections of 40 C.F.R. § 52.21(aa) where 40 C.F.R. § 52.21(b)(49) is referenced. In those instances, paragraph (G) of Reg. 19.904 shall apply;
 - (2) 40 C.F.R. § 52.21(r)(6), which is incorporated by reference as of the effective date of the federal final rule published by EPA in the Federal Register on December 21, 2007 (72 FR 72607);
 - (3) 40 C.F.R. §§ 52.21(b)(23), 52.21(i)(5)(ii), and 52.21(i)(5)(iii), which are incorporated by reference as of May 16, 2008;
 - (4) 40 C.F.R. §§ 52.21(b)(14)(i) [Major Source Baseline Date], 52.21(b)(14)(ii) [Minor Source Baseline Date], 52.21(b)(14)(iii), 52.21(b)(15) [Baseline Area], 52.21(c) [Ambient Air Increments], 52.21(k)(1) [Source Impact Analysis Requirements], and 52.21(p) [Requirements for Sources Impacting Federal Class I areas], which are incorporated herein by reference as of October 20, 2010;
 - (5) 40 C.F.R. §§ 52.21(b)(49), 52.21(b)(50), 52.21(b)(55-58), 52.21(i)(9), and 52.21(cc), which are not incorporated herein.

In the absence of a specific imposition of responsibility or grant of authority, the Department shall be deemed to have that responsibility and authority necessary to attain the purposes of the Plan, these PSD Regulations, and the applicable federal regulations, as incorporated herein by reference.

- (B) Exclusions from the consumption of increments, as provided in 40 C.F.R. § 51.166(f)(1)(iii) as of November 29, 2005, shall be effective immediately. Submission of this Plan under the Governor's signature constitutes a request by the Governor for this exclusion.

- (C) In addition to the requirements of 40 C.F.R. § 52.21(o) as of November 29, 2005, the following requirements [designated as Reg. 19.904(C)(1),(2),(3) and (4)] shall also apply:
 - (1) Where air quality impact analyses required under this part indicate that the issuance of a permit for any major stationary source or for any major modification would result in the consumption of more than fifty percent (50%) of any available annual increment or eighty percent (80%) of any short term increment, the person applying for such a permit shall submit to the Department an assessment of the following factors:
 - (a) Effects that the proposed consumption would have upon the industrial and economic development within the area of the proposed source; and
 - (b) Alternatives to such consumption, including alternative siting of the proposed source or portions thereof.
 - (2) The assessment required under subparagraph (1) above shall be made part of the application for permit and shall be made available for public inspection as provided in 40 C.F.R. § 52.21(q) as of November 29, 2005.
 - (3) The assessment required under subparagraph (1) above shall be in detail commensurate with the degree of proposed increment consumption, both in terms of the percentage of increment consumed and the area affected.
 - (4) The assessment required under subparagraph (1) above may be made effective where a proposed source would cause an increment consumption less than that specified in said subparagraph if the Director finds that unusual circumstances exist in the area of the proposed source which warrant such an assessment. The Director shall notify the applicant in writing of those circumstances which warrant said assessment. The Commission may rescind or modify the Director's

action, upon a showing by the applicant that the circumstances alleged by the Director either do not exist or do not warrant the aforesaid assessment.

- (D) In addition to the requirements of 40 C.F.R. § 52.21(p)(1) as of October 20, 2010, the following requirements shall also apply:

Impacts on mandatory Class I federal areas include impacts on visibility. The preliminary determination that a source may affect air quality or visibility in a mandatory Class I federal area shall be made by the Department, based on screening criteria agreed upon by the Department and the Federal Land Manager.

- (E) In all instances wherein the aforesaid 40 C.F.R. § 51.301 and 40 C.F.R. § 52.21 refer to the Administrator or the Environmental Protection Agency, the reference, for the purposes of paragraph (A) of Reg. 19.904, shall be deemed to mean the Arkansas Department of Environmental Quality, unless the context plainly dictates otherwise, except in the following sections:

- (1) Exclusion from increment consumption: 40 C.F.R. §§ 52.21(f)(1)(v), (f)(3), and (f)(4)(I);
- (2) Redesignation: 40 C.F.R. §§ 52.21(g)(1), (g)(2), (g)(4), (g)(5), and (g)(6);
- (3) Air quality models: 40 C.F.R. § 52.21(l)(2).

- (F) Redesignation of air quality areas in Arkansas shall comply with Ark. Code Ann. § 8-3-101 *et seq.*

- (G) For the purpose of the regulation of GHGs, only the standards and requirements promulgated by EPA as of June 3, 2010, related to the permitting of GHG emissions shall apply to the requirements of 40 C.F.R. § 52.21, as of November 29, 2005, incorporated by reference at Reg. 19.904(A). The following definitions and requirements shall also apply:

- (1) “Greenhouse gases” (GHGs) means the air pollutant defined as the aggregate group of six greenhouse gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, shall not be

subject to regulation except as provided in Reg. 19.904(G)(4) through Reg.19.904(G)(5), and shall not be subject to regulation if the stationary source:

- (a) Maintains its total source-wide emissions below the GHG plantwide applicability limitations (hereinafter “PAL”) level;
 - (b) Meets the requirements in 40 § C.F.R 52.21(aa)(1) through 40 C.F.R. § 52.21(aa)(15) as outlined in Reg. 19.904(A)(1); and
 - (c) Complies with the PAL permit containing the GHG PAL.
- (2) For purposes of Reg. 19.904(G)(3) through Reg.19.904(G)(5):
- (a) The term tons per year (tpy) “CO₂ equivalent emissions” (CO₂e) shall represent an amount of GHGs emitted, and shall be computed as follows:
 - (i) Multiplying the mass amount of emissions in tpy, for each of the six greenhouse gases in the pollutant GHGs, by each gas’s associated global warming potential published at Table A - 1 to Subpart A of 40 C.F.R. Part 98 - Global Warming Potentials (as of the effective date of the federal final rule published by EPA in the Federal Register on November 29, 2013 [78 FR 71948]); and
 - (ii) Sum the resultant values from Reg. 19.904(G)(2)(a) for each gas to compute a tpy CO₂e.
- (3) The term “emissions increase” as used in Reg. 19.904(G)(4) through Reg. 19.904(G)(5) shall mean that both a significant emissions increase (as calculated using the procedures in 40 C.F.R. § 52.21(a)(2)(iv), as of November 29, 2005), and a significant net emissions increase (as defined in 40 C.F.R. § 52.21(b)(3), as of November 29, 2005, and 40 C.F.R. § 52.21(b)(23), as of November 29, 2005), occur. For the pollutant GHGs, an emissions increase shall be based on tpy CO₂e, and shall be calculated assuming the pollutant GHGs is a regulated NSR pollutant, and “significant” is defined as 75,000 tpy CO₂e instead of applying the value in 40 C.F.R. § 52.21(b)(23)(ii), as of November 29, 2005.
- (4) Beginning January 2, 2011, the pollutant GHGs is subject to regulation if:

- (a) The stationary source is a new major stationary source for a regulated NSR pollutant that is not GHGs, and also will emit or will have the potential to emit GHGs at 75,000 tpy CO₂e or more; or
 - (b) The stationary source is an existing major stationary source for a regulated NSR pollutant that is not GHGs, and also will have an emissions increase of a regulated NSR pollutant, and an emissions increase of GHGs of 75,000 tpy CO₂e or more.
- (5) Beginning July 1, 2011, in addition to the provisions in Reg.19.904(G)(4) of this section, the pollutant GHGs shall also be subject to regulation:
- (a) At a new stationary source that will emit or have the potential to emit 100,000 tpy CO₂e or more; or
 - (b) At an existing stationary source that emits or has the potential to emit 100,000 tpy CO₂e or more, when such stationary source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more.

CHAPTER 10: REGULATIONS FOR THE CONTROL OF VOLATILE ORGANIC COMPOUNDS IN PULASKI COUNTY

Reg. 19.1001 Title

This chapter, adopted in accordance with the provisions of the Arkansas Water and Air Pollution Control Act [Arkansas Code Annotated Sections 8-4-101 *et seq.*, as amended] and pursuant to the provisions of the federal Clean Air Act, shall be known as the Regulations for the Control of Volatile Organic Compounds.

Reg. 19.1002 Purpose

The Regulations for the Control of Volatile Organic Compounds are designed to provide for the attainment and maintenance of the National Ambient Air Quality Standards for ozone in those areas of Arkansas which have been designated as nonattainment areas by the EPA pursuant to the federal Clean Air Act and are further designed to bring the Arkansas Plan of Implementation for Air Pollution Control into compliance with the provisions of said Act.

Reg. 19.1003 Definitions

When used in these Regulations for the Control of Volatile Organic Compounds, the following definitions apply. Terms and phrases used in this chapter which are not explicitly defined herein shall have the same meaning as those terms used in Chapter 2 of Regulation 19 or, if not defined in Chapter 2 of Regulation 19, as those terms defined in the federal Clean Air Act.

Unless manifestly inconsistent therewith, terms and phrases used herein shall have the same meaning as used in the Arkansas Water and Air Pollution Control Act and the federal Clean Air Act.

"Clear coat" means a coating which lacks color and opacity.

"Coating application system" means all operations and equipment which applies, conveys, and dries a surface coating.

"Control Technique Guideline" means any of the guideline series documents describing an emission control technology for a specific source or category of sources; which documents being published by the EPA.

"Cutback asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluent). Upon exposure to atmospheric conditions, the diluents evaporate, leaving the asphalt cement to perform its function.

"Crude oil" means a naturally occurring mixture consisting of hydrocarbons and/or sulfur, nitrogen, and/or oxygen derivatives of hydrocarbons and which is a liquid in the reservoir and at standard conditions.

"Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

"Delivery vessel" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary tanks of gasoline dispensing facilities.

"Existing source" means any source of volatile organic compounds other than a new source.

"External floating roof" means a storage vessel cover in an open tank top consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell.

"Extreme performance coating" means coatings designed for harsh exposure or extreme environmental conditions.

"Gasoline" means a petroleum distillate having a Reid vapor pressure of 27.6 kilopascals (kPa) (4 pounds per square inch [psi]) or greater that is used as fuel for internal combustion engines.

"Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.

"Gasoline tank truck" means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks or to gasoline bulk facilities.

"Liquid-mounted" means a primary seal mounted so the bottom of the seal covers the liquid surface between the tank shell and the floating roof.

"Low solvent coating" means coatings which contain less organic solvent than the conventional coatings used by the industry. Low solvent coatings include water borne, high solids, electrodeposition and powder coatings.

"Lowest Achievable Emission Rate" (LAER) means for any source, that rate of emissions which reflects the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent. In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable New Source Standards of Performance.

"Major source" means any stationary source which has the potential to emit 100 tons or more per year of volatile organic compounds.

"Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any volatile organic compound emitted by such source or which results in the emission of any other volatile organic compound not previously emitted.

"New source" means any stationary source of volatile organic compounds, the construction or modification of which is commenced after July 1, 1979.

"New Source Standard of Performance" (NSPS) means those standards which are adopted by the EPA pursuant to the provisions of Section 111 of the federal Clean Air Act [NSPS, 40 CFR Part 60].

"Operator" means any person who leases, operates, controls, or supervises any source, facility or equipment affected by these regulations.

"Owner" means any person who has legal or equitable title to any source, facility, or equipment affected by these regulations.

"Person" means any individual or other legal entity or their legal representative or assignee.

"Prime coat" means the first of two or more films of coating applied to a metal surface.

"Reasonably Available Control Technology" (RACT) means the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. It may require technology that has been applied to similar, but not necessarily identical source categories.

"Single coat" means one film coating applied to a metal surface.

"Top coat" means the final film or series of films or coatings applied in a two coat (or more) operation.

"True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute (API) Bulletin 2517, Evaporation Loss from External Floating Roof Tanks, 1980. The API procedure may not be applicable to some high viscosity or high pour crudes. Available estimates of true vapor pressure may be used in special cases such as these.

"Vapor collection system" means a vapor transport system which used direct displacement by the gasoline being transferred to force vapors from the vessel being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.

"Vapor control system" means a system that prevents release to the atmosphere of gasoline vapors in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per liter).

"Vapor-mounted" means a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof.

Reg. 19.1004 General Provisions

(A) Applicability and Effective Dates

- (1) Sources which are subject to provisions of the Regulations for the Control of Volatile Organic Compounds include:
 - (a) Any source for which controls are governed by Reg. 19.1005 hereof;
 - (b) Any source which is subject to the terms of a Commission order issued pursuant to Reg. 19.1004(D)(1) hereof, and
 - (c) Any new major source.
- (2) The provisions of Chapter 10, the Regulations for the Control of Volatile Organic Compounds, shall be limited to sources located in Pulaski County, except as provided in Reg. 19.1004(D)(1) and shall go into full force and effect on the effective date provided, however, that the provisions of Reg. 19.1004(D)(1) shall go into full force and effect on April 1, 1979. The effective date for Reg. 19.1005(A)(B) and (C) is July 1, 1979, and for Reg. 19.1005(D) and (E) is October 1, 1980. The effective date for Reg. 19.1005(F) is April 1, 1981.

(B) Exemptions and Variances

- (1) [RESERVED]
- (2) The requirements of Reg. 19.1005 are based upon information presented in the Control Technique Guidelines as published by the EPA and are intended to be consistent with Reasonably Available Control Technology. The owner or operator of equipment affected by the provisions of Reg. 19.1005 may be granted a variance from the specific provisions of such section provided that such owner or operator can demonstrate to the reasonable satisfaction of the Commission that full and strict compliance is technologically or economically infeasible or that alternative techniques to be employed by such owner or operator will result in substantially the same environmental benefits as would be achieved with full and strict compliance with the provisions of Reg. 19.1005. In no event, however, shall the Commission issue variances from the requirements of Reg. 19.1005 if

such variances will prevent reasonable further progress for the attainment and maintenance of the National Ambient Air Quality Standards for ozone.

(C) Toxic Compounds

The Regulations for the Control of Volatile Organic Compounds are not intended as appropriate controls for sources which emit volatile organic compounds which are hazardous air pollutants.

(D) Determination of Reasonably Available Control Technology

- (1) Where the Department proposes the existence of Reasonably Available Control Technology for existing sources, other than the sources for which the provisions of Reg. 19.1005 are applicable, the Department shall give public notice of such determination and shall, in such notice, describe the nature of such technology and shall list by size, type, source, category or by individual source name, the affected sources. The public notice shall also give notice of public hearing concerning the subject proposals. If, after review of the information produced through the public hearing process, the Department determines that such technology does exist and that the application of such technology is necessary to maintain reasonable further progress toward the attainment and maintenance of the National Ambient Air Quality Standards for ozone, the Department shall issue an order requiring the installation of such technology.
- (2) Any order issued pursuant to Reg. 19.1004(D)(1) above may require the owner or operator of sources affected by such order to file such schedules and reports as the Department feels necessary to assure that the subject technology is placed into operation as expeditiously as practicable. The terms of such orders may be modified where the Department finds that such modifications are necessary to avoid economic hardship and where such modification would not interfere with reasonable further progress toward the attainment of the previously cited standards.

(E) Permits and Compliance Schedules

- (1) Existing Sources:

- (a) No person shall cause or permit the operation or use of an existing source to which any provision of Reg. 19.1005 applies unless the owner or operator of such source shall have submitted to the Department, prior to the applicable date below, a compliance schedule indicating what steps have been, or will be taken to bring the operation of such source into compliance with the provisions of Reg. 19.1005. The compliance schedule shall be of such form and contain such information as the Department may reasonably require. The applicable date for Reg. 19.1005(A)(B) and (C) is October 1, 1979. The applicable date for Reg. 19.1005(D) and (E) is January 1, 1981. The applicable date for Reg. 19.1005(F) is May 15, 1981.
- (b) No person shall cause the operation or use of an existing source which is affected by any provision of Reg. 19.1005 after the approval date if a compliance schedule of such source under Subsection (a) above has been disapproved by the Department. No compliance schedule for any source shall be approved by the Department unless the Department finds that the controls proposed by the owner or operator will be installed, placed in operation, and that the source will be in compliance with the provisions of Reg. 19.1005 prior to the final compliance date. Extensions beyond the final compliance date may be granted by the Department provided the Department finds that such extensions are necessary to avoid economic hardship and that such extensions will not prevent reasonable further progress toward the attainment of the National Ambient Air Quality Standards for ozone. The approval date for Reg. 19.1005(A)(B) and (C) is February 1, 1981 and for Reg. 19.1005(D)(E) and (F) is February 1, 1982. The final compliance date for Reg. 19.1005(A)(B) and (C) is June 1, 1981, for Reg. 19.1005(D) is March 1, 1982, and for Reg. 19.1005(E) and (F) is July 1, 1982.
- (c) No person shall cause or permit the operation of an existing source in a manner which violates the terms of a compliance schedule which has been approved or amended by the Department or which violates the terms of a Department order issued pursuant to the provisions of Reg. 19.1004(D)(1).

(2) New Sources:

Except as provided herein, no person shall commence the construction, installation, or modification of a new source after July 1, 1979, unless that person has first received a permit from the Department. Application for permit shall be of such form and contain such information as the Department may reasonably require.

(a) New Major Sources: No permit shall be issued for the construction, installation or modification of a new major source after July 1, 1979, unless the Department determines the following conditions to have been met:

- (i) The emissions resulting from the proposed source when considered together with all other existing and proposed emissions of volatile organic compounds in Pulaski County will not cause or contribute to emission levels which exceed the allowance permitted for volatile organic compounds under the Arkansas Plan of Implementation for Air Pollution Control, as revised to comply with the provisions of the Clean Air Act.
- (ii) The emissions resulting from the proposed new major source will comply with the requirements of the FCAA which are in effect as of the effective date of this regulation.
- (iii) The owner or operator of the proposed new or modified major source has demonstrated that all major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in Arkansas are in compliance, or on a schedule of compliance with all applicable emission limitations and standards under the federal Clean Air Act, including the Arkansas Plan of Implementation for Air Pollution Control.
- (iv) A permit may be issued to a new major source which would otherwise cause or contribute to emission levels which exceed the

allowable levels for Pulaski County, as described in the State Implementation Plan for Air Pollution Control, as amended, if the owner or operator of that source first submits legally binding agreements to the Department which reflect emission reductions from other sources in Pulaski County, or from sources within seventy-two (72) miles of the North Little Rock Municipal Airport, which would more than offset the emissions from such proposed new major source. Emission reductions claimed by such owner or operator may not include those emission reductions in Pulaski County which are necessary to reduce the total volatile organic compound emission to the allowable level in Pulaski County.

(b) Other New Sources:

- (i) No permit shall be issued for a new source of the size, type, class, or category for which the provisions of Reg. 19.1005 apply unless the Department finds that such new source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by the source and that, as a minimum, the source will be designed, constructed and operated such that the emissions therefrom, will not exceed the allowable emission rate provided by such section for existing sources.
- (ii) No permit shall be issued for a new source of the size, type, class or category for which a Department Order has been issued pursuant to Reg. 19.1004(D)(1), unless the Department finds that such source incorporates Reasonably Available Control Technology developed for the kind and amount of volatile organic compounds to be emitted by such source and that, as a minimum, the source will be designed, constructed, and operated such that the emissions therefrom will not exceed the rate required of existing sources by such order.

(F) Testing and Reporting Requirements

- (1) Any person owning or operating sources which are affected by the provisions of the Regulations for the Control of Volatile Organic Compounds shall, upon the request of the Director, furnish such information as may be required to demonstrate compliance with said Regulations. For purposes of this chapter, the provisions of Chapter 7 of the Regulations of the Arkansas Plan of Implementation for Air Pollution Control shall apply.
- (2) For purposes of administering the provisions of the Regulations for the Control of Volatile Organic Compounds, the Director shall not be limited to the results obtained from emission tests but may, where appropriate, determine the compliance status of any source with respect to the emission limitations contained herein by the results of engineering evaluations, by inspection reports or by such information submitted, and certified, by the source owner or operator. For purposes of this chapter, a source may be deemed to be in compliance with the emission limitations of said Regulations if the equipment of such source is designed and operated in accordance with the provisions of Reg. 19.1005 or, where Reg. 19.1005 is not applicable, is designed and operated in accordance with the provisions of a Department Order or a permit issued hereunder, provided however, where an emission limitation is applicable to a certain source and where emission testing has been conducted in a manner approved by the Department and where such test demonstrate compliance with such limitations, the source shall be deemed to be in compliance with such limitations.
- (3) To test the leak tightness of gasoline tank trucks as required in Reg. 19.1005(D), the following method and procedures should be followed:
 - (a) The owner or operator shall, at his or her own expense demonstrate compliance with Reg. 19.1005(D) by the methods of Part 3 of this subsection or an alternative method approved by the Director.
 - (b) The owner or operator of a tank truck subject to this regulation must notify the Director in writing of the date and location of a certification test at least thirty (30) days before the anticipated test date.

- (c) Test procedures to determine compliance with Reg. 19.1005(D) must be approved by the Director and consistent with the test procedures described in Appendix A or C of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
 - (d) Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the OAQPS Guideline Series document, "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA-450/2-78-051.
- (4) To test for compliance with Reg. 19.1005(E) procedures outlined in EPA guideline series document "Measurement of Volatile Organic Compounds," EPA-450/2-78-041 and Appendix A of "Control of Volatile Organics from Existing Stationary Sources--Volume II--Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles and Light Trucks," EPA 450/2-77-008 shall be used.
 - (5) To test for compliance with Reg. 19.1005(F) a visual inspection must be conducted at an interval not to exceed one year. For tanks with vapor mounted primary seals, the secondary seal gap area should be determined by measuring the length and width of the gaps around the entire circumference of the secondary seal. Only gaps greater than or equal to 0.32 centimeter (cm) (1/8 inch) shall be used in computing the gap area. The area of the gaps shall be accumulated to determine the compliance with Reg. 19.1005(F)(1)(b). This data along with records of the throughput and type of volatile petroleum liquids for each vessel should be maintained by the owner or operator.

(G) Circumvention

- (1) No owner or operator subject to these Regulations may build, erect, install, or use any article, machine, equipment, process or method, the use of which conceals an emission which would otherwise constitute a violation of these Regulations.
- (2) The provisions of Reg. 19.1004(G)(1) above include, but are not limited to, the

use of gaseous diluents to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a Regulation that applies only to operations larger than a specified size.

(H) Malfunctions, Breakdowns, Upsets

(1) Emissions in excess of these Regulations which are temporary and result solely from a sudden and unavoidable breakdown, malfunction or upset of process or emission control equipment, or sudden and unavoidable upset of operation will not be considered a violation of these Regulations provided:

- (a) the owner or operator notifies the Department of any such occurrence by the end of the next business day of the occurrence; and
- (b) the owner or operator demonstrates to the Director that the suggested period of time for correction is as expeditious as practicable; and
- (c) the breakdown or upset is determined by the Director to be unavoidable and not the result of negligence; and
- (d) within five (5) days after the beginning of the occurrence, a written report is submitted to the Director which includes the cause and nature of the event, estimated quantity of volatile organic compounds emitted, time of emission and to prevent recurrence; and
- (e) the Director is immediately notified when corrective measures have been accomplished.

(2) [RESERVED]

Reg. 19.1005 Provisions for Specific Processes

(A) Gasoline Storage and Marketing

- (1) No person shall cause or permit the loading of gasoline into a storage tank of a gasoline storage or marketing facility with a monthly throughput in excess of 10,000 gallons except through a submerged fill pipe or by bottom loading. This provision shall not apply to storage tanks of less than 4,000 liter capacity (approximately 1,000 gallons).
- (2) No person shall cause or permit the operation of a gasoline bulk facility of less than 87,000 liters (23,000 gallons) per day throughput unless all gasoline delivery vessels are loaded by submerged fill pipe or bottom filling.
- (3) No person shall cause or permit the operation of a gasoline bulk facility having a daily throughput equal to greater than 87,000 liters (23,000 gallons) per day unless a vapor control system is in place, is properly maintained and is used to prevent gasoline vapors from being emitted into the atmosphere at a rate in excess of 80 milligrams per liter of gasoline loaded (4.7 grains per gallon).

(B) Petroleum Liquid Storage

- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilopascals (1.52 pounds-force per square inch [psia]) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) unless such tanks:
 - (a) meet the equipment specifications and maintenance requirements of the federal Standards of Performance for New Stationary Sources—Storage Vessels for Petroleum Liquids, 40 CFR 60.110, as amended by proposed rule change, *Federal Register*, May 18, 1978, pages 21617 through 21625; or
 - (b) are retrofitted with a floating roof or internal floating cover using a non-metallic resilient seal as a primary seal which meets the equipment specifications in the federal standards referred to in Reg. 19.1005(B)(1)(a), or its equivalent, or

- (c) have a covered floating roof or internal floating cover which is maintained in effective working order and which meets the manufacturer's equipment specifications in effect at the time it was installed.
- (2) All seals necessary to meet the requirements of Reg. 191005(B)(1)(b) and (c) are to be maintained in good operating condition.
- (3) All openings, except stub drains and those related to safety, are to be sealed with suitable closures when not in use.

(C) Cutback Asphalt

No person shall mix, use or apply cutback asphalt for roadway paving except where the cutback asphalt is used solely as a penetrating prime coat or when the maximum ambient temperature on the day of application is less than 15 degrees Celsius ($^{\circ}\text{C}$) (59 degrees Fahrenheit [$^{\circ}\text{F}$]).

(D) Gasoline Tank Trucks and Vapor Collection Systems

- (1) No person shall allow a gasoline tank truck subject to this regulation to be filled or emptied unless the gasoline tank truck:
 - (a) is tested on a schedule acceptable to the Director according to the test procedure referenced in Reg. 19.1004(F)(3);
 - (b) sustains a pressure change of no more than 750 pascals (3 inches of water [in. of H_2O]) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H_2O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H_2O) during the testing required in Reg. 19.1005(D)(1)(a); and
 - (c) is repaired by the owner or operator and retested within 15 days of testing if it does not meet the criteria of Reg. 19.1005(D)(1)(b). subparagraph (1)(b) of this chapter.
- (2) The owner or operator of a vapor collection system subject to this regulation shall:

- (a) Design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:
 - (i) Gauge pressure from exceeding 4,500 pascals (18 in. of H₂O) and vacuum from exceeding 1,500 pascals (6 in. of H₂O) in the gasoline tank truck;
 - (ii) A reading equal to or greater than 100 percent of the lower explosive limit (LEL, measured as propane) at 2.5 centimeters from all points on the perimeter of a potential leak source when measured by the method referenced in Reg. 19.1004(F)(3) during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and
 - (iii) Avoidable visible liquid leaks during loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals.
 - (b) Within 15 days, repair and retest a vapor collection or control system that exceeds the limit in supporting Reg. 19.1005(D)(2)(a)(ii) above.
 - (3) The Director may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system by the method referenced in Reg. 19.1004(F)(3) to confirm continuing compliance with Reg. 19.1005(D)(1) or (2) of this section.
- (E) Surface Coating of Metal Parts and Products
- (1) No owner or operator of a major source engaged in the surface coating of miscellaneous metal parts and products may operate a coating application system subject to this regulation that emits VOC in excess of:
 - (a) 0.52 kg/liter (l) 4.3 pounds per gallon [lb/gal]) of coating, excluding water, delivered to a coating applicator that applies clear coatings;
 - (b) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator in a coating application system that utilizes air or forced air dryers;

- (c) 0.42 kg/l (3.5 lb/gal) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings;
 - (d) 0.36 kg/l (3.0 lb/gal) of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems; and
 - (e) The above emission limitations shall include all VOC emissions from both coating and solvent washing unless the solvent is directed into containers that prevent evaporation.
- (2) If more than one emission limitation in Reg. 19.1005(E)(1) applies to a specific coating, then the most stringent emission limitation shall be applied.
- (3) The emission limits set forth in Reg. 19.1005(E)(1) shall be achieved by:
- (a) The application of low solvent coating technology;
 - (b) An incineration system which oxidizes at least 90.0 percent of the non-methane VOC measured as total combustible carbon to carbon dioxide and water; or
 - (c) An equivalent means of VOC removal. The equivalent means must be certified by the owner or operator and approved by the Director.
- (4) A capture system must be used in conjunction with the emission control system in Reg. 19.1005(E)(3)(b) and (c). The design and operation of a capture system must be consistent with good engineering practice, and shall be required to provide for an overall VOC emission reduction efficiency of at least 80 percent.
- (F) External Floating Roof
- (1) No person shall cause or permit the storage of volatile organic compounds having a true vapor pressure in excess of 10.5 kilo pascals (1.52 psia) in tanks having a capacity equal to or greater than 150,000 liters (approximately 39,000 gallons) equipped with an external floating roof unless:

- (a) The storage tank has been fitted with a continuous secondary seal extending from the floating roof to the tank wall (rim mounted) or an control device with an effectiveness equal to or greater than the secondary seal;
 - (b) All seal closure devices meet the following requirements:
 - (i) There shall be no visible holes, tears, or other openings in the seals or seals fabric;
 - (ii) The seals must be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank walls; and
 - (iii) For vapor mounted seals, the gap area between the secondary seal and the tank wall shall not exceed 21.2 square centimeters per meter of inside tank diameter (1.0 square inch per foot of inside tank diameter);
 - (c) All openings in the external floating roof except for automatic bleeder vents, rim space vents, and leg sleeves provide a projection below the liquid surface and are sealed with a suitable closure when not in use;
 - (d) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (e) Rim vents are set to open only when the roof is being floated off the leg supports or at the manufacturer's recommended settings; and
 - (f) Emergency roof drains are provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent of the area of the opening.
- (2) The following are specifically exempted from the requirements of this subsection:

- (a) External floating roof tanks having capacities less than 1,600,000 liters (10,000 barrels [bbls]) used to store produced crude oil and condensate prior to custody transfer;
- (b) A metallic-type shoe seal in a welded tank which has a secondary seal from the top of the shoe to the tank wall (a shoe-mounted secondary); and
- (c) External floating roof tanks storing waxy, heavy pour crudes.

Reg. 19.1006 Severability

If any provision of the Regulations for the Control of Volatile Organic Compounds or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the Regulations for the Control of Volatile Organic Compounds which can be given effect without the invalid provision or application, and to this end, the provisions of the Regulations for the Control of Volatile Organic Compounds are declared to be severable.

CHAPTER 11: MAJOR SOURCE PERMITTING PROCEDURES

Facilities subject to Arkansas Pollution Control and Ecology Commission's Regulation 26, Regulations of the Arkansas Operating Air Permit Program, (Regulation 26) shall be required to have their permit applications processed in accordance with the procedures contained in Regulation 26 which are hereby incorporated by reference.

CHAPTER 13: STAGE I VAPOR RECOVERY

Reg. 19.1301 Purpose

The purpose of this chapter is to limit emissions of VOC from gasoline stored in stationary dispensing tanks and from gasoline delivered into such tanks.

Reg. 19.1302 Applicability

This rule applies to all gasoline dispensing facilities and gasoline service stations and to delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station in a nonattainment area; and this rule applies to all persons owning or operating a gasoline distribution facility or gasoline service station in a nonattainment area.

Reg. 19.1303 Definitions

- (A) “Coaxial system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tanks occurs through a single coaxial fill tube, which is a tube within a tube. Product is delivered through the inner tube, and vapor is recovered through the annular space between the walls of the inner tube and outer tube.
- (B) “Delivery vessel” means tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources of supply to stationary storage tanks of gasoline dispensing facilities.
- (C) “Dual point system” means the delivery of the product to the stationary storage tank and the recovery of vapors from the stationary storage tank occurs through two separate openings in the storage tank and two separate hoses between the tank truck and the stationary storage tank.
- (D) “Gasoline” means any petroleum distillate or blend of petroleum distillates with other combustible liquids that is used as a fuel for internal combustion engines and has a Reid vapor pressure of 4.0 psi or greater. This does not include diesel fuel or liquefied petroleum gas (LPG).

- (E) “Gasoline dispensing facility” means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks.
- (F) “Gasoline service station” means any gasoline dispensing facility where gasoline is sold to the motoring public from stationary storage tanks.
- (G) “Independent small business marketer” means a person engaged in the marketing of gasoline unless such person:
- (1) (a) is a refiner, or
 - (b) controls, is controlled by, or is under common control with, a refiner, or
 - (c) is otherwise directly or indirectly affiliated with a refiner or with a person who controls, is controlled by, or is under common control with a refiner, unless the sole affiliation referred to is by means of a supply contract or an agreement or contract to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner or any such person; or
- (2) receives less than 50 percent of his or her annual income from refining or marketing of gasoline.
- (3) For purposes of this regulation, the term “refiner” shall not include any refiner whose total refinery capacity (including the refinery capacity of any person who controls, is controlled by, or is under common control with, such refiner) does not exceed 65,000 barrels per day. For purposes of this section, “control” of a corporation means ownership of more than 50 percent of its stock.
- (H) “Leak free” means a condition in which there is no liquid gasoline escape or seepage of more than three (3) drops per minute from gasoline storage, handling, and ancillary equipment, including, but not limited to, seepage and escapes from above ground fittings.
- (I) “Line” means any pipe suitable for transferring gasoline.
- (J) “Nonattainment area” means a county or counties designated by EPA as not meeting the NAAQS for ozone.

- (K) “Operator” means any person who leases, operates, controls, or supervises a facility at which gasoline is dispensed.
- (L) “Owner” means any person who has legal or equitable title to the gasoline storage tank at a facility.
- (M) “Poppeted vapor recovery adaptor” means a vapor recovery adaptor that automatically and immediately closes itself when the vapor return line is disconnected and maintains a tight seal when the vapor return line is not connected.
- (N) “Stationary storage tank” means a gasoline storage container that is a permanent fixture.
- (O) “Submerged fill pipe” means any fill pipe with a discharge opening which is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid, or which is entirely submerged when the level of the liquid is:
 - (1) Six inches above the bottom of the tank if the tank does not have a vapor recovery adaptor; or
 - (2) Twelve inches above the bottom of the tank if the tank has a vapor recovery adaptor. If the opening of the submerged fill pipe is cut at a slant, the distance is measured from the top of the slanted cut to the bottom of the tank.
- (P) “Throughput” means the amount of gasoline dispensed at a facility.
- (Q) “Vapor tight” means a condition in which an organic vapor analyzer or a combustible gas detector at a potential VOC leak source shows either less than 10,000 ppm when calibrated with methane, or less than 20% of the lower explosive limit when calibrated and operated according to the manufacturer’s specifications.

Reg. 19.1304 Exemptions

This rule does not apply to:

- (A) Transfers made to storage tanks at gasoline dispensing facilities or gasoline service stations equipped with floating roofs or their equivalent.

- (B) Stationary storage tanks with a capacity of not more than 550 gallons, if the tanks are equipped with a submerged fill pipe.
- (C) Stationary storage tanks used exclusively for the fueling of implements of normal farm operations.
- (D) Facilities selling less than 10,000 gallons of gasoline per month.
- (E) Independent small business marketers of gasoline selling less than 50,000 gallons per month.
- (F) Any other facility or use exempted by state or federal statute.

Reg. 19.1305 Prohibited Activities

No person may cause, allow or permit the transfer of gasoline from any delivery vessel into any stationary storage tank unless such transfer complies with the following requirements:

- (A) The stationary storage tank is equipped with a submerged fill pipe and the vapors displaced from the tank during filling are controlled by a vapor control system as described herein;
- (B) The vapor control system is in good working order and is connected and operating with a vapor tight connection;
- (C) The vapor control system is properly maintained and any damaged or malfunctioning components or elements of design have been repaired, replaced or modified;
- (D) Gauges, meters, or other specified testing devices are maintained in proper working order;
- (E) All loading lines and vapor lines of delivery vessels and vapor collection systems are equipped with fittings which are leak tight and vapor tight;
- (F) All hatches on the delivery vessel are kept closed and securely fastened; and
- (G) The stationary storage tank has been tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.

Reg. 19.1306 Record Keeping

The following records shall be maintained for not less than two (2) years and the same shall be made available for inspection by the Department:

- (A) The scheduled date for maintenance and testing, and the date that a malfunction was detected;
- (B) The date the maintenance and testing was performed or the malfunction corrected; and
- (C) The date the component or element of design of the control system was repaired, replaced, or modified.
- (D) Monthly totals of gallons of gasoline sold by the facility.

Reg. 19.1307 Inspections

- (A) The premises of any gasoline dispensing facility or gasoline service station shall be available for inspection by representatives of the Department.
- (B) The process of transfer of gasoline from any delivery vessel into any stationary storage tank shall be subject to observation and inspection by representatives of the Department.

Reg. 19.1308 Vapor Recovery Systems

- (A) The vapor control system required by Reg. 19.1305 of this rule shall include one or more of the following:
 - (1) A vapor-tight line from the stationary storage tank to the delivery vessel and:
 - (a) For a coaxial vapor recovery system, either a poppeted or unpoppeted vapor recovery adaptor;
 - (b) For a dual point vapor recovery system, a poppeted vapor recovery adaptor;

- (2) A refrigeration-condensation system or equivalent designed to recover or destroy at least 90 percent by weight of the organic compounds in the displaced vapor.
- (B) If an unpopeted vapor recovery adaptor is used, the tank liquid fill connection shall remain covered either with a vapor-tight cap or a vapor return line except when the vapor return line is being connected or disconnected.
- (C) If an unpopeted vapor recovery adaptor is used, the unpopeted vapor recovery adaptor shall be replaced with a poppeted vapor recovery adaptor when the tank is replaced or upgraded.
- (D) Where vapor lines from the storage tanks are manifolded, poppeted vapor recovery adapters shall be used. No more than one tank is to be loaded at a time if the manifold vapor lines have a nominal pipe size of less than three (3) inches. If the manifold vapor lines have a nominal pipe size of three (3) inches or larger, then two tanks at a time may be loaded.
- (E) Vent lines on stationary storage tanks shall have pressure release valves or restrictors.

Reg. 19.1309 Gasoline Delivery Vessels

- (A) Gasoline delivery vessels shall be designed and maintained to be vapor-tight during loading and unloading operations and during transport.
- (B) Gasoline delivery vessels shall be tested, no less than annually, on a schedule acceptable to the Director according to the test methods required herein.
- (C) Gasoline delivery vessels shall sustain a pressure change of no more than 750 pascals (3 in. of H₂O) in five minutes when pressurized to a gauge pressure of 4,500 pascals (18 in. of H₂O) or evacuated to a gauge pressure of 1,500 pascals (6 in. of H₂O) during testing.

Reg. 19.1310 Owner/Operator Responsibility

- (A) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to assure compliance with this rule and to disallow the transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.

- (B) It shall be the responsibility of owners, operators and drivers of delivery vessels to assure compliance with this rule and to refuse to transfer from any delivery vessel that does not comply with those requirements of this rule applicable to delivery vessels.
- (C) It shall be the responsibility of owners and operators of gasoline dispensing facilities and gasoline service stations to properly maintain, repair, replace, modify, and test the vapor recovery system components of stationary storage tanks regulated herein.
- (D) It shall be the responsibility of owners and operators of gasoline dispensing facilities, gasoline service stations, and gasoline delivery vehicles to repair and retest equipment within (15) days of a test that exceeds the limitations set forth herein.

Reg. 19.1311 Test Methods

- (A) Test method for leak detection:
 - (1) Within four (4) hours prior to monitoring, the organic vapor analyzer or combustible gas detector shall be suitably calibrated in a manner and with the gas specified by the manufacturer for 20% of the lower explosive limit response, or calibrated with methane for a 10,000 ppm response.
 - (2) The probe inlet shall be 2.5 centimeters or less from the potential leak source when searching for leaks.
 - (3) The highest detector reading and location for each incident of detected leakage shall be recorded, along with the date, time and name of the person performing the testing. If no gasoline vapor is detected, that fact shall be recorded.
- (B) Control efficiency of vapor recovery systems and vapor collection/processing systems shall be determined according to EPA Method 2A and either EPA Method 25A or 25B. EPA Method 2B shall be used for vapor incineration devices.
- (C) Vapor pressure of gasoline shall be determined using American Society for Testing and Materials (ASTM) Method D323-94 or ASTM Method D4953-93. Method D323-94 shall be used for gasoline either containing no oxygenates or MTBE (methyl ethyl butyl ether) as the sole oxygenate. Method D-4953-93 shall be used for oxygenated gasoline.

Reg. 19.1312 Effective Date

- (A) The requirements of this rule shall be effective within nonattainment areas one (1) year after the designation by EPA of an area as a nonattainment area.
- (B) In the case of an independent small business marketer with sales of 50,000 gallons or more per month, this rule shall be phased-in as follows:
 - (1) 33 percent of facilities shall be in compliance at the end of the first year;
 - (2) 66 percent at the end of the second year; and,
 - (3) 100 percent at the end of the third year.

CHAPTER 14: CAIR NO_x OZONE SEASON TRADING PROGRAM GENERAL PROVISIONS

Reg. 19.1401 Adoption of Regulations

40 C.F.R. Part 96, Subparts AAAA-HHHH for the CAIR NO_x Ozone Season Trading Program, as finalized by the EPA on May 12, 2005, and further revised by EPA on April 28, 2006, with correcting amendments on December 13, 2006, and on October 19, 2007, are herein incorporated by reference with the exception of Subpart EEEE (CAIR NO_x Ozone Season Allowance Allocations) and all references to CAIR NO_x Ozone Season Opt-in Units, which, along with Subpart III (CAIR NO_x Ozone Season Opt-in Units), are not incorporated. The following regulations replace 40 C.F.R. § 96 Subpart EEEE.

Reg. 19.1402 State Trading Budget

The Arkansas State trading budgets for annual allocations for CAIR NO_x Ozone Season allowances have been set by EPA as follows: for the control periods of 2009 through 2014, 11,515 tons per control period; and for the control periods for 2015 and beyond, 9,596 tons per control period. The total number of allowances allocated by the State of Arkansas shall not exceed these budgets for their respective control periods.

Reg. 19.1403 Timing Requirements for CAIR NO_x Ozone Season Allowance Allocations

- (A) For EGUs allocated allowances under Reg. 19.1404(B) and (C), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by April 30, 2007, for 2009, 2010, and 2011 and by October 31, 2008, and October 31 of each year thereafter for the 4th year after the notification deadline.
- (B) For EGUs allocated allowances under Reg. 19.1404(D), the Department will determine and notify the Administrator of each unit's allocation of CAIR NO_x Ozone Season allowances by July 31 of the year for which the CAIR NO_x Ozone Season allowances are allocated.

Reg. 19.1404 CAIR NO_x Ozone Season Allowance Allocations

- (A) The baseline gross electric generation (in MWh) used with respect to CAIR NO_x Ozone Season allowance allocations under Reg. 19.1404(B) for each CAIR NO_x Ozone Season unit that has operated each calendar year during a period of five (5) or more consecutive calendar years, the average of the three (3) highest amounts of the unit's control period gross electrical output over the five (5) years immediately preceding the year in which allocations are due to EPA, provided that gross electrical output of a generator served by two or more units will be attributed to each unit in proportion to each unit's share of the total control period heat input of such units for the year. For the allocations allocated for 2009, 2010, 2011, baseline data will be determined using gross electrical output for years 2000 through 2004.
- (B) With regard to the timing requirements contained in Reg. 19.1403, for each control period in 2009 and thereafter, the Department will allocate to all CAIR NO_x Ozone Season units in the State that have baseline gross electric generation (as determined under Reg. 19.1404(A)) a total amount of CAIR NO_x Ozone Season allowances equal to 95 percent for a control period, of the tons of NO_x emissions in the State trading budget under Reg. 19.1402 (except as provided in Reg. 19.1404(E)).
- (C) The Department will allocate CAIR NO_x Ozone Season allowances to each CAIR NO_x Ozone Season unit under Reg. 19.1404(B) in an amount determined by multiplying the total amount of CAIR NO_x Ozone Season allowances allocated under Reg. 19.1404(B) by the ratio of the baseline gross electric generation of such CAIR NO_x Ozone Season unit to the total amount of baseline gross electric generation of all such CAIR NO_x Ozone Season units in the State and rounding to the nearest whole allowances as appropriate.
- (D) For each control period in 2009 and thereafter, the Department will allocate CAIR NO_x Ozone Season allowances to CAIR NO_x Ozone Season units in the State that do not yet have a baseline gross electric generation (as determined under Reg. 19.1404(A)), in accordance with the following procedures:
 - (1) The Department will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NO_x Ozone Season allowances equal to five percent (5%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402.

- (2) The CAIR designated representative of such a CAIR NO_x Ozone Season unit may submit to the Department a request, in a format specified by the Department, to be allocated CAIR NO_x Ozone Season allowances, starting with the later of the control period in 2009 or the first control period after the control period in which the CAIR NO_x Ozone Season unit commences commercial operation and until the first control period for the which the unit is allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404(B). The CAIR NO_x Ozone Season allowance allocation request must be submitted on or before January 1 of the first control period for which the CAIR NO_x Ozone Season allowances are requested and after the date on which the CAIR NO_x Ozone Season unit commences commercial operation.
- (3) In a CAIR NO_x Ozone Season allowance allocation request under Reg.19.1404(D)(2), the CAIR designated representative may request for a control period CAIR NO_x Ozone Season allowances in an amount not exceeding the CAIR NO_x Ozone Season unit's total tons of NO_x emissions during the control period immediately before such control period.
- (4) The Department will review each CAIR NO_x Ozone Season allowance allocation request under Reg. 19.1404(D)(2) and will allocate CAIR NO_x Ozone Season allowances for each control period pursuant to such request as follows:
 - (a) The Department will accept an allowance allocation request only if the request meets, or is adjusted by the Department as necessary to meet, the requirements of Reg. 19.1404(D)(2) and (3).
 - (b) On or after February 1 of the control period, the Department will determine the sum of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404(D)(4)(a)) for the control period.
 - (c) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is greater than or equal to the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate the amount of CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)) to each CAIR NO_x Ozone Season unit covered by Reg. 19.1404 (D)(4)(a).

- (d) If the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period is less than the sum under Reg. 19.1404 (D)(4)(b), then the Department will allocate to each CAIR NO_x Ozone Season unit covered by an allowance allocation request accepted under Reg. 19.1404 (D)(4)(a) the amount of the CAIR NO_x Ozone Season allowances requested (as adjusted under Reg. 19.1404 (D)(4)(a)), multiplied by the amount of CAIR NO_x Ozone Season allowances in the new unit set-aside for the control period, divided by the sum determined under Reg. 19.1404 (D)(4)(b), and rounded to the nearest whole allowance as appropriate.
 - (e) The Department will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO_x Ozone Season allowances (if any) allocated for the control period to the CAIR NO_x Ozone Season unit covered by the request.
- (E) If, after completion of the procedures under Reg. 19.1404(D)(4) for a control period, any unallocated CAIR NO_x Ozone Season allowances remain in the new unit set-aside for the control period, the Department will allocate to each CAIR NO_x Ozone Season unit that was allocated CAIR NO_x Ozone Season allowances under Reg. 19.1404 (B) an amount of CAIR NO_x Ozone Season allowances equal to the total amount of such remaining unallocated CAIR NO_x Ozone Season allowances, multiplied by the unit's allocation under Reg. 19.1404(B), divided by ninety-five percent (95%) of the amount of tons of NO_x emissions in the State trading budget under Reg. 19.1402, and rounded to the nearest whole allowance as appropriate.

CHAPTER 15: REGIONAL HAZE

Reg. 19.1501 Purpose

The purpose of this chapter is to establish regional haze program requirements.

Reg. 19.1502 Definitions

For purposes of this chapter only the definitions contained in 40 C.F.R. § 51.301 as in effect on June 22, 2007, are hereby incorporated by reference.

Reg. 19.1503 BART Eligible Sources

The following are BART-eligible sources:

BART Source Category Number and Name	Facility Name	AFIN	Unit ID	Unit Description	
1. Fossil fuel-fired Electric Plants > 250 million British thermal units (MMbtu)/hour – Electric Generating Units (EGUs)	Arkansas Electric Coop – Carl E. Bailey	74-00024	SN-01	Boiler	
	Arkansas Electric Coop – John L. McClelland Generating Station	52-00055	SN-01	Boiler	
	Entergy Arkansas, Inc. – Lake Catherine Plant	30-00011	SN-03	Unit 4 Boiler	
	Entergy Arkansas – Ritchie	54-00017	SN-02	Unit 2	
	Entergy Arkansas, Inc. – White Bluff		35-00110	SN-01	Unit 1 Boiler
				SN-02	Unit 2 Boiler
				SN-05	Auxiliary Boiler
SWEPCO Flint Creek Power Plant	04-00107	SN-01	Boiler		

3. Kraft Pulp Mills	Domtar Industries, Inc. – Ashdown Mill	41-00002	SN-03	#1 Power Boiler
			SN-05	#2 Power Boiler
	Delta Natural Kraft and Mid America Packaging, LLC.	35-00017	SN-02	Recovery Boiler
	Evergreen Packaging Inc., Pine Bluff Mill	35-00016	SN-04	#4 Recovery Boiler
	Georgia-Pacific Corporation – Crossett Paper Operations	02-00013	SN-19	6A Boiler
			SN-22	9A Boiler
	Green Bay Packaging, Inc. – Arkansas Kraft Division	15-00001	SN-05A	Recovery Boiler
Potlatch Forest Products Corporation – Cypress Bend Mill	21-00036	SN-04	Power Boiler	
11. Petroleum Refineries	Lion Oil Company	70-00016	SN-809	#7 Catalyst Regenerator
15. Sulfur Recovery Plant	Albermarle Corporation – South Plant	14-00028	SR-01	Tail Gas Incinerator
19. Sintering Plants	Big River Industries	18-00082	SN-01	Kiln A
21. Chemical Processing Plants	Albermarle Corporation – South Plant	14-00028	BH-01	Boiler #1
			BH-02	Boiler #2
	FutureFuels Chemical Co.	32-00036	6M01-01	3 Coal Boilers
	El Dorado Chemical Company	70-00040	SN-08	West Nitric Acid Plant
			SN-09	East Nitric Acid Plant
		SN-10	Nitric Acid Concentrator	

Reg. 19.1504 Facilities Subject-to-BART

(A) The following sources are subject-to-BART:

AFIN	Facility Name	Source #	Source Name
74-00024	Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station	SN-01	Boiler
52-00055	Arkansas Electric Cooperative Corporation John L. McClellan Generating Station	SN-01	Boiler
41-00002	Domtar Industries, Inc. Ashdown Mill	SN-03	#1 Power Boiler
		SN-05	#2 Power Boiler
30-00011	Entergy Arkansas, Inc. – Lake Catherine Plant	SN-03	Unit 4 Boiler
35-00110	Entergy Arkansas, Inc. – White Bluff	SN-01	Unit 1 Boiler
		SN-02	Unit 2 Boiler
		SN-05	Auxiliary Boiler
04-00107	SWEPCO Flint Creek Power Plant	SN-01	Boiler

(B) Each source subject-to-BART shall install and operate BART as expeditiously as practicable, but in no event later than 6 years after the effective date of this regulation or five (5) years after EPA approval of the Arkansas Regional Haze State Implementation Plan, whichever comes first.

(C) Each source subject-to-BART shall maintain the control equipment required by this chapter and establish procedures to ensure such equipment is properly operated and maintained.

Reg. 19.1505 BART Requirements

(A) On or before the compliance date required under Reg. 19.1504(B), SWEPCO Flint Creek Power Plant, SN-01 shall comply with BART by meeting the following emission limits:

- (1) 0.15 pounds of sulfur dioxide (SO₂) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.23 pounds of nitrogen oxides (NO_x) per million Btu of heat input (0.23 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit satisfies the BART particulate matter requirement.
- (A) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation Carl E. Bailey Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (B) On or before the compliance date required under Reg. 19.1504(B), Arkansas Electric Cooperative Corporation John L. McClellan Generating Station, SN-01 shall comply with BART by burning fuel oil that has a 1% or less sulfur content by weight.
- (C) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #1 Power Boiler, SN-03 shall comply with BART by meeting the following emission limits:
- (1) 1.12 pounds of SO₂ per million Btu of heat input (1.12 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.46 pounds of NO_x per million Btu of heat input (0.46 lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.07 pounds of PM₁₀ per million Btu of heat input (0.07 lb/MMBtu) on a 30-day rolling average.
- (D) On or before the compliance date required under Reg. 19.1504(B), Domtar Industries Inc. – Ashdown Mill, #2 Power Boiler, SN-05 shall comply with BART by meeting the following emission limits:
- (1) 1.20 pounds of SO₂ per million Btu of heat input (1.20 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.450 pounds of NO_x per million Btu of heat input (0.450lb/MMBtu) on a 30-day rolling average; and
 - (3) 0.10 pounds of PM₁₀ per million Btu of heat input (0.10 lb/MMBtu) on a 30-day rolling average.
- (E) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning bituminous coal:

- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirement.
- (F) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 1 Boiler, SN-01 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (G) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 1 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (H) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;
 - (2) 0.28 pounds of NO_x per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (I) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, Unit 2 Boiler, SN-02 shall comply with BART by meeting the following emission limits when burning sub-bituminous coal:
- (1) 0.15 pounds of SO₂ per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

- (2) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and
 - (3) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (J) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 2 Boiler at Entergy Arkansas, Inc. – White Bluff the NO_x BART limits shall be prorated using the percentage of each of coal being burned.
- (K) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – White Bluff, auxiliary boiler, SN-05 shall comply with BART by restricting operation to not more than 4360 hours annually.
- (L) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning natural gas:
- (1) 0.15 pounds of NO_x per million Btu of heat input (0.15 lb/MMBtu) on a 30 day rolling average; and
 - (2) The existing particulate matter emission limit as of October 15, 2007, satisfies the BART particulate matter requirements.
- (M) On or before the compliance date required under Reg. 19.1504(B), Entergy Arkansas, Inc. – Lake Catherine Plant, Unit 4 Boiler, SN-03 shall comply with BART by meeting the following emission limits when burning oil:
- (1) 0.562 pounds of SO₂ per million Btu of heat input (0.562 lb/MMBtu) on a 30 day rolling average;
 - (2) 0.25 pounds of NO_x per million Btu of heat input (0.25 lb/MMBtu) on a 30 day rolling average; and
 - (3) 0.037 pounds of PM_{2.5} per million Btu of heat input (0.037 lb/MMBtu) on a 30 day rolling average.

Reg. 19.1506 Compliance Provisions

Each facility listed in Reg. 19.1504(A) as being subject to BART shall demonstrate compliance with the BART limits listed in 19.1505 in accordance with the provisions of Chapter 7 of this regulation.

Reg. 19.1507 Permit Reopening

The Part 70 permit of each facility subject-to-BART shall be subject to re-opening in accordance with section 26.1011(A) of Arkansas Pollution Control and Ecology Commission Regulation 26.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 19

APPENDIX A

INSIGNIFICANT ACTIVITIES LIST

APPENDIX A: INSIGNIFICANT ACTIVITIES LIST

The following types of activities or emissions are deemed insignificant on the basis of size, emission rate, production rate, or activity. Certain of these listed activities include qualifying statements intended to exclude many similar activities. By such listing, the Department exempts certain sources or types of sources from the requirements to obtain a permit or plan under this regulation. Listing in this part has no effect on any other law to which the activity may be subject. Any activity for which a state or federal applicable requirement applies (such as NSPS, National Emission Standards for Hazardous Air Pollutants [NESHAP], or Maximum Achievable Control Technology [MACT]) is not insignificant, even if this activity meets the criteria below.

Group A

The following emission units, operations, or activities must either be listed as insignificant or included in the permit application as sources to be permitted. The ton-per-year applicability levels are for all sources listed in the categories (i.e., cumulative total).

1. Fuel burning equipment with a design rate less than ten (10) MMBtu per hour, provided that the aggregate air pollutant specific emissions from all such units listed as insignificant do not exceed five (5) tons per year (tpy) of any combination of HAPs, 75,000 tpy carbon dioxide, and ten (10) tpy of any other air pollutant.
2. Storage tanks less than or equal to 250 gallons storing organic liquids having a true vapor pressure less than or equal to three and one-half (3.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
3. Storage tanks less than or equal to 10,000 gallons storing organic liquids having a true vapor pressure less than or equal to one-half (0.5) psia, provided that the aggregate air pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.
4. Caustic storage tanks that contain no VOCs.
5. Emissions from laboratory equipment/vents used exclusively for routine chemical or physical analysis for quality control or environmental monitoring purposes provided that

the aggregate air pollutant specific emissions from all such equipment/vents considered insignificant do not exceed five (5) tpy of any combination of HAPs and ten (10) tpy of any other air pollutant.

6. Non-commercial water washing operations of empty drums less than or equal to fifty-five (55) gallons with less than three percent of the maximum container volume of material.
7. Welding or cutting equipment related to manufacturing activities that do not result in aggregate emissions of HAPs in excess of one-tenth (0.1) tpy.
8. Containers of less than or equal to five (5) gallons in capacity that do not emit any detectable VOCs or HAPs when closed. This includes filling, blending, or mixing of the contents of such containers by a retailer.
9. Equipment used for surface coating, painting, dipping, or spraying operations, provided the material used contains no more than four-tenths (0.4) lb/gal VOCs, no hexavalent chromium, and no more than one-tenth (0.1) tpy of all other HAPs.
10. Non-production equipment approved by the Department, used for waste treatability studies or other pollution prevention programs provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs.¹
11. Operation of groundwater remediation wells, including emissions from the pumps and collection activities provided that the emissions are less than ten (10) tpy of any air pollutant regulated under this regulation or less than two (2) tpy of a single HAP or five (5) tpy of any combination of HAPs. This does not include emissions from air-stripping or storage.
12. Emergency use generators, boilers, or other fuel burning equipment that is of equal or smaller capacity than the primary operating unit, cannot be used in conjunction with the primary operating unit, and does not emit or have the potential to emit regulated air pollutants in excess of the primary operating unit and not operated more than ninety (90) days a year. This does not apply to generators which provide electricity to the distribution grid.

¹ The treatability study or pollution prevention program must be approved separately. The activity creating the emissions must also be determined to be insignificant as discussed in the introduction to this group.

13. Other activities for which the facility demonstrates that no enforceable permit conditions are necessary to ensure compliance with any applicable law or regulation provided that the emissions are less than 75,000 tpy carbon dioxide, one (1) tpy of a single HAP or two and one-half (2.5) tpy of any combination of HAPs, or five (5) tpy of any other air pollutant regulated under this regulation. These emission limits apply to the sum of all activities listed under this group.

Group B

The following emission units, operations, or activities need not be included in a permit application:

1. Combustion emissions from propulsion of mobile sources and emissions from refueling these sources unless regulated by Title II and required to obtain a permit under Title V of the federal Clean Air Act, as amended. This does not include emissions from any transportable units, such as temporary compressors or boilers. This does not include emissions from loading racks or fueling operations covered under any applicable federal requirements.
2. Air conditioning and heating units used for comfort that do not have applicable requirements under Title VI of the Act.
3. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.
4. Non-commercial food preparation or food preparation at restaurants, cafeterias, or caterers, etc.
5. Consumer use of office equipment and products, not including commercial printers or business primarily involved in photographic reproduction.
6. Janitorial services and consumer use of janitorial products.
7. Internal combustion engines used for landscaping purposes.
8. Laundry activities, except for dry-cleaning and steam boilers.
9. Bathroom/toilet emissions.
10. Emergency (backup) electrical generators at residential locations.

11. Tobacco smoking rooms and areas.
12. Blacksmith forges.
13. Maintenance of grounds or buildings, including: lawn care, weed control, pest control, and water washing activities.
14. Repair, up-keep, maintenance, or construction activities not related to the source's primary business activity, and not otherwise triggering a permit modification. This may include, but is not limited to such activities as general repairs, cleaning, painting, welding, woodworking, plumbing, re-tarring roofs, installing insulation, paved/paving parking lots, miscellaneous solvent use, application of refractory, or insulation, brazing, soldering, the use of adhesives, grinding, and cutting.²
15. Surface-coating equipment during miscellaneous maintenance and construction activities. This activity specifically does not include any facility whose primary business activity is surface-coating or includes surface-coating or products.
16. Portable electrical generators that can be "moved by hand" from one location to another.³
17. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.
18. Brazing or soldering equipment related to manufacturing activities that do not result in emission of HAPs.⁴
19. Air compressors and pneumatically operated equipment, including hand tools.
20. Batteries and battery charging stations, except at battery manufacturing plants.

² Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must get a permit.

³ "Moved by hand" means that it can be moved by one person without assistance of any motorized or non-motorized vehicle, conveyance, or device.

⁴ Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production thresholds. Brazing, soldering, and welding equipment, and cutting torches related directly to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately in this appendix.

21. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.⁵
22. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and no volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
23. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.
24. Drop hammers or presses for forging or metalworking.
25. Equipment used exclusively to slaughter animals, but not including other equipment at slaughter-houses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
26. Vents from continuous emissions monitors and other analyzers.
27. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
28. Hand-held applicator equipment for hot melt adhesives with no VOCs in the adhesive.
29. Lasers used only on metals and other materials which do not emit HAPs in the process.
30. Consumer use of paper trimmers/binders.
31. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
32. Salt baths using non-volatile salts that do not result in emissions of any air pollutant covered by this regulation.
33. Laser trimmers using dust collection to prevent fugitive emissions.

⁵ Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids are based on size and limits including storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.

34. Bench-scale laboratory equipment used for physical or chemical analysis not including lab fume hoods or vents.
35. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
36. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
37. Hydraulic and hydrostatic testing equipment.
38. Environmental chambers not using hazardous air pollutant gases.
39. Shock chambers, humidity chambers, and solar simulators.
40. Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
41. Process water filtration systems and demineralizers.
42. Demineralized water tanks and demineralizer vents.
43. Boiler water treatment operations, not including cooling towers.
44. Emissions from storage or use of water treatment chemicals, except for hazardous air pollutants or pollutants listed under regulations promulgated pursuant to Section 112(r) of the Act as of July 1, 1997, for use in cooling towers, drinking water systems, and boiler water/feed systems.
45. Oxygen scavenging (de-aeration) of water.
46. Ozone generators.
47. Fire suppression systems.
48. Emergency road flares.
49. Steam vents and safety relief valves.
50. Steam leaks.

51. Steam cleaning operations.
52. Steam and microwave sterilizers.
53. Site assessment work to characterize waste disposal or remediation sites.
54. Miscellaneous additions or upgrades of instrumentation.
55. Emissions from combustion controllers or combustion shutoff devices but not combustion units itself.
56. Use of products for the purpose of maintaining motor vehicles operated by the facility, not including air cleaning units of such vehicles (i.e. antifreeze, fuel additives).
57. Stacks or vents to prevent escape of sanitary sewer gases through the plumbing traps.
58. Emissions from equipment lubricating systems (i.e. oil mist), not including storage tanks, unless otherwise exempt.
59. Residential wood heaters, cookstoves, or fireplaces.
60. Barbecue equipment or outdoor fireplaces used in connection with any residence or recreation.
61. Log wetting areas and log flumes.
62. Periodic use of pressurized air for cleanup.
63. Solid waste dumpsters.
64. Emissions of wet lime from lime mud tanks, lime mud washers, lime mud piles, lime mud filter and filtrate tanks, and lime mud slurry tanks.
65. Natural gas odoring activities unless the Department determines that emissions constitute air pollution.
66. Emissions from engine crankcase vents.
67. Storage tanks used for the temporary containment of materials resulting from an emergency reporting to an unanticipated release.

68. Equipment used exclusively to mill or grind coatings in roll grinding rebuilding, and molding compounds where all materials charged are in paste form.
69. Mixers, blenders, roll mills, or calendars for rubber or plastic for which no materials in powder form are added and in which no hazardous air pollutants, organic solvents, diluents, or thinners are used or emitted.
70. The storage, handling, and handling equipment for bark and wood residues not subject to fugitive dispersion offsite (this applies to the equipment only).
71. Maintenance dredging of pulp and paper mill surface impoundments and ditches containing cellulosic and cellulosic derived biosolids and inorganic materials such as lime, ash, or sand.
72. Tall oil soap storage, skimming, and loading.
73. Water heaters used strictly for domestic (non-process) purposes.
74. Facility roads and parking areas, unless necessary to control offsite fugitive emissions.
75. Agricultural operations, including onsite grain storage, not including internal combustion engines or grain elevators.
76. Natural gas and oil exploration and production site equipment not subject to a rule under 40 C.F.R. Parts 60, 61, or 63.

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



REGULATION NO. 19

APPENDIX B

**NATIONAL AMBIENT AIR QUALITY
STANDARDS LIST**

APPENDIX B: NATIONAL AMBIENT AIR QUALITY STANDARDS LIST

The National Ambient Air Quality Standards as adopted as of the effective date of this Regulation are listed below.

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Carbon Monoxide	76 FR 54294	August 31, 2011	Primary	8-hour	9 ppm	Not to be exceeded more than once per year	All Chapters
				1-hour	35 ppm		All Chapters
Lead	73 FR 66964	November 12, 2008	Primary and secondary	Rolling 3 month average	0.15 $\mu\text{g}/\text{m}^3$	Not to be exceeded	All Chapters
Nitrogen Dioxide	75 FR 6474	February 9, 2010	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years	All Chapters
	61 FR 52852	October 8, 1996	Primary and secondary	Annual	53 ppb	Annual Mean	All Chapters
Ozone	73 FR 16436	March 27, 2008	Primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years	All Chapters
Particle Pollution, $\text{PM}_{2.5}$	78 FR 3085	January 15, 2013	Primary	Annual	12 $\mu\text{g}/\text{m}^3$	Annual mean, averaged over 3 years	All Chapters
	71 FR 61144	October 17, 2006	Secondary	Annual	15 $\mu\text{g}/\text{m}^3$		
			Primary and secondary	24-hour	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years	All Chapters

Pollutant	Final Rule Cite	Final Rule Date	Primary / Secondary	Averaging Time	Level	Form	Applicable Chapters
Particle Pollution, PM ₁₀	71 FR 61144	October 17, 2006	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years	All Chapters
Sulfur Dioxide	75 FR 35520	June 22, 2010	Primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	All Chapters
	38 FR 25678	September 14, 1973	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year	All Chapters

**ARKANSAS POLLUTION CONTROL
and ECOLOGY COMMISSION**

**REGULATION NO. 26
REGULATIONS OF THE ARKANSAS
OPERATING AIR PERMIT PROGRAM**



FILED

MAR 04 2016

**Arkansas
Secretary of State**

Approved by Arkansas Pollution Control and Ecology Commission
February 26, 2016

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CHAPTER 3: REQUIREMENT FOR A PERMIT, APPLICABILITY

Reg. 26.301 Requirement for a permit

- (A) No part 70 source may operate unless it is operating in compliance with a part 70 permit, or unless it has filed a timely and complete application for an initial or renewal permit as required under these regulations. Existing part 70 sources shall submit initial applications according to the provisions of section 4. If a part 70 source submits a timely and complete application for an initial or renewal permit, the source's failure to have a part 70 permit is not a violation of this regulation until the Department takes final action on the permit application, except as noted in this section. This protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information identified as being needed to process the application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.
- (B) No proposed new part 70 source shall begin construction prior to obtaining a part 70 permit, unless the applicable permit application was submitted prior to the effective date of these regulations and the Department's draft permitting decision for such source has already proceeded to public notice in accordance with Regulation No. 19.
- (C) No part 70 source shall begin construction of a new emissions unit or begin modifications to an existing emissions unit prior to obtaining a modified part 70 permit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit. An existing part 70 source shall be subject to the permit modification procedures of Regulation No. 19 until such time that an initial part 70 permit application is due from the source.

Reg. 26.302 Sources subject to permitting

The following sources shall be subject to permitting under these regulations, unless exempted by Reg. 26.303 below:

- (A) Any major source;
- (B) Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the Act (i.e., New Source Performance Standards [NSPS] regulations). However, non-major sources subject to section 111 of the Act are exempt from the obligation to obtain a part 70 permit until such time that the Administrator completes a rulemaking to determine how the program should be structured for non-major sources;
- (C) Any source, including an area source, subject to a standard or other requirement under section 112 of the Act (i.e., hazardous air pollutant regulations), except that a source is

not required to obtain a permit solely because it is subject to regulations or requirements under section 112(r) of the Act;

- (D) Any source subject to Arkansas Pollution Control and Ecology Commission's Regulation No. 19, Chapter 9;
- (E) Any acid rain source (which shall be permitted in accordance with the provisions of the federal acid rain program); and
- (F) Any source in a source category designated by the Administrator pursuant to this section.

Reg. 26.303 Source category exemptions

The following source categories are exempted from the obligation to obtain a part 70 permit:

- (A) All sources listed in Reg. 26.302 that are not major sources, acid rain sources, or solid waste incineration units required to obtain a permit pursuant to section 129(e) of the Act, are exempted from the obligation to obtain a part 70 permit until such time as the Administrator completes a rulemaking to determine how the program should be structured for non-major sources.
- (B) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 C.F.R. Part 60, Subpart AAA - Standards of Performance for New Residential Wood Heaters as of July 23, 1993; and
- (C) All sources and source categories that would be required to obtain a permit solely because they are subject to 40 C.F.R. Part 61, Subpart M - National Emission Standard for Hazardous Air Pollutants for Asbestos, section 61.145, Standard for Demolition and Renovation as of July 23, 1993.
- (D) Any other non-major sources subject to a standard or other requirement under either section 111 or 112 of the Act exempted by the Administrator.

Reg. 26.304 Emissions units subject to permitting

The Department shall include in the part 70 permit all applicable requirements for all relevant emissions units in the part 70 source. Some equipment with very small emission rates is exempt from permitting requirements as per Chapter 4 and Appendix A of Regulation No. 19.

Reg. 26.305 Emissions subject to permitting

All regulated air pollutant emissions and recognized air contaminant emissions from a part 70 source shall be included in a part 70 permit, except that GHG emissions less than 100,000 tpy CO₂e shall not be included in a part 70 permit unless the part 70 source undertakes a physical change or change in the method of operation that will result in an emissions increase of 75,000 tpy CO₂e or more. Only regulated air pollutants may trigger the need for a part 70 permit or a part 70 permit modification process. A permit modification involving only air contaminants other than regulated air pollutants shall be permitted according to the procedure of Regulation

No. 19. Such permits shall be incorporated into the part 70 permit by administrative permit amendment.

Reg. 26.306 Fugitive emissions subject to permitting

Fugitive emissions from a part 70 source shall be included in the permit application and the part 70 permit in the same manner as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source.

CHAPTER 4: APPLICATIONS FOR PERMITS

Reg. 26.401 Duty to apply

For each source subject to 40 C.F.R. Part 70, as promulgated June 3, 2010 (75 FR 31607), the owner or operator shall submit a timely and complete permit application (on forms supplied by the Department) in accordance with this section.

Reg. 26.402 Standard application form and required information

The Department shall provide a standard application form or forms and shall provide them to part 70 sources upon request. Information as described below for each emissions unit at a part 70 source shall be required by the application form and included by the applicant in the application.

- (A) Insignificant activities which are exempted because of size or production rate, a list of such insignificant activities must be included in the application.
- (B) An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement, or to evaluate the fee amount required by the Arkansas Pollution Control and Ecology Commission's Regulation Number 9, Fee Regulation (Regulation No. 9). The Department may use discretion in developing application forms that best meet program needs and administrative efficiency. The forms and attachments chosen, however, shall include the elements specified below:
 - (1) Identifying information, including company name and address (or plant name and address if different from the company name), owner's name and agent, and telephone number and names of plant site manager/contact;
 - (2) A description of the source's processes and products (by Standard Industrial Classification Code or the North American Industry Classification System) including any associated with alternate scenario identified by the source;
 - (3) The following emission-related information:
 - (a) A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under Reg. 26.402(A). The Department shall require additional information related to the emissions of air pollutants sufficient to verify which requirements are applicable to the source, and other information necessary to collect any permit fees owed under the fee schedule in Regulation No. 9.
 - (b) Identification and description of all points of emissions described above in sufficient detail to establish the basis for fees and applicability of requirements of the Act.

- (c) Emissions rate in tpy and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.
 - (d) The following information to the extent it is needed to determine or regulate emissions: fuels, fuel use, raw materials, production rates, and operating schedules.
 - (e) Identification and description of air pollution control equipment and compliance monitoring devices or activities.
 - (f) Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 70 source.
 - (g) Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Act).
 - (h) Calculations on which the information in Reg. 26.402(B)(3) is based.
- (4) The following air pollution control requirements:
- (a) Citation and description of all applicable requirements, and
 - (b) Description of or reference to any applicable test method for determining compliance with each applicable requirement.
- (5) Other specific information that may be necessary to implement and enforce other applicable requirements of the Act, of this part or to determine the applicability of such requirements.
- (6) An explanation of any proposed exemptions from otherwise applicable requirements.
- (7) Additional information as determined to be necessary by the Department to define alternative operating scenarios identified by the source pursuant to Reg. 26.701(I) or to define permit terms and conditions implementing Reg. 26.802 or Reg. 26.701(J).
- (8) A compliance plan for all part 70 sources that contains all the following:
- (a) A description of the compliance status of the source with respect to all applicable requirements.
 - (b) A description as follows:

- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis.
 - (iii) For requirements for which the source is not in compliance at the time of permit issuance, a narrative description of how the source will achieve compliance with such requirements.
- (c) A compliance schedule as follows:
- (i) For applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements.
 - (ii) For applicable requirements that will become effective during the permit term, a statement that the source will meet such requirements on a timely basis. A statement that the source will meet in a timely manner applicable requirements that become effective during the permit term shall satisfy this provision, unless a more detailed schedule is expressly required by the applicable requirement.
 - (iii) A schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance. Such a schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the source will be in non-compliance at the time of permit issuance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable requirements on which it is based.
- (d) A schedule for submission of certified progress reports no less frequently than every 6 months for sources required to have a schedule of compliance to remedy a violation.
- (e) The compliance plan content requirements specified in this paragraph shall apply and be included in the acid rain portion of a compliance plan for an affected source, except as specifically superseded by regulations promulgated under title IV of the Act with regard to the schedule and

method(s) the source will use to achieve compliance with the acid rain emissions limitations.

- (9) Requirements for compliance certification, including the following:
 - (a) A certification of compliance with all applicable requirements by a responsible official consistent with Reg. 26.410 and section 114(a)(3) of the Act;
 - (b) A statement of methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods;
 - (c) A schedule for submission of compliance certifications during the permit term, to be submitted no less frequently than annually, or more frequently if specified by the underlying applicable requirement or by the Department; and
 - (d) A statement indicating the source's compliance status with any applicable enhanced monitoring and compliance certification requirements of the Act.
- (10) The use of nationally-standardized forms for acid rain portions of permit applications and compliance plans, as required by regulations promulgated under title IV of the Act.

(C) Reserved

Reg. 26.403 Initial applications from existing part 70 sources

A timely application for an initial part 70 permit for an existing part 70 source is one that is submitted within 12 months after the source becomes subject to the permit program, or on or before such earlier date as the Department may establish. The earliest that the Department may require an initial application from such an existing part 70 source is 6 months after the Department notifies the source in writing of its duty to apply for an initial part 70 permit.

Reg. 26.404 Applications for proposed new part 70 sources

The owner or operator proposing to construct a new part 70 source shall apply for and obtain a part 70 permit prior to the construction of the source, unless the applicable permit application was submitted prior to the effective date of these Regulations and the Department's draft permitting decision for such source has already proceeded to public comment in accordance with Regulation No. 19.

Reg. 26.405 Applications for proposed significant modifications at part 70 sources

Part 70 sources proposing to construct a new emissions unit or modify an existing emissions unit shall apply for and obtain a modified part 70 permit prior to the construction or modification of

such emissions unit. This applies only to significant modifications and does not apply to modifications that qualify as minor modifications or changes allowed under the operational flexibility provisions of a part 70 permit.

Reg. 26.406 Permit renewal applications

For purposes of permit renewal, a timely application is one that is received by the Department at least six (6) months prior to the date of permit expiration or such other longer time as may be approved by the Administrator that ensures that the term of the permit will not expire before the permit is renewed. In no event shall this time be greater than eighteen (18) months. Renewal permits are subject to the same procedural requirements that apply to initial permit issuance. Permit expiration terminates a part 70 source's right to operate unless a timely and complete renewal application has been received by the Department, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. If the Department fails to act in a timely way on a permit renewal, EPA may invoke its authority under section 505(e) of the Act to terminate or revoke and reissue the permit.

Reg. 26.407 Complete application

To be deemed complete, an application must provide all information required by Reg. 26.402, except that applications for permit revision need supply only that information related to the proposed change. Unless the Department determines that an application is not complete within sixty (60) days of receipt of the application, such application shall be deemed to be complete. If, while processing an application that has been determined or deemed to be complete, the Department determines that additional information is necessary to evaluate or take final action on that application, it may request such information in writing and set a reasonable deadline for a response.

Reg. 26.408 Confidential information

In the case where a source has submitted information to the State under a claim of confidentiality, the Department may also require the source to submit a copy of such information directly to the Administrator.

Reg. 26.409 Applicant's duty to supplement or correct application

Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

Reg. 26.410 Certification by responsible official

Any application form, report, or compliance certification submitted pursuant to these regulations shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under these regulations shall state that, based on

information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

CHAPTER 5: ACTION ON APPLICATIONS

Reg. 26.501 Action on part 70 permit applications

A permit, permit modification, or permit renewal may be issued only if all of the following conditions have been met:

- (A) The Department has received a complete application for a permit, permit modification, or permit renewal, except that a complete application need not be received before issuance of a general permit.
- (B) Except for modifications qualifying for minor permit modification procedures under Chapter 10 of Regulation No. 26, the Department has complied with the requirements under Chapter 6 of Regulation No. 26 for public participation and for notifying and responding to affected States.
- (C) The processing of the permit application and the conditions of the permit provide for compliance with all applicable requirements and the requirements of this regulation; and
- (D) The Administrator has received a copy of the proposed permit and any notices required under Chapter 6 of Regulation No. 26 and has not objected to issuance of the permit within the time period specified therein.

Reg. 26.502 Final action on permit application

The Department shall take final action on each permit application (including a request for permit modification or renewal) as expeditiously as practicable, but no later than eighteen (18) months after receiving a complete application, unless a different time period is provided for in these regulations (i.e., initial permitting of existing part 70 sources and minor permit modifications). Failure of the Department to act upon an application shall not constitute approval of the permit application. An aggrieved applicant may seek relief from Department inaction on a permit application in accordance with the procedures of Ark. Code Ann. § 8-4-311 (b)(10)(F).

Reg. 26.503 Priority for application review

Priority shall be given by the Department to taking action on applications for construction and modification over applications for permit renewal to the extent practicable.

Reg. 26.504 Notification of application completeness

The Department shall promptly provide notice to the applicant of whether the application is complete. Unless the Department requests additional information or otherwise notifies the applicant of incompleteness within sixty (60) days of receipt of an application, the application shall be deemed complete. For modifications processed through minor permit modification procedures, the program shall not require a completeness determination, but shall be subject to an eligibility determination.

Reg. 26.505 Source's ability to operate prior to final permit action

A part 70 source's ability to operate without a permit prior to initial permit issuance (to existing part 70 sources) or permit renewal shall be in effect from the date the timely and complete application for initial permit or permit renewal is determined or deemed to be complete until the final permit is issued, provided that the applicant submits any requested additional information by the deadline specified by the Department. However, the installation of new emissions units and the modification of existing emissions units may not commence until a final permit for such activity is issued, unless such activity involves equipment exempt from permitting requirements or modifications eligible to be processed through minor permit modification procedures.

Reg. 26.506 Basis for draft permit conditions

The Department shall provide a statement that sets forth the legal and factual basis for the draft permit conditions (including references to the applicable statutory or regulatory provisions). The Department shall send this statement to EPA and to any other person who requests it.

CHAPTER 6: PERMIT REVIEW BY THE PUBLIC, AFFECTED STATES, AND EPA

Reg. 26.601 Applicability

All initial permits, renewal permits, and significant permit modifications shall meet the permit review requirements of this chapter.

Reg. 26.602 Public participation

All initial permit issuances, significant modifications, minor modifications, and renewals shall afford the public the opportunity to comment.

(A) Public notice shall be given:

- (1) By publication of notice of application receipt by the Department, in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with the Arkansas Pollution Control and Ecology Commission's Regulation Number 8, Administrative Procedures (Regulation No. 8) (minor permit modification applications are exempt from this requirement). In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
- (2) By the availability for public inspection in at least one location in the area where the source is located and in the Department's central offices of the permit application submitted by the owner or operator and the Department's draft permitting decision and analysis of the effect of the proposed emissions on air quality;
- (3) By publication of a notice of the Department's draft permitting decision in a newspaper of general circulation in the county in which the proposed facility or activity is to be located, in accordance with Regulation No. 8. In the event the local newspaper is unable or unwilling to publish the notice, notice may be published in a newspaper in general circulation through the State;
- (4) To the mayor of the community in which the source is located;
- (5) To the county judge of the county in which the source is located;
- (6) To persons on a mailing list developed by the Department, including those who request in writing to be on the list; and
- (7) By other means if necessary to assure adequate notice to the affected public.

(B) The notice of Reg. 26.602(A)(3) shall identify the affected facility; the name and address of the permittee; the name and address of the Department; the activity or activities involved in the permit action; the emissions change involved in any permit modification;

the name, address, and telephone number of a person from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials and all other materials available to the Department that are relevant to the permit decision; a brief description of the comment procedures required by this regulation; and a statement of procedures to request a hearing.

- (C) The Department shall provide such notice and opportunity for participation by affected States as is provided for in this section.
- (D) The Department shall provide at least thirty (30) days for public comment on its draft permitting decision and shall give notice of any public hearing at least thirty (30) days in advance of the hearing.
- (E) The Department shall keep a record of the commenters and also of the issues raised during the public participation process so that the Administrator may fulfill his obligation under section 505(b)(2) of the Act to determine whether a citizen petition may be granted, and such records shall be available to the public.

Reg. 26.603 Transmission of permit information to the Administrator

- (A) The Department shall provide to the Administrator a copy of each permit application (including any application for permit modification), each proposed permit, and each final part 70 permit. The applicant may be required by the Department to provide a copy of the permit application (including the compliance plan) directly to the Administrator. Upon agreement with the Administrator, the Department may submit to the Administrator a permit application summary form and any relevant portion of the permit application and compliance plan, in place of the complete permit application and compliance plan.
- (B) The Department shall keep for five (5) years such records and submit to the Administrator such information as the Administrator may reasonably require to ascertain whether the State program complies with the requirements of the Act or of 40 C.F.R. Part 70, as promulgated July 21, 1992, and last modified June 3, 2010 (75 FR 31607).

Reg. 26.604 Review of draft permit by affected States

- (A) The Department shall give notice of each draft permit to any affected State on or before the time that the Department provides this notice to the public, except to the extent that minor permit modification procedures requires the timing of the notice to be different.
- (B) The Department, as part of the submittal of the proposed permit to the Administrator (or as soon as possible after the submittal for minor permit modification procedures), shall notify the Administrator and any affected State in writing of any refusal by the Department to accept all recommendations for the proposed permit that the affected State submitted during the public or affected State review period. The notice shall include the Department's reasons for not accepting any such recommendation. The Department is not required to accept recommendations that are not based on applicable requirements or the requirements of 40 C.F.R. Part 70, as promulgated July 21, 1992, and last modified June 3, 2010 (75 FR 31607).

Reg. 26.605 EPA objection to proposed permit

- (A) The Administrator will object to the issuance of any proposed permit determined by the Administrator not to be in compliance with applicable requirements or requirements under this regulation. No permit for which an application is required to be transmitted to the Administrator may be issued if the Administrator objects to its issuance in writing within forty-five (45) days of receipt of the proposed permit and all necessary supporting information.
- (B) Any EPA objection shall include a statement of the Administrator's reasons for objection and a description of the terms and conditions that the permit must include to respond to the objections. The Administrator will provide the permit applicant a copy of the objection.
- (C) Failure of the Department to follow proper permit issuance procedural requirements or to submit required information necessary to review the proposed permit also shall constitute grounds for an objection.
- (D) If the Department fails, within ninety (90) days after the date of an objection under Reg. 26.605(A) to revise and submit a proposed permit in response to the objection, the Administrator will issue or deny the permit in accordance with the requirements of the Federal program promulgated under title V of the Act.

Reg. 26.606 Public petitions to the Administrator

If the Administrator does not object in writing to a proposed part 70 permit, any person may petition the Administrator within sixty (60) days after the expiration of the Administrator's forty-five (45) day review period to make such objection. Any such petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this subsection, the Department shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the Department has issued a permit prior to receipt of an EPA objection under this subsection, the Administrator will modify, terminate, or revoke such permit, and shall do so consistent with the procedures in Chapter 10 of Regulation No. 26 except in unusual circumstances, and the Department may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

Reg. 26.607 Prohibition on default issuance

No part 70 permit (including a permit renewal or modification) shall be issued until affected States and EPA have had an opportunity to review the proposed permit as required under this chapter.

Tab G

Procedural Requirements

- ADEQ Regulation Tracking Sheets
- Arkansas Register Transmittal Sheets
- Arkansas State Library Agency Certification Forms

ADEQ REGULATIONS TRACKING SHEET

Regulation No. 19

Common Name: Regulations of the Arkansas Plan of Implementation for Air Pollution Control

1. **Strawman review** of draft regulations by key groups.

	<u>initiated</u>	<u>completed</u>	<u>incorporated</u>
EPA	<u>Dec. 5, 2015</u>	<u>Jan. 12, 2015</u>	<u>Dec. 15, 2015</u>
ADEQ Legal/Admin.	<u>Nov 18, 2014</u>	<u>Jan. 27, 2015</u>	<u>Jan. 11, 2016</u>
Industrial/ Environmental Groups	<u>Dec. 5, 2014</u>	<u>Feb. 17, 2015</u>	<u>Jan. 12, 2016</u>

Comments: ADEQ collaborated with local industry interest groups to complete this regulation revision. During the process, the Department has incorporated many suggestions from industry groups, including several revisions that resulted from the Public Notice and Comment process. The Department is confident that all requisites of internal and external review for this rulemaking have been satisfied.

2. Proposed regulations presentation to Commission's **Regulations Committee** for approval to proceed to public comment period.

Date: Dec. 5, 2015 *By:* Mike Bates

Comments/Approval: Committee recommended adoption of Petition to initiate rulemaking

3. **Legal notice** of proposed regulations and public hearing.

<u>publication</u>	<u>dates of publication</u>
<u>Arkansas Democrat-Gazette</u>	<u>Dec 10 – Dec 11, 2014</u>

4. Provide **Legislative Council** with three copies of proposed regulations and the legislative questionnaire at least ten days prior to the first public hearing.

5. Hold **public hearing(s)** on the proposed regulations.

<u>location</u>	<u>date</u>	<u>hearing chairman</u>
<u>ADEQ Commission Room</u>	<u>Jan. 12, 2015</u>	<u>APC&EC Judge Charles Moulton</u>

6. Date of final day of public comment period: extended to Feb. 17, 2015

7. **Final proposed regulation** and **response to comments** prepared by Department.

Date initiated: Feb. 18, 2015 *Date completed:* Oct. 23, 2015

8. Formal presentation to the **Public Health & Welfare Committee** of the Legislative Council.

Date: Jan. 11, 2016 *By:* Stuart Spencer

Comments/Approval: Approval Received by Committee

9. Formal presentation of proposed final regulation to the **Administrative Rules & Regulations Subcommittee** of the Legislative Council (All Regs).

Date: Jan. 12, 2016 By: Stuart Spencer

Comments/Approval: Approval Received by Committee

10. Presentation of proposed final regulation to Commission's **Regulations Committee**.

Date: Feb. 26, 2016 By: Stuart Spencer

Comments/Approval: _____
Committee recommended adoption of the final rulemaking

11. Provide Commission members with copy of proposed final regulation prior to Commission meeting.

Date Delivered: Feb. 12, 2016

12. Present proposed final regulation to the **Commission** for adoption.

Date: Feb. 26, 2016 By: Stuart Spencer

Comments/Approval: _____
Committee approved adoption of the final rulemaking

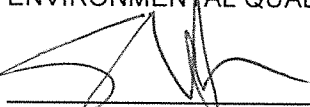
13. Send two copies of adopted regulation to **Secretary of State** (regulation becomes effective ten days after filing).

Date mailed: Upon final promulgation of Regulation

14. Formally submit adopted regulation to **EPA**.

Date mailed: Upon final promulgation of Regulation

PREPARED BY:
ARKANSAS DEPARTMENT
OF ENVIRONMENTAL QUALITY

By: 
Stuart Spencer, Associate Director
Office of Air Quality

ADEQ REGULATIONS TRACKING SHEET

Regulation No. 26

**Common Name: Regulations of the Arkansas
Operating Air Permit Program**

1. **Strawman review** of draft regulations by key groups.

	<u>initiated</u>	<u>completed</u>	<u>incorporated</u>
EPA	<u>Dec.5, 2015</u>	<u>Jan. 12, 2015</u>	<u>Dec. 15, 2015</u>
ADEQ Legal/Admin.	<u>Nov 18, 2014</u>	<u>Jan. 27, 2015</u>	<u>Jan. 11, 2016</u>
Industrial/ Environmental Groups	<u>Dec. 5, 2014</u>	<u>Feb. 17, 2015</u>	<u>Jan. 12, 2016</u>

Comments: ADEQ collaborated with local industry interest groups to complete this regulation revision. During the process, the Department has incorporated many suggestions from industry groups, including several revisions that resulted from the Public Notice and Comment process. The Department is confident that all requisites of internal and external review for this rulemaking have been satisfied.

2. Proposed regulations presentation to Commission's **Regulations Committee** for approval to proceed to public comment period.

Date: Dec.5, 2015 *By:* Mike Bates

Comments/Approval: Committee recommended adoption of Petition to initiate rulemaking

3. **Legal notice** of proposed regulations and public hearing.

<u>publication</u>	<u>dates of publication</u>
<u>Arkansas Democrat-Gazette</u>	<u>Dec 10 – Dec 11, 2014</u>

4. Provide **Legislative Council** with three copies of proposed regulations and the legislative questionnaire at least ten days prior to the first public hearing.

5. Hold **public hearing(s)** on the proposed regulations.

<u>location</u>	<u>date</u>	<u>hearing chairman</u>
<u>ADEQ Commission Room</u>	<u>Jan. 12, 2015</u>	<u>APC&EC Judge Charles Moulton</u>

6. Date of final day of public comment period: extended to Feb. 17, 2015

7. **Final proposed regulation** and **response to comments** prepared by Department.

Date initiated: Feb.18, 2015 *Date completed:* Oct. 23, 2015

8. Formal presentation to the **Public Health & Welfare Committee** of the Legislative Council.

Date: Jan. 11, 2016 *By:* Stuart Spencer

Comments/Approval: Approval Received by Committee

9. Formal presentation of proposed final regulation to the **Administrative Rules & Regulations Subcommittee** of the Legislative Council (All Regs).

Date: Jan. 12, 2016 By: Stuart Spencer

Comments/Approval: Approval Received by Committee

10. Presentation of proposed final regulation to Commission's **Regulations Committee**.

Date: Feb. 26, 2016 By: Stuart Spencer

Comments/Approval: _____

Committee recommended adoption of the final rulemaking

11. Provide Commission members with copy of proposed final regulation prior to Commission meeting.

Date Delivered: Feb. 12, 2016

12. Present proposed final regulation to the **Commission** for adoption.

Date: Feb. 26, 2016 By: Stuart Spencer

Comments/Approval: _____

Committee approved adoption of the final rulemaking


13. Send two copies of adopted regulation to **Secretary of State** (regulation becomes effective ten days after filing).

Date mailed: Upon final promulgation of Regulation

14. Formally submit adopted regulation to **EPA**.

Date mailed: Upon final promulgation of Regulation

PREPARED BY:
ARKANSAS DEPARTMENT
OF ENVIRONMENTAL QUALITY

By: 
Stuart Spencer, Associate Director
Office of Air Quality

ARKANSAS REGISTER

Transmittal Sheet

* Use only for FINAL and EMERGENCY RULES



Secretary of State
Mark Martin
State Capitol, Suite 026
Little Rock, Arkansas 72201-1094
(501) 682-3527
www.sos.arkansas.gov



For Office
Use Only:

Effective Date _____ Code Number _____

Name of Agency Arkansas Pollution Control & Ecology Commission

Department Arkansas Department of Environmental Quality

Contact Stewart Spencer E-mail spencer@adeq.state.ar.us Phone 501-682-0750

Statutory Authority for Promulgating Rules Ark. Code Ann. §8-1-203(b) and (1)

Rule Title: Regulation No. 19, Regulations of The AR Plan of Implementation for Air Pollution Control; Docket No. 14-010-R; Minute Order No. 16-04
Intended Effective Date _____ Date _____
(Check One)

- | | | |
|---|---------------------------------|-----------------|
| <input type="checkbox"/> Emergency (ACA 25-15-204) | Legal Notice Published | <u>12/10/14</u> |
| <input type="checkbox"/> 30 Days After Filing (ACA 25-15-204) | Final Date for Public Comment | <u>02/17/15</u> |
| <input checked="" type="checkbox"/> Other <u>10 days after filing</u>
(Must be more than 30 days after filing date.) | Reviewed by Legislatice Council | <u>01/12/16</u> |
| | Adopted by State Agency | <u>02/26/16</u> |

Electronic Copy of Rule submitted under ACA 25-15-218 by:

Contact Person _____ E-mail Address _____ Date _____

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 the Arkansas Administrative Procedures Act. (ACA 25-15-201 et. seq.)

Charles Moulton
Signature

(501) 682-7890 moulton@adeq.state.ar.us
Phone Number E-mail Address

Administrative Law Judge
Title

03/04/16
Date

FILED

MAR 04 2016

**Arkansas
Secretary of State**

ARKANSAS REGISTER



Transmittal Sheet

* Use only for **FINAL** and **EMERGENCY RULES**

Secretary of State
Mark Martin
State Capitol, Suite 026
Little Rock, Arkansas 72201-1094
(501) 682-3527
www.sos.arkansas.gov



For Office
Use Only:

Effective Date _____ Code Number _____

Name of Agency Arkansas Pollution Control & Ecology Commission

Department Arkansas Department of Environmental Quality

Contact Stewart Spencer E-mail spencer@adeq.state.ar.us Phone 501-682-0750

Statutory Authority for Promulgating Rules Ark. Code Ann. §8-1-203(b) and (1)

Rule Title: Regulation No. 26, Regulations of the Arkansas Operating Air

Permit Program; Docket No. 14-011-R; Minute Order No. 16-05

Intended Effective Date
(Check One)

Date

Emergency (ACA 25-15-204)

Legal Notice Published

12/10/14

30 Days After Filing (ACA 25-15-204)

Final Date for Public Comment

02/17/15

Other 10 days after filing
(Must be more than 30 days after filing date.)

Reviewed by Legislative Council

01/12/16

Adopted by State Agency

02/26/16

Electronic Copy of Rule submitted under ACA 25-15-218 by:

Contact Person

E-mail Address

Date

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 the Arkansas Administrative Procedures Act. (ACA 25-15-201 et. seq.)

Chloe Moulton
Signature

(501) 682-7890 moulton@adeq.state.ar.us

Phone Number

E-mail Address

Administrative Law Judge

Title

03/04/16

Date

FILED

MAR 04 2016

**Arkansas
Secretary of State**

ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION

101 EAST CAPITOL

SUITE 205

LITTLE ROCK, ARKANSAS 72201

PHONE: (501) 682-7890

FAX: (501) 682-7891



March 4, 2016

Ms. Donna Davis
Administrative Rules and Regulations Committee
Room 433, State Capitol Building
Little Rock, Arkansas 72201

RE: Regulation No 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control; Docket No. 14-010-R; Minute Order No. 16-04 - FINAL FILING.

Dear Ms. Davis:

I am enclosing the following for filing with your office:

1. One (1) hard copy of the amendment to Regulation No 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control.
2. One (1) copy of Commission Minute Order No. 16-04
3. One (1) copy of the Financial Impact Statement.

Please provide written confirmation of your receipt of these materials by file-marking the enclosed copy of this letter and returning it to me.

Thank you for your assistance in this matter.

RECEIVED

MAR 04 2016

BUREAU OF
LEGISLATIVE RESEARCH

Respectfully,

A handwritten signature in cursive script that reads "Charles Moulton".

Charles Moulton
Administrative Law Judge

Enclosures

ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION

101 EAST CAPITOL

SUITE 205

LITTLE ROCK, ARKANSAS 72201

PHONE: (501) 682-7890

FAX: (501) 682-7891



March 4, 2016

Ms. Donna Davis
Administrative Rules and Regulations Committee
Room 433, State Capitol Building
Little Rock, Arkansas 72201

RE: Regulation No 26, Regulations of the Arkansas Operating Air Permit Program; Docket No. 14-011-R; Minute Order No. 16-05
- **FINAL FILING.**

Dear Ms. Davis:

I am enclosing the following for filing with your office:

1. One (1) hard copy of the amendment to Regulation No 26, Regulations of the Arkansas Operating Air Permit Program.
2. One (1) copy of Commission Minute Order No. 16-05
3. One (1) copy of the Financial Impact Statement.

Please provide written confirmation of your receipt of these materials by file-marking the enclosed copy of this letter and returning it to me.

Thank you for your assistance in this matter.

RECEIVED

MAR 04 2016

BUREAU OF
LEGISLATIVE RESEARCH

Respectfully,

A handwritten signature in black ink that reads "Charles Moulton".

Charles Moulton
Administrative Law Judge

Enclosures

ARKANSAS STATE LIBRARY



Agency Certification Form For Depositing Final Rules and Regulations At the Arkansas State Library

Documents Services • Arkansas State Library
One Capitol Mall • Little Rock, AR 72201-1094
501-682-2326 Phone; 501-682-1532 FAX

2016 MAR 3 22

For Office Use Only		
Effective Date:		Classification Number:
Name of Agency: Arkansas Department of Environmental Quality		
Contact Person: Stuart Spencer		Telephone: (501) 682-0750
Statutory Authority for Promulgating Rules: Ark. Code Ann. §8-1-203(b) and (1)		
Title of Rule: Regulation No 26, Regulations of the Arkansas Operating Air Permit Program; Docket No. 14-011-R Minute Order 16-05		
Rule Status	Effective Date Status	Effective Date
<input type="checkbox"/> New Rule/Regulation	<input type="checkbox"/> Emergency	
<input type="checkbox"/> Amended Rule/Regulation	10 Days after filing	March 12, 2016
<input type="checkbox"/> Repealed Rule/Regulation	<input type="checkbox"/> Other	
<input type="checkbox"/> Order	<input type="checkbox"/> Repealed	
<input type="checkbox"/> Emergency Rule/Regulation	Adopted by State Agency	
<input type="checkbox"/> Rule above is proposed and will be replaced by final version <input checked="" type="checkbox"/> Financial and/or Fiscal Impact Statement Attached		
<h3>Certification of Authorized Officer</h3>		
I hereby certify that the attached rules were adopted in compliance with Act 434 of 1967 as amended.		
Signature: <u><i>Chuck Muntz</i></u>		Date: <u>March 4, 2016</u>
Title: <u>Administrative Law Judge</u>		

Tab H

Public Participation

Regulations No. 19 and No. 26 revisions:

- Public Notice Information and Public Hearing Documentation
- Public Comments and Responsive Summary

SIP revisions:

- Public Notice Information and Public Meeting Documentation
- Public Comments and Responsive Summary

NOTICE OF PROPOSED CHANGES TO THREE AIR QUALITY REGULATIONS AND NOTICE OF PUBLIC HEARINGS AND COMMENT PERIOD

The Arkansas Pollution Control and Ecology Commission (APC&EC) will hold three public hearings January 12, 2015, to receive public comments on proposed changes to three APC&EC air pollution control regulations. The hearings will begin at 2:00 p.m. in the Commission Room at the Arkansas Department of Environmental Quality (ADEQ) headquarters building, 5301 Northshore Drive, North Little Rock, AR 72118.

The deadline for submitting written comments on the proposed changes is 4:30 p.m. (Central Time), January 27, 2015. In the event of inclement weather or other unforeseen circumstances, a decision may be made to postpone the hearings. If the hearings are postponed and rescheduled, a new legal notice will be published to announce the details of the new hearing date and comment period.

Separate hearings will be held for proposed changes to APC&EC Regulations 18 (Air Pollution Control Code), 19 (State Implementation Plan [SIP] for Air Pollution Control), and 26 (Arkansas Operating Air permit program). The Regulation 18 hearing will begin at 2:00 p.m., and will be followed, in order, by the hearings on Regulations 19 and 26.

APC&EC authority to revise Regulations 18, 19, and 26 is found in Arkansas Code Annotated, Section 8-4-301, *et seq.*

The substantive proposed changes to the Regulations 18, 19, and 26 are necessary in order to adopt the Environmental Protection Agency's (EPA) 2012 National Ambient Air Quality Standards (NAAQS) for particulate matter up to 2.5 micrograms in size (PM_{2.5}), 2006 NAAQS for particulate matter up to 10 micrograms in size (PM₁₀), 2008 NAAQS for ozone, 2008 NAAQS for lead, 2010 NAAQS for nitrogen dioxide, and 2010 NAAQS for sulfur dioxide.

During the public comment period, ADEQ will take comments on when an analysis would be required to evaluate impacts on the NAAQS during the permitting process. Additionally, ADEQ will take comment on requirements for such an analysis, when required.

In general, the proposed changes will help ensure Arkansas has the authority to implement air pollution control programs and to issue permits. Amendments to Regulation 19 will be submitted to the EPA for inclusion into Arkansas's SIP and amendments to Regulation 26 will be submitted to the EPA for inclusion into Arkansas's Title V and Part 70 State Program.

Copies of the three proposed regulation changes are available for public inspection during normal business hours at the Public Outreach and Assistance (POA) Division in the ADEQ's headquarters building in North Little Rock, and in ADEQ information depositories located in public libraries at Arkadelphia, Batesville, Blytheville, Camden, Clinton, Crosssett, El Dorado, Fayetteville, Forrest City, Fort Smith, Harrison, Helena, Hope, Hot Springs, Jonesboro, Little Rock (main branch), Magnolia, Mena, Monticello, Mountain Home, Pocahontas, Russellville, Searcy, Stuttgart, Texarkana, and West Memphis; in campus libraries at the University of Arkansas at Pine Bluff and the University of Central Arkansas at Conway; and in the Arkansas State Library, 900 W. Capitol, Suite 100, Little Rock. In addition, copies of the draft regulations showing the proposed changes, along with related support documents, are available for viewing or downloading on the draft regulations page of the ADEQ's website at www.adeq.state.ar.us.

Oral and written statements will be accepted at the hearings, but written comments are preferred in the interest of accuracy. In addition, written and electronic mail comments will be accepted if received no later than 4:30 p.m. (Central Time) January 27, 2015. Written comments should be mailed to Doug

Szenher, POA Division, Arkansas Department of Environmental Quality, 5301 Northshore Drive, North Little Rock, AR 72118. Electronic mail comments should be sent to: reg-comment@adeq.state.ar.us.

Published December 10 and 11, 2014,
Ryan Benefield, P.E., Interim Director,
Arkansas Department of Environmental Quality

Arkansas Democrat-Gazette

STATEMENT OF LEGAL ADVERTISING

REMIT TO:
 ARKANSAS DEMOCRAT-GAZETTE, INC.
 P.O. BOX 2221
 LITTLE ROCK, AR 72203

ADEQ
 5301 NORTHSHORE DR
 NORTH LITTLE ROCK AR 72118

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ATTN: Fiscal Office
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AD COPY

STATE OF ARKANSAS, }
 COUNTY OF PULASKI, } ss.

I, Annette Holcombe do solemnly swear that I am the Legal Billing Clerk of the Arkansas Democrat - Gazette, a daily newspaper printed and published in said County, State of Arkansas; that I was so related to this publication at and during the publication of the annexed legal advertisement in the matter of:

ADEQ NOTICE

pending in the Court, in said County, and at the dates of the several publications of said advertisement stated below, and that during said periods and at said dates, said newspaper was printed and had a bona fide circulation in said County; that said newspaper had been regularly printed and published in said County, and had a bona fide circulation therein for the period of one month before the date of the first publication of said advertisement; and that said advertisement was published in the regular daily issues of said newspaper as stated below.

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BENNIE J. FULLER
 NOTARY PUBLIC - ARKANSAS
 PULASKI COUNTY
 MY COMMISSION EXPIRES: 3-21-2021

Annette M Holcombe
 Subscribed and sworn to me this 11th
 day of December 2014
Bennie J Fuller
 Notary Public

STATEMENT OF LEGAL ADVERTISING

PAGE USED FOR ADDITIONAL AD COPY SPACE AS NEEDED.

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NOTICE OF PROPOSED CHANGES TO THREE AIR QUALITY REGULATIONS AND NOTICE OF PUBLIC HEARINGS AND COMMENT PERIOD

The Arkansas Pollution Control and Ecology Commission (APC&EC) will hold three public hearings January 12, 2015, to receive public comments on proposed changes to three APC&EC air pollution control regulations. The hearings will begin at 2:00 p.m. in the Commission Room at the Arkansas Department of Environmental Quality (ADEQ) headquarters building, 5301 Northshore Drive, North Little Rock, AR 72118.

The deadline for submitting written comments on the proposed changes is 4:30 p.m. (Central Time), January 27, 2015. In the event of inclement weather or other unforeseen circumstances, a decision may be made to postpone the hearings. If the hearings are postponed and rescheduled, a new legal notice will be published to announce the details of the new hearing date and comment period.

Separate hearings will be held for proposed changes to APC&EC Regulations 18 (Air Pollution Control

Code), 19 (State Implementation Plan [SIP] for Air Pollution Control), and 26 (Arkansas Operating Air

permit program). The Regulation 18 hearing will begin at 2:00 p.m., and will be followed, in order, by the hearings on Regulations 19 and 26.

APC&EC authority to revise Regulations 18, 19, and 26 is found in Arkansas Code Annotated, Section 8-4-301, et seq.

The substantive proposed changes to the Regulations 18, 19, and 26 are necessary in order to adopt the

Environmental Protection Agency's (EPA) 2012 National Ambient Air Quality Standards (NAAQS) for

particulate matter up to 2.5 micrograms in size (PM2.5), 2006 NAAQS for particulate matter up to 10 micrograms in size (PM10), 2008 NAAQS for ozone, 2008 NAAQS for lead, 2010 NAAQS for nitrogen dioxide, and 2010 NAAQS for sulfur dioxide.

During the public comment period, ADEQ will take comments on when an analysis would be required to evaluate impacts on the NAAQS during the permitting process. Additionally, ADEQ will take comment on requirements for such an analysis, when required.

In general, the proposed changes will help ensure Arkansas has the authority to implement air pollution control programs and to issue permits. Amendments to Regulation 19 will be submitted to the EPA for inclusion into Arkansas's SIP and amendments to Regulation 26 will be submitted to the EPA for inclusion into Arkansas's Title V and Part 70 State Program.

Copies of the three proposed regulation changes are available for public inspection during normal business hours at the Public Outreach and Assistance (POA) Division in the ADEQ's headquarters building in North Little Rock, and in ADEQ information depositories located in public libraries at Arkadelphia, Batesville, Blytheville, Camden, Clinton, Crossett, El Dorado, Fayetteville, Forrest City, Fort Smith, Harrison, Helena, Hope, Hot Springs, Jonesboro, Little Rock (main branch), Magnolia, Mena, Monticello, Mountain Home, Pocahontas, Russellville, Searcy, Stuttgart, Texarkana, and West Memphis; in campus libraries at the University of Arkansas at Pine Bluff and the University of Central Arkansas at Conway; and in the Arkansas State Library, 900 W. Capitol, Suite 100, Little Rock. In addition, copies of the draft regulations showing the proposed changes, along with related support documents, are available for viewing or downloading on the draft regulations page of the ADEQ's website at www.adeg.state.ar.us.

Oral and written statements will be accepted at the hearings, but written comments are preferred in the interest of accuracy. In addition, written and electronic mail comments will be accepted if received no later than 4:30 p.m. (Central Time) January 27, 2015. Written comments should be mailed to Doug Szenher, POA Division, Arkansas Department of Environmental Quality, 5301 Northshore Drive, North Little Rock, AR 72118. Electronic mail comments should be sent to: reg-comment@adeq.state.ar.us.

Published December 10 and 11, 2014,
Ryan Benefield, P.E., Interim Director,
Arkansas Department of Environmental Quality
72933211f

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

HEARING/MEETING REGISTRATION



Name	Address				Organization Represented
<i>Please Print Legibly</i>	Street	City	State	Zip	
STEPHEN CAIN	COOPERATIVE WAY	LITTLE ROCK	AR	72209	AECC
COURTNEY GALLAND	TRINITY CONSULTANTS	LITTLE ROCK			TRINITY CONS.
J S THOSRAY	WEST A	NLR	AK	72116	N/A
Mary Cameron		LR			BLR
David Triplett	425 W. Capitol Ave.	Little Rock	AR	72206	Entergy
MAX BRASWELL	1213 W. 4th	L.R.	AR	72201	Ark Forestry Assn.
Chad Wood	425 W. Capitol Ave.	LR	AR	72204	
MARK RUPPEL	30 Ferncrest	LR		72223	GP
Alan Thomas	501 East 1st Ave.	Crossett	AR	71635	Georgia Pacific
Sydney Park	201 Riverfront Dr.	Little Rock	AR	72202	Winrock
JORDAN TINSLEY	300 SOUTH SPRING	SUITE 614	LR, AR	72201	AECC/AGC
MARIE ALLISON	Doves Dove Home				
Charles Miller	Ark. Env. Fed.				
Anne Faiz					
Ryan Benefield	ADEQ				
Tammera Harrelson	"				
MIKE BATES	"				
Lester Morgan	"				
Stuart Spencer	"				
Flavia Jacobs	"				
Tommi West	"				
Katherine Benford	"				
Doug Stanbor	"				
Charles Moulton	APQEC Hearing officer				

Public Comment Registration Card

PLEASE PRINT LEGIBLY

Date 1-12-2015

Verbal Comment Written Comment
Speaker # (Attached or back of card)

Hearing Location APC & EC

Name Chad Wood

Address 425 West Capitol Ave, Suite 3800

City Little Rock State AR Zip Code 72201

E-mail Address wood@gill-law.com



Public Comment Registration Card

PLEASE PRINT LEGIBLY

Date 1/12/15

Verbal Comment Written Comment
Speaker # (Attached or back of card)

Hearing Location ADEQ Commission Room

Name JORDAN TIRSTEY

Address 300 SOUTH SPRING ST., SUITE 614

City LITTLE ROCK State AR Zip Code 72201

E-mail Address JORDAN@CATTORNEY.COM



BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

**IN THE MATTER OF AMENDMENTS TO)
REGULATION NO. 19, REGULATIONS OF THE) DOCKET NO. 14-010 R
ARKANSAS PLAN OF IMPLEMENTATION FOR)
AIR POLLUTION CONTROL)**

**RESPONSIVE SUMMARY FOR
REGULATION NO. 19, REGULATIONS OF THE ARKANSAS PLAN OF
IMPLEMENTATION FOR AIR POLLUTION CONTROL**

Pursuant to Arkansas Code Annotated (Ark. Code Ann.) § 8-4-202(d)(4)(C) and Regulation¹ No. 8.815, the Arkansas Pollution Control and Ecology Commission (Commission, APC&EC) shall cause to be prepared a responsive summary, which groups public comments into similar categories and explains why the Commenters’ rationale for each category is accepted or rejected.

On November 21, 2014, the Arkansas Department of Environmental Quality (Department, ADEQ) filed a Petition to Initiate Rulemaking to Amend Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control. Administrative Law Judge Charles Moulton conducted a public hearing on January 12, 2015. The following is a summary of the comments regarding the proposed amendments to Regulation No. 19 along with the Commission’s response.

Comment 1: The U.S. Environmental Protection Agency (EPA) understands that the proposed addition of Reg. 19.305 establishes tiered air quality analysis requirements based on the type of permit action being taken and is intended to meet the State Implementation Plan (SIP)-approved Reg. 19.405 requirement that the Arkansas Department of Environmental Quality (ADEQ or Department) technical review should ensure that “the stationary source will be constructed or modified to operate without interfering with attainment or maintenance of a national ambient air quality standard (NAAQS).”

¹ All citations of and references to state environmental regulations contained in this document signify those regulations promulgated by the Arkansas Pollution Control and Ecology Commission.

While EPA agrees with the basic elements of the proposed approach that allows for both qualitative or quantitative analyses, depending on the project-specific conditions, EPA has determined that the proposed addition of Reg. 19.305 is potentially not approvable into the Arkansas SIP because it does not ensure that all sources permitted under the Minor New Source Review (NSR) Program will not cause or contribute to a NAAQS violation or interfere with the maintenance of the NAAQS. EPA states that most Minor NSR programs rely on the permitting authority's ability to utilize both qualitative and quantitative air quality analyses, including air dispersion modeling, on a case-by-case basis to demonstrate NAAQS compliance. EPA explains that these analyses may be conducted by the permit applicant or the permitting authority as needed.

EPA states that Reg. 19.305, as proposed by ADEQ, includes a tiered approach that restricts qualitative and quantitative analyses to specific cases and does not allow the Department to require or rely upon these analyses for all Minor NSR permitting actions. EPA explains that because the tiered approach does not allow for case-by-case NAAQS demonstrations, ADEQ needs to demonstrate how all sources permitted under the Minor NSR Program will not cause or contribute to a NAAQS violation or interfere with the maintenance of the NAAQS. EPA states that ADEQ may achieve this by providing a detailed analysis and supporting documentation, such as generic air quality modeling, to demonstrate that all sources permitted under the Minor NSR program will not interfere with NAAQS attainment or maintenance for all NAAQS.

In addition, EPA states that the proposed tiered air quality analysis approach must address the intervals upon which ADEQ will review and update the information relied upon to develop the proposed regulations. The frequency of ADEQ review and resulting updates made to the information relied upon to develop the proposed regulations are necessary to ensure that the supporting information does not become outdated, and therefore not representative of current air quality conditions. EPA asks if ADEQ will update the rules or modeling and technical analyses that the rules rely upon if the EPA releases new NAAQS standards or does ADEQ anticipate regular or periodic updates? Without this supporting information, the proposed provisions found in Reg. 19.305 are potentially not approvable as revisions to the Arkansas SIP.

Response 1: Due to this and other Comments, ADEQ will withdraw the proposed language in Reg. 19.305.

Under EPA SIP-approved Reg. 19.405, the Department reviews Minor NSR permit applications to ensure, to the reasonable satisfaction of the Department, that any proposed stationary source that will be constructed or modified will operate without interfering with attainment of the NAAQS. Pursuant to Reg. 19.402, the Department will not grant a permit unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without interfering with the attainment or

maintenance of the NAAQS. The Department is in the process of determining what pollutant-specific or facility-specific NAAQS evaluation requirements will be required for non-PSD permitting actions pursuant to Reg. 19.402 and Reg. 19.405. The Department anticipates that these NAAQS evaluation requirements will be included in the subsequent NAAQS SIP that the State will submit to EPA. ADEQ is also developing a technical analysis to support its NAAQS evaluation requirements for non-PSD permitting and anticipates submitting the results of this analysis with the SIP submission.

Structuring the minor NSR NAAQS review process based on the Department's determination as to what evaluation requirements are necessary to ensure that stationary source construction and modification activities do not interfere with attainment of the NAAQS is consistent with 74 FR 51422 (October 6, 2009) which states: "The minor NSR program is part of each State's 'State Implementation Plan' (SIP) and is designated to ensure that the construction or modification of any stationary source does not interfere with the attainment of the NAAQS. Aside from this requirement, which is stated in broad terms, the Act includes no specifics regarding the structure or functioning of minor NSR programs." Furthermore, the Department has the authority under Reg. 19.402 and under Arkansas Code Annotated (Ark. Code Ann.) § 8-4-318 (b)(3) to establish provisions in the NAAQS SIP regarding types of evaluations required for non-PSD permitting actions.

See Responses 2(b)(iv) and 2(b)(v).

Comment 2: EPA has several specific questions regarding the implementation of the proposed tiered air quality analysis approach and how it will ensure protection of the NAAQS consistent with federal requirements and requirements of the current Arkansas SIP. EPA requests that ADEQ provide answers to these questions and any referenced supporting information, since it will be necessary for EPA to determine if the proposed tiered air quality analysis requirements are consistent with applicable requirements. Based on EPA's review of the proposed revisions at this time, the tiered air quality analysis requirements are potentially not approvable into the SIP without additional analysis and supporting information to show that the proposed approach ensures that all sources permitted under Regulation No. 19 do not interfere with NAAQS attainment or maintenance.

2(a): Reg. 19.305(A) states that new constructions or modifications with proposed emission increases less than the De Minimis thresholds contained in Reg. 19.407(C) are not required to include an air quality analysis because the resulting environmental impact is "trivial." While EPA agrees that certain permit actions could be exempt from including a case-specific air quality analysis on the basis that the impacts are expected to be small and will not adversely impact ambient air, this type of exclusion must be evaluated and technically supported by a quantitative analysis, such as generic air quality modeling, clearly demonstrating the negligible impacts from

emissions below the proposed thresholds. De Minimis levels established to protect current NAAQS may not be protective for future NAAQS. EPA points out that, ordinarily, a state's ability to require case-by-case air quality analyses could address this concern. Given the restriction imposed on the state to require or conduct such analyses, EPA states that ADEQ needs to address how this concern will be resolved over time (i.e. would the De Minimis thresholds become null and void by operation of state law in the event of a change to the NAAQS?). This information should be included as part of the state's rulemaking and subsequent SIP revision development.

Furthermore, EPA states that the De Minimis thresholds contained in the state's current version of Reg. 19.407(C) are not approved as part of the current Arkansas SIP. The ADEQ needs to provide additional technical information, including the described quantitative analysis, to demonstrate that proposed changes with emissions increases less than the referenced thresholds will not cause or contribute to a violation of the NAAQS or interfere with the maintenance of the NAAQS.

Response 2(a): Due to this and other Comments, ADEQ will withdraw the proposed language in Reg. 19.305.

The Department anticipates submitting additional technical information, including the described quantitative analysis, to support the De Minimis level thresholds contained in Reg. 19.407(C). On July 10, 2015, ADEQ submitted a draft monitoring based demonstration which discussed an analysis of trends in ambient air concentrations for those pollutants for which the permit thresholds and De Minimis levels were revised in a 2010 Permit Threshold SIP revision. According to the monitoring data, air quality with respect to those pollutants has improved in the years following the permit threshold and De Minimis level revisions. Based on this analysis, the Department has determined that the De Minimis levels in 19.407(C) are sufficiently protective of the NAAQS. The Department has also engaged with stakeholders and its modeling contractor, ICF, to perform a modeling exercise, which demonstrates that the worst case scenario of adding a source with realistic, median stack parameters and emissions equal to the De Minimis levels will not interfere with the attainment of the NAAQS anywhere in the State. The Department anticipates submitting a final technical support document containing the monitoring based and modeling based demonstrations to EPA.

It is the practice of the Department to revise its regulations and SIPs when EPA finalizes new standards. Under CAA 110(a)(1), each state has three years after the promulgation of a new or revised NAAQS to submit a plan for implementation, maintenance, and enforcement of the standard. If it becomes necessary to revise the De Minimis thresholds because of a change to the NAAQS, the current De Minimis thresholds will remain in effect until a new revised rulemaking, in which changes to the thresholds are proposed, becomes effective. If revisions to the De

Minimal thresholds are determined necessary to implement a revised NAAQS and are adopted by the Arkansas Pollution Control & Ecology Commission (APC&EC), the Department will submit these revisions to EPA as part of a SIP revision.

2(b): EPA points out that Reg. 19.305(D) states that for permit actions requiring an air quality analysis under Section 305, the analysis may be qualitative in nature unless “the need has been demonstrated and specific criteria adopted... in the applicable NAAQS SIP” to require air dispersion modeling. In those cases where a need has been demonstrated, the Director may conduct modeling instead of a qualitative air quality analysis to ensure that the proposed permit action does not interfere with NAAQS attainment or maintenance. EPA agrees that an air quality analysis in support of a Minor NSR permit action may be qualitative or quantitative in nature depending on the project, and location-specific details. However, EPA states that, as proposed, Reg. 19.305(D) appears to be very restrictive regarding when quantitative air dispersion modeling may be required or conducted by the Director. EPA has several questions regarding the implementation of this proposed approach and how the ADEQ will ensure that the permitting process is protective of the NAAQS given the proposed restrictions. EPA requests that ADEQ provide answers to the following questions and any supporting information that the responses rely upon.

Based on our current review of the proposed revisions, the tiered air quality analysis approach that relies on future NAAQS SIP development is potentially not approvable for several reasons. It restricts the ADEQ’s ability to require or conduct quantitative analyses to certain prescribed hypothetical situations that are not yet known or clearly defined. This results in the inability to determine NAAQS compliance on a case-by-case basis and is not consistent with current SIP-approved and federal requirements that require the ADEQ’s determination that each permit action not interfere with the attainment or maintenance of the NAAQS.

2(b)(i): What is the bar to establish that a “need has been demonstrated?” Provide additional information regarding what is considered to be a “need” and how that need is determined based on NAAQS SIP development.

Response 2(b)(i): See Response 1.

2(b)(ii): Will the NAAQS SIP development rely on state-wide modeling currently under development by the ADEQ? If so, how and with what frequency will the regional scale state-wide modeling be applied and updated to account for local-scale facility-specific impacts and new sources?

Response 2(b)(ii): ADEQ is still investigating the possibility of using state-wide modeling to determine NAAQS evaluation requirements for new and modified sources and is in the process

of developing a credible approach. Once such an approach is implemented, ADEQ would likely update the regional scale statewide modeling every three years.

No revisions to the final rule are necessary due to this Comment.

2(b)(iii): How frequently will the NAAQS SIP, including any associated air quality modeling, be evaluated and updated to confirm that it is representative of current air quality conditions?

Response 2(b)(iii): ADEQ envisions that it will periodically evaluate modeling and annual monitoring data to determine whether a revision to the SIP is necessary based on changes to the stringency of the NAAQS or when data analysis indicates potential for non-compliance with the NAAQS.

No revisions to the final rule are necessary due to this Comment.

2(b)(iv): In situations where the NAAQS SIP has not been updated to address revised or new NAAQS or is determined to be out-of-date, how will permitting actions be processed? Will delays in NAAQS SIP development result in permit reviews and issuances being held up or not processed? More explicitly, if the EPA revises a NAAQS and the standard is in effect, how will the ADEQ demonstrate that a permitting action will not interfere with attainment or maintenance of all current NAAQS if quantitative analyses, such as air dispersion modeling, are not allowed?

Response 2(b)(iv): Permits will be processed according to the current adopted Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation No. 19, as is the current accepted practice. When EPA revises a NAAQS, ADEQ initiates rulemaking to incorporate the revisions to the SIP portions of the regulations. Once approved by the APC&EC, ADEQ will develop a SIP based on those revisions and submit the SIP for EPA's approval. ADEQ will not delay permit reviews while SIP revisions are under development as the CAA gives states up to three years for implementation of revisions.

Under EPA SIP-approved Reg. 19.302, the Department takes precautions to prevent the NAAQS from being exceeded. The Department has an EPA-approved air monitoring network which quantifies concentrations of criteria pollutants in any areas that can be expected to be in excess of the NAAQS. The Department also periodically conducts computer modeling of criteria pollutants to evaluate the areas at risk of exceeding the NAAQS.

Also under EPA SIP-approved Reg. 19.405, the Department reviews Minor NSR permit applications to ensure, to the reasonable satisfaction of the Department, that any proposed stationary source that will be constructed or modified will operate without interfering with attainment of the NAAQS. Pursuant to Reg. 19.402, the Department will not grant a permit

unless the owner/operator demonstrates to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without interfering with the attainment or maintenance of the NAAQS.

No revisions to the final rule are necessary due to this Comment.

2(b)(v): How would the current restrictions regarding air dispersion modeling under Act 1302 interact with the proposed provisions that call for the Director to conduct air modeling? Is such a regulation even allowed pursuant to the restrictions imposed by Act 1302?

Response 2(b)(v): Act 1302 allows the Department to require pollutant-specific or facility-specific air dispersion modeling if such a requirement is included in a NAAQS SIP submitted to EPA (Ark. Code Ann. § 8-4-318(b)(3)(C)). The Department anticipates including when pollutant-specific or facility-specific air dispersion modeling will be required in a revised SIP submitted to EPA. The revised SIP will be made available for public comment prior to SIP submission.

See Response 1.

2(b)(vi): What approach would be used when a proposed permit action does not meet the requirement under Reg. 19.305(D)(1), but a qualitative analysis is not sufficient to ensure NAAQS compliance or protection? Would the Director be able to require and/or conduct air dispersion modeling to determine NAAQS compliance?

Response 2(b)(vi): See Response 1.

2(c): EPA states that Reg. 19.305(E) exempts De Minimis changes and changes to insignificant activities from the air quality analysis requirements. As discussed in the previous Comment 1, EPA requires ADEQ to provide additional information to demonstrate that these exempted permit actions with emission increases below the referenced thresholds will not cause or contribute to a violation of the NAAQS.

Response 2(c): See Response 2(a).

Comment 3: EPA states that ADEQ has proposed the addition of Minor NSR permitting thresholds and De Minimis thresholds for PM_{2.5} at Reg. 19.401 and 19.407(C)(2)(iv), respectively. ADEQ needs to provide additional information regarding how these threshold values for PM_{2.5} were determined. EPA states that 40 C.F.R. § 51.160(e) allows states to have discretion regarding the types and sizes of facilities subject to review, including obtaining a permit. However, EPA points out that the state must provide information supported by a

technical analysis or demonstration, which may include generic air quality modeling, ambient air data, and/or emissions inventory information to detail why specific sources are exempt from review. EPA requests that the additional information should outline how the ADEQ arrived at the threshold values and demonstrate that the exemption of proposed changes with emission increases less than the proposed thresholds will not interfere with attainment or maintenance of the PM_{2.5} NAAQS. This demonstration should take into consideration a source-by-source evaluation, as well as, provide that the cumulative impacts from all anticipated exempted sources will not cause or contribute to a violation of the NAAQS or interfere with NAAQS attainment or maintenance.

Response 3: The Department determined the PM_{2.5} thresholds based on the Significant Emission Rate (SER) for PM_{2.5} promulgated by EPA under 40 C.F.R. § 51.166(b)(23)(i). In EPA’s “Implementation of the New Source Review (NSR) Program for Particulate Matter Less than 2.5 Micrometers (PM_{2.5})” rule finalized on May 16, 2008, EPA states that the agency considers “emissions increases [lower than the SERs] to be De Minimis. According to EPA’s analysis of modeling using the ISC3 model described in 70 FR 66038, increases in direct PM_{2.5} emissions less than 10 tons per year would be unlikely to increase annual average ambient PM_{2.5} concentrations by more than four percent of the annual PM_{2.5} standard. Based on EPA’s assertion that increases in PM_{2.5} below the SER promulgated under 40 C.F.R. § 51.166(b)(23)(i) can be considered De Minimis, the Department set the permitting thresholds at 10 tons per year.

The Department has contracted with ICF to produce a modeling-based analysis which will demonstrate that emission increases less than the proposed thresholds will not cause or contribute to a violation of the NAAQS or interfere with NAAQS attainment or maintenance. The Department anticipates submitting this analysis to EPA as part of a SIP revision to demonstrate that Arkansas Minor NSR program ensures that the construction or modification of any non-PSD stationary source does not interfere with the attainment of the NAAQS.

No revisions to the final rule are necessary due to this Comment.

Comment 4: EPA states that while the ADEQ is proposing only formatting changes to the Minor NSR permitting thresholds and De Minimis thresholds for all other pollutants at Reg. 19.401 and 19.407(C)(2) and is not revising the actual values, EPA would like to use this opportunity to point out that these thresholds are not currently SIP-approved. Arkansas previously submitted the current state-effective thresholds to the EPA for review and approval into the SIP on July 26, 2010. However, as outlined in EPA’s letter to ADEQ, dated July 3, 2014, EPA needs additional information to aid in evaluation of those revised thresholds. To date, ADEQ has not provided additional information or a technical analysis or demonstration, such as an air quality modeling analysis or an evaluation of ambient air data and/or emissions inventory information to support the thresholds contained in the July 26, 2010 SIP revision. EPA

asks ADEQ to refer to their July 3, 2014 letter and the above comment regarding the type of additional information needed. EPA states that without the required additional information, the previously submitted Minor NSR permitting thresholds and De Minimis thresholds will not be approvable. If EPA is not able to approve the SIP submittal, any permits issued or exemptions from permitting claimed in accordance with these thresholds are not consistent with the current SIP-approved Minor NSR program and may require additional action for sources to be in compliance with the Arkansas SIP and to obtain federal authorization, including the amendments to existing permits or the issuance of permits to those sources claiming exemption under the state effective permitting thresholds.

Response 4: The Department acknowledges EPA's assertion that the current Minor NSR permitting thresholds and De Minimis thresholds have not yet been SIP-approved. On July 26, 2010, the Department submitted a SIP revision, including the current State-effective permitting thresholds, for review and approval by EPA. The values of the current permitting and De Minimis thresholds, with the exception of carbon monoxide, were set at the SERs promulgated under 40 C.F.R. § 51.166(b)(23)(i); therefore, ADEQ set the thresholds based on the SERs because EPA analysis has demonstrated that emission increases lower than these rates can be considered De Minimis. The permitting thresholds for carbon monoxide were set below the SER. Although sources that emit less than the current permitting thresholds are not required to obtain a permit, the Department still requires sources that emit greater than the previous permitting thresholds to register with the Department.

As part of the 2010 Threshold SIP revision submittal, the Department submitted emissions data for sources no longer required to obtain permits based on the threshold revisions which indicated that these sources made up 0.125 % or less of total permitted emissions for each criteria pollutant. The percentages of emissions from unregulated minor sources for each criteria pollutant in Arkansas were compared to those percentages included in the EPA's "Review of New Sources and Modifications in Indian Country" proposed rule (71 FR 48696). In the "Review of New Sources and Modifications in Indian Country," EPA included a table, which contained the percentage of total emissions from unregulated sources, and stated that the EPA "believes that [the table] provides excellent evidence that sources below the proposed Minor NSR thresholds will be inconsequential to attainment and maintenance of the NAAQS". The EPA did not include modeling to demonstrate that unregulated sources below EPA's minor NSR permitting thresholds in Indian Country would not cause a violation or interfere with the maintenance of the NAAQS. In Arkansas's 2010 Threshold SIP Revision submittal, the Department submitted data mirroring the table which EPA stated provided "excellent evidence" that proposed Minor NSR thresholds would be inconsequential to attainment and maintenance of the NAAQS and the data provided by Arkansas showed that the percent of total emissions from sources no longer required to obtain permits would be lower than what EPA found to be negligible for tribal minor NSR.

Although, the Department modeled its analysis of the change in Minor NSR permitting thresholds after the methodology that EPA considered reasonable in its “Review of New Sources and Modifications in Indian Country” rule, the EPA has requested additional documentation to support the revised Minor NSR permitting thresholds. Per EPA’s request, the Department is working on additional technical analyses to demonstrate that the revision of previously submitted Minor NSR permitting and De Minimis thresholds have not caused a violation or interfered with the maintenance of the NAAQS.

No revisions to the final rule are necessary due to this Comment.

Comment 5: The Commenters state that ADEQ proposes to add a provision at Reg. 19.305(A) stating that, for modifications to existing sources which involve emissions increases of less than the pollutant-specific amounts established in Reg. 19.407(C), the resulting environmental impact is trivial and no further air quality analysis is required for each such pollutant. However, the Commenters point out that many of the provisions of Reg.19.407(C) do not reference emissions increases of pollutant-specific amounts. Thus, the Commenters suggest revisions to eliminate potential confusion and provide further consistency between the regulations and the proposed language for Reg. 19.305(A):

For construction of a new stationary source or modification ~~[to]~~ of an existing stationary source involving emissions increases, over permitted rates, of less than the pollutant-specific amounts established in [Reg.] 19.407(C)(2), the resulting environmental impact is trivial and no further air quality analysis is required for each such pollutant for the modification.

Response 5: See Response 1.

Comment 6: The Commenters state that ADEQ proposes to add a definition for “Emission increase” to Regulation No. 19, Chapter 2. However, the Commenters believe that the proposed definition for “Emission increase” should clarify that the definition in no way supersedes the Prevention of Significant Deterioration applicability determination calculation requirements found in Regulation No. 19, Chapter 9. The Commenters suggest that the proposed definition of "Emission increase" should be revised to state that emissions increases are calculated as described for those emission changes not subject to Chapter 9 of Regulation No. 19, consistent with the corresponding definition proposed in Regulation No. 26, Chapter 2.

The Commenters suggest the following revision to eliminate potential confusion among the regulated community and provide clarity to regulators and third parties, of the proposed definition of “Emission increase.”

“Emissions increase” means, ~~the calculated sum for each federally regulated air pollutant, for emission changes not subject to Prevention of Significant Deterioration applicability under Chapter 9 of Regulation No. 19, the calculated sum for each air pollutant, based on the difference between the sum of the proposed permitted rates for all emissions units and the sum of the previously permitted emission rates for all emissions units.~~

Response 6: The Department agrees with the Commenter that the addition of the definition of “emission increase” to Chapter 2 could cause potential confusion among the regulated community. The proposed definition for “emission increase” was intended to address the use of “emission increase” in relation to De Minimis changes; however, the definition does not necessarily apply to other uses of the phrase “emission increase” elsewhere in the regulation. Therefore, the Department will remove the proposed definition from Chapter 2 and clarify in Reg 19.407(C)(2) that emission increases for each pollutant, for the purposes of determining whether a change will be considered De Minimis, are based on the differences between the sum of the proposed permitted rates for all emission units and the sum of the previously permitted emission rates for all units. No credit is allowed for emission units that have not actually operated or operated as permitted, emission reductions required by other rules or under an enforcement order, or old emission sources removed from service prior to initiation of this rulemaking on December 5, 2014.

Comment 7: The Commenters state that the proposed revisions to Reg. 19.305(D) provide that, for the construction of a new stationary source or the modification of an existing stationary source, the air quality analysis may be qualitative in nature where the need and specific criteria for air dispersion modeling has not been adopted on a pollutant-specific or facility-specific basis in the applicable NAAQS SIP. The Commenters suggest the following revisions to the proposed language of Reg. 19.305(D) to ensure the most comprehensive consideration of ambient air impacts when air dispersion modeling is not mandated by an applicable NAAQS SIP:

“For all other permits not described in 19.305(A) through 19.305(C) for the construction of a new stationary source or the modification of an existing stationary source, the air quality analysis ~~may be qualitative in nature and may, except as set forth in (D)(1) and (D)(2) below, shall~~ consider such factors as the nature, type, location, and emission parameters of the source, the existing attainment status of the area, the level of the proposed emissions increase relative to the area’s permitted emission rates, the existing ambient air levels of the pollutant based on the state monitoring network, and historical monitored trends in ambient air levels of the federally regulated air pollutant.”

Response 7: See Response 1.

Comment 8: The Commenters state that the approval criteria for minor new source air permits under Reg. 19.402 currently directs review of the application to the demonstration by the owner/operator that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of Reg. 19 or without interfering with the attainment or maintenance of a NAAQS. The Commenters suggest aligning the minor new source approval criteria with the proposed provisions of Reg. 19.305, which requires the Department to consider potential ambient air quality impacts from a proposed increase in emissions for any pollutant for which a NAAQS is in effect, by revising Reg. 19.402 as follows:

“No permit shall be granted or modified under this chapter unless the owner/operator ~~demonstrates~~ review of the application to the reasonable satisfaction of the Department that the stationary source will be constructed or modified to operate without resulting in a violation of applicable portions of this regulation or without interfering with the attainment or maintenance of a national ambient air quality standard.”

Response 8: See Response 1.

Comment 9: The Commenters point out that most of the proposed Reg. 19.305 complies with Ark. Code Ann. § 8-4-318. However, the Commenters believe that the proposed language on Reg. 19.305 (D) contains ambiguous language that may exceed the authority granted to ADEQ under § 8-4-318. The Commenters believe that the use of passive voice “[w]here the need has been demonstrated” fails to clarify that ADEQ bears the burden of demonstrating a need for air dispersion modeling in addition to the qualitative air quality analysis permitted by sub-section (D). The Commenters state that in light of the ambiguity in this proposed sub-section of Reg. 19.305, which renders this regulation inconsistent with ADEQ's regulatory authority pursuant to Arkansas law, they suggest revisions (in red) in the end of Reg. 19.305 (D) proposed language:

“For all other permits not described in 19.305(A) through 19.305(C) for the construction of a new stationary source or the modification of an existing stationary source, the air quality analysis may be qualitative in nature and may consider such factors as the nature, type, location, and emission parameters of the source, the existing attainment status of the area, the level of the proposed emissions increase relative to the area's permitted emission rates, the existing ambient air levels of the pollutant based on the state monitoring network, and historical monitored trends in ambient air levels of the federally regulated air pollutant. Said air quality analysis shall not include air dispersion modeling unless the Department has complied with air dispersion modeling based upon those factors listed in 19.305(D) above, together with Ark. Code Ann. § 8-4-318 (b)(3), and the Department demonstrates a need for air dispersion modeling based upon those factors listed in 19.305(D) above, together with other available and pertinent information such as the results of regional airshed modeling performed for NAAQS SIP development”

Response 9: See Response 1.

Comment 10: The Commenters believe that the proposed language in Reg. 19.305(D) fails to adequately account for the industrial and economic development of the State of Arkansas as required by Ark. Code Ann. § 8-4-312. The Commenters state that, if adopted, the proposed language in Reg. 19.305(D) may allow ADEQ to resurrect a "stringent" air dispersion modeling policy, and could have a significant deleterious effect upon the industrial and economic development of the State. The Commenters state that "Arkansas law requires ADEQ and the Commission to account for and consider this factor [industrial and economic development of the State of Arkansas] in the discharge of their respective responsibilities and duties as described at Ark. Code Ann. § 8-4-312(14). Also, the Commenters point to Ark. Code Ann. § 8-4-311(b)(1) which requires the Commission to consider the economic impact and the environmental benefit of the regulation on the people of the State and those entities that will be subject to the regulation. In the Commenter's opinion, neither the Commission nor ADEQ have given adequate consideration to the economic impact of this proposed regulation, insofar as the economic analysis conducted by ADEQ and the Commission has failed to consider the economic impact that the resurrection of an overly stringent air dispersion modeling requirement will have on the economic and industrial development of the State. The Commenters state that the Economic Impact/Environmental Benefit Analysis questionnaire prepared by ADEQ did not support the assertion that the proposed rules will have no economic impact. The Analysis states: "From a facility standpoint, there is no cost above what is required by the federal rule to implement the rule changes for which this statement is being prepared. There is no increase of permitting fees associated with this proposed change." The Commenters state that, although there may be no "increase of permitting fees associated with this proposed change," the requirement to conduct air dispersion modeling could significantly increase the costs that certain facilities must incur to obtain air permits. The Commenters believe that the results of those air dispersion models also may lead to more stringent requirements and control technology than required by federal regulations. The Commenters recommend that both the Commission and ADEQ undertake additional economic analysis and allow stakeholders sufficient time to review and comment on this additional analysis before the Commission adopts the proposed revisions. The Commenters state, "if ADEQ and the Commission fail to conduct more rigorous, supplemental economic analysis that accounts for the economic impact of the vague and ambiguous language contained in Regulation No. 19.305(D), and provide an additional opportunity for engaged stakeholders to review and comment upon the supplemental analysis or make changes to 19.305(D), they will fail to discharge their statutory duties pursuant Ark. Code Ann. §§ 8-4-311 and 8-4-312."

Response 10: ADEQ followed requirements found in Ark. Code Ann. § 8-4-312 during the development of the proposed regulation revisions, and Commission and Legislative approved forms were submitted to outline the economic impacts and environmental benefit analysis of proposed rulemakings. ADEQ asserts that the protocol, as found in the Arkansas Pollution

Control & Ecology Commission's ("APC&EC") *Guidelines*, was followed for the proposed NAAQS rulemaking and the EIS, FIS, and EI/EBA forms which ADEQ submitted were prepared following the examples found in the Appendices of APC&EC's *Guidelines*.

See Response 1.

Comment 11: The Commenters believe that the proposed language in Reg. 19.305 exceeds the authority granted to ADEQ by Ark. Code Ann. § 8-4-318. The Commenters state that collectively, Reg. 19.305 purports to identify the type of air quality analysis ADEQ will conduct as it considers "potential ambient air quality impacts from a proposed increase in emissions for any pollutant for which a NAAQS is in effect prior to issuing a permit for the construction of a new stationary source or the modification of an existing stationary source subject to" Regulation No.19. The Commenters believe that since Reg. 19 purports to define the type of air quality analysis ADEQ may require when making permitting decisions, ADEQ must comply with the requirements established in Ark. Code Ann. § 8-4-318, which state that "Unless otherwise voluntarily proposed and agreed to by the owner or operator of a stationary source, the Department shall not require or consider air dispersion modeling of an air contaminant for which a National Ambient Air Quality Standard has been established in air permitting decisions for stationary sources except:." The exception list includes: major source constructions; the Department's judgment with respect to permitting of a temporary source; and pollutant-specific or facility-specific air dispersion modeling explicitly required by an applicable NAAQS state implementation plan submitted to the EPA.

Response 11: See Response 1.

Comment 12: The Commenters state that ADEQ proposes to add a provision at Reg. 19.305(A) stating that, for modifications to existing sources involving emissions increases of less than the pollutant-specific amounts established in 19.407(C), the resulting environmental impact is trivial and no further air quality analysis is required for each such pollutant. Therefore, the Commenters suggest the Commission should codify the De Minimis permitting thresholds currently found in Reg. 19.407(C)(2) (including the proposed thresholds for PM_{2.5} emissions) directly into the provisions of Reg. 19.305(A). The Commenters believe that this proposed change would eliminate potential confusion and reduce uncertainty among the regulated community in light of the uncertainty on EPA-status approval of Reg. 19.407(C), which is part of the Arkansas State Implementation Plan (SIP). As an alternative, the Commenters suggest, should the Commission codify the De Minimis permitting thresholds directly into the provisions of Reg. 19.305(A), to revise proposed Reg. 19.305(A) to specifically reference the "pollutant specific amounts established in 19.407(C)(2)."

Response 12: See Response 1.

Comment 13: The Commenters request Arkansas to exempt Dimethyl Carbonate and 2-Amino-2-methyl-1-propanol (AMP) as a Volatile Organic Compound (VOC). The Commenters state that “the coatings industry is under constant pressure to reformulate products to lower and lower VOC content. As a result, there is a critical and urgent need for safe, effective and affordable exempt solvents and coating formulators need all available tools to formulate both lower VOC and reactivity coatings. DMC and AMP could prove useful for coatings formulations.” Therefore, the Commenters believe that this exemption “may be an incentive for industry to use these negligibly reactive compounds in place of more highly reactive compounds that are regulated as VOCs.” The Commenters request exempting DMC and AMP as VOC’s. In addition, the Commenters suggest that Arkansas include a direct reference to EPA’s Exempt VOC Compound List at 40 C.F.R. Section 51.100(s)(1) to minimize the need to conduct a formal rulemaking every time EPA exempts a VOC compound.

Response 13: ADEQ has included the exemption of both Dimethyl Carbonate and 2-Amino-2-methyl-1-propanol (AMP) as “Volatile Organic Compounds” (VOC) in Chapter 2 of this proposed rulemaking. ADEQ is not able to include direct reference to EPA’s Exempt VOC Compound List at 40 C.F.R. § 51.100(s)(1). In order to include federal requirements in APC&EC air regulations, the Department must follow protocol and initiate a new rulemaking to incorporate EPA’s final rules.

No revisions to the final rule are necessary due to this Comment.

Comment 14: The Commenters stated that these proposed regulations may create financial burdens on public utilities in the state of Arkansas, consequently affecting Arkansas rate payers. The Commenters noted that the accelerated timeframe under which these regulations are being considered is fairly problematic and affected stakeholders need some time to consider the impacts of these regulations. The Commenters pointed out, particularly on Regulation No. 19, that the potential changes to existing regulations include very complex matters. The Commenters stated, “As you know the Department is required to consider numerous factors before approving these changes to these regulations.” The Commenters also noted that “it is extremely difficult for the stakeholders to generate substantive comments regarding these complex amendments to these regulations in the timeframe that has been allotted by the Department.”

Response 14: ADEQ asserts that this rulemaking process has not been accelerated and has followed state and federal requirements related to public comment period. ADEQ adhered to requirements of Reg. No. 8.812 and protocol, as found in the APC&EC *Regulation Formatting and Drafting Guidelines*, was followed for the proposed NAAQS rulemaking. This included the

preparation and submission of the Economic Impact Statement (EIS), Financial Impact Statement (FIS), and Environmental Impact and Economic Benefit Analysis (EI/EBA) forms.

ADEQ does not agree that this rulemaking contains complex amendments, but rather revised federal requirements. ADEQ also asserts that the allotted time for public comment period was given as prescribed by Reg. No. 8.805 and 8.806, “Administrative Procedures.” APC&EC and ADEQ both acknowledge that the U. S. Congress, EPA, and the state intend (more so, require) that a public comment process, including public hearing and public comment, occurs for all proposed rulemakings, and that public input is encouraged. As such, APC&EC extended the public comment period for this proposed rulemaking as requested by the public. Under the CAA guidelines, once the SIP is prepared, ADEQ will schedule another public notice and comment period, and revisions will be considered based on public input prior to submitting a complete SIP package to EPA for review. All comments received through public hearings and comment periods (and the resulting responses from ADEQ) are included as part of the SIP package that is reviewed by EPA. Therefore, this rulemaking and the SIP process will provide stakeholders with extensive opportunity to provide their comments.

No revisions to the final rule are necessary due to this Comment.

Comment 15: The Commenters express concern regarding ambiguity between Regs. No. 19 and 26, with regard to the extent to which they would authorize the Department to require permittees, including coal-fired power plants and facilities in the State, to undertake air modeling on their own. According to the Commenters, language in Regulation No. 19 is ambiguous with regard to the ability of the Department and its Director to require modeling under certain circumstances. Therefore, the Commenters suggest changes to the amended regulation.

Response 15: ADEQ has the authority to require air dispersion modelling for PSD, temporary sources, or those sources or pollutants specifically addressed in a NAAQS SIP submitted to EPA (Ark. Code Ann. 8-4-318). The Department may also conduct and consider air dispersion modeling for those non-PSD stationary sources that voluntarily propose and agree to modeling. ADEQ can also use dispersion modeling as a tool for the development of state implementation plans and general permits.

The Department is in the process of determining what pollutant-specific or facility-specific NAAQS evaluation requirements will be required for non-PSD permitting actions. The Department anticipates that these NAAQS evaluation requirements will be included in the subsequent NAAQS SIP that the State will submit to EPA.

See response 1.

No revisions to the final rule are necessary due to this Comment.

Comment 16: The Commenters believe that there is some disagreement among stakeholders over the effect of the proposed amendments and the authority that would be granted to the Department. The Commenters are unclear as to the intent of the proposed changes and believe that it is fairly problematic that the proposed changes are not clear to the people that are going to be affected by them. In addition, the Commenters state, “we are being asked to opine on the proposed changes and even provide economic analysis in regard to the proposed changes in such a short time frame that is almost impossible for this Department to discharge its duty to consider all of the facts and information pursuant to Arkansas Law for approving these changes in these proposed regulations.”

Response 16: The proposed language is congruent with current Arkansas statutes and the CAA, and clarifies the authority given to the Department to comply with both State and federal requirements.

The Department has provided opportunities for stakeholders’ feedback through the public comment period which was extended by public request. In addition, the Department has also organized a series of stakeholder meetings that have been taking place concomitantly with these rulemakings to seek their suggestions and feedback for the revisions of the State’s infrastructure SIP and NAAQS SIP that will be completed after these rulemakings are adopted.

Additionally, the SIP proposal will provide stakeholders with additional opportunity to comment on the SIP. All comments received through public hearings and comment periods (and the resulting responses from ADEQ), are included as part of the SIP package that is reviewed by EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 17: The Commenters appreciate the opportunity to provide comments to the proposed revisions to the APC&EC Regulations No. 18, 19, and 26, proposed by ADEQ. The Commenters state that they have strong interests in the proposed revisions to the Regulations and the implementation of the NAAQS proposed for adoption as part of these rulemakings. The Commenters point out that these rulemakings affect the regulated community that own or operate sources that emit one or more of the pollutants and will be subjected to the new NAAQS should the Commission adopt the proposed revisions. Therefore, the Commenters state that they generally support the incorporation of the new standards into the State air pollution control regulations, and recognize that the Commission has an obligation to do so in the normal course of federal-state regulatory affairs to avoid imposition of a Federal Implementation Plan. However, the Commenters also state, “the Commission and ADEQ have an obligation under the

CAA and the Arkansas Water & Air Pollution Control Act to develop a comprehensive State Implementation Plan (“SIP”) for attainment and maintenance of the NAAQS. [40 C.F.R. § 51.161 and Ark. Code Ann. § 8-4-318].”

Response 17: The Department acknowledges and appreciates this Comment and asserts that these rulemakings are necessary to include the revised PM_{2.5}, O₃, Pb, NO₂, and SO₂ NAAQS into APC&EC regulations. The Department is in the process of developing a SIP revision, concomitantly with these proposed rulemakings, to ensure attainment and maintenance of the revised NAAQS. The SIP revisions will be made available for public comment prior to its submission to EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 18: The Commenters state, “CAA requires that SIPs provide a pre-construction review process for new sources and modifications of existing sources that includes legally-enforceable procedures including the basis for determining the types and sizes of construction or modifications which will be subject to review, an application process disclosing the nature and amounts of emissions to be emitted, the permit approval and public-participation process, and the air quality data that will be used to facilitate such review [51.160].” The Commenters also state, “to ‘implement’ the NAAQS, the state must follow the process set forth in the CAA for SIP development, a process which requires the state to look at a variety of tools (from economic incentives to emissions standards) that can be applied to a range of sources (large and small, mobile and stationary), to meet the NAAQS.”

The Commenters state that EPA has emphasized that states should consider a wide range of options and their potential benefits while developing their SIPs. The Commenters understand that the SIP-development process is not intended to focus solely on large stationary sources, as those sources are already covered by other federal regulations, such as the New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, and Prevention of Significant Deterioration/Nonattainment New Source Review programs. Instead, the Commenters state, “relevant ‘control strategies’ apply to all types of sources, stationary and mobile, and include, but are not limited to:

- Economic incentive or disincentive programs;
- Scheduling, relocation, and closure programs;
- Mobile source inspection and maintenance programs;
- Fuel or fuel additive programs for mobile sources; and
- Emissions limitations on stationary sources.”

The Commenters state, “EPA further stipulates that nothing in its regulations should be construed, among other things, ‘[t]o encourage a State to adopt any particular control strategy without taking into consideration the cost-effectiveness of such control strategy in relation to that of alternative control strategies,’ ‘[t]o encourage a State to prepare, adopt or submit a plan without taking into consideration the social and economic impact of the control strategy set forth in such plan,’ or ‘[t]o encourage a State to adopt a control strategy uniformly applicable throughout a region unless there is no satisfactory alternative way of providing for attainment and maintenance of a national standard throughout such region.’”

The Commenters believe these federal factors are echoed by some of those found at the Arkansas legislature, which requires the Commission to consider when exercising its powers and responsibilities as found at Ark. Code Ann. § 8-4-312(12) “[i]nterference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants,” a factor it can only truly explore through the SIP development process. The Commenters believe the information provided in the SIP development steps will inform the Commission whether emissions are interfering with business and human health and will help ADEQ to determine what steps to propose to maintain (or, where needed, to achieve) compliance with the revised NAAQS.

Response 18: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 19: The Commenters state that the use of the terms “State Implementation Plan” and “Plan” should be consistent across regulations. The Commenters point out that existing regulations include a definition of “Plan” in Chapter 2 of Regulation No. 19, which states that the term means the Arkansas Plan of Implementation for Air Pollution Control. However, the Commenters further point out, there are instances across Regulations No. 18, 19, and 26 where the terms “Plan,” “State Implementation Plan,” and “Regulation 19” appear to be used interchangeably (see, e.g., introduction paragraph to Chapter 2 of Regulation No. 26). The Commenters suggest that the Commission review the use of those terms throughout Regulations No. 18, 19, and 26 for consistency and to ensure that those terms are appropriately incorporated.

Response 19: The Department has reviewed the use of the terms “State Implementation Plan,” “Plan,” and “Regulation 19” in Regulations No. 18, 19, and 26. The terms in Regulation No. 19, as well as in Regulation No. 18, are not used interchangeably but applied throughout the regulations according to the description in the Definitions chapter. The Department agrees with the Commenters’ suggestion for clarification of these terms in Regulation No. 26 and will consider including clarifying revisions in a future rulemaking so that such revisions may be open to public comment.

No revisions to the final rule are necessary due to this Comment.

Comment 20: The Commenters support the adoption of the NAAQS into Arkansas air rules and recognize proposing a common-sense approach to maintaining Arkansas's clean air. In addition, the Commenters support ADEQ's proposed changes to current state regulations, which will allow flexibility in the permitting process and would give business owners the choice to make cost-effective reductions in emissions from current operations in order to more quickly obtain new permit modifications for those changes.

Response 20: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 21: The Commenters are aware and respect that ADEQ has the challenge to maintain ever more stringent air quality standards imposed by the EPA. In addition, the Commenters state that this is especially true considering that ADEQ's authority over only stationary sources limits the Department's ability to control major contributing sources such as fires and traffic. Despite this limitation, the Commenters believe that ADEQ has created a valuable long-term tool to promote the growth of jobs in Arkansas through its modified permitting process and support the proposed modifications to the regulations.

Response 21: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 22: The Commenters recognize that implementation details, policies, and procedures will be defined in the State Implementation Plans currently under development and encourage ADEQ to continue to use a public process in the development of those implementation details.

Response 22: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 23: The Commenters state that they have an ongoing interest in the adoption and implementation of the NAAQS in accordance with the requirements of State and federal law and regulations and sound scientific and engineering practices. The Commenters understand that updating the State's regulations to refer to the national standards is required in the normal course of federal-state regulatory affairs. However, the Commenters state that the revised NAAQS are very stringent by historical standards and believe that due to the complexity of sources that

contribute to ambient concentrations of the pollutants in question, it is critical that the State develop a comprehensive plan for implementation of the standards in question, consistent with the requirements of Arkansas statute and the CAA.

Response 23: The Department acknowledges and appreciates this Comment. ADEQ has carefully considered all the elements to comply with State and federal requirements and is diligently seeking stakeholders' participation for a transparent and effective process to develop an approvable SIP.

No revisions to the final rule are necessary due to this Comment.

Prepared by:
Arkansas Department of Environmental Quality

By: 

Stuart Spencer, Associate Director, Office of Air Quality

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

**IN THE MATTER OF AMENDMENTS TO)
REGULATION NO. 26, REGULATIONS OF THE) DOCKET NO. 14-011-R
ARKANSAS OPERATING AIR PERMIT PROGRAM)**

**RESPONSIVE SUMMARY FOR
REGULATION NO. 26, REGULATIONS OF THE ARKANSAS OPERATING AIR
PERMIT PROGRAM**

Pursuant to Arkansas Code Annotated (Ark. Code Ann.) § 8-4-202(d)(4)(C) and Regulation¹ No. 8.815, the Arkansas Pollution Control and Ecology Commission (Commission, APC&EC) shall cause to be prepared a responsive summary, which groups public comments into similar categories and explains why the Commenters' rationale for each category is accepted or rejected.

On November 21, 2014, the Arkansas Department of Environmental Quality (Department, ADEQ) filed a Petition to Initiate Rulemaking to Amend Regulation No. 26, Regulations of the Arkansas Operating Air Permit Program. Administrative Law Judge Charles Moulton conducted a public hearing on January 12, 2015. The following is a summary of the comments regarding the proposed amendments to Regulation No. 26 along with the Commission's response.

Comment 1: The Commenters state that the Arkansas Department of Environmental Quality (ADEQ or Department) proposes to add a definition for "Emission increase" to Regulation No. 26, Chapter 2. The Commenters believe that, instead of the proposed reference to 40 C.F.R. § 52.21, the definition of "Emission increase" should reference and clarify that the definition in no way supersedes the Prevention of Significant Deterioration (PSD) applicability determination calculation requirements found in Regulation No. 19, Chapter 9. The Commenters state that the

¹ All citations of and references to state environmental regulations contained in this document signify those regulations promulgated by the Arkansas Pollution Control and Ecology Commission.

proposed reference to 40 C.F.R. § 52.21 lacks a date certain and may represent an impermissible delegation of the Commission's authority. The Commenters suggest a revision consistent with the Commenters revision suggestion for the proposed revisions to Regulation No. 19, Chapter 2, to eliminate potential confusion among the regulated community and provide clarity to regulators and third parties. The Commenters suggestion revising the proposed definition of “Emission increase” as follows:

“Emissions increase” means, for emission changes not subject to Prevention of Significant Deterioration applicability under Chapter 9 of Regulation 19, the calculated sum for each air pollutant, based on the difference between the sum of the proposed permitted rates for all emissions units and the sum of the previously permitted emission rates for all emissions units.

Additionally, the Commenters state that ADEQ should provide an explanation or guidance to the regulated community regarding how this definition "Emission increase" is to be applied.

Response 1: The Department agrees with the Commenter that the addition of the definition of “emission increase” to Chapter 2 could cause potential confusion among the regulated community. The proposed definition for “emission increase” was intended to address the use of “emission increase” in relation to minor permit modification applicability; however, the definition does not necessarily apply to other uses of the phrase “emission increase” elsewhere in the regulation. Therefore, the Department will remove the proposed definition from Chapter 2 and clarify in Reg. 26.1002 that emission increases for each pollutant, for the purposes of minor permit modification applicability, are based on the differences between the sum of the proposed permitted rates for all emission units and the sum of the previously permitted emission rates for all units. No credit is allowed for emission units that have not actually operated or operated as permitted, emission reductions required by other rules or under an enforcement order, or old emission sources removed from service prior to initiation of this rulemaking on December 5, 2014.

Comment 2: The Commenters stated that these proposed regulations may create financial burdens on public utilities in the state of Arkansas, consequently affecting Arkansas rate payers. The Commenters noted that the accelerated timeframe under which these regulations are being considered is fairly problematic and affected stakeholders need some time to consider the impacts of these regulations. The Commenters pointed out, particularly on Regulation No. 19, that the potential changes to existing regulations include very complex matters. The Commenters stated, “As you know the Department is required to consider numerous factors before approving these changes to these regulations.” The Commenters also noted that “it is extremely difficult for the stakeholders to generate substantive comments regarding these complex amendments to these regulations in the timeframe that has been allotted by the Department.”

Response 2: ADEQ asserts that this rulemaking process has not been accelerated and has followed state and federal requirements related to public comment period. ADEQ adhered to requirements of Reg. No. 8.812 and protocol, as found in the APC&EC Regulation Formatting and Drafting Guidelines (Guidelines), was followed for the proposed NAAQS rulemaking, which included the preparation and submission of the Economic Impact Statement (EIS), Financial Impact Statement (FIS), and Environmental Impact and Economic Benefit Analysis (EI/EBA) forms.

ADEQ does not agree that this rulemaking contains complex amendments, but revised federal requirements. ADEQ also asserts that the allotted time for public period was given as prescribed by per Reg. No. 8.805 and 8.806, “Administrative Procedures.” APC&EC and ADEQ both acknowledge that the U. S. Congress, EPA, and the state intend for (more so, require) due public process for all proposed rulemakings, and that public input is encouraged. As such, APC&EC extended the public comment period for this proposed rulemaking as requested by the public. Under the CAA guidelines, once the SIP is prepared, ADEQ will schedule another public notice and comment period, and revisions will be considered based on public input prior to submitting a complete SIP package to EPA for review. All comments received through public hearings and comment periods (and the resulting responses from ADEQ) are included as part of the SIP package that is reviewed by EPA. Therefore, this rulemaking and consequent SIP process will provide stakeholders with extensive opportunity to provide their comments.

No revisions to the final rule are necessary due to this Comment.

Comment 3: The Commenters express concern to the ambiguity between Regs. No. 19 and 26, with regard to the extent to which they would authorize the Department to require permittees, including coal-fired power plants and facilities in the State, to undertake air modeling on their own. According to the Commenters, language in Regulation No. 19 is ambiguous with regard to the ability of the Department and its Director to require modeling under certain circumstances. Therefore, the Commenters suggest changes to the amended regulation.

Response 3: ADEQ may model PSD sources, temporary sources, or those sources or pollutants specifically addressed in a NAAQS SIP submitted to EPA. The Department may also conduct and consider air dispersion modeling for those non-PSD stationary sources that voluntarily propose and agree to modeling. ADEQ can also use dispersion modeling as a tool for the development of state implementation plans and general permits.

The Department is in the process of determining what pollutant-specific or facility-specific NAAQS evaluation requirements will be required for non-PSD permitting actions. The

Department anticipates that these NAAQS evaluation requirements will be included in the subsequent NAAQS SIP that the State will submit to EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 4: The Commenters believe that there is some disagreement among stakeholders over the effect of the proposed amendments and the authority that would be granted to the Department. The Commenters are unclear as to the intent of the proposed changes and believe that it is fairly problematic that the proposed changes are not clear to the people that are going to be affected by them. In addition, the Commenters state, “we are being asked to opine on the proposed changes and even provide economic analysis in regard to the proposed changes in such a short time frame that is almost impossible for this Department to discharge its duty to consider all of the facts and information pursuant to Arkansas Law for approving these changes in these proposed regulations.”

Response 4: The proposed language is in line with current Arkansas statutes and the CAA, and clarifies the authority given to the Department to comply with both State and federal requirements.

The Department has provided opportunities for stakeholders’ feedback through the public comment period, which was extended by public request. In addition, the Department has also organized a series of stakeholders meetings that have been taking place concomitantly with these rulemakings to seek their suggestions and feedback for the revisions of the State’s infrastructure SIP and NAAQS SIP that will be completed after these rulemakings are adopted.

Additionally, the SIP proposal will provide stakeholders with additional opportunity to comment on the SIP. All comments received through public hearings and comment periods (and the resulting responses from ADEQ), are included as part of the SIP package that is reviewed by EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 5: The Commenters appreciate the opportunity to provide comments to the proposed revisions to the APC&EC Regulations No. 18, 19, and 26, proposed by ADEQ. The Commenters state that they have strong interests in the proposed revisions to the Regulations and the implementation of the NAAQS proposed for adoption as part of these rulemakings. The Commenters point out that these rulemakings affect the regulated community that own or operate sources that emit one or more of the pollutants and will be subjected to the new NAAQS should the Commission adopt the proposed revisions. Therefore, the Commenters state that they generally support the incorporation of the new standards into the State air pollution control

regulations, and recognize that the Commission has an obligation to do so in the normal course of federal-state regulatory affairs to avoid imposition of a Federal Implementation Plan. However, the Commenters also state, “the Commission and ADEQ have an obligation under the CAA and the Arkansas Water & Air Pollution Control Act to develop a comprehensive State Implementation Plan (“SIP”) for attainment and maintenance of the NAAQS. [40 C.F.R. § 51.161 and Ark. Code Ann. § 8-4-318].”

Response 5: The Department acknowledges and appreciates this Comment and asserts that these rulemakings are necessary to include the revised PM_{2.5}, O₃, Pb, NO₂, and SO₂ NAAQS in APC&EC regulations. The Department is in the process of developing a SIP revision, concomitantly with these proposed rulemakings, to ensure attainment and maintenance of the revised NAAQS. The SIP revisions will be made available for public comment prior to its submission to EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 6: The Commenters state, “CAA requires that SIPs provide a pre-construction review process for new sources and modifications of existing sources that includes legally-enforceable procedures including the basis for determining the types and sizes of construction or modifications which will be subject to review, an application process disclosing the nature and amounts of emissions to be emitted, the permit approval and public-participation process, and the air quality data that will be used to facilitate such review [51.160].” The Commenters also state, “to ‘implement’ the NAAQS, the state must follow the process set forth in the CAA for SIP development, a process which requires the state to look at a variety of tools (from economic incentives to emissions standards) that can be applied to a range of sources (large and small, mobile and stationary), to meet the NAAQS.”

The Commenters state that EPA has emphasized that states should consider a wide range of options and their potential benefits while developing their SIPs. The Commenters understand that the SIP-development process is not intended to focus solely on large stationary sources, as those sources are already covered by other federal regulations, such as the New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, and Prevention of Significant Deterioration /Nonattainment New Source Review programs. Instead, the Commenters state, “relevant ‘control strategies’ apply to all types of sources, stationary and mobile, and include, but are not limited to:

- Economic incentive or disincentive programs;
- Scheduling, relocation, and closure programs;
- Mobile source inspection and maintenance programs;
- Fuel or fuel additive programs for mobile sources; and

- Emissions limitations on stationary sources.”

The Commenters state, “EPA further stipulates that nothing in its regulations should be construed, among other things, ‘[t]o encourage a State to adopt any particular control strategy without taking into consideration the cost-effectiveness of such control strategy in relation to that of alternative control strategies,’ ‘[t]o encourage a State to prepare, adopt or submit a plan without taking into consideration the social and economic impact of the control strategy set forth in such plan,’ or ‘[t]o encourage a State to adopt a control strategy uniformly applicable throughout a region unless there is no satisfactory alternative way of providing for attainment and maintenance of a national standard throughout such region.’”

The Commenters believe these federal factors are echoed by some of those found at the Arkansas legislature, which requires the Commission to consider when exercising its powers and responsibilities as found at Ark. Code Ann. § 8-4-312(12) “[i]nterference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants,” a factor it can only truly explore through the SIP development process. The Commenters believe the information provided in the SIP development steps will inform the Commission whether emissions are interfering with business and human health and will help ADEQ to determine what steps to propose to maintain (or, where needed, to achieve) compliance with the revised NAAQS.

Response 6: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 7: The Commenters state that the use of the terms “State Implementation Plan” and “Plan” should be consistent across regulations. The Commenters point out that existing regulations include a definition of “Plan” in Chapter 2 of Regulation No. 19, which states that the term means the Arkansas Plan of Implementation for Air Pollution Control. However, the Commenters further point out, there are instances across Regulations No. 18, 19, and 26 where the terms “Plan,” “State Implementation Plan,” and “Regulation 19” appear to be used interchangeably (see, e.g., introduction paragraph to Chapter 2 of Regulation No. 26). The Commenters suggest that the Commission review the use of those terms throughout Regulations No. 18, 19, and 26 for consistency and to ensure that those terms are appropriately incorporated.

Response 7: The Department has reviewed the use of the terms “State Implementation Plan,” “Plan,” and “Regulation 19” in Regulations No. 18, 19, and 26. The Department agrees with the Commenters’ suggestion for clarification of these terms in Regulation No. 26 and will consider including clarifying revisions in a future rulemaking so that such revisions may be open to public

comment. However, the terms used in Regulations No. 18 and 19 are not used interchangeably but applied throughout the regulations according to the description in the Definitions chapter.

Comment 8: The Commenters support the adoption of the NAAQS into Arkansas air rules and recognize proposing a common-sense approach to maintaining Arkansas's clean air. In addition, the Commenters support ADEQ's proposed changes to current state regulations, which will allow flexibility in the permitting process and would give business owners the choice to make cost-effective reductions in emissions from current operations in order to more quickly obtain new permit modifications for those changes.

Response 8: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 9: The Commenters are aware and respect that ADEQ has the challenge to maintain ever more stringent air quality standards imposed by the EPA. In addition, the Commenters state that this is especially true considering that ADEQ's authority over only stationary sources limits the Department's ability to control major contributing sources such as fires and traffic. Despite this limitation, the Commenters believe that ADEQ has created a valuable long-term tool to promote the growth of jobs in Arkansas through its modified permitting process and support the proposed modifications to the regulations.

Response 9: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 10: The Commenters recognize that implementation details, policies, and procedures will be defined in the State Implementation Plans currently under development and encourage ADEQ to continue to use a public process in the development of those implementation details.

Response 10: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 11: The Commenters state that they have an ongoing interest in the adoption and implementation of the NAAQS in accordance with the requirements of State and federal law and regulations and sound scientific and engineering practices. The Commenters understand that updating the State's regulations to refer to the national standards is required in the normal course of federal-state regulatory affairs. However, the Commenters state that the revised NAAQS are very stringent by historical standards and believe that due to the complexity of sources that

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO)
REGULATION NO. 26, REGULATIONS OF THE) DOCKET NO. 14-011-R
ARKANSAS OPERATING AIR PERMIT PROGRAM)

RESPONSIVE SUMMARY FOR
REGULATION NO. 26, REGULATIONS OF THE ARKANSAS OPERATING AIR
PERMIT PROGRAM

Pursuant to Arkansas Code Annotated (Ark. Code Ann.) § 8-4-202(d)(4)(C) and Regulation¹ No. 8.815, the Arkansas Pollution Control and Ecology Commission (Commission, APC&EC) shall cause to be prepared a responsive summary, which groups public comments into similar categories and explains why the Commenters' rationale for each category is accepted or rejected.

On November 21, 2014, the Arkansas Department of Environmental Quality (Department, ADEQ) filed a Petition to Initiate Rulemaking to Amend Regulation No. 26, Regulations of the Arkansas Operating Air Permit Program. Administrative Law Judge Charles Moulton conducted a public hearing on January 12, 2015. The following is a summary of the comments regarding the proposed amendments to Regulation No. 26 along with the Commission's response.

Comment 1: The Commenters state that the Arkansas Department of Environmental Quality (ADEQ or Department) proposes to add a definition for "Emission increase" to Regulation No. 26, Chapter 2. The Commenters believe that, instead of the proposed reference to 40 C.F.R. § 52.21, the definition of "Emission increase" should reference and clarify that the definition in no way supersedes the Prevention of Significant Deterioration (PSD) applicability determination calculation requirements found in Regulation No. 19, Chapter 9. The Commenters state that the

¹ All citations of and references to state environmental regulations contained in this document signify those regulations promulgated by the Arkansas Pollution Control and Ecology Commission.

proposed reference to 40 C.F.R. § 52.21 lacks a date certain and may represent an impermissible delegation of the Commission's authority. The Commenters suggest a revision consistent with the Commenters revision suggestion for the proposed revisions to Regulation No. 19, Chapter 2, to eliminate potential confusion among the regulated community and provide clarity to regulators and third parties. The Commenters suggestion revising the proposed definition of "Emission increase" as follows:

"Emissions increase" means, for emission changes not subject to Prevention of Significant Deterioration applicability under Chapter 9 of Regulation 19, the calculated sum for each air pollutant, based on the difference between the sum of the proposed permitted rates for all emissions units and the sum of the previously permitted emission rates for all emissions units.

Additionally, the Commenters state that ADEQ should provide an explanation or guidance to the regulated community regarding how this definition "Emission increase" is to be applied.

Response 1: The Department agrees with the Commenter that the addition of the definition of "emission increase" to Chapter 2 could cause potential confusion among the regulated community. The proposed definition for "emission increase" was intended to address the use of "emission increase" in relation to minor permit modification applicability; however, the definition does not necessarily apply to other uses of the phrase "emission increase" elsewhere in the regulation. Therefore, the Department will remove the proposed definition from Chapter 2 and clarify in Reg. 26.1002 that emission increases for each pollutant, for the purposes of minor permit modification applicability, are based on the differences between the sum of the proposed permitted rates for all emission units and the sum of the previously permitted emission rates for all units. No credit is allowed for emission units that have not actually operated or operated as permitted, emission reductions required by other rules or under an enforcement order, or old emission sources removed from service prior to initiation of this rulemaking on December 5, 2014.

Comment 2: The Commenters stated that these proposed regulations may create financial burdens on public utilities in the state of Arkansas, consequently affecting Arkansas rate payers. The Commenters noted that the accelerated timeframe under which these regulations are being considered is fairly problematic and affected stakeholders need some time to consider the impacts of these regulations. The Commenters pointed out, particularly on Regulation No. 19, that the potential changes to existing regulations include very complex matters. The Commenters stated, "As you know the Department is required to consider numerous factors before approving these changes to these regulations." The Commenters also noted that "it is extremely difficult for the stakeholders to generate substantive comments regarding these complex amendments to these regulations in the timeframe that has been allotted by the Department."

Response 2: ADEQ asserts that this rulemaking process has not been accelerated and has followed state and federal requirements related to public comment period. ADEQ adhered to requirements of Reg. No. 8.812 and protocol, as found in the APC&EC Regulation Formatting and Drafting Guidelines (Guidelines), was followed for the proposed NAAQS rulemaking, which included the preparation and submission of the Economic Impact Statement (EIS), Financial Impact Statement (FIS), and Environmental Impact and Economic Benefit Analysis (EI/EBA) forms.

ADEQ does not agree that this rulemaking contains complex amendments, but revised federal requirements. ADEQ also asserts that the allotted time for public period was given as prescribed by per Reg. No. 8.805 and 8.806, “Administrative Procedures.” APC&EC and ADEQ both acknowledge that the U. S. Congress, EPA, and the state intend for (more so, require) due public process for all proposed rulemakings, and that public input is encouraged. As such, APC&EC extended the public comment period for this proposed rulemaking as requested by the public. Under the CAA guidelines, once the SIP is prepared, ADEQ will schedule another public notice and comment period, and revisions will be considered based on public input prior to submitting a complete SIP package to EPA for review. All comments received through public hearings and comment periods (and the resulting responses from ADEQ) are included as part of the SIP package that is reviewed by EPA. Therefore, this rulemaking and consequent SIP process will provide stakeholders with extensive opportunity to provide their comments.

No revisions to the final rule are necessary due to this Comment.

Comment 3: The Commenters express concern to the ambiguity between Regs. No. 19 and 26, with regard to the extent to which they would authorize the Department to require permittees, including coal-fired power plants and facilities in the State, to undertake air modeling on their own. According to the Commenters, language in Regulation No. 19 is ambiguous with regard to the ability of the Department and its Director to require modeling under certain circumstances. Therefore, the Commenters suggest changes to the amended regulation.

Response 3: ADEQ may model PSD sources, temporary sources, or those sources or pollutants specifically addressed in a NAAQS SIP submitted to EPA. The Department may also conduct and consider air dispersion modeling for those non-PSD stationary sources that voluntarily propose and agree to modeling. ADEQ can also use dispersion modeling as a tool for the development of state implementation plans and general permits.

The Department is in the process of determining what pollutant-specific or facility-specific NAAQS evaluation requirements will be required for non-PSD permitting actions. The

Department anticipates that these NAAQS evaluation requirements will be included in the subsequent NAAQS SIP that the State will submit to EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 4: The Commenters believe that there is some disagreement among stakeholders over the effect of the proposed amendments and the authority that would be granted to the Department. The Commenters are unclear as to the intent of the proposed changes and believe that it is fairly problematic that the proposed changes are not clear to the people that are going to be affected by them. In addition, the Commenters state, “we are being asked to opine on the proposed changes and even provide economic analysis in regard to the proposed changes in such a short time frame that is almost impossible for this Department to discharge its duty to consider all of the facts and information pursuant to Arkansas Law for approving these changes in these proposed regulations.”

Response 4: The proposed language is in line with current Arkansas statutes and the CAA, and clarifies the authority given to the Department to comply with both State and federal requirements.

The Department has provided opportunities for stakeholders’ feedback through the public comment period, which was extended by public request. In addition, the Department has also organized a series of stakeholders meetings that have been taking place concomitantly with these rulemakings to seek their suggestions and feedback for the revisions of the State’s infrastructure SIP and NAAQS SIP that will be completed after these rulemakings are adopted.

Additionally, the SIP proposal will provide stakeholders with additional opportunity to comment on the SIP. All comments received through public hearings and comment periods (and the resulting responses from ADEQ), are included as part of the SIP package that is reviewed by EPA.

No revisions to the final rule are necessary due to this Comment.

Comment 5: The Commenters appreciate the opportunity to provide comments to the proposed revisions to the APC&EC Regulations No. 18, 19, and 26, proposed by ADEQ. The Commenters state that they have strong interests in the proposed revisions to the Regulations and the implementation of the NAAQS proposed for adoption as part of these rulemakings. The Commenters point out that these rulemakings affect the regulated community that own or operate sources that emit one or more of the pollutants and will be subjected to the new NAAQS should the Commission adopt the proposed revisions. Therefore, the Commenters state that they generally support the incorporation of the new standards into the State air pollution control

regulations, and recognize that the Commission has an obligation to do so in the normal course of federal-state regulatory affairs to avoid imposition of a Federal Implementation Plan. However, the Commenters also state, “the Commission and ADEQ have an obligation under the CAA and the Arkansas Water & Air Pollution Control Act to develop a comprehensive State Implementation Plan (“SIP”) for attainment and maintenance of the NAAQS. [40 C.F.R. § 51.161 and Ark. Code Ann. § 8-4-318].”

Response 5: The Department acknowledges and appreciates this Comment and asserts that these rulemakings are necessary to include the revised PM_{2.5}, O₃, Pb, NO₂, and SO₂ NAAQS in APC&EC regulations. The Department is in the process of developing a SIP revision, concomitantly with these proposed rulemakings, to ensure attainment and maintenance of the revised NAAQS. The SIP revisions will be made available for public comment prior to its submission to EPA.

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The Commenters state that EPA has emphasized that states should consider a wide range of options and their potential benefits while developing their SIPs. The Commenters understand that the SIP-development process is not intended to focus solely on large stationary sources, as those sources are already covered by other federal regulations, such as the New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants, and Prevention of Significant Deterioration /Nonattainment New Source Review programs. Instead, the Commenters state, “relevant ‘control strategies’ apply to all types of sources, stationary and mobile, and include, but are not limited to:

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- Scheduling, relocation, and closure programs;
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- Emissions limitations on stationary sources.”

The Commenters state, “EPA further stipulates that nothing in its regulations should be construed, among other things, ‘[t]o encourage a State to adopt any particular control strategy without taking into consideration the cost-effectiveness of such control strategy in relation to that of alternative control strategies,’ ‘[t]o encourage a State to prepare, adopt or submit a plan without taking into consideration the social and economic impact of the control strategy set forth in such plan,’ or ‘[t]o encourage a State to adopt a control strategy uniformly applicable throughout a region unless there is no satisfactory alternative way of providing for attainment and maintenance of a national standard throughout such region.’”

The Commenters believe these federal factors are echoed by some of those found at the Arkansas legislature, which requires the Commission to consider when exercising its powers and responsibilities as found at Ark. Code Ann. § 8-4-312(12) “[i]nterference with reasonable enjoyment of life by persons in the area and conduct of established enterprises that can reasonably be expected from air contaminants,” a factor it can only truly explore through the SIP development process. The Commenters believe the information provided in the SIP development steps will inform the Commission whether emissions are interfering with business and human health and will help ADEQ to determine what steps to propose to maintain (or, where needed, to achieve) compliance with the revised NAAQS.

Response 6: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 7: The Commenters state that the use of the terms “State Implementation Plan” and “Plan” should be consistent across regulations. The Commenters point out that existing regulations include a definition of “Plan” in Chapter 2 of Regulation No. 19, which states that the term means the Arkansas Plan of Implementation for Air Pollution Control. However, the Commenters further point out, there are instances across Regulations No. 18, 19, and 26 where the terms “Plan,” “State Implementation Plan,” and “Regulation 19” appear to be used interchangeably (see, e.g., introduction paragraph to Chapter 2 of Regulation No. 26). The Commenters suggest that the Commission review the use of those terms throughout Regulations No. 18, 19, and 26 for consistency and to ensure that those terms are appropriately incorporated.

Response 7: The Department has reviewed the use of the terms “State Implementation Plan,” “Plan,” and “Regulation 19” in Regulations No. 18, 19, and 26. The Department agrees with the Commenters’ suggestion for clarification of these terms in Regulation No. 26 and will consider including clarifying revisions in a future rulemaking so that such revisions may be open to public

comment. However, the terms used in Regulations No. 18 and 19 are not used interchangeably but applied throughout the regulations according to the description in the Definitions chapter.

Comment 8: The Commenters support the adoption of the NAAQS into Arkansas air rules and recognize proposing a common-sense approach to maintaining Arkansas's clean air. In addition, the Commenters support ADEQ's proposed changes to current state regulations, which will allow flexibility in the permitting process and would give business owners the choice to make cost-effective reductions in emissions from current operations in order to more quickly obtain new permit modifications for those changes.

Response 8: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 9: The Commenters are aware and respect that ADEQ has the challenge to maintain ever more stringent air quality standards imposed by the EPA. In addition, the Commenters state that this is especially true considering that ADEQ's authority over only stationary sources limits the Department's ability to control major contributing sources such as fires and traffic. Despite this limitation, the Commenters believe that ADEQ has created a valuable long-term tool to promote the growth of jobs in Arkansas through its modified permitting process and support the proposed modifications to the regulations.

Response 9: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 10: The Commenters recognize that implementation details, policies, and procedures will be defined in the State Implementation Plans currently under development and encourage ADEQ to continue to use a public process in the development of those implementation details.

Response 10: The Department acknowledges and appreciates this Comment.

No revisions to the final rule are necessary due to this Comment.

Comment 11: The Commenters state that they have an ongoing interest in the adoption and implementation of the NAAQS in accordance with the requirements of State and federal law and regulations and sound scientific and engineering practices. The Commenters understand that updating the State's regulations to refer to the national standards is required in the normal course of federal-state regulatory affairs. However, the Commenters state that the revised NAAQS are very stringent by historical standards and believe that due to the complexity of sources that

contribute to ambient concentrations of the pollutants in question, it is critical that the State develop a comprehensive plan for implementation of the standards in question, consistent with the requirements of Arkansas statute and the CAA.

Response 11: The Department acknowledges and appreciates this Comment. ADEQ has carefully considered all the elements to comply with State and federal requirements and is diligently seeking stakeholders' participation for a transparent and effective process to develop an approvable SIP.

No revisions to the final rule are necessary due to this Comment.

Prepared by:
Arkansas Department of Environmental Quality

By: 
Stuart Spencer, Associate Director, Office of Air Quality

Arkansas Department of Environmental Quality

Public Notice

The Arkansas Department of Environmental Quality (ADEQ) is publishing this Public Notice to provide interested persons the opportunity to comment on ADEQ's proposed state implementation plan (SIP) revision. Under Clean Air Act (CAA) §§ 110(a)(1) and 110(a)(2), each state must submit a SIP that provides for the implementation, maintenance, and enforcement of a revised primary or secondary national ambient air quality standard (NAAQS). In this proposed SIP revision, ADEQ is addressing the requirements under CAA sections 110(a)(1) and 110(a)(2) for the 2006 NAAQS for fine particulate matter (PM_{2.5}), 2008 NAAQS for ozone, 2008 NAAQS for lead, 2010 NAAQS for nitrogen dioxide, 2010 NAAQS for sulfur dioxide, and the 2012 PM_{2.5} NAAQS. These NAAQS were adopted into Arkansas Pollution Control & Ecology Commission Regulation No. 19 and Regulation No. 26 on February 26, 2016. This proposal also includes a NAAQS SIP developed to address State requirements for measures necessary for the attainment and maintenance of the NAAQS under Arkansas Code Annotated § 8-4-318. Among measures necessary for the attainment and maintenance of the NAAQS, ADEQ proposes NAAQS evaluation requirements for minor new source review permitting actions. The documents contained in this proposal will be submitted to the United States Environmental Protection Agency to revise the current SIP as required by the CAA.

ADEQ will accept written and electronic comments received no later than 4:30 p.m. on Monday February 27, 2016. Written comments should be mailed to Tricia Treece, Office of Air Quality, Arkansas Department of Environmental Quality, 5301 Northshore Drive, North Little Rock, AR 72118. Electronic comments should be sent to: treecep@adeq.state.ar.us.

A member of the public may request a hearing. If a hearing request is received by 4:30 p.m. on February 14, 2017, ADEQ will hold a public hearing on February 21, 2017 at 2:00 p.m. in the Commission Room on the first floor of ADEQ headquarters located at 5301 Northshore Drive, North Little Rock, Arkansas.

If no request is received by the deadline, ADEQ will not hold a public hearing, and ADEQ will announce the cancellation of the hearing on its website at <https://www.adeq.state.ar.us/air/planning/sip/naaqs.aspx> by 4:30 p.m. on February 15, 2017. If a public hearing is requested, but inclement weather or unforeseen circumstances require ADEQ to postpone the hearing, ADEQ will post this decision on the same web page. To request a public hearing or to find out whether the public hearing has been cancelled, please contact Kelly Jobe by email at jobe@adeq.state.ar.us or by phone at 501-682-0084.

A copy of Arkansas's proposed SIP revision is available for public inspection during normal business hours at the Office of Communications in the ADEQ headquarters building in North Little Rock. In addition, Arkansas's SIP revision is available for viewing or downloading on ADEQ's website at: <https://www.adeq.state.ar.us/air/planning/sip/naaqs.aspx>. Public libraries

hosting ADEQ information depositories will also be available to assist interested persons access the SIP from ADEQ's website. These information depositories are located in public libraries at Arkadelphia, Batesville, Blytheville, Camden, Clinton, Crossett, El Dorado, Fayetteville, Forrest City, Fort Smith, Harrison, Helena, Hope, Hot Springs, Jonesboro, Little Rock, Magnolia, Mena, Monticello, Mountain Home, Pocahontas, Russellville, Searcy, Stuttgart, Texarkana, and West Memphis; in campus libraries at the University of Arkansas at Pine Bluff and the University of Central Arkansas at Conway; and in the Arkansas State Library, 900 W. Capitol, Suite 100, Little Rock.

Arkansas Democrat Gazette

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STATE OF ARKANSAS, }
COUNTY OF PULASKI, } ss.

I, Yvette Hines, do solemnly swear that I am the Legal Billing Clerk of the Arkansas Democrat - Gazette, a daily newspaper printed and published in said County, State of Arkansas; that I was so related to this publication at and during the publication of the annexed legal advertisement in the matter of:

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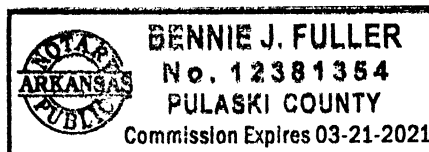
pending in the Court, in said County, and at the dates of the several publications of said advertisement stated below, and that during said periods and at said dates, said newspaper was printed and had a bona fide circulation in said County; that said newspaper had been regularly printed and published in said County, and had a bona fide circulation therein for the period of one month before the date of the first publication of said advertisement; and that said advertisement was published in the regular daily issues of said newspaper as stated below.

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Arkansas Democrat Gazette

STATEMENT OF LEGAL ADVERTISING
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Arkansas Department of Environmental Quality Public Notice

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Arkansas Department of Environmental Quality

Public Notice: Correction

On January 18, 2017, the Arkansas Department of Environmental Quality (ADEQ) published a Public Notice to provide interested persons the opportunity to comment on ADEQ's proposed state implementation plan (SIP) revision. The notice included a typographical error by listing the close of the public comment period as February 27, 2016.

This correction is to notify the public that ADEQ will be accepting written and electronic comments received no later than 4:30 p.m. on Monday February 27, 2017. Written comments should be mailed to Tricia Treece, Office of Air Quality, Arkansas Department of Environmental Quality, 5301 Northshore Drive, North Little Rock, AR 72118. Electronic comments should be sent to: treecep@adeq.state.ar.us.

Arkansas Democrat Gazette

STATEMENT OF LEGAL ADVERTISING

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ADEQ
5301 NORTHSHORE DR
NORTH LITTLE ROCK AR 72118

REMIT TO:
ARKANSAS DEMOCRAT-GAZETTE, INC.
P.O. BOX 2221
LITTLE ROCK, AR 72203

ATTN: Kelly Robinson

BILLING QUESTIONS CALL 378-3547

DATE : 01/28/17 INVOICE #: 3142406
ACCT #: L844316 P.O. #:

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STATE OF ARKANSAS, }
COUNTY OF PULASKI, } ss.

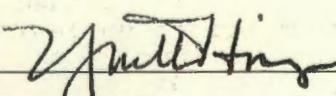
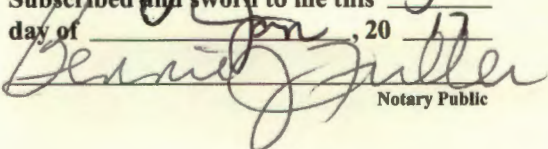
I, Yvette Hines, do solemnly swear that I am the Legal Billing Clerk of the Arkansas Democrat - Gazette, a daily newspaper printed and published in said County, State of Arkansas; that I was so related to this publication at and during the publication of the annexed legal advertisement in the matter of:

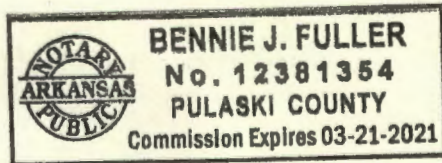
ADEQ
pending in the Court, in said County, and at the dates of the several publications of said advertisement stated below, and that during said periods and at said dates, said newspaper was printed and had a bona fide circulation in said County; that said newspaper had been regularly printed and published in said County, and had a bona fide circulation therein for the period of one month before the date of the first publication of said advertisement; and that said advertisement was published in the regular daily issues of said newspaper as stated below.

Arkansas Department of Environmental Quality
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74008532

DATE	DAY	LINAGE	RATE	DATE	DAY	LINAGE	RATE
01/28	Sat	36	1.35				

TOTAL COST ----- 48.60
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Subscribed and sworn to me this 30 day of Jan, 2017

Notary Public


BENNIE J. FULLER
No. 12381354
PULASKI COUNTY
Commission Expires 03-21-2021



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

**NAAQS SIP DEVELOPMENT
Stakeholder Meeting**

December 18, 2014, 1:00 p.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome and Introductions

Presentation

- Purpose of today's meeting
- Overview of SIP development process
- ADEQ timetable for SIP development
- Provide technical information to inform discussion
- Request stakeholder input
- Provide recommendations

Break

Discussion by Stakeholders

Next Steps

Adjourn

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

HEARING/MEETING REGISTRATION

Name <i>Please Print Legibly</i>	Address - Email Street City State Zip	Organization Represented
Judith Logan	jlogan@fs.fed.us	USDA -USFS
Kathy Nunez	Kathy.nunez@sglgroup.com	S&L Carbon
Catala Mershon	mershonc16@asmusa.org	ASMSA
Audrey Dyer	adyer@fs.fed.us	USFS
Tom Hudson	thudson@hsgec.com	HSG Environmental
Virginia Porta	virginia.porta@akt4.ar.gov	AHTD
Larry Nance	larry.nance@arkansar.gov	AFC
Sam Leslie	sleslie@gbp.com	Green Bay Packaging
Nathan Green	ngreen@inveritasinfo.com	inVeritas
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Jeff Robinson	robinson.jeffrey@epa.gov	EPA R.6
Jordan Tinsley	JORDAN@TYATTORNEY.COM	AEEC/AGC
Martin Blaney	martin.blaney@agfc.ar.gov	AGFC
Bria Bond	tbond@aep.com	SWEPDO
Eddie Brawley	e.brawley@sbcglobal.net	West Memphis MPD
Stephen Cain	stephen.cain@aecc.com	AECC
Charles Miller	AIEF	AIEF
David Triplett	dtriplett@endray.com	Endray
Kelly Robbins	krobbins@aipro.org	
Kenny Hall	State khall@arkansasstatechamber.com	State Chamber
Chuck Buttry	cbuttry@trinityconsultants.com	AEE/Trinity

Public hearing/meeting on: NAAQS SIP Stakeholder Meeting

Date: 12-18-14

Location: _____

Page ___ of ___



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

**NAAQS SIP DEVELOPMENT
Stakeholder Meeting**

January 13, 2015, 10:00 a.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome

Control Strategy Approaches: Round 1 (60 minutes)

- Individual pollutant breakout groups: NO₂ & VOCs (Ozone)
- Stakeholder breakout group idea sharing

Control Strategy Approaches: Round 2 (45 minutes)

- Individual pollutant breakout groups: PM_{2.5}
- Stakeholder breakout group idea sharing

Control Strategy Approaches: Round 3 (45 minutes)

- Individual pollutant breakout groups: SO₂
- Stakeholder breakout group idea sharing

Homework & Next Steps

Adjourn



ARKANSAS
Department of Environmental Quality

**NAAQS SIP DEVELOPMENT
Stakeholder Meeting**

January 28, 2015, 10:00 a.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome

Presentation

Comparison of Recent Monitor Design Values to NAAQS
SIP Control Measures Requirements
Review Stakeholder Suggested Control Measures

Discussion with Stakeholders

Next Steps

Adjourn



ARKANSAS
Department of Environmental Quality

**Modeling Subgroup Meeting
NAAQS SIP Development Stakeholder Group**

February 10, 2015, 1:30 p.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome

Discussion

Stakeholder Comments Received to Date

- ECCI Comments
- Chuck Buttry/Trinity Consultants Comments

Speciation of PM_{2.5} Data

- Overview
- Types
- Uses
- Data Overview

Monitor Data Trend Analysis

- Capabilities
- Data Trends Influences

Statewide vs Intrastate Regional Approach

- Arkansas Air Quality Regions
- Arkansas Planning and Development Districts
- County Level
- PSD Radius of Impact
- 4 Kilometer Grid

Modeling Protocol

- Starting Point
 - Previous ADEQ Protocol
 - Previous discussions between ADEQ & AEF
 - Start New

Additional Monitors

- Temporary Monitors
- Siting

Next Steps

Adjourn



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

**Modeling Subgroup Meeting
NAAQS SIP Development Stakeholder Group**

February 24, 2015, 1:30 p.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome

Open Stakeholder Discussion

Permitting flowchart

ADEQ Update

Stakeholder input on how to improve/alter

Protocol for Voluntary Modeling

Clarify modeling approach to provide certainty for Industry

How to Develop

How to define in a consistent fashion Qualitative Analysis in absence of modeling

Proposed 19.305

Next Steps

Adjourn



ARKANSAS
Department of Environmental Quality

**Modeling Subgroup Meeting
NAAQS SIP Development Stakeholder Group**

March 19, 2015, 1:30 p.m.

**Arkansas Department of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118
Commission Room**

Agenda

Welcome	Stuart Spencer
Qualitative analysis in absence of modeling -Factors in minor NSR NAAQS review -Discuss South Carolina guidance -Proposed flowchart -ADEQ responsibilities -Multi-state considerations	Tony Davis
Weight of Evidence (WoE) Analysis -Air quality data -Emissions and emissions-related data -Emissions controls -Economic trends/urban growth patterns -Meteorology/transport -Geography/topography/jurisdictional	Tony Davis and Staff
Pollutant-specific example based on proposal -NOx / AQCR 19	Tony Davis and/or Mark McCorkle
Impact on Permitting	Tom Rheaume
Next steps	
Adjourn	

RESPONSIVE SUMMARY FOR STATE IMPLEMENTATION PLAN REVISION:

National Ambient Air Quality Standards (NAAQS) Infrastructure SIPs and NAAQS SIP Per Ark. Code Ann. § 8-4-318

Pursuant to Arkansas Code Annotated (Ark. Code Ann.) § 8-4-317(b)(2)(B)(i), the Arkansas Department of Environmental Quality (ADEQ) must prepare a record of the public process in the form of a written response to each issue raised during the public comment period. A responsive summary groups public comments into similar categories and explains why ADEQ accepts or rejects the rationale for each category.

On February 26, 2016, ADEQ filed with the Arkansas Pollution Control and Ecology Commission (“Commission”) Petitions to Adopt Rulemaking to Amend Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, (Commission Docket No. 14-010-R) and Regulation No. 26, Regulations of the Arkansas Operating Air Permit Program Control, (Commission Docket No. 14-011-R). Subsequently, ADEQ prepared a State Implementation Plan (SIP) revision related to the rulemaking, which included provisions from Regulation No. 19 and Regulation No. 26 adopted on February 26, 2016; proposed revisions to infrastructure SIPs for the 2006 fine particulate matter (PM_{2.5}) national ambient air quality standard (NAAQS) and the 2008 lead NAAQS; proposed infrastructure SIPs for the 2008 ozone NAAQS, the 2010 SO₂ NAAQS, the 2010 NO₂ NAAQS, and the 2012 PM_{2.5} NAAQS; and a NAAQS SIP submitted to fulfill Ark. Code. Ann. § 8-4-318 requirements. Included in the NAAQS SIP were NAAQS evaluation requirements for minor new source review (NSR) permitting actions for emission increases of certain pollutants.

On January 18, 2017, ADEQ published a public notice of SIP draft availability and solicited comments on the proposed SIP. In the public notice for this SIP revision, ADEQ offered the opportunity to request a public hearing with a deadline of February 14, 2017 for such a request to be made. No request for a public hearing was submitted by February 14, 2017; therefore, ADEQ published notice that the public hearing would not be held to its website on February 15, 2017. The public comment period for the SIP ended February 27, 2017. Comments received during the public comment period are summarized and a response for each is given below.

Comment 1: The Commenters incorporated by reference “Comments of the Arkansas Environmental Federation on Proposed Revisions to Arkansas Pollution Control and Ecology Commission Regulation Nos. 18, 19, and 26” at APC&EC Docket Nos. 14-009-R, 14-010-R, and 14-011-R.

Response 1: ADEQ addressed “Comments of the Arkansas Environmental Federation on Proposed Revisions to Arkansas Pollution Control and Ecology Commission Regulation Nos. 18, 19, and 26” in “Responsive Summary for Regulation No. 18, Arkansas Air Pollution Control Code” (Docket No. 14-009-R); “Responsive Summary for Regulation No. 19, Regulations of the

Arkansas Plan of Implementation for Air Pollution Control” (Docket No. 14-010-R); and “Responsive Summary for Regulation No. 26, Regulations of the Arkansas Air Operating Permit Program” (Docket No. 14-011-R). ADEQ hereby incorporates those responsive summaries herein as if set out word for word.

No revisions to the SIP are necessary in response to this Comment.

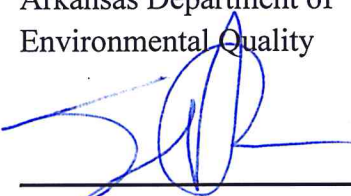
Comment 2: The Commenters understand that the establishment of a NAAQS evaluation for minor NSR permitting actions, set forth at Section 4.2.2 Pollutant-Specific Minor NSR NAAQS Evaluation Requirements of the proposed NAAQS SIP, is in keeping with ADEQ's duties under Act 1302 of 2013, codified at Ark. Code Ann. § 8-4-317 and § 8-4-318. The Commenters further assert their understanding that the requirements of Section 4.2.2 of the NAAQS SIP only concerns minor NSR permitting actions for PM₁₀, SO₂, and NO_x emissions. Specifically, ADEQ has proposed that air dispersion modeling or an approved alternative demonstration will be required for new and existing stationary sources for minor NSR permitting actions with net emission increases of such pollutants of 100 tons per year or greater.

Response 2: ADEQ acknowledges and appreciates this Comment. ADEQ agrees with the Commenters that the NAAQS evaluation requirements proposed for minor NSR permitting actions in the NAAQS SIP are in keeping with ADEQ's duties under Ark. Code Ann. § 8-4-317 and § 8-4-318. The Commenters are correct that new NAAQS evaluation requirements were only proposed for new and existing stationary sources for minor NSR permitting actions with net emission increases of PM₁₀, SO₂, and NO_x of 100 tons per year or greater; however, ADEQ also notes that monitoring requirements for lead pursuant to 40 C.F.R. 58 Appendix D § 4.5 have not been revised in this SIP proposal. ADEQ also engaged in technical analyses to determine that NAAQS evaluations were not necessary for individual minor NSR permitting actions for ozone, PM_{2.5}, and CO. Support for NAAQS evaluation requirements determinations can be found in Appendices E, G, and I.

No revisions to the SIP are necessary in response to this Comment.

Prepared by:
Arkansas Department of
Environmental Quality

By:



Stuart Spencer
Associate Director, Office of Air Quality