Arkansas Department of Environmental Quality

Appendices for the
State of Arkansas
Regional Haze Rule
State Implementation Plan

Appendix Volume 6
Appendices 9.3B-11.2

Appendix 9.3B

Response to EPA Comments on Engineering Analysis

Comments on Arkansas BART Engineering Analyses
5/1/07

Note: The following is based solely on the BART Engineering Analyses and doesn't consider actual BART exemption modeling. Also, additional comments concerning the Domtar facility may be submitted at a later date.

General Comments:

Region 6 encourages ADEQ to submit all of the BART exemption modeling for review well in advance of ADEQ's public hearing.

Response: ADEQ has provided EPA access to the BART exemption modeling. http://listserv.adeq.state.ar.us/bart

As specified in 40 CFR 51.308(e)(1)(v), States are required to ensure each source subject to BART install and operate BART *as expeditiously as practicable*, but in no event later than 5 years after approval of the implementation plan revision. States should ensure that BART requirements in a SIP are written in a way that clearly specifies the individual emission unit(s) subject to BART regulation and the time by which the emission unit(s) must begin to comply with the BART limit. Because the BART requirements are ''applicable'' requirements of the CAA, they must be included as title V permit conditions according to the procedures established in 40 CFR part 70 or 40 CFR part 71. Under 70.7(f)(1)(i) Title V permits must be reopened and revised to include new applicable requirements if the permit has three or more years of life. The reopening must be completed within 18 months after promulgation of the new applicable requirement and the reopening must follow the same procedures (public comment, etc.) as apply to initial permit issuance. This may require that States provide commitments in the SIPs to ensure that all applicable construction permits under Title 1, and the operating permits under Title V are revised in time.

Response: ADEQ is aware of the requirement set forth in 40 CFR 51.308(e)(1)(v) and has made the following provision in Regulation 19.1504 (B) of the Arkansas Pollution Control and Ecology Commission (APCEC), Regulations of the Arkansas Plan of Implementation for Air Pollution Control: "Each source subject-to-BART shall install and operate BART as expeditiously as practicable, but in no even later than 6 years after the effective date of this regulation or 5 years after EPA approval of the Arkansas Regional Haze State Implementation Plan, whichever comes first." to ensure compliance with 40 CFR 51.308(e)(1)(v). To compile with the BART requirements of the CAA, ADEQ has made stipulations in Regulation 19.1507 for BART sources' title V permits to be reopened under 40 CFR 70. The aforementioned Chapter 15 of Regulation 19 was promulgated by APCEC on September 28, 2007 and became effective October 15, 2007.

Arkansas Electric Cooperative Bailey and McClellan Comments:

Arkansas Electric Cooperative's (AEC) SO2 analysis for the Bailey and McClellan units considered two options - wet scrubbers and switching to low sulfur fuel. The wet scrubbers would have cost $2,108.25/ton for the Bailey unit and $1,658.32/ton for the McClellan unit. Switching to 1% sulfur fuel would have resulted in a cost to the units of $54.90/ton and $158.60/ton, respectively. However, the scrubbers would have removed 95% of the SO2 in comparison to the fuel switch removing only 55% of the SO2 at the Bailey unit, and only 65% at the McClellan unit. How was it determined that the $2100/ton and $1600/ton controls, which would have removed another 40% were not cost effective? Why did ADEQ not require both scrubbers and low sulfur fuel, since the latter's cost is relatively minor?

Response: The five-factor analysis considers more than economic feasibility. ADEQ ruled out SO_2 scrubbers based on the energy impacts and non-air quality environmental impacts as well as the significant increase in costs.

AEC proposes a switch to 1% sulfur fuel oil. On page 39171 of the July 5, 2005 BART rule (70 FR 39171), EPA states, "For oil-fired units, regardless of size, you should evaluate limiting the sulfur content of the fuel oil burned to 1 percent or less by weight." Region 6 notes that similar facilities across the U.S. use fuel oil with a sulfur content as low as 0.05%. What criteria did ADEQ use to make a determination that a lower sulfur content was not cost effective?

Response: 0.05% fuel oil is significantly more expensive. For example, the cost could be 16 times greater than the cost of 1% sulfur content fuel oil.

Region 6 notes that some of the permits for the BART Engineering Analyses reviewed (e.g., AEC's Bailey and McClellan units, SWEPCO Flint Creek) indicate the boilers can burn a variety of fuels. For instance, both the AEC Bailey and McClellan units are permitted to burn fuel oil or natural gas, and the SWEPCO Flint Creek unit is permitted to burn coal or tires. ADEQ should describe what assumptions were made regarding fuel variability when these units underwent BART exemption modeling.

Response: In the BART exemption modeling, ADEQ requested the highest 24-hour actual emission rate for the years 2001 – 2003 to be submitted. These emission rates represented non-start-up, shutdown or malfunction emissions. Additionally, the BART-eligible sources were requested to submit emissions from the "dirtiest" fuel they were permitted to use as a fuel source. This was in accordance with the CENRAP BART Modeling Guidelines which were approved by Region 6. (Tesche, T.W., et al. 2005, p 6-4) AEC and SWEPCO complied by submitting the highest 24-hour actual emission rate for the years 2001 – 2003 from their "dirtiest" fuel source.

SWEPCO-Flint Creek Comments:

Region 6 notes that some of the permits for the BART Engineering Analyses reviewed (e.g., AEC's Bailey and McClellan units, SWEPCO Flint Creek) indicate the boilers can burn a variety of fuels. For instance, both the AEC Bailey and McClellan units are permitted to burn fuel oil or natural gas, and the SWEPCO Flint Creek unit is permitted to burn coal or tires. ADEQ should describe what assumptions were made regarding fuel variability when these units underwent BART exemption modeling.

Response: In the BART exemption modeling, ADEQ requested the highest 24-hour actual emission rate for the years 2001 – 2003 to be submitted. These emission rates represented non-start-up, shutdown or malfunction emissions. Additionally, the BART-eligible sources were requested to submit emissions from the "dirtiest" fuel they were permitted to use as a fuel source. This was in accordance with the CENRAP BART Modeling Guidelines which were approved by Region 6. (Tesche, T.W., et al. 2005, p 6-4) AEC and SWEPCO complied by submitting the highest 24-hour actual emission rate for the years 2001 – 2003 from their "dirtiest" fuel source.

In its 10/26/06 letter, SWEPCO states it will meet the presumptive BART limits of 0.15 lbs/mmBtu SO2 and 0.23 lbs/mmBtu NOx. What coal and unit types, referring to Table 1 of 70 FR 39172, apply to the NOx presumptive limit? Since these presumptive limits will apparently be based on upgraded control technology, ADEQ should include a commitment in its SIP to modify SWEPCO's Title V permit in time to ensure those controls are operational no later than 5 years after SIP approval.

Response: SWEPCO's BART source is a dry-bottom wall-fired unit which will burn sub-bituminous low sulfur western coal. This is consistent with the presumptive NOx limits listed in Table 1 of 70 FR 39172.

Domtar Comments:

The Domtar Ashdown Mills BART analysis states on page 4-3 that even 100% SO2 control on Boiler 1 would not significantly affect visibility at any Class I area, because that boiler burns predominantly wood products. However, R6 notes that boiler (p. 2-1) is actually permitted to burn up to 2,700,000 gallons per year of fuel oil, and the sulfur content of the fuel oil used is limited to 3.0 percent by weight. ADEQ should explain how the addition of fuel oil to the fuel mix was considered in the BART analysis, and why a restriction on burning low sulfur fuel (see above comment on sulfur content) should not be viewed as BART.

Response: At the Department's request, Domtar revised the SO2 limits for Boiler 1. Domtar will be restricted to an SO2 limit of 1.12 lb/MMBtu at this source. This is consistent with the BART limits imposed on the other sources in the state.

R6 also notes both Boilers 1 and 2 are permitted to burn tire-derived fuel (TDF). The Domtar Ashdown Mills BART analysis states on page 4-3, TDF usage (total for No.1, No. 2, and No. 3 Power Boilers) is limited to 220 tons per day. Although TDF can contain a lower sulfur content than some coals, it has been estimated to contain between 0.86 - 2.8%[1], which is potentially significant, considering the visibility impact the Domtar facility has on the visibility of the Caney Creek Class I area. Therefore, ADEQ should explain how the addition of TDF to the fuel mix was considered in the BART analysis, and why conventional sulfur control should not be considered in the BART analysis.

Domtar Response: The addition of TDF to the fuel mix was part of the composite fuel mix utilized in the BART analysis. No.2 Power Boiler has an existing wet scrubber for SO2 and particulate control. Since wet scrubbing is the most effective method of controlling SO2 emissions, no additional analysis was needed for SO2 emissions from No. 2 Power Boiler. On No. 1 Power Boiler, the addition of caustic to the Wet Electrostatic Precipitator

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[1] U.S. EPA, Control of Mercury Emissions from Coal-Fired Electric Utility Boilers, April 2002, EPA-600/R-01-109, Table A-11 at:http://www.epa.gov/appcdwww/aptb/EPA-600-R-01-109A.pdf

was evaluated through modeling at a 90% SO2 reduction level. The results of the modeling showed no additional improvement at Caney Creek with this amount of SO2 control on No. 1 Power Boiler, and therefore add-on controls were not considered further.

The Domtar Ashdown Mills BART analysis states on page 4-3 that no further BART analysis is merited for Boiler 2, since it employs a wet scrubber with a 90% control efficiency. R6 notes the presumptive limit for SO2 control for EGUs at power plants with a total generating capacity in excess of 750 MW is 95% control or 0.15 lbs/mmBtu. This indicates EPA believes this level of control can typically be met through the use of wet scrubbers at coal fired boilers. Regarding this, ADEQ should address how pollution prevention techniques, improvements to existing controls, and combinations of inherently lower-emitting processes (70 FR 39164) were considered.

Domtar Response: The No. 2 Power Boiler is a swing boiler in a pulp and paper facility. It is not a base-loaded boiler at an EGU. As stated on page 4-3 of our BART analysis, the 90% control efficiency is the BART-based control efficiency presumed by the Central Regional Air Planning Association (CENRAP) and the Midwest Regional Planning Organization (MRPO) for pulp and paper industry power boilers.

The Domtar BART analysis has relied extensively on technical publications from The National Council for Air and Stream Improvement (NCASI), which is a forest products industry trade organization. The membership of this organization is apparently open to industry participation only. Region 6 feels that any assertions, studies, data, etc. used in any BART engineering analysis should be open to the public and either peer-reviewed, self-corroborating, or corroborated by independent information. Although those analyses have been provided to EPA following our request, ADEQ should include them in the Domtar Asdown [sic] Mills BART analysis as part of the SIP submittal.

Response: ADEQ will include the above-mentioned studies in the Regional Haze SIP.

Regarding the Domtar Ashdown Mills BART analysis, ADEQ should discuss the conclusions drawn on control technology feasibility in light of the controls used by similar sources, as outlined by a survey of those sources in EPA's RACT/BACT/LAER Clearinghouse.

Response: A survey of the RBLC was performed during the evaluation of the Domtar BART analysis. Following the BART guidelines, it is the Department's position that the control technologies identified as BART in the Domtar BART analysis represents BART.

ADEQ should provide information that documents the statement on page 4-7 of the Domtar Ashdown Mills BART analysis, "LNB are not used for wood-fired boilers."

Response: It is impossible for the Department to document a statement made by a facility that absolutely no wood fired boiler employs a LNB. We are unaware of an

application of LNB technology on a wood-fired boiler. If this is erroneous, please cite examples of LNB being used in wood-fired boilers.

The applicability of low NOx burners is discussed on page 4-8 of the Domtar Ashdown Mills BART analysis. The report states that experience points to the conclusion that this technology is mainly used for combustion efficiency and its application can in some instance actually increase NOx emissions. The report refers to Domtar's experience with this technology in boiler No. 3 in that an increase in NOx has been measured. In its application on boiler No. 3, is this technology, in fact, being tuned for NOx reduction?

Domtar Response: The discussion on page 4-8 actually dealt with Overfire Air systems as NOx control technology, not low NOx burners. Ashdown did in fact install a new Overfire Air system on the No. 3 Power Boiler (SN-01, not a BART-eligible unit) for purposes of combustion optimization, not for NOx reduction. It is being tuned for combustion optimization. The Overfire Air vendors we spoke with informed Domtar that theoretically NOx emissions might decrease, but they had seen where implementation of these systems did result in increases in NOx emissions in certain circumstances.

Entergy-Lake Catherine Comments:

In its letter to the ADEQ, dated March 1, 2007, Entergy addresses an ADEQ inquiry concerning why it feels the Lake Catherine Unit 4 boiler should be exempt from installing post combustion NOx controls. In its response, Entergy references the BART Guidelines (70 FR 39172):

"For oil-fired and gas-fired EGUs larger than 200MW, we believe that installation of current combustion control technology to control NOx is generally highly cost-effective and should be considered in your determination of BART for these sources. Many such units can make significant reductions in NOX emissions which are highly cost-effective through the application of current combustion control technology."

The context of the above reference is with regard to whether EPA felt a presumptive emissions limit was appropriate for gas-fired EGUs. It was not intended to limit the consideration for BART of possible choices of cost effective post combustion controls for these sources. As a consequence, Region 6 does not believe Entergy adequately followed the BART guidelines, since it has not completed STEP 1—Identify All 12 Available Retrofit Control Technologies, as outlined in 70 FR 39164, July 6, 2005. Region 6 requests that ADEQ direct Entergy to re-assess its BART analysis for the Lake Catherine Plant to properly assess all control options, including post combustion controls, as outlined in the BART Guidelines. This should be done for both gas and oil firing and should include documented, detailed cost estimates for all control options that are technically feasible.

Entergy should provide documentation for the efficiencies of the control equipment evaluated within its BART analysis for the Lake Catherine Plant.

<u>Entergy Comment:</u> Entergy used a computerized model that evaluated electrical generating unit performance and the capital and O&M cost associated with each identified control technology. Entergy's analysis began with the most economical control technology and then the model performed a stepped approach where the next economical control or the next economical combination of controls was analyzed. This analysis continued with combination of all identified control technologies. Entergy reported the combination of control technologies up to a point that the combination of control technologies clearly had a cost that would be uneconomical to install. This is demonstrated in tables ES-1 and ES-2

Clearly an incremental cost to control NOx at $41,739/ton for option 5 in Table ES-1 and an incremental cost to control NOx at $10,101/ton for Option 4 in Table ES-2 do not pass the cost test described in the BART Guidelines, excerpt below, so this is where Entergy stopped the reporting control technology analysis.

From 40 CFR Part 51 Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule in Federal Register / Vol. 70, No. 128 / Wednesday, July 6, 2005 / Rules and Regulations page 39164

> **<u>4. In the course of the BART review, one or more of the available control options may be eliminated from consideration because they are demonstrated to be technically infeasible or to have unacceptable energy, cost, or non-air quality environmental impacts on a case-by-case (or site-specific) basis. However, at the outset, you should initially identify all control options with potential application to the emissions unit under review</u>**

Post Control NOx technologies available for both gas and oil fired boilers are SCNR and SCR. Below are the control cost and benefits from Entergy Engineering evaluations for these technologies as well as the cost for single installations of SNCR and SCR.

Gas Data – 0.483 Max 24 Hour NOx Value

Case 5	Tune/BOOS/IFGR/OFA/LNB	88.6%	0.055	953.2	$3,581,027	$3,757	49.0	$2,043,297	$41,739
	Tune/BOOS/IFGR/OFA/SNCR	88.7%	0.055	955	$3,227,000	$3,378	50.7	$1,689,269	$33,319
	Tune/BOOS/IFGR/OFA/SCR	97.4%	0.013	1049	$8,545,000	$8,150	95.8	$4,963,973	$51,816
	SNCR	30.0%	0.338	323	$1,933,000	$5,984			
	SCR	85.0%	0.072	915	$6,939,000	$7,581			
				removed	**($/year)**		**removed**	**Control Scenario ($/Year**	**removed**
Baseline	Base Case	0%	0.483	--		--	--		--
Case 1	Tune	20.0%	0.386	215.2	$17,016	$79	215.2	$17,016	$79
Case 2	Tune/BOOS	42.1%	0.280	452.8	$122,956	$272	237.6	$105,940	$446
Case 3	Tune/BOOS/IFGR	69.6%	0.147	748.9	$397,923	$531	296.0	$274,967	$929
Case 4	Tune/BOOS/IFGR/OFA	84.0%	0.077	904.3	$1,537,731	$1,701	155.4	$1,139,807	$7,335

Oil Data – 0.483 Max 24 Hour NOx Value

		% removal	lb/MMBtu	Total tons removed	Annualized Cost ($/year)	Avg Cost/Ton	Incremental tons removed	Incremental Cost from Previous Control Scenario ($/Year	Incremental cost/ton removed
Baseline	Base Case	0.0%	0.483	--	--	--	--	--	--
Case 1	Tune	20.0%	0.386	220.0	$16,000	$73	220.0	***$16,000***	$73
Case 2	Tune/Burner Mods	42.1%	0.280	462.9	***$433,934***	$937	242.9	***$417,933***	$1,720
Case 3	Tune/Burner Mods /BOOS	47.6%	0.253	523.5	***$583,386***	$1,115	60.5	***$149,452***	$2,469
Case 4	Tune/Burner Mods /BOOS/FFGR	54.6%	0.219	600.1	***$1,357,123***	$2,262	76.6	***$773,737***	$10,101
	Tune/Burner Mods /BOOS/SNCR	62.9%	0.179	693	***$2,382,000***	$3,440	169.5	***$1,798,614***	$10,611
	Tune/Burner Mods /BOOS/SCR	91.4%	0.042	1006	***$7,562,000***	$7517	482.5	***$6,978,614***	$14,463
	SNCR	30.0%	0.338	323	***$1,933,000***	$5,984			
	SCR	85.0%	0.072	915	***$6,939,000***	$7581			

It should also be noted that Entergy used the highest 24 hour average NOx value recorded from 2001 to 2003(0.4830 #/mmBtu) to calculate annual emissions to perform the analysis so the effects of controls on the visibility (deciviews) could be determined. Being this value is emitted for a small portion of the three year period a more accurate assessment of the economics of control installation would use the anticipated annual emissions for a source based on actual emissions. The expected annual emissions can be derived from the average NOx value from the Clean Air Markets Acid Rain Database from 2001 to 2003(0.180 #/mm/Btu) to calculate actual tonnage reduction expected. This is supported by directions to calculate baseline emission contain in From 40 CFR Part 51 Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule in Federal Register / Vol. 70, No. 128 / Wednesday, July 6, 2005 / Rules and Regulations page 39167

1. The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source. In general, for the existing sources subject to BART, you will estimate the anticipated annual emissions based upon actual emissions from a baseline period.

When using the 0.180 average #/mmBtu NOx number the engineering analysis computes the following values.

Gas Data - 0.180 #/mmBtu Average NOx Value

		% removal	lb/MMBtu	Total tons removed	Annualized Cost ($/year)	Avg Cost/Ton	Incremental tons removed	Incremental Cost from Previous Control Scenario ($/Year	Incremental cost/ton removed
Baseline	Base Case	0%	0.144	--		--	--		--
Case 1	Tune	20.0%	0.104	80	$51,000	$635	80	$51,000	$635
Case 2	Tune/BOOS	42.1%	0.055	169	$194,000	$1,148	89	$143,000	$1,607
Case 3	Tune/BOOS/IFGR	69.6%	0.029	279	$516,000	$1,847	110	$322,000	$2,927
Case 4	Tune/BOOS/IFGR/OFA	84.0%	0.021	337	$1,681,000	$4.984	58	$1,165,000	$20,086
Case 5	Tune/BOOS/IFGR/OFA/LNB	88.6%	0.020	355	$3,734,000	$10,594	18	$2,053,000	$114,056
	Tune/BOOS/IFGR/OFA/SNCR	88.7%	0.005	356	$3,339,000	$9,381	19	$1,658,000	$87,263
	Tune/BOOS/IFGR/OFA/SCR	97.4%	0.126	391	$8,695,000	$22,251	54	$7,014,000	$129,889
	SNCR	30.0%	0.027	120	$1,750,000	$14,535			
	SCR	85.0%	0.072	341	$6,989,000	$20,490			

Oil Data - 0.180 #/mmBtu Average NOx Value

		% removal	lb/MMBtu	Total tons removed	Annualized Cost ($/year)	Avg Cost/Ton	Incremental tons removed	Incremental Cost from Previous Control Scenario ($/Year	Incremental cost/ton removed
Baseline	Base Case	0.0%	0.18	--	--	--	--	--	--
Case 1	Tune	20.0%	0.144	82	$51,000	$616	82	***$51,000***	$616
Case 2	Tune/Burner Mods	42.1%	0.104	173	$507,000	$2,934	91	***$456,000***	$5,034
Case 3	Tune/Burner Mods /BOOS	47.6%	0.094	195	$666,000	$3,412	23	***$159,000***	$7,063
Case 4	Tune/Burner Mods /BOOS/FFGR	76.1%	0.043	312	$2,609,000	$8,352	117	***$1,943,000***	$16,585
	Tune/Burner Mods /BOOS/SNCR	83.1%	0.030	341	$4,276,000	$12,541	29	***$1,668,000***	$58,248
	Tune/Burner Mods /BOOS/SCR	96.1%	0.007	394	$9,621,000	$24,410	82	***$7,012,000***	$85,512
	SNCR	30.0%	0.126	123	$1,752,000	$14,238			
	SCR	85.0%	0.027	349	$6,989,000	$20,044			

From the data presented it becomes obvious that Entergy's BART determination correctly stated that BART is a combination of tuning, BOOS and IFGR for Lake Catherine Unit 4 when firing natural gas and tuning, burner modifications, and BOOS when firing oil.

Entergy developed a model designed to assess the reduction potential and economics for technical applicable control options based on EPRI's IEC cost model. The model layers control options to calculate the removal efficiencies and associated cost for all the combinations of control options. Removal efficiencies and cost were derived from an EPRI document entitled "Retrofit NOx Control Guidelines for Gas and Oil Fired Boilers" Version 2, June 1997. The inputs derived from the EPRI guidelines were further analyzed to reflect performance expected for the Lake Catherine unit as each specific boiler will perform differently due to the unique characteristics of that boiler. Entergy was assisted in these analyses were performed by Washington Group International and Entropy Technology & Environmental Consultants, Inc. A table listing the various control technologies and a table reflecting the inputs into the model are attached.

Unit-Specific Inputs

		Selections (where applicable):	9 Lake Catherine 4 EAI-AR
General unit data:			
	Unit type		gas
	Owned capacity, MW		547
	Real-lev. ozone-season delivered fuel cost, cost input year $/mmBtu		9.50
	Real-lev. off-season delivered fuel cost, cost input year $/mmBtu		9.50
	Real-lev. ozone season electricity price, cost input year $/MWh		34.71
	Real-lev. off-season electricity price, cost input year $/MWh		34.71
Assumed last year for cost recovery:			
4	Custom 1: unit-specific dates		2018
Capacity factors:		**6**	
1	Low annual		3%
2	MIDAS 05C7 annual average, 2009-14		7%
3	Recent annual, 7/2003-6/2005		6%
4	High annual		11%
5	Custom annual 1: coal 85%, new CC 0%, other recent		6%
6	Custom annual 2: BART		10%
1	Low seasonal		4%
2	MIDAS annual * recent seas/ann ratio		10%
3	Recent seasonal, 7/2003-6/2005		9%
4	High seasonal		15%
5	Custom seasonal 1: coal 95%, new CC 0%, other recent		9%
6	Custom seasonal 2:		9%
Heat rates, Btu/kWh:		**4**	
4	Custom 1: coal recent, gas lesser of recent or MIDAS block 1 BART Gas		9,305
5	Custom 2 BART Oil		9,512
NOx emission rates, lbs/mmBtu:		**6**	
5	Custom annual 2: 2001-2003 Acid Rain Avg		0.1800
6	Custom annual 3: Final BART		0.4830
5	Custom annual 2: 2001-2003 Acid Rain Avg		0.1800
6	Custom annual 3: Final BART		0.4830

Northbridge Model Inputs - Gas

Technology 1: Tuning

NOx removal effectiveness:		**3**	
1	Low		10%
2	Base		15%
3	High		20%
4	Custom Final BART includes Training and good operating practices.		0%
Overnight capital, cost input year $/kW:		**1**	
1	Low		0.56
2	Base		0.72
3	High		0.88
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		61%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		0.5%
	Non-consumable VOM, cost input year $/MWh		0.006
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 2: BOOS

NOx removal effectiveness:		**4**	
1	Low		10%
2	Base		15%
3	High		20%
4	Custom		30%
Overnight capital, cost input year $/kW:		**4**	
1	Low		1.38
2	Base		1.74
3	High		2.09
4	Custom		0.16
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		59%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		0.5%
	Non-consumable VOM, cost input year $/MWh		0.020
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		28
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 3: OFA

NOx removal effectiveness:		**2**	
1	Low		40%
2	Base		50%
3	High Final BART		60%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		6.00
2	Base		8.00
3	High		10.00
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00

Applicability (1=yes, 0=no)	1
Operating period (1=year round, 0=ozone season only)	1
Construction period, years	0.25
"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital	46%
Property tax applicabilty, % of capital	100%
Recurring FOM, % of total overnight capital plus one-time O&M	2.0%
Non-consumable VOM, cost input year $/MWh	0.022
Reagent consumption, lbs per lb of NOx after combustion control technologies	0.0000
Heat rate impact, Btu per kWh of base generation output	28
Auxiliary power impact, kWh per mmBtu of base heat input	0.0000

Technology 4: LNB

NOx removal effectiveness:		**2**	
1	Low		25%
2	Base		30%
3	High (Final BART)		35%
4	Custom		0%
Overnight capital, cost input year $/kW:		**3**	
1	Low		9.75
2	Base		12.22
3	High		14.68
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		45%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		2.0%
	Non-consumable VOM, cost input year $/MWh		0.055
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		28
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 5: IFGR

NOx removal effectiveness:		**1**	
1	Low		50%
2	Base		60%
3	High		70%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		1.00
2	Base		1.50
3	High		2.00
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00

Applicability (1=yes, 0=no)	1
Operating period (1=year round, 0=ozone season only)	1
Construction period, years	0.25
"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital	45%
Property tax applicabilty, % of capital	100%
Recurring FOM, % of total overnight capital plus one-time O&M	2.0%
Non-consumable VOM, cost input year $/MWh	0.041
Reagent consumption, lbs per lb of NOx after combustion control technologies	0.0000
Heat rate impact, Btu per kWh of base generation output	28
Auxiliary power impact, kWh per mmBtu of base heat input	0.0000

Technology 6: FFGR

NOx removal effectiveness:		**2**	
1	Low		35%
2	Base		40%
3	High		45%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		7.49
2	Base		9.37
3	High		11.24
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		43%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		2.5%
	Non-consumable VOM, cost input year $/MWh		0.071
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 7: SNCR

NOx removal effectiveness:		**2**	
1	Low		25%
2	Base		30%
3	High		35%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		10.26
2	Base		12.87
3	High		15.47
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00

Applicability (1=yes, 0=no)	1
Operating period (1=year round, 0=ozone season only)	1
Construction period, years	0.50
"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital	48%
Property tax applicabilty, % of capital	100%
Recurring FOM, % of total overnight capital plus one-time O&M	1.0%
Non-consumable VOM, cost input year $/MWh	0.077
Reagent consumption, lbs per lb of NOx after combustion control technologies	1.5997
Heat rate impact, Btu per kWh of base generation output	0
Auxiliary power impact, kWh per mmBtu of base heat input	0.0000

Technology 8: SCR

NOx removal effectiveness:		**2**	
1	Low		80%
2	Base		85%
3	High		90%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		39.94
2	Base		49.85
3	High		59.76
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		1.50
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		46%
	Property tax applicabilty, % of capital		0%
	Recurring FOM, % of total overnight capital plus one-time O&M		1.0%
	Non-consumable VOM, cost input year $/MWh		1.734
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.5676
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.2045

Northbridge Model Inputs - Gas

Common inputs across units and control technologies

	Election:	Notes:
Financial View adders used in marginal costs (1=yes, 0=no)?	**1**	
Financial View adders used in Plan Summary sheet (1=yes, 0=no)?	**1**	
Financial View adders used in Unit Summary sheet (1=yes, 0=no)?	**1**	
Real-lev. NOx allowance prices, in-service year $/ton	**2**	Selects from allowance price alternatives shown at left below.

		Seasonal
0	No credit	0
1	SPO Low	331
2	SPO Base	662
3	SPO High	2,760
4	Custom 1: high seasonal	3,005
5	Custom 2:	0

The allowance prices shown as options 1-4 are based on 2009 real levelized prices calculated on the "EA Prices" worksheet, inflated to the in-service year (if different from 2009).

Nominal discount rate for capital	**11.5%**	Based on EVAL; used to calculate real levelized carrying charges and Nox allowance prices.
Nominal discount rate for O&M	**11.5%**	Placeholder in case different discount rates are required for capital and non-recurring O&M.
Annual inflation rate	**2.0%**	From WGI; applies to all cost items and in real levelization calculations.
In-service year for all control options	**2009**	
Cost input year for capital and O&M	**2006**	Costs for all inputs other than allowances should be entered in dollars of the year selected here.
Inflation index from cost input year to in-service year	106.1%	
Ammonia reagent price, cost input year $/ton	**229.5**	WGI $2005 price inflated to $2006.
Urea reagent price, cost input year $/ton	**204.0**	WGI $2005 price inflated to $2006.
Diminishing returns factor for multi-technology options	**5.0%**	5% gets diminishing returns similar in scale to WGI method. 10% roughly doubles effect; 0% eliminates it.

Company-specific and state-specific financial rates:

Company and state	Financial View "Storeroom Ldrs"	Financial View "Cap Sus"	AFUDC rates from Financial View	Property tax rates based on EVAL
EAI-AR	**6.8840%**	**15%**	**8.931%**	**0.95%**
EMI-AR	**16.8560%**	**4%**	**8.012%**	**0.95%**

If Fin View is elected, "Storeroom Ldrs" multiplier applies to OEM and retrofit components of capital cost.

If Fin View is elected, "Cap Sus" multiplier applies to entire capital cost.

AFUDC applies to all capital whether or not Fin View is elected.

Property tax rates are taken from EVAL, except EGSI-TX and EGSI-LA rates have been switched; also EMI Arkansas assets have been given same property tax rates as EAI Arkansas assets.

Unit-Specific Inputs		9
	Selections (where applicable):	Lake Catherine 4 EAI-AR
General unit data:		
Unit type		gas
Owned capacity, MW		547
Real-lev. ozone-season delivered fuel cost, cost input year $/mmBtu		9.50
Real-lev. off-season delivered fuel cost, cost input year $/mmBtu		9.50
Real-lev. ozone season electricity price, cost input year $/MWh		34.71
Real-lev. off-season electricity price, cost input year $/MWh		34.71
Assumed last year for cost recovery:		
4 Custom 1: unit-specific dates		2018
Capacity factors:	**6**	
1 Low annual		3%
2 MIDAS 05C7 annual average, 2009-14		7%
3 Recent annual, 7/2003-6/2005		6%
4 High annual		11%
5 Custom annual 1: coal 85%, new CC 0%, other recent		6%
6 Custom annual 2: BART		10%
1 Low seasonal		4%
2 MIDAS annual * recent seas/ann ratio		10%
3 Recent seasonal, 7/2003-6/2005		9%
4 High seasonal		15%
5 Custom seasonal 1: coal 95%, new CC 0%, other recent		9%
6 Custom seasonal 2:		9%
Heat rates, Btu/kWh:	**5**	
4 Custom 1: coal recent, gas lesser of recent or MIDAS block 1 BART Gas		9,305
5 Custom 2 BART Oil		9,512
NOx emission rates, lbs/mmBtu:	**5**	
5 Custom annual 2: 2001-2003 Acid Rain Avg		0.1800
6 Custom annual 3: Final BART		0.4830
5 Custom seasonal 2: 2001-2003 Acid Rain Avg		0.1800
6 Custom seasonal 3: Final BART		0.4830

Technology 1: Tuning

NOx removal effectiveness:		**3**	
1	Low		10%
2	Base		15%
3	High		20%
4	Custom Final BART includes Training and good operating practices.		0%
Overnight capital, cost input year $/kW:		**1**	
1	Low		0.56
2	Base		0.72
3	High		0.88
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		0
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		61%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		0.5%
	Non-consumable VOM, cost input year $/MWh		0.006
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 2: BOOS

NOx removal effectiveness:		**1**	
1	Low		10%
2	Base		15%
3	High		20%
4	Custom		30%
Overnight capital, cost input year $/kW:		**4**	
1	Low		1.38
2	Base		1.74
3	High		2.09
4	Custom		0.16
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		0
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		59%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		0.5%
	Non-consumable VOM, cost input year $/MWh		0.020
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		28
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 3: OFA

NOx removal effectiveness:		**4**	
1	Low		40%
2	Base		50%
3	High Final BART		60%
4	Custom		30%
Overnight capital, cost input year $/kW:		**2**	
1	Low		6.00
2	Base		8.00
3	High		10.00
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00

Applicability (1=yes, 0=no)	0
Operating period (1=year round, 0=ozone season only)	1
Construction period, years	0.25
"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital	46%
Property tax applicabilty, % of capital	100%
Recurring FOM, % of total overnight capital plus one-time O&M	2.0%
Non-consumable VOM, cost input year $/MWh	0.022
Reagent consumption, lbs per lb of NOx after combustion control technologies	0.0000
Heat rate impact, Btu per kWh of base generation output	28
Auxiliary power impact, kWh per mmBtu of base heat input	0.0000

Technology 4: LNB

NOx removal effectiveness:		**2**	
1	Low		25%
2	Base		30%
3	High (Final BART)		35%
4	Custom		0%
Overnight capital, cost input year $/kW:		**3**	
1	Low		9.75
2	Base		12.22
3	High		14.68
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		0
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		45%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		2.0%
	Non-consumable VOM, cost input year $/MWh		0.055
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		28
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 5: FFGR

NOx removal effectiveness:		**2**	
1	Low		35%
2	Base		40%
3	High		45%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		7.49
2	Base		9.37
3	High		11.24
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		0
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		43%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		2.5%
	Non-consumable VOM, cost input year $/MWh		0.071
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 6: SNCR

NOx removal effectiveness:		**2**	
1	Low		25%
2	Base		30%
3	High		35%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		10.26
2	Base		12.87
3	High		15.47
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00

Applicability (1=yes, 0=no)	0
Operating period (1=year round, 0=ozone season only)	1
Construction period, years	0.50
"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital	48%
Property tax applicabilty, % of capital	100%
Recurring FOM, % of total overnight capital plus one-time O&M	1.0%
Non-consumable VOM, cost input year $/MWh	0.077
Reagent consumption, lbs per lb of NOx after combustion control technologies	1.5997
Heat rate impact, Btu per kWh of base generation output	0
Auxiliary power impact, kWh per mmBtu of base heat input	0.0000

Technology 7: Burner Modifications

NOx removal effectiveness:		**4**	
1	Low		75%
2	Base		80%
3	High		85%
4	Custom		30%
Overnight capital, cost input year $/kW:		**4**	
1	Low		26.05
2	Base		32.56
3	High		39.07
4	Custom		2.50
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		0
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		0.25
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		45%
	Property tax applicabilty, % of capital		100%
	Recurring FOM, % of total overnight capital plus one-time O&M		2.0%
	Non-consumable VOM, cost input year $/MWh		0.041
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.0000
	Heat rate impact, Btu per kWh of base generation output		28
	Auxiliary power impact, kWh per mmBtu of base heat input		0.0000

Technology 6: SCR

NOx removal effectiveness:		**2**	
1	Low		80%
2	Base		85%
3	High		90%
4	Custom		0%
Overnight capital, cost input year $/kW:		**2**	
1	Low		39.94
2	Base		49.85
3	High		59.76
4	Custom		0.00
Overnight one-time O&M, cost input year $/kW:		**2**	
1	Low		0.00
2	Base		0.00
3	High		0.00
4	Custom		0.00
	Applicability (1=yes, 0=no)		1
	Operating period (1=year round, 0=ozone season only)		1
	Construction period, years		1.50
	"Storeroom Ldrs" factor applicability if Financial View is elected, % of capital		46%
	Property tax applicabilty, % of capital		0%
	Recurring FOM, % of total overnight capital plus one-time O&M		1.0%
	Non-consumable VOM, cost input year $/MWh		1.734
	Reagent consumption, lbs per lb of NOx after combustion control technologies		0.5676
	Heat rate impact, Btu per kWh of base generation output		0
	Auxiliary power impact, kWh per mmBtu of base heat input		0.2045

Common inputs across units and control technologies

	Election:	**Notes:**

Financial View adders used in marginal costs (1=yes, 0=no)?	**1**
Financial View adders used in Plan Summary sheet (1=yes, 0=no)?	**1**
Financial View adders used in Unit Summary sheet (1=yes, 0=no)?	**1**

Real-lev. NOx allowance prices, in-service year $/ton **2** Selects from allowance price alternatives shown at left below.

		Seasonal
0	No credit	0
1	SPO Low	331
2	SPO Base	662
3	SPO High	2,760
4	Custom 1: high seasonal	3,005
5	Custom 2:	0

The allowance prices shown as options 1-4 are based on 2009 real levelized prices calculated on the "EA Prices" worksheet, inflated to the in-service year (if different from 2009).

Nominal discount rate for capital	**11.5%**	Based on EVAL; used to calculate real levelized carrying charges and Nox allowance prices.
Nominal discount rate for O&M	**11.5%**	Placeholder in case different discount rates are required for capital and non-recurring O&M.
Annual inflation rate	**2.0%**	From WGI; applies to all cost items and in real levelization calculations.
In-service year for all control options	**2009**	
Cost input year for capital and O&M	**2006**	Costs for all inputs other than allowances should be entered in dollars of the year selected here.
Inflation index from cost input year to in-service year	106.1%	
Ammonia reagent price, cost input year $/ton	**229.5**	WGI $2005 price inflated to $2006.
Urea reagent price, cost input year $/ton	**204.0**	WGI $2005 price inflated to $2006.
Diminishing returns factor for multi-technology options	**5.0%**	5% gets diminishing returns similar in scale to WGI method. 10% roughly doubles effect; 0% eliminates it.

Company-specific and state-specific financial rates:

Company and state	Financial View "Storeroom Ldrs"	Financial View "Cap Sus"	AFUDC rates from Financial View	Property tax rates based on EVAL
EAI-AR	**6.8840%**	**15%**	**8.931%**	**0.95%**
EMI-AR	**16.8560%**	**4%**	**8.012%**	**0.95%**

If Fin View is elected, "Storeroom Ldrs" multiplier applies to OEM and retrofit components of capital cost.
If Fin View is elected, "Cap Sus" multiplier applies to entire capital cost.
AFUDC applies to all capital whether or not Fin View is elected.
Property tax rates are taken from EVAL, except EGSI-TX and EGSI-LA rates have been switched;
also EMI Arkansas assets have been given same property tax rates as EAI Arkansas assets.

In its BART analysis for the Lake Catherine Plant, Entergy dismisses the potential use of OFA and LNB due to a concern these control technologies could increase PM emissions. Entergy should more properly assess this concern by (1) as in the previous comment, including these technologies among those assessed for technical feasibility, and (2) evaluating the effect these control technologies have on the total deciview change in visibility at the Class I areas, considering any possible offset due to additional PM emissions.

Entergy Comment: OFA and LNB burners were included in the BART determination for gas firing for Lake Catherine Unit 4. The EPRI document <u>Retrofit NOx Control Guidelines for Gas and Oil Fired Boilers</u>" Version 2, June 1997 states in Table 1-1 Summary of Evaluation of Control Technologies that the NOx reduction potential for OFA is approximately 50% for gas fired and 20-50% for oil fired. The table also states that the NOx reduction potential for LNB is 30-50% for gas fired and 30-50% for oil fired. In the expected potential impacts to boiler operation section of the table increased opacity, CO and PM emissions are listed. This is further discussed in the body of the report where EPRI states "A trade off among reducing NOx, minimizing air levels, and minimizing CO emissions and stack opacity *in oil fired boilers* can be expected, even with a well defined OFA system" In the section discussing LNB, EPRI states "However the potential does exist for increased excess air levels, and increased opacity levels, carbon monoxide, and unburned carbon particulate emissions (oil firing) if burners are not properly matched fuel, boiler design, and boiler operating conditions of a specific unit". Due to the fact that OFA or LNB were not determined to be BART in the gas firing scenario, the fact that the control technologies would not be as effective when burning oil, and the potential increase in particulate emissions when using OFA and

LNB when oil firing, these two technologies were not included in the BART determination for oil firing. The reduction potential and control cost had they been included are listed below.

Oil Data – 0.483 Max 24 Hour NOx Value

	% removal	lb/MMBtu	Total tons removed	Annualized Cost ($/year)	Avg Cost/Ton	Incremental tons removed	Incremental Cost from Previous Control Scenario ($/Year	Incremental cost/ton removed
Tune/Burner Mods /BOOS/FFGR/OFA	77.1%	0.111	849	$2,953,000	$3,480	101	$1,154,000	$11,483
Tune/Burner Mods /BOOS/FFGR/LNB	83.6%	0.079	920	$4,993,000	$5,425	72	$2,042,000	$28,381

Oil Data – 0.180 #/mmBtu Average NOx Value

	% removal	lb/MMBtu	Total tons removed	Annualized Cost ($/year)	Avg Cost/Ton	Incremental tons removed	Incremental Cost from Previous Control Scenario ($/Year	Incremental cost/ton removed
Tune/Burner Mods /BOOS/FFGR/OFA	77.1%	0.111	316	$3,086,000	$9,759	37	$1,170,000	$31,234,000
Tune/Burner Mods /BOOS/FFGR/LNB	83.6%	0.079	343	$5,137,000	$14,977	27	$2,051,000	$76,576,000

Entergy should revise Tables ES1, ES2, and 5.1 to show the actual cost per ton for each potential control technology. Showing only incremental and total values does not allow the true cost of each control technology to be fairly assessed, as competing control technologies cannot be readily compared.

Entergy Comment: Entergy included the actual cost per ton; the proper nomenclature is average cost per ton, in Tables 3-1 and Tables 3-2 for each layered control option. These costs are also shown in the Tables above. Entergy correctly choose BART for Lake Catherine Unit 4 using guidance in the preamble section of 40 CFR Part 51 Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule, page 39127 (excerpt below) and in the final rule, page 39168.

> **In addition, the guidelines continue to include both average and incremental costs. We continue to believe that both average and incremental costs provide information useful for making control determinations. However, we believe that these techniques should not be misused. For example, a source may be faced with a choice between two available control devices, control A and control B, where control B achieves slightly greater emission reductions. The average cost (total annual cost/total annual emission reductions) for each may be deemed to be reasonable. However, the incremental cost (total annual**

costA–B/total annual emission reductionsA–B) of the additional emission reductions to be achieved by control B may be very great. In such an instance, it may be inappropriate to choose control B, based on its high incremental costs, even though its average cost may be considered reasonable.

The average cost per ton removed for each technology is in the tables below.

Gas Data - 0.180 #/mmBtu Average NOx Value

Unit name	Option components	Removal efficiency	Total costs	Total tons	Avg cost/ton	Incr costs	Incr tons	Incr cost/ton
Lake Catherine 4	Tune	20.0%	51	80	635	51	80	635
Lake Catherine 4	BOOS	30.0%	135	120	1,121	135	120	1,121
Lake Catherine 4	IFGR	50.0%	299	201	1,493	299	201	1,493
Lake Catherine 4	OFA	50.0%	1,129	201	5,628	1,129	201	5,628
Lake Catherine 4	LNB	30.0%	2,028	120	16,843	2,028	120	16,843
Lake Catherine 4	SNCR	30.0%	1,750	120	14,535	1,750	120	14,535
Lake Catherine 4	SCR	85.0%	6,989	341	20,490	6,989	341	20,490

Oil Data – 0.180 #/mmBtu Average NOx Value

Unit name	Option components	Removal efficiency	Total costs	Total tons	Avg cost/ton	Incr costs	Incr tons	Incr cost/ton
Lake Catherine 4	Tune	20.0%	51	82	616	51	82	616
Lake Catherine 4	Burner Mods	30.0%	448	123	3,640	448	123	3,640
Lake Catherine 4	BOOS	10.0%	155	41	3,774	155	41	3,774
Lake Catherine 4	FFGR	40.0%	1,230	164	7,497	1,230	164	7,497
Lake Catherine 4	OFA	30.0%	1,149	123	9,334	1,149	123	9,334
Lake Catherine 4	LNB	30.0%	2,027	123	16,471	2,027	123	16,471
Lake Catherine 4	SNCR	30.0%	1,752	123	14,238	1,752	123	14,238
Lake Catherine 4	SCR	85.0%	6,989	349	20,044	6,989	349	20,044

Entergy should provide documentation for the efficiencies of the control equipment evaluated within its BART analysis for the Lake Catherine Plant

Entergy has conducted its BART analysis for the Lake Catherine Plant assuming the use of (1) 1% sulfur fuel when the Unit 4 boiler is oil fired, and (2) a 10% future capacity factor. To R6's knowledge, these limitations of Entergy's operations are not housed within its Title V permit. ADEQ should therefore include a commitment in its SIP to modify Entergy's Title V permit in time to ensure these limitations, should they be deemed BART, are operational no later than 5 years after SIP approval.

Response: As stated in a previous response, ADEQ has provided provisions in Reg 19 for all subject-to-BART sources to re-open their Title V permits.

The Entergy Lake Catherine BART analysis is limited to the analysis of the effects of the NOx emissions for Unit 4. However, the Title V permit for the Lake Catherine Facility indicates the permitted PM and SO2 emissions are above the de minimis limits of 40 tpy for SO2 and 15 tpy for PM10. Therefore, Entergy should either take a permit limit of these levels or lower, or Entergy should expand its BART analysis to include PM and SO2.

Response: The Entergy Lake Catherine BART analysis included PM and SO_2 for oil

firing. Species specific screening modeling conducted by ADEQ determined that PM and SO_2 emissions when combusting gas did not contribute to visibility degradation in any Class I area. Additionally,

ADEQ should explain why the other units at the Entergy Lake Catherine plant are not considered BART eligible, since the Title V permit states all the units are grandfathered and none have apparently any controls.

Response: ADEQ agrees that all of the units at the Entergy – Lake Catherine plant are grandfathered; however only unit 4 meets all BART-eligible requirements. Unit 4 was in operation in 1972, but units 1 and 2 were in operation in 1950 and unit 3 in 1953. As stated in Appendix Y II to Part 51, How to Identify BART-Eligible Sources A, 2, 1 (*FR* 39159), "Emissions units listed under Step 1 are BART-eligible only if they were 'in existence' on August 7, 1977 but not 'in operation' before August 7, 1962."

The Entergy Lake Catherine BART analysis is conducted on the basis of two modeling scenarios – gas fired and oil fired, both assuming a 10% capacity factor. Entergy should indicate whether the oil fired modeling was based on 100% oil firing during the periods of operation, or whether some gas firing was assumed.

Response: The Entergy – Lake Catherine subject-to-BART source, unit 4, BART oil fired modeling was based on 100% oil firing during the periods of operation.

For the Entergy Lake Catherine and White Bluff BART analyses Entergy has only supplied a cost summary, which is not an acceptable substitute for the detailed, line-item cost estimate which is required for each for each technically feasible control alternative, as described in 70 FR 39166. This cost estimate should include detailed documentation for each line item. Any deviation from the recommendations in the OAQPS Control Cost Manual should be explained.

Entergy Comment: Cost estimates are for each control option are included in the attached table. As described above, Entergy used EPRI guidance as a starting point then analyzed each control technology for specific conditions at Lake Catherine with the assistance of NOx control experts. Entergy included in the cost estimate only the expected capital cost and any impacts the control technology will have on the unit heat rate. This is a conservative estimate of the cost of each control technology. For instance, Entergy added a small percentage increase to each technology to cover common loaders such as taxes, AFUDC, etc. These additions have a very minimal effect on cost per ton amounts. The methods of calculation are described in the Appendix of the Determination Report.

The Entergy Lake Catherine and White Bluff BART analyses should include a "five factor analysis" as specified in 40 CFR 51.308(e)(1)(ii)(A) for each technically feasible control alternative.

Entergy Comment: Entergy has provided the "five factor analysis" for each control option to ADEQ in a report that detailed the following.

(1) The costs of compliance

Entergy included cost of compliance in when analyzing each control option

(2) The energy and non-air quality environmental impacts of compliance

Entergy included energy cost in the analysis for each control option, if applicable; non-air quality environmental impacts are minimal.

(3) Any existing pollution control technology in use at the source

If existing pollution control was in use, it was considered.

(4) The remaining useful life of the source

Entergy included remaining useful life in determining control cost for each control option.

(5) The degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology

Entergy modeling the degree of improvement in visibility for each control option and included a $/deciview incremental cost.

Energy should explain how, in its BART analysis for the White Bluff facility, Table 3-3 can indicate that while wet scrubbing is listed as having a 95% removal efficiency and dry scrubbing is listed as having a 92% removal efficiency, both methods are listed as having the same mass SO2 removal efficiency of 0.15 lbs/MMBtu.

Entergy Comment: 40 CFR Part 51 Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule in Federal Register / Vol. 70, No. 128 / Wednesday, July 6, 2005 / Rules and Regulations, page 39167, states

> **4. Sulfur dioxide limits for utility boilers**
> **You must require 750 MW power plants to meet specific control levels for SO2 of either 95 percent control or 0.15 lbs/MMBtu, for each EGU greater than 200 MW that is currently uncontrolled unless you determine that an alternative control level is justified based on a careful consideration of the statutory factors.**

The type of fuel and the corresponding sulfur content used at the White Bluff

facility in the future will vary, so the ensuing emission level with either 95% or 92% reduction could vary. Entergy correctly used 0.15 lb/mmBtu as the final emissions value for each option.

Within Section 5.0 of the Entergy Lake Catherine BART analysis, Entergy apparently assumes an 85% future capacity factor. To R6's knowledge, these limitations of Entergy's operations are not housed within its Title V permit. ADEQ should therefore include a commitment in its SIP to modify Entergy's Title V permit in time to ensure this limitation, should it be deemed BART, is operational no later than 5 years after SIP approval.

Entergy Comment: We assume this concerns the 85% capacity factor used for the economic evaluation in the 5 step BART determination. 40 CFR Part 51 Regional Haze Regulations and Guidelines for Best Available Retrofit Technology (BART) Determinations; Final Rule in Federal Register / Vol. 70, No. 128 / Wednesday, July 6, 2005 / Rules and Regulations, page 39167 states

> **d. How do I calculate baseline emissions?**
>
> **1. The baseline emissions rate should represent a realistic depiction of anticipated annual emissions for the source. In general, for the existing sources subject to BART, you will estimate the anticipated annual emissions based upon actual emissions from a baseline period.**
> **2. When you project that future operating parameters (e.g., limited hours of operation materials or product mix or type) will differ from past practice, and if this projection has a deciding effect in the BART determination, then you must make these parameters or assumptions into enforceable limitations. In the absence of enforceable limitations, you calculate baseline emissions based upon continuation of past practice.**
> **3. For example, the baseline emissions calculation for an emergency standby generator may consider the fact that the source owner would not operate more than past practice of 2 weeks a year. On the other hand, baseline emissions associated with a base-loaded turbine should be based on its past practice which would indicate a large number of hours of operation. This produces a significantly higher level of baseline emissions than in the case of the emergency/ standby unit and results in more cost-effective controls. As a consequence of the dissimilar baseline emissions, BART for the two cases could be very different.**

The above guidelines state operational parameters or operational assumptions must be made into enforceable limits when these operational parameters or operational assumptions are different from past practice and the different operational parameters or operational assumption will have a deciding effect in the BART determination. Being Entergy use future assumptions that are identical to past

practices then enforceable limits in the Title V are not necessary. In fact assumptions for unit operation are used to determine annual emissions so that the cost determinations can be made in the five factor analysis. Limiting a unit's capacity factor will not have an effect on the actual emissions being controlled for the Regional Haze rule which are short termed emissions under certain meteorological conditions that are conducive to forming haze.

The Entergy Lake Catherine and White Bluff BART analyses apparently assumes the auxillary [sic] boiler, SN-0 is not subject to BART. Through correspondence with the ADEQ, Region 6 understands Entergy's reasoning for this is the answer to No. BART 19 of the document, "Additional Regional Haze Questions," dated 8/24/07:

"Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted."

However, SN-05 is permitted for 8760 hrs/yr of operation. Although Entergy has historically employed this unit far less than that, the potential for greater use exits due to the permit limit. Therefore, Entergy should either include SN-05 in the BART analysis assuming 8760 hrs/yr of operation, or revise its permit to reflect this unit's historical function.

Response: At the Department's request, Entergy – White Bluff accepted an operation limit of 4360 hours annually. Please refer to Regulation 19.1505 (L).

Entergy-White Bluff Comments:

For the Entergy Lake Catherine and White Bluff BART analyses Entergy has only supplied a cost summary, which is not an acceptable substitute for the detailed, line-item cost estimate which is required for each for each technically feasible control alternative, as described in 70 FR 39166. This cost estimate should include detailed documentation for each line item. Any deviation from the recommendations in the OAQPS Control Cost Manual should be explained.

Response: This comment has been addressed in the Entergy – Lake Catherine Comments.

The Entergy Lake Catherine and White Bluff BART analyses should include a "five factor analysis" as specified in 40 CFR 51.308(e)(1)(ii)(A) for each technically feasible control alternative.

Response: Entergy Lake Catherine and White Bluff provided this information in the Entergy – Lake Catherine comments.

Energy should explain how, in its BART analysis for the White Bluff facility, Table 3-3 can indicate that while wet scrubbing is listed as having a 95% removal efficiency and dry scrubbing is listed as having a 92% removal efficiency, both methods are listed as having the same mass SO2 removal efficiency of 0.15 lbs/MMBtu.

Response: As stated previously, Entergy Lake Catherine and White Bluff provided this information in the Entergy – Lake Catherine comments.

Within Section 5.0 of the Entergy Lake Catherine BART analysis, Entergy apparently assumes an 85% future capacity factor. To R6's knowledge, these limitations of Entergy's operations are not housed within its Title V permit. ADEQ should therefore include a commitment in its SIP to modify Entergy's Title V permit in time to ensure this limitation, should it be deemed BART, is operational no later than 5 years after SIP approval.

Response: As stated previously, Entergy – Lake Catherine provided this information in the Entergy – Lake Catherine comments.

The Entergy Lake Catherine and White Bluff BART analyses apparently assumes the auxillary [sic] boiler, SN-0 is not subject to BART. Through correspondence with the ADEQ, Region 6 understands Entergy's reasoning for this is the answer to No. BART 19 of the document, "Additional Regional Haze Questions," dated 8/24/07:

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Response: As stated previously, at the Department's request, Entergy – White Bluff accepted an operation limit of 4360 hours annually. Please refer to Regulation 19.1505 (L).

Appendix 9.3C

Arkansas Pollution Control and Ecology Commission Regulation No. 19 – Regulations of the Arkansas Plan of Implementation for Air Pollution Control

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 19

REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL

Approved by the PC&E Commission: September 28, 2007

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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 A.C.A. §§ 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 U.S.C. §§ 7401 et seq., 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 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 CFR Part 51), and certain delegated subparts of the National Emission Standards for Hazardous Air Pollutants (40 C.F.R. Parts 61 and 63). 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 which are consistent with this policy and the legislative intent of state laws governing air pollution control (A.C.A. § 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.

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.

"Commission" means the Arkansas Pollution Control and Ecology Commission.

"Construction" means fabrication, erection, or installation of equipment. See also 40 CFR 60.2, 40 CFR 51.165, and 40 CFR 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 United States Environmental Protection Agency 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”** 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:

(1) Nitrogen oxides or any volatile organic compounds;

(2) Any pollutant for which a National Ambient Air Quality Standard has been promulgated;

(3) 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;

(4) Any Class I or II substance subject to a standard promulgated under or established by Title VI of the Clean Air Act, as amended, 42 U.S.C.§§ 7401, et seq.

“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.

"Hazardous Air Pollutant" 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:

(1) Routine maintenance, repair, and replacement shall not be considered a physical change, and

(2) The following shall not be considered a change in the method of operation:

(a) Any change in the production rate, if such change does not exceed the permitted operating capacity of the source;

(b) Any change in the hours of operation, as long as it does not violate applicable air permit conditions; or

(c) The use of an alternate fuel or raw material, as long as it does not violate applicable air permit conditions.

(3) *De Minimis* changes, as defined in §19.407(C), and changes in ownership shall not be considered.

"National Ambient Air Quality Standard" or **"(NAAQS),"** mean those ambient air quality standards promulgated by the EPA in 40 CFR Part 50.

"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" 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 Part 60 Appendix A or by a test method specified in these regulations or any supplement thereto.

"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_{10}" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method based on Appendix J of 40 CFR Part 50, or by an equivalent method designated in accordance with 40 CFR Part 53.

"PM_{10} emissions" means PM_{10} emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternate method, specified in 40 CFR Part 51, Appendix M, 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. Secondary air emissions do not count in determining the potential to emit of a stationary source.

"Responsible official" means one of the following:

(1) 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:

(a) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

(b) The delegation of authority to such representative is approved in advance by the Department;

(2) For partnership or sole proprietorship: a general partner or the proprietor, respectively;

(3) 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

(4) For acid rain sources:

(a) The designated representative insofar as actions, standards, requirements, or prohibitions under Title IV of the Act or the regulations promulgated thereunder are concerned; and

(b) 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.

“Stationary source” means any building, structure, facility, or installation which emits or may emit any federally regulated air pollutant.

“Volatile organic compounds” (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.

(1) 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);
1,1,1 trichloro-2,2,2- 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)
pentaflurorethane (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 ($C_4F_9OCH_3$);
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-
heptafluoropropane($(CF_3)_2CFCF_2OCH_3$);
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$);
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane
($(CF_3)_2CFCF_2OC_2H_5$);
methyl acetate and perfluorocarbon compounds which fall into these classes:

(a) cyclic, branched, or linear, completely fluorinated alkanes;

(b) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(c) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations;

(d) sulfur containing perfluorocarbons with no saturations and with sulfur bonds only to carbon and fluorine.

(2) For purposes of determining compliance with emission limits, VOC will be measured by the test methods in the approved SIP or 40 CFR Part 60, Appendix A, 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.

(3) 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 results demonstrating, to the satisfaction of the Department, the amount of negligibly-reactive compounds in the sources' emissions.

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:

(F) Ambient air monitoring in any area that can reasonably be expected to be in excess of the NAAQS.

(G) 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:

40 tons per year or more of carbon monoxide;

25 tons per year or more of nitrogen oxides;

25 tons per year or more of sulfur dioxide;

25 tons per year or more of volatile organic compounds;

10 tons per year or more of PM_{10};

0.5 tons per year or more of lead;

1.0 ton per year or more of any single hazardous air pollutant; or

3.0 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 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 §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 recognized federally regulated air pollutant emissions and all federally regulated air pollutant emitting equipment at the stationary source except pollutants or equipment specifically exempt.

(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 §19.407, the public shall have an opportunity to comment on the Department's proposed permit decision in accordance with §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 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 facilities' 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:

(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 or other such documents as required.

(i) "Disclosure statement" means a written statement by the applicant which contains:

(aa) The full name, business address, and social security number of the applicant an all affiliated persons;

(bb) The full name and business address of any legal entity in which the applicant holds a debt or equity interest of at least five percent (5%) or which is a parent company or subsidiary of the applicant, and a description of the ongoing

organizational relationships as they may impact operations within the state;

(cc) A description of the experience and credentials of the applicant, including any past or present permits, licenses, certifications, or operational authorizations relating to environmental regulation;

(dd) A listing and explanation of any civil or criminal legal actions by government agencies involving environmental protection laws or regulations against the applicant and affiliated persons in the ten (10) years immediately preceding the filing of the application, including administrative enforcement actions resulting in the imposition of sanctions, permit or license revocations or denials issued by any state or federal authority, actions that have resulted in a finding or a settlement of a violation, and actions that are pending;

(ee) A listing of any federal environmental agency and any other environmental agency outside this state that has or has had regulatory responsibility over the applicant;

(ff) Any other information the director may require that relates to the competency, reliability, or responsibility of the applicant and affiliated persons.

(ii) Deliberate falsification or omission of relevant information from disclosure statements shall be grounds for civil or criminal enforcement action or administrative denial of a permit, license, certification, or operational authorization. The following persons or entities are not required to file a disclosure statement:

(aa) Governmental entities, consisting only of subdivisions or agencies of the federal government, agencies of the state government, counties, municipalities, or duly authorized

regional solid waste authorities. This exemption shall not extend to improvement districts or any other subdivision of government which is not specifically instituted by an act of the General Assembly; and

(bb) Applicants for a general permit to be issued by the Department pursuant to its authority to implement the National Pollutant Discharge Elimination System for storm water discharge.

(iii) Nothing in this sub-paragraph, including the exemptions in supporting paragraph (ii) of this sub-paragraph, shall be construed as a limitation upon the authority of the director to deny a permit based upon a history of noncompliance to any applicant or for other just cause.

(iv) If the applicant is a publicly held company required to file periodic reports under the Securities and Exchange Act of 1934, or a wholly owned subsidiary of a publicly held company, the applicant shall not be required to submit a disclosure statement, but shall submit the most recent annual and quarterly reports required by the Securities and Exchange which provide information regarding legal proceedings in which the applicant has been involved. The applicant shall submit such other information as the director may require that relates to the competency, reliability, or responsibility of the applicant and affiliated persons.

(2) The director may deny the issuance or transfer of any permit, license, certification, or operational authority if he finds, based upon the disclosure statement and other investigation which he deems appropriate, that:

(a) The applicant has a history of noncompliance 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 noncompliance 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.

(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 from the change alone, without taking into account any corresponding emission reductions, will:

(a) be less than the following amounts:

(i) five (5) tons per year of carbon monoxide, nitrogen dioxide, PM_{10}, and sulfur dioxide;

(ii) twenty (20) tons per year of volatile organic compounds; and

(iii) one-half (0.5) a ton per year of lead;

(b) or, result in an air quality impact less than:

pollutant	*De Minimis* Concentration	Averaging time
carbon monoxide	500 $\mu g/m^3$	8-hour
nitrogen dioxide	10 $\mu g/m^3$	annual
PM_{10}	8 $\mu g/m^3$	24-hour
sulfur dioxide	18 $\mu g/m^3$	24-hour
lead	0.1 $\mu g/m^3$	3-month

(3) 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 BACT, §112(g), §112(i)(5), §112(j), or §111(d) of the Clean Air Act;

(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.

(4) 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.

(5) The applicant may implement *De Minimis* changes immediately upon approval by the Department.

(6) 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 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 Part 51 (Guideline on Air Quality Models) as of August 12, 1996.

(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 US 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 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 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 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.

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 which are in effect as of the effective date of this regulation, to be exceeded:

(A) Any National Ambient Air Quality Standard or ambient air increment (as listed in 40 CFR 52.21).

(B) Any applicable emission limitation promulgated by the United States Environmental Protection Agency.

(C) 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 hereinunder 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 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 United States Environmental Protection Agency:

(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 Part 60, Appendix A).

Reg. 19.504 Stack height/dispersion regulations

The stack height provisions of 40 CFR 51.118 are incorporated by reference. The definition of "stack," "a stack in existence," "dispersion technique," "good engineering practice," "nearby," and "excessive concentration" contained in 40 CFR 51.100 (ff) through (kk) are incorporated into this chapter by reference.

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 National Ambient Air Quality Standards 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 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 unforseeable 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 noncompliance 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 noncompliance 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.

The Department shall require that all applicable testing be performed using the methods described in 40 CFR Part 60, Appendix A. 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 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 Part 60 Appendix B, and quality assurance procedures in 40 CFR Part 60 Appendix F, 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 Part

51 Appendix P or in 40 CFR Part 60 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 Part 51, Appendix P, Section 4.0 (Minimum Data Requirements) 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 8: 111(D) DESIGNATED FACILITIES

Reg. 19.801 Purpose

The purpose of this chapter is to establish regulations for designated pollutants emitted from designated facilities in accordance with Section 111(d) of the Clean Air Act.

Reg. 19.802

No person shall cause or permit emissions from equipment located at facilities described in this chapter to be exceeded. Future permit conditions may place more stringent emissions limitations on the equipment which shall supersede the limitations of this section.

Reg. 19.803 Sulfuric Acid Plants (H_2SO_4 Mist)

(A) El Dorado Chemical Company (AFIN 7000040) of El Dorado shall not exceed the following emission limitation after November 1, 1980:

(1) Sulfuric Acid Plant - 0.5 lb H_2SO_4 mist/ton 100% acid.

(2) [RESERVED]

(B) Compliance testing shall be performed using EPA Method #8 (40 CFR Part 60 Appendix A) at intervals specified in the applicable permit.

Reg. 19.804 Kraft Pulp Mills (TRS)

(A) Affected Facilities

Equipment located at the following kraft pulp mills are affected by the provisions of this subsection. The total reduced sulfur (TRS) emissions limitations are contained in Table 19.8.1.

(1) International Paper Company (AFIN 3500016) of Pine Bluff.

(2) Green Bay Packaging, Arkansas Kraft Division (AFIN 1500001) of Morrilton.

(3) Delta National Kraft (AFIN 3500017) of Pine Bluff.

(4) Georgia-Pacific Corporation (AFIN 0200013) of Crossett.

(5) Georgia-Pacific Corporation (AFIN 4100002) of Ashdown.

(6) Potlatch Corporation (AFIN 2100036) of McGehee.

(B) Compliance Testing Requirements

All designated equipment in Table 19.8.1 shall have annual compliance testing of TRS emissions performed using EPA Method 16. Data reduction shall be performed as set forth in 40 CFR 60.8. Annual compliance testing will not be required for equipment with a continuous TRS emissions monitor.

(C) Continuous Monitoring Requirements

Any equipment located at the above designated facilities shall conduct TRS continuous monitoring in accordance with the requirements of 40 CFR 60.284 (date of installation not withstanding). The continuous monitoring systems shall be operated according to the provisions of 40 CFR 60.284 by April 1, 1993, except that continuous emissions monitors for affected lime kilns shall be installed and certified by January 1, 1994.

Table 19.8.1 Kraft Pulp Mill TRS Emission Limits

AFIN	Facility	Equipment	TRS Concentration
5200013	IP Camden	recovery furnace	40 ppm
		lime kiln	40 ppm
		smelt dissolving tank	0.0168 g/kg
3500016	IP Pine Bluff	recovery furnace	40 ppm
		lime kiln	40 ppm

		smelt dissolving tank	0.0168 g/kg
1500001	Green Bay Packaging, Arkansas Kraft Division	recovery furnace	40 ppm
		lime kiln	40 ppm
		smelt dissolving tank	0.0168 g/kg

Table 19.8.1 Kraft Pulp Mill TRS Emission Limits			
AFIN	Facility	Equipment	TRS Concentration
3500017	Gaylord Container, Corp.	recovery furnace	100 ppm
		lime kiln	40 ppm
		smelt dissolving tank	0.0168 g/kg
0200013	GP Crossett	recovery furnace	5 ppm
		lime kiln	8 ppm
		smelt dissolving tank	0.0168 g/kg
4100002	GP Ashdown	recovery furnace	5 ppm
		lime kiln	8 ppm
		smelt dissolving tank	0.0168 g/kg
2100036	Potlatch McGehee	recovery furnace	5 ppm
		lime kiln	20 ppm
		smelt dissolving tank	0.0168 g/kg

Recovery Furnaces – measured as H_2S on a dry basis and on a 12 hour average, corrected to 8% by volume oxygen.

Lime Kilns – measured as H_2S on a dry basis and on a 12 hour average, corrected to 10% volume oxygen.
Smelt Dissolving Tanks – measured as grams H_2S/kg black liquor solids on a 12 hour average.
Digesters and Evaporators – efficient incineration of non-condensible gases (at least 1200°F for at least 0.5 second).

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 §§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 U.S. Environmental Protection Agency 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) All other terms used herein shall have the same meaning as set forth in chapter 2 or in 40 CFR 52.21(b) [PSD] and 40 CFR 51.301 [Protection of Visibility], all as in effect upon the latest date of amendment of this supplement, unless manifestly inconsistent with the context in which they are used. Wherever there is a difference between the definitions in chapter 2 and those listed in 40 CFR 52.21(b) and 40 CFR 51.301, the federal definitions as listed in 40 CFR 52.21(b) and 40 CFR 51.301 shall apply.

(C) The definition for “routine maintenance, repair and replacement” in 40 CFR 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), and (F) of this section, 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 U.S. Environmental Protection Agency under 40 CFR 52.21 (a)(2) through (bb), as in effect on July 23, 2004, which are hereby incorporated herein by reference, with the exception of 40 CFR 52.21(b)(55-58), 40 CFR 52.21(i) (9), and 40 CFR 52.21(cc), which are not incorporated. 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 CFR 51.166(f)(1)(iii), 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 CFR 52.21(o), the following requirements [designated as subparagraphs (4), (5), (6), and (7)] shall also apply:

(4) 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:

(i) Effects that the proposed consumption would have upon the industrial and economic development within the area of the proposed source; and

(ii) Alternatives to such consumption, including alternative siting of the proposed source or portions thereof.

(5) The assessment required under subparagraph (4) above shall be made part of the application for permit and shall be made available for public inspection as provided in 40 CFR 52.21(q).

(6) The assessment required under subparagraph (4) 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.

(7) The assessment required under subparagraph (4) 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 aforecited assessment.

(D) In addition to the requirements of 40 CFR 52.21(p)(1), 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 CFR 51.301 and 40 CFR 52.21 refer to the Administrator or the Environmental Protection Agency, the reference, for the purposes of paragraph (A) of §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 CFR 52.21(f)(1)(v), (f)(3), and (f)(4)(I);

(2) Redesignation: 40 CFR 52.21(g)(1), (g)(2), (g)(4), (g)(5), and (g)(6);

(3) Air quality models: 40 CFR 52.21 (2).

(F) Redesignation of air quality areas in Arkansas shall comply with Arkansas Code Annotated 1987 Section 8-3-101 et seq.

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 United States Environmental Protection Agency 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 or, if not defined in chapter 2, 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 United States Environmental Protection Agency.

"Cutback asphalt" means asphalt cement which has been liquefied by blending with petroleum solvents (diluents). 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 kPa (4 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" 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 §19.1005 hereof;

(b) Any source which is subject to the terms of a Commission order issued pursuant to paragraph 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 paragraph 19.1004(D)(1) and shall go into full force and effect on the effective date provided, however, that the provisions of paragraph 19.1004(D)(1) shall go into full force and effect on April 1, 1979. The effective date for subsections 19.1005(A)(B)&(C) is July 1, 1979 and for subsections 19.1005(D)&(E) is October 1, 1980. The effective date for subsection 19.1005(F) is April 1, 1981.

(B) Exemptions and Variances

(1) [RESERVED.]

(2) The requirements of §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 §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 §19.1005. In no event, however, shall the Commission issue variances from the requirements of §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 §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 Commission 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 Commission shall issue an order requiring the installation of such technology.

(2) Any order issued pursuant to paragraph 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 Commission 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 Commission 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 §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 §19.1005. The compliance schedule shall be of such form and contain such information as the Commission may reasonably require. The applicable date for subsection 19.1005(A)(B)&(C) is October 1, 1979. The applicable date for subsections 19.1005(D)&(E) is January 1, 1981. The applicable date for subsection 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 §19.1005 after the approval date if a compliance schedule of such source under Subsection (a) above has been disapproved by the Commission. No compliance schedule for any source shall be approved by the Commission unless the Commission 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 §19.1005 prior to the final compliance date. Extensions beyond the final compliance date may be granted by the Commission provided the Commission 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 subsections 19.1005(A)(B)&(C) is February 1, 1981 and for subsections 19.1005(D)(E)&(F) is February 1, 1982. The final compliance date for subsections 19.1005(A)(B)&(C) is June 1, 1981, for subsection 19.1005(D) is March 1, 1982, and for subsections 19.1005(E)&(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 Commission or which violates the terms of a

Commission order issued pursuant to the provisions of paragraph 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 Commission. Application for permit shall be of such form and contain such information as the Commission 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 Commission 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 Commission 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 §19.1005 apply unless the Commission 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 Commission Order has been issued pursuant to paragraph 19.1004(D)(1), unless the Commission 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 §19.1005 or, where §19.1005 is not applicable, is designed and operated in accordance with the provisions of a Commission 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 subsection 19.1005(D), the following method and procedures should be followed:

(a) The owner or operator shall, at his own expense demonstrate compliance with subsection 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 subsection 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 subsection 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 subsection 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 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 paragraph19.1005(F)(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 paragraph (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 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 (a) above, 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 (1)(b)&(c) of this subsection 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 C (59˚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 paragraph 19.10004(F)(3);

(b) sustains a pressure change of no more than 750 pascals (3 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 subparagraph (1)(a) of this chapter; and

(c) is repaired by the owner or operator and retested within 15 days of testing if it does not meet the criteria of 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 H_2O) and vacuum from exceeding 1,500 pascals (6 in. of H_2O) 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 paragraph 19.10004(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 paragraph (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 paragraph 19.10004(F)(3) to confirm continuing compliance with paragraphs (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/l (4.3 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; and

(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.

(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 paragraph (1) applies to a specific coating, then the most stringent emission limitation shall be applied.

(3) The emission limits set forth in paragraph (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 volatile organic compounds (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 paragraph (3)(b)&(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 equivalent 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 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 Regulation 26 shall be required to have their permit applications processed in accordance with the procedures contained in the Regulations of the Arkansas Operating Air Permit program, Regulation 26, which are hereby incorporated by reference.

CHAPTER 12: [RESERVED]

CHAPTER 13—STAGE I VAPOR RECOVERY

Reg. 19.1301 Purpose

The purpose of this chapter is to limit emissions of volatile organic compounds (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 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 national ambient air quality standards 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 unpoppeted 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 unpoppeted vapor recovery adaptor is used, the unpoppeted 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 3 inches. If the manifold vapor lines have a nominal pipe size of 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 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 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 NOX OZONE SEASON TRADING PROGRAM GENERAL PROVISIONS

Reg. 19.1401 Adoption of Regulations

40 CFR 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, 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 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 4^{th} 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 MW) used with respect to CAIR NO_x Ozone Season allowance allocations under paragraph (B) of this section for each CAIR NO_x Ozone Season unit that has operated each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit's control period gross electrical output over the 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 paragraph (A) of this section) 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 paragraph (E) of this section).

(C) The Department will allocate CAIR NO_x Ozone Season allowances to each CAIR NO_x Ozone Season unit under paragraph (B) of this section in an amount determined by multiplying the total amount of CAIR NO_x Ozone Season allowances allocated under 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 paragraph (A) of this section), 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 5 percent 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 paragraph (B) of this section. 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 paragraph (D)(2) of this section, 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 paragraph (D)(2) of this section 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 paragraphs (D)(2) and (3) of this section.

(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 paragraph (D)(4)(a) of this section) 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 paragraph (D)(4)(b) of this section, then the Department will allocate the amount of CAIR NO_x Ozone Season allowances requested (as adjusted under paragraph (D)(4)(a) of this section) to each CAIR NO_x Ozone Season unit covered by paragraph (D)(4)(a) of this section.

(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 paragraph (D)(4)(b) of this section, then the Department will allocate to each CAIR NO_x Ozone Season unit covered by an allowance allocation request accepted under paragraph (D)(4)(a) of this section the amount of the CAIR NO_x Ozone Season allowances requested (as adjusted under paragraph (D)(4)(a) of this section), 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 paragraph (D)(4)(b) of this section, 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 paragraphs (D)(4) of this section 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 paragraph (B) of this section 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 paragraph (B) of this section, divided by 95 percent 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 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 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
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 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 section 19.15004(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 (SO_2) 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.

(B) On or before the compliance date required under section 19.15004(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.

(C) On or before the compliance date required under section 19.15004(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.

(D) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (1.12 lb/MMBtu) on a 30-day rolling average;

(2) 0.46 pounds of nitrogen oxides (NO_x) per million Btu of heat input (0.46 lb/MMBtu) on a 30-day rolling average; and

(3) 0.07 pounds of PM_{10} per million Btu of heat input (0.07 lb/MMBtu) on a 30-day rolling average.

(E) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (1.20 lb/MMBtu) on a 30-day rolling average;

(2) 0.450 pounds of nitrogen oxides (NO_x) per million Btu of heat input (0.450lb/MMBtu) on a 30-day rolling average; and

(3) 0.10 pounds of PM_{10} per million Btu of heat input (0.10 lb/MMBtu) on a 30-day rolling average.

(F) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

(2) 0.28 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and

(3) The existing particulate matter emission limit satisfies the BART particulate matter requirement.

(G) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

(2) 0.15 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and

(3) The existing particulate matter emission limit satisfies the BART particulate matter requirements.

(H) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 1 Boiler at Entergy Arkansas, Inc. – White Bluff the NOx BART limits shall be prorated using the percentage of each of coal being burned.

(I) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

(2) 0.28 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average; and

(3) The existing particulate matter emission limit satisfies the BART particulate matter requirements.

(J) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average;

(2) 0.15 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and

(3) The existing particulate matter emission limit satisfies the BART particulate matter requirements.

(K) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 2 Boiler at Entergy Arkansas, Inc. – White Bluff the NOx BART limits shall be prorated using the percentage of each of coal being burned.

(L) On or before the compliance date required under section 19.15004(B), Entergy Arkansas, Inc. – White Bluff, auxiliary boiler, SN-05 shall comply with BART by restricting operation to not more than 4360 hours annually.

(M) On or before the compliance date required under section 19.15004(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 nitrogen oxides (NOx) per million Btu of heat input (0.15 lb/MMBtu) on a 30 day rolling average; and

(2) The existing particulate matter emission limit satisfies the BART particulate matter requirements.

(N) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.562 lb/MMBtu) on a 30 day rolling average;

(2) 0.25 pounds of nitrogen oxides (NOx) 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.

19.1506 Compliance Provisions

Each facility listed in section 19.15004(A) as being subject to BART shall demonstrate compliance with the BART limits listed in 19.15005 in accordance with the provisions of Chapter 7 of this regulation.

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.

CHAPTER 16. EFFECTIVE DATE

Reg. 19.1601 Effective Date

This regulation is effective ten (10) days after filing with the Secretary of State, the State Library and the Bureau of Legislative Research.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 19

APPENDIX A

Insignificant Activities List

December 3, 2004

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, NESHAP, or 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.

1. Fuel burning equipment with a design rate less than 10 million BTU per hour, provided that the aggregate pollutant specific emissions from all such units listed as insignificant do not exceed 5 tons per year (tpy) of any combination of HAPs and 10 tpy of any other pollutant.

2. Storage tanks less than or equal to 250 gallons storing organic liquids having a true vapor pressure less than or equal to 3.5 psia, provided that the aggregate pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed 5 tpy of any combination of HAPs and 10 tpy of any other 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 0.5 psia, provided that the aggregate pollutant specific emissions from all such liquid storage tanks listed as insignificant do not exceed 5 tpy of any combination of HAPs and 10 tpy of any other 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 pollutant specific emissions from all such equipment/vents considered insignificant do not exceed 5 tpy of any combination of HAPs and 10 tpy of any other pollutant.

6. Non commercial water washing operations of empty drums less than or equal to 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 0.1 tpy.

8. Containers of less than or equal to 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 0.4 lb/gal VOCs, no hexavalent chromium, and no more than 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 10 tpy of any pollutant regulated under this regulation or less than 2 tpy of a single HAP or 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 10 tpy of any pollutant regulated under this regulation or less than 2 tpy of a single HAP or 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 90 days a year.

13. Other activities for which the facility demonstrates that no enforceable permit conditions are necessary to insure compliance with any applicable law or regulation provided that the emissions are less than 5 tpy of any pollutant regulated under this regulation or less than 1 tpy of a single HAP or 2.5 tpy of any combination of HAPs. These emission limits apply to the sum of all activities listed under this group.

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[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.

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 sources' 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.

21. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.[5]

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[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.

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.

34. Bench-scale laboratory equipment used for physical or chemical analysis not including lab fume hoods or vents.

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[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.

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, 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 organic solvents, diluents, or thinners are used.

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 IC engines or grain elevators.

76. The following natural gas and oil exploration production site equipment: separators, dehydration units, natural gas fired compressors, and pumping units. This does not include compressors located on natural gas transmission pipelines.

ARKANSAS REGISTER

Transmittal Sheet

Charlie Daniels
Secretary of State
State Capitol Room 026
Little Rock, Arkansas 72201-1094
(501) 682-3527

For Office Use Only: Effective Date _____ Code Number _____

Name of Agency: Arkansas Department of Environmental Quality

Department: Arkansas Pollution Control and Ecology Commission

Contact: Mike Bates E-mail: bates@adeq.state.ar.us Phone: (501) 682-0750

Statutory Authority for Promulgating Rules: Ark. Code Ann. § 8-4-202 (d)(4)(C)

Rule Title: Reg 19, AR Plan of Implementation for Air Pollution Control; Docket 07-006-R; Minute Order 07-33

Intended Effective Date		Date
☐ Emergency	Legal Notice Published	05/27/07
☑ 10 Days After Filing	Final Date for Public Comment	07/12/07
☐ Other _____	Reviewed by Legislative Council	08/02/07
	Adopted by State Agency	09/28/07

☑ Electronic Copy of Rule Provided (per Act 1648 of 2001)

☐ Electronic Copy of Rule to be e-mailed from: _____
Contact Person Email Address

FILED
07 OCT -5 AM 10: 17
CHARLIE DANIELS
SECRETARY OF STATE
STATE OF ARKANSAS
BY

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted In Compliance with Act 434 of 1967 As Amended.

Michael O'Malley
Signature

(501) 682-7890 omalley@adeq.state.ar.us
Phone Number E-mail Address

Administrative Hearing Officer
Title

10/05/07
Date

ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION
101 EAST CAPITOL
SUITE 205
LITTLE ROCK, ARKANSAS 72201
PHONE: (501) 682-7890
FAX: (501) 682-7891

October 5, 2007

Ms. Donna Davis
Administrative Rules and Regulations Committee
Room 433, State Capitol Building
Little Rock, AR 72201

Re: Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control; Docket No. 07-006-R - **FINAL REGULATION**

Dear Ms. Davis:

I am enclosing the following for filing with your office:

1. Two (2) hard copies of the amendment to Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control.

2. Two (2) copies of Minute Order No. 07-33.

3. Two (2) copies 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.

Respectfully,

Michael O'Malley

Michael O'Malley
Administrative Hearing Officer

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

For Office Use Only

Effective Date: **Classification Number:**

Name of Agency:
Arkansas Department of Environmental Quality

Contact Person: Mike Bates **Telephone:** (501) 682-0750

Statutory Authority for Promulgating Rules: Ark. Code Ann. § 8-4-202 (d)(4)(C)

Title of Rule: Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control; Docket No. 07-006-R, Minute Order No. 07-33

Rule Status	Effective Date Status	Effective Date
☐ New Rule/Regulation	☐ Emergency	
☒ Amended Rule/Regulation	☒ 10 Days after filing	October 15, 2007
☐ Repealed Rule/Regulation	☐ Other	
☐ Order	☐ Repealed	
☐ Emergency Rule/Regulation	Adopted by State Agency	

☐ Rule above is proposed and will be replaced by final version

☒ Financial and/or Fiscal Impact Statement Attached

Certification of Authorized Officer

I hereby certify that the attached rules were adopted in compliance with Act 434 of 1967 as amended.

Signature: Michael O'Malley Date: October 5, 2007

Title: Administrative Hearing Officer

ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION

SUBJECT: Adoption of Revisions to Regulation Number 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control

Docket No. 07-006-R

MINUTE ORDER NO. 07-33

Pursuant to public notice and hearing, and in consideration of the facts presented in the response to comments, Arkansas Pollution Control and Ecology Commission hereby adopts revisions to Regulation 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control.

PROMULGATED THIS SEPTEMBER 28TH DAY OF SEPTEMBER, 2007 BY ORDER OF THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION.

BY: _____
Thomas Schueck, Chair

ATTEST: _____
Teresa Marks, Director

APPROVED: _____
Mike Beebe, Governor

COMMISSIONERS:

B. Ackerman	L. Sickel
L. Bengal	J. Simpson
S. Henderson	W. Thompson
C. McGrew	E. Valdez
D. Samples	B. White
J. Shannon	R. Young

_____
Chair

Submitted by: Deborah Pitts PASSED: September 28, 2007

Appendix 9.3D

Supporting Documentation for
Arkansas Pollution Control and Ecology
Commission Regulation No. 19

ADEQ REGULATIONS TRACKING SHEET

Regulation No. 19 **Common Name:** Arkansas Plan of Implementation for Air Pollution Control

1. **Strawman review** of draft regulations by key groups.

	initiated	*completed*	*incorporated*
EPA	n/a	n/a	n/a
ADEQ Legal/Admin.	03/02/2007	03/09/2007	03/09/2007
Industrial/ Environmental Groups	03/23/2007	03/30/2007	03/30/2007

Comments: The Arkansas Department of Environmental Quality (ADEQ) proposes revisions to Regulation 19 by adding a chapter to address the State's obligations as part of the Regional Haze Rule.

2. Proposed regulations presentation to Commission's **Regulations Committee** for approval to proceed to public comment period.

Date: 05/24/2007 *By:* Deborah Pitts, Attorney Specialist

Comments/Approval: Committee recommended adoption of petition to initiate rulemaking

3. **Legal notice** of proposed regulations and public hearing.

publication	*dates of*
Arkansas Democrat Gazette	5/27/2007 and 5/28/2007

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.

location	*date*	*hearing chairman*
Little Rock, Arkansas, ADEQ Head Quarters, Building G	6/27/2007	Ephrain Valdez

6. Date of final day of public comment period: July 12, 2007

7. **Final proposed regulation** and **response to comments** prepared by Department.

Date initiated: 7/13/2007 *Date completed:* 8/31/2007

8. Formal presentation to the **Public Health & Welfare Committee** of the Legislative Council.

Date: 8/28/2007 *By:* Karen Basset, Deputy Director

Comments/Approval: Committee recommended adoption of regulation changes.

9. Formal presentation of proposed final regulation to the **Administrative Rules & Regulations Subcommittee** of the Legislative Council (All Regs).

Date: 8/02/2007 *By:* Karen Bassett, Deputy Director

Comments/Approval: Subcommittee recommended adoption of regulation changes.

10. Presentation of proposed final regulation to Commission's **Regulations Committee**.

Date: 9/28/2007 *By:* Deborah Pitts, Attorney Specialist

Comments/Approval: Committee recommended adoption of regulation changes

11. Provide Commission members with copy of proposed final regulation prior to Commission meeting.

Date Delivered: 9/07/2007

12. Present proposed final regulation to the **Commission** for adoption.

Date: 9/28/2007 *By:* Deborah Pitts, Attorney Specialist

Comments/Approval: Commission adopted regulation changes

13. Send two copies of adopted regulation to **Secretary of State** (regulation becomes effective twenty days after filing).

Date mailed: October 5, 2007

14. Formally submit adopted regulation to **EPA**.

Date mailed: Upon submittal of Regional Haze Rule State Implementation Plan

PREPARED BY:
ARKANSAS DEPARTMENT
OF ENVIRONMENTAL QUALITY

By: _____

ADEQ
ARKANSAS
Department of Environmental Quality

News Release

Contact: Doug Szenher, Public/Media Affairs Mgr. **For release: September 24, 2007**
Telephone 501-682-0915 **Fax 501-682-0880** **E-mail doug@adeq.state.ar.us**

PC&E COMMISSION, REGULATIONS COMMITTEE TO MEET

The Arkansas Pollution Control and Ecology Commission and its Regulations Committee will meet September 28 at the Arkansas Department of Environmental Quality's (ADEQ) new headquarters at 5301 Northshore Drive, North Little Rock.

The Regulations Committee will meet at 8:30 a.m. to consider recommendations for the full Commission on proposed revisions to four Commission regulations:

- Regulation No. 2 (Water Quality Standards); proposed final changes involving two separate proposals. One proposal (Phase I) focuses primarily on issues involving Extraordinary Resource Waters (ERW), while the other proposal (Phase II) involves adoption of changes to the bacteria and mineral standards, and clarification of language in several sections unrelated to ERW issues.
- Regulation No. 12 (Regulated Storage Tanks); proposed final changes involving new regulations for secondary containment of petroleum product releases and cost eligibility issues for reimbursement of release clean-up activities.
- Regulation No. 19 (State Implementation Plan for Air Pollution Control); proposed final changes involving adoption of new regional haze regulations to comply with recent changes to federal air pollution regulations.
- Regulation No. 9 (Permit Fees); initiation of the rulemaking process to accept public comments on proposed changes to several sections dealing with general permits issued by the ADEQ.

--MORE--

The full Commission meeting will begin at 9:00 a.m., or immediately after the Regulations Committee adjourns, whichever comes later. In addition to acting on the Regulations Committee recommendations, the Commission will hear oral arguments involving an appeal of the Commission Hearing Officer's recommended decision to dismiss a third-party permit appeal concerning a wastewater discharge permit issued to UMETCO Minerals Corp. in Hot Spring County.

After the meeting adjourns, several Commissioners are expected to remain at the ADEQ headquarters for an open house ceremony marking the agency's move to the new building during July and August.

In addition, several Commission members are expected to attend a training session on the use of laptop computers to be used in future meetings. The training session is scheduled to begin at 4:00 p.m. September 27 in the Commission Room.

It is not certain whether a quorum will be in attendance at either the open house or the training session, but no Commission business transactions will take place during either event.

Directions to the new ADEQ building and an area map showing its location are available on the agency's Internet web site at www.adeq.state.ar.us. Visitors attending the meeting should first register at the reception desk in the lobby, then proceed down the hall on the right side of the lobby to the Commission Room.

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ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 19

REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL

Submitted to the
Pollution Control and Ecology Commission
on May 24, 2007 DRAFT

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 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 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 1350 mm
	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
	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	35-00082	SN-01	Kiln A
Chemical Processing Plants	Albermarle Corporation – South Plant	14-00028	BH-01	Boiler #1
			BH-02	Boiler #2
	Future Fuels	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 5 years after the effective date of this regulation.

(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 section 19.15004(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 (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and

(2) 0.23 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.23 lb/MMBtu) on a 30-day rolling average.

(B) On or before the compliance date required under section 19.15004(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.

(C) On or before the compliance date required under section 19.15004(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.

(D) On or before the compliance date required under section 19.15004(B), Domtar Industries Inc. – Ashdown Mill, #1 Power Boiler, SN-03 shall comply with BART by meeting the following emission limits:

(1) 0.763 pounds of sulfur dioxide (SO_2) per million Btu of heat input (0.763 lb/MMBtu) on a 24-hour average,

(2) 0.310 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.310 lb/MMBtu) on a 24-hr average; and

(3) 0.07 pounds of PM_{10} per million Btu of heat input (0.07 lb/MMBtu) on a 24 hour average.

(E) On or before the compliance date required under section 19.15004(B), Domtar Industries Inc. – Ashdown Mill, #2 Power Boiler, SN-05 shall comply with BART by meeting the following emission limits:

(1) 0.961 pounds of sulfur dioxide (SO_2) per million Btu of heat input (0.961 lb/MMBtu) on a 24-hour average;

(2) 0.450 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.450lb/MMBtu) on a 24-hour average; and

(3) 0.07 pounds of PM_{10} per million Btu of heat input (0.07 lb/MMBtu) on a 24 hour average.

(F) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average, and

(2) 0.28 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average.

(G) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average; and

(2) 0.15 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average.

(H) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 1 Boiler at Entergy Arkansas, Inc. – White Bluff the NOx BART limits shall be prorated using the percentage of each of coal being burned.

(I) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average, and

(2) 0.28 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.28 lb/MMBtu) on a 30-day rolling average.

(J) On or before the compliance date required under section 19.15004(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 sulfur dioxide (SO_2) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average, and

(2) 0.15 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.15 lb/MMBtu) on a 30-day rolling average.

(K) When burning a mix of bituminous coal and sub-bituminous coal in the Unit 2 Boiler at Entergy Arkansas, Inc. – White Bluff the NOx BART limits shall be prorated using the percentage of each of coal being burned.

(L) On or before the compliance date required under section 19.15004(B), Entergy Arkansas, Inc. – White Bluff, auxiliary boiler, SN-05 shall comply with BART by not operating concurrently with Unit 1 and Unit 2. The auxiliary boiler may operate concurrently with Unit 1 or Unit 2.

(M) On or before the compliance date required under section 19.15004(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) 0.00057 pounds of sulfur dioxide (SO_2) per million Btu of heat input (0.00057 lb/MMBtu) on a 24-hour average;

(2) 0.048 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.048 lb/MMBtu) on a 24-day hour average; and

(3) 0.0063 pounds of $PM_{2.5}$ per million Btu of heat input (0.0063 lb/MMBtu) on a 24 hour average.

(N) On or before the compliance date required under section 19.15004(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) 0.194 pounds of sulfur dioxide (SO_2) per million Btu of heat input (0.194 lb/MMBtu) on a 24-hour average;

(2) 0.021 pounds of nitrogen oxides (NOx) per million Btu of heat input (0.021 lb/MMBtu) on a 24-day hour average; and

(3) 0.015 pounds of $PM_{2.5}$ per million Btu of heat input (0.015 lb/MMBtu) on a 24 hour average.

19.1506 Compliance Provisions

Each facility listed in section 19.15004(A) as being subject to BART shall demonstrate compliance with the BART limits listed in 19.15005 in accordance with the provisions of Chapter 7 of this regulation.

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.

CHAPTER 16 EFFECTIVE DATE

Reg. 19.1601 Effective Date

This regulation is effective ten (10) days after filing with the Secretary of State, the State Library and the Bureau of Legislative Research.

NEED NUMBER

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

REGULATION NO. 19

REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL

Submitted to the
Pollution Control and Ecology Commission
On May 24, 2007 DRAFT

ECONOMIC IMPACT STATEMENT
OF PROPOSED RULES OR REGULATIONS
ACT 143 OF 2007: Regulatory Flexibility

Department	Arkansas Department of Environmental Quality
Division	Air Division
Contact Person	Technical: Mary Pettyjohn; Formatting: Mike Porta
Date	May 11, 2007
Contact Phone	Mary Pettyjohn: 501.682.0070; Mike Porta: 501.682.0730
Contact Email	Mary Pettyjohn: pettyjohn@adeq.state.ar.us; Mike Porta: porta@adeq.state.ar.us
Title or Subject:	Addition of Chapter 15: Regional Haze Rule (CAIR) to Arkansas Pollution Control and Ecology Regulation 19 Regulations of the Arkansas Plan of Implementation for Air Pollution Control

Benefits of the Proposed Rule or Regulation

1. Explain the need for the proposed change(s). Did any complaints motivate you to pursue regulatory action? If so, Please explain the nature of such complaints.
Regulation Number 19 contains the provisions of the State Implementation Plan for the State of Arkansas. The proposed addition of Chapter 15 addresses the State's obligations under the Regional Haze Rule. 40 CFR 51.308 requires all states to submit, an implementation plan addressing regional haze in each mandatory Class I Federal area located within the state and areas located outside the state which may be affected by emissions from within the state. This plan, among other things, must contain emission limits representing best available retrofit technology (BART) requirements for sources "that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I federal area.

2. What are the top three benefits of the proposed rule or regulation?
a. Improved visibility in Federally Mandated Class I area;
b. Reduced respiratory health effects and reduced cardiovascular and lung cancer incidents;
c. Increased revenue to the State by increasing visitation to AR's two Class I areas.

3. What, in your estimation, would be the consequence of taking no action, thereby maintaining the status quo?
EPA will implement a FIP to address the requirements under the Regional Haze Rule.

4. Describe market-based alternatives or voluntary standards that were considered in place of the proposed regulation and state the reason(s) for not selecting those alternatives.
None. EPA mandated these revisions.

Impact of Proposed Rule or Regulation

5. Estimate the cost to state government of collecting information, completing paperwork, filing recordkeeping, auditing and inspecting associated with this new rule or regulation.
There are no costs to Arkansas to participate. Minimal costs are associated with providing annual data to EPA.

EXHIBIT D

6. What types of small businesses will be required to comply with the proposed rule or regulation? Please estimate the number of small businesses affected.
Small business will not be affected by the proposed Regulation 19 revision.

7. Does the proposed regulation create barriers to entry? If so, please describe those barriers and why those barriers are necessary.
The proposed regulation will provide no barriers to entry. Businesses affected by this regulation are obligated to participate by EPA.

8. Explain the additional requirements with which small business owners will have to comply and estimate the costs associated with compliance.
No additional requirements for small business owners.

9. State whether the proposed regulation contains different requirements for different sized entities, and explain why this is, or is not, necessary.
This rue establishes Best Available Retrofit Technology (BART) limits for sources required to have them. These limits are established on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

10. Describe your understanding of the ability of small business owners to implement changes required by the proposed regulation.
Small businesses are not required to implement any changes.

11. How does this rule or regulation compare to similar rules and regulations in other states or the federal government?
This rule revision is intended to meet the State's obligations under 40 CFR 51.308. It does not contain any elements not required by 40 CFR 51.308.

Provide a summary of the input your agency has received from small business or small business advocates about the proposed rule or regulation.

None.

ECONOMIC IMPACT/ENVIRONMENTAL BENEFIT ANALYSIS

Answer to best of the proponent's ability, as required by ADPCEC Regulation 8, Chapter 3.5

STEP 1: DETERMINATION OF ANALYSIS REQUIREMENT (to be included in petition to initiate rulemaking)

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION REGULATION NUMBER 19
REGULATIONS OF THE ARKANSAS PLAN
OF IMPLEMENTATION FOR AIR POLLUTION CONTROL

1A. Is the proposal expressly addressed by a Federal requirement?
Yes.
1B. If 1A is YES, is proposed regulation equivalent, or more stringent, or less stringent than federal requirement?

- If equivalent – Economic Impact/Environmental Benefit Analysis is not required
- If more stringent - Economic Impact/Environmental Benefit Analysis is required
- If less stringent - Economic Impact/Environmental Benefit Analysis is not required, but does require federal agency approval prior to adoption if the proposal is part of an authorized state program.

Equivalent to federal requirements, thus an Economic Impact/Environmental Benefit Analysis is not required. The proposed amendment of Regulation Number 19 will add Chapter 15 to the regulation. The proposed addition of Chapter 15 will address the State's obligations as part of the Regional Haze Rule. 40 CFR 51.308 requires all states to submit, an implementation plan addressing regional haze in each mandatory Class I Federal area located within the state and areas located outside the state which may be affected by emissions from within the state. This plan, among other things, must contain emission limits representing best available retrofit technology (BART) requirements for sources "that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I federal area.

The purpose of these regulatory revisions is to meet the State's obligation to establish BART requirements as found in 40 CFR 51.308(e).

STEP 2: THE ANALYSIS (to be included in petition to initiate rulemaking, if required)

2A. ECONOMIC IMPACT

Not required.

2B. ENVIRONMENTAL BENEFIT

Not required.

EXHIBIT E

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO REGULATION NO. 19 REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL	))))	DOCKET NO. 07-_____-R

STATEMENT OF BASIS AND PURPOSE FOR REGULATION NO. 19

40 CFR 51.308 requires all states to submit, an implementation plan addressing regional haze in each mandatory Class I Federal area located within the state and areas located outside the state which may be affected by emissions from within the state. This plan, among other things, must contain emission limits representing best available retrofit technology (BART) requirements for sources "that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I federal area."

The purpose of these regulatory revisions is to meet the State's obligation to establish BART requirements as found in 40 CFR 51.308(e). The following table lists each section of this regulation revision and the corresponding federal or Arkansas Pollution Control and Ecology Commission ("APC&EC") requirement.

Regulation 19 Chapter 15 Section	Corresponding Requirement
19.1501 Purpose	40 CFR 51.308(a)
19.1502 Definitions	40 CFR 51.301
19.1503 BART Eligible Sources	40 CFR 51.308(e)(1)(i)
19.1504 Facilities Subject to BART	40 CFR 51.308(e)(1)(ii) 40 CFR 51.308(e)(1)(iv) 40 CFR 51.308(e)(1)(v)
19.1505 BART Requirements	40 CFR 51.308(e)(1)(ii)(A) & (B) 40 CFR 51.308(e)(1)(iii)
19.1506 Compliance Provisions	APC&EC Regulation 19 Chapter 7
19.1507 Permit Reopening	APC&EC Regulation 26.1011(A)(1)

EXHIBIT F

ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION

SUBJECT: Petition to
Initiate Rulemaking:
Regulation Number 19
Regulations of the Arkansas
Plan of Implementation
for Air Pollution Control

Docket No. 07-_____-R

MINUTE ORDER NO. 07-____

On May 11, 2007, The Arkansas Department of Environmental Quality ("Department") filed a Petition to Amend Regulation Number 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control. The Petition has been designated as Docket No. 07-____-R.

The Commission's Regulations Committee met on May 11, 2007, to review the Petition. Having considered the Petition, the Regulations Committee recommends the Commission institute a rulemaking proceeding to consider adopting the proposed revisions to Regulation Number 19.

1. The Department shall file an original and two (2) copies and a computer disk in Word of all materials required under this Minute Order.

2. Persons submitting written public comments shall submit their written comments to the Department. Within ten (10) business days following the adoption or denial of the proposed rule, the Department shall deliver the originals of all comments to the Commission Secretary.

3. A public hearing shall be conducted on June 27, 2007 in the Arkansas Pollution Control and Ecology Commission Meeting Room located in the Arkansas State Police Building near Geyer Springs Road and Interstate 30 , Little Rock, Arkansas.

4. Public Notice of the proposed rulemaking will be published beginning on or about May 27 and May 28. The period for receiving all written comments shall conclude on July 12 unless the Commission grants an extension of time.

5. The Department shall file, not later than 14 days before the Commission meets to consider adoption of the proposed rule, a Statement of Basis and Purpose as required by Regulation No. 8, Part 3, Section 3.6.2(1), (2) and (3).

6. The Department shall file, not later than 14 days before the Commission meets to consider adoption of the proposed rule, a proposed Minute Order deciding this matter.

7. The Department shall seek review of the proposed rule from the Joint Interim Committee on Public Health and Welfare and from the Joint Interim Committee on Administrative Rules and Regulations.

8. The Regulations Committee will consider this matter at its August 2007 meeting. Members of the Regulations Committee may ask questions of the Department and any person that made oral or written comments. The Regulations Committee will make a recommendation to the Commission.

9. At its regularly scheduled August 2007 meeting, the presentation of oral statements and legal arguments shall be regulated as follows:

a. The Chair of the Commission will permit members of the public to make a statement to the Commission. No more than three (3) minutes will be allowed for each statement. The period for statements will close at the end of one (1) hour, or sooner if all interested persons have completed their statements. The Chair, in his discretion, may extend the one (1) hour public comment period.

b. At the discretion of the Chair, an attorney representing one or more individuals, a corporation or other legal entity may be permitted five (5) minutes in which to address the Commission.

c. Department legal counsel or other designated Department employee will be permitted ten (10) minutes in which to address the Commission.

d. At the conclusion of all comments, the Chairman will call on each Commissioner for the purpose of asking the attorneys or persons sponsoring comments who are present, any questions they may have. Attorneys will not be permitted to respond or ask follow-up questions of any person questioned by a Commissioner.

e. After each Commissioner has had an opportunity to ask questions, the Chair will entertain a motion on the matter, allow discussions, and call for a vote of the Commission members.

10. The Commission authorizes the Chair of the Regulations Committee, in consultation with the Chair of the Commission, to revise the procedures and schedules set out above.

11. Act 143 of 2007 requires that the Commission determine whether a proposed rule affects small businesses. Based on the information contained in the Petition, the Commission finds the proposed amendments to Regulation No. 19 are exempt from the requirements of Act 143 of 2007.

12. The Commission accepts the recommendation of the Regulations Committee and initiates the rulemaking proceeding Docket No. 07-___-R effective May 24, 2007. The Commission adopts, without modification, the procedural schedule set forth above.

COMMISSIONERS:

_____B. Ackerman
_____L. Bengal
_____S. Henderson
_____C. McGrew
_____R. Quillin
_____D. Samples
_____T. Schueck
_____J. Shannon
_____L. Sickel
_____W. Thompson
_____E. Valdez
_____B. White
_____R. Young

_____ submitted by: Deborah Pitts PASSED: May 24, 2007
Chair

EXHIBIT G

FINANCIAL IMPACT STATEMENT

PLEASE ANSWER ALL QUESTIONS COMPLETELY

DEPARTMENT: Arkansas Department of Environmental Quality
DIVISION: Air Division
PERSON COMPLETING THIS STATEMENT: Mike Porta
TELEPHONE NO.: 682-0730 **FAX NO.:** 682-0753 **EMAIL:** porta@adeq.state.ar.us

To comply with Act 1104 of 1995, please complete the following Financial Impact Statement and file two copies with the questionnaire and proposed rules.

SHORT TITLE OF THIS RULE: Regulation No. 19

1. Does this proposed, amended, or repealed rule or regulation have a financial impact?
   Yes X No _____

2. If you believe that the development of a financial impact statement is so speculative as to be cost prohibitive, please explain.

3. If the purpose of this rule or regulation is to implement a federal rule or regulation, please give the incremental cost for implementing the regulation. Please indicate if the cost provided is the cost of the program.

Current Fiscal Year	Next Fiscal Year
General Revenue_____	General Revenue_____
Federal Funds_____	Federal Funds_____
Cash Funds_____	Cash Funds_____
Special Revenue_____	Special evenue_____
Other (Identify)_____	Other (Identify)_____
Total $0	Total $0

There will be no additional cost to the Agency to implement this revised regulation.

4. What is the total estimated cost by fiscal year to any party subject to the proposed, amended, or repealed rule or regulation? Identify the party subject to the proposed regulation, and explain how they are affected.

Current Fiscal Year	**Next Fiscal Year**
$0	$0

The substantive requirements of this regulatory revision do not take effect until five years after enactment. Thus, there will be no implementation cost for the current or next fiscal year.

5. What is the total estimated cost by fiscal year to the agency to implement this regulation?

Current Fiscal Year	**Next Fiscal Year**
$ 0	$0

These revisions will be implemented by the Agency with existing staff.

EXHIBIT C

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDING REGULATION NUMBER 19, REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL	Docket No. 07-006-R

2007 MAY 15 AM 9:12

AR. POLLUTION CONTROL & ECOLOGY COMMISSION FILED BY

PETITION TO INITIATE RULEMAKING TO AMEND REGULATION NUMBER 19, REGULATIONS OF THE ARKANSAS PLAN OF IMPLEMENTATION FOR AIR POLLUTION CONTROL

The Arkansas Department of Environmental Quality ("ADEQ" or "Department"), for its Petition to Initiate Rulemaking to Amend Regulation Number 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control, states:

1. The Department requests that the Commission Initiate Rulemaking to amend Regulation Number 19, the Regulations of the Arkansas Plan of Implementation for Air Pollution Control to amend Chapter 15 to fulfill the State's obligation as part of the federal Regional Haze Program ("Program"). The Program addresses regional haze in each mandatory Class I Federal area located in Arkansas. The Program also addresses Class I Federal areas located outside Arkansas which may be affected by facility emissions from the State. Implementation plans, required by the Program, among other things, must contain emission limits representing best available retrofit technology ("BART") requirements for sources "that may reasonably be anticipated to cause or contribute to any impairment of visibility in any

mandatory Class I federal area". The purpose of these regulatory revisions is to meet the State's obligation to establish BART requirements as found in 40 CFR 51.308(e).

2. The Department proposes adding Chapter 15 which is entitled Regional Haze. The Department proposes adding seven sections as follows:

a. Reg. 19.1501 Purpose;

b. Reg.19.1502 Definitions;

c. Reg.19.1503 BART Eligible sources;

d. Reg.19.1504 Facilities Subject to BART;

e. Reg.19.1505 BART Requirements;

f. Reg.19.1506 Compliance Provisions; and

g. Reg.19.1507 Permit Reopening.

4. The proposed changes to Regulation Number 19 do not require an economic impact/environmental benefit analysis because the provisions Chapter 15 of APC&EC Regulation Number 19 incorporate federal requirements.

5. The proposed changes to Regulations Number 19 are currently under review by the Arkansas Department of Economic Development (ADED). The Department anticipates that ADED will determine that the amendments are exempt from the requirements of Act 143 of 2007.

6. Attached to this petition and incorporated by reference are documents as follows:

A. Legislative Questionnaire (Exhibit B);

B. Financial Impact Statement (Exhibit C);

C. Act 143 of 2007 EIS (Exhibit D);

D. Economic Impact/Environmental Benefit Analysis (Exhibit E);

E. Statement of Basis and Purpose (Exhibit F); and

F. Proposed Minute Order (Exhibit G).

6. ADEQ employees, Mary Pettyjohn, Mike Porta and Deborah Pitts, will be available to answer questions concerning this proposed rulemaking.

WHEREFORE, ADEQ requests that the Commission initiate the rulemaking process, adopt the proposed Minute Order, and adopt the proposed revisions of Regulation Number 19.

Respectfully Submitted,

ARKANSAS DEPARTMENT OF
ENVIRONMENTAL QUALITY
8001 National Drive P.O. Box 8913
Little Rock, Arkansas 72219-8913

Deborah Pitts

By: Deborah Pitts

QUESTIONNAIRE FOR FILING PROPOSED RULES AND REGULATIONS WITH THE ARKANSAS LEGISLATIVE COUNCIL AND JOINT INTERIM COMMITTEE

DEPARTMENT/AGENCY Arkansas Department of Environmental Quality
DIVISION Air Division
DIVISION DIRECTOR Mike Bates
CONTACT PERSON Mary Pettyjohn; Mike Porta
ADDRESS P. O. Box 8913, Little Rock AR 72219-8913
PHONE NO. Mary Pettyjohn: 501.682.0070; Mike Porta: 501.682.0730
E-MAIL Mary Pettyjohn: pettyjohn@adeq.state.ar.us; Mike Porta: porta@adeq.state.ar.us

INSTRUCTIONS

A. **Please make copies of this form for future use.**
B. **Please answer each question completely using layman terms. You may use additional sheets, if necessary.**
C. **If you have a method of indexing your rules, please give the proposed citation after "Short Title of this Rule" below.**
D. **Submit two (2) copies of this questionnaire and financial impact statement attached to the front of two (2) copies of the proposed rule and required documents. Mail or deliver to:**

Donna K. Davis
Subcommittee on Administrative Rules and Regulations
Arkansas Legislative Council
Bureau of Legislative Research
Room 315, State Capitol
Little Rock, AR 72201

****

1. What is the short title of this rule?
Regulation 19

2. What is the subject of the proposed rule?
Arkansas Pollution Control and Ecology Commission Regulation 19 Regulations of the Arkansas Plan of Implementation for Air Pollution Control

3. Is this rule required to comply with federal statute or regulations? Yes x No _____

If yes, please provide the federal regulation and/or statute citation.
Clean Air Act Section 169A and B and 40 CFR 51.308 and 40 CFR 51.300.

4. Was this rule filed under the emergency provisions of the Administrative Procedure Act?
Yes_____ No X

If yes, what is the effective date of the emergency rule? _____

When does the emergency rule expire? _____

Will this emergency rule be promulgated under the permanent provisions of the Administrative Procedure Act? Yes_____ No_____

5. Is this a new rule? Yes_____ No X If yes, please provide a brief summary explaining the regulation.

EXHIBIT B

Does this repeal an existing rule? Yes_____ No__X___ If yes, a copy of the repealed rule is to be included with your completed questionnaire. If it is being replaced with a new rule, please provide a summary of the rule giving an explanation of what the rule does.

Is this an amendment to an existing rule? Yes__X___ No_____If yes, please attach a mark-up showing the changes in the existing rule and a summary of the substantive changes. **Note: The summary should explain what the amendment does, and the mark-up copy should be clearly labeled "mark-up."**
Addition of Chapter 15 to address the State's obligations as part of the Regional Haze Rule. 40 CFR 51.308 requires all states to submit, an implementation plan addressing regional haze in each mandatory Class I Federal area located within the state and areas located outside the state which may be affected by emissions from within the state. This plan, among other things, must contain emission limits representing best available retrofit technology (BART) requirements for sources "that may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I federal area.

6. Cite the state law that grants the authority for this proposed rule? If codified, please give Arkansas Code citation.
A.C.A. Sections 8-4-202 and 8-4-311.

7. What is the purpose of this proposed rule? Why is it necessary?
The purpose of these regulatory revisions is to meet the State's obligation to establish BART requirements as found in 40 CFR 51.308(e).

8. Will a public hearing be held on this proposed rule? Yes__X___ No_____
If yes, please complete the following:
Date: *June 27, 2007*
Time: 2:00 p.m. to 4:00 p.m.
Place: *Arkansas Pollution Control and Ecology Commission Meeting Room located in the Arkansas State Police Building near Geyer Springs Road and Interstate 30 , Little Rock, Arkansas*

9. When does the public comment period expire for permanent promulgation? (Must provide a date.)
July 12, 2007

10. What is the proposed effective date of this proposed rule? (Must provide a date.)
Ten days after filing with the Secretary of State, the State Library and the Bureau of Legislative Research.

11. Do you expect this rule to be controversial? Yes_____ No__*X*___ If yes, please explain.

12. Please give the names of persons, groups, or organizations that you expect to comment on these rules? Please provide their position (for or against) if known.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION
REGULATIONS COMMITTEE MEETING
Thursday, May 24, 2007
8:30 a.m.

ARKANSAS STATE POLICE
NO. 1 STATE POLICE PLAZA
LITTLE ROCK, ARKANSAS 72209

AGENDA

I. Call Meeting to Order – 8:30 a.m.

II. Roll Call

III. Approval of April 27, 2007 Regulations Committee Minutes

IV. Regulation No. 12, Storage Tank Regulation **APPENDIX I**
- **Docket No. 07-005-R**
- **Dawn Guthrie for Arkansas Department of Environmental Quality**
- **Minute Order (Initiate)**

V. Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control **APPENDIX II**
- **Docket No. 07-006-R**
- **Deborah Pitts for Arkansas Department of Environmental Quality**
- **Minute Order (Initiate)**

VI. Adjourn

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION
REGULAR COMMISSION MEETING
Thursday, May 24, 2007
9:00 a.m. (or immediately following the Regulations Committee Meeting)

ARKANSAS STATE POLICE
NO. 1 STATE POLICE PLAZA
LITTLE ROCK, ARKANSAS 72209

AGENDA

I. Call Meeting to Order - 9:00 a.m.

II. Roll Call

III. Approval of April 27, 2007, Commission Meeting Minutes

IV. Department Reports

A. Director's Report

V. Public Comments

VI. Commission Reports

A. Regulations Committee – Randy Young

1. Regulation No. 12, Storage Tank Regulation **APPENDIX I**
- **Docket No. 07-005-R**
- **Dawn Guthrie for Arkansas Department of Environmental Quality**
- **Minute Order (Initiate)**

2. Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control **APPENDIX II**
- **Docket No. 07-006-R**
- **Deborah Pitts for Arkansas Department of Environmental Quality**
- **Emergency Order – Minute Order (Adopt)**
- **Minute Order (Initiate)**

VII. Administrative Hearing Officer – Michael O'Malley

A. Recommended Decisions

1. In the Matter of Homeport Land Company, LLC **APPENDIX III**
- **Docket No. 06-009-NOV**

2. In the Matter of Guy King & Sons, Inc. **APPENDIX IV**
- **Docket No. 07-001-P**

B. Settled Cases per Regulation No. 8 **APPENDIX V**

1. In the Matter of Port Cities Oil, LLC - Docket No. 06-008-NOV

VIII. Adjourn

Domtar

June 25, 2007

Arkansas Department of Environmental Quality
Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913

Attention: Ms. Mary Pettyjohn, Sr. Epidemiologist
RE: Domtar Comments on Regulation 19 Draft of BART Requirements
AFIN: 41-00002, Permit No. 287-AOP-R6

Dear Ms. Pettyjohn:

This letter is in response to the draft Regulation 19 document submitted by ADEQ on May 24, 2007, that includes Regional Haze (BART) requirements for facilities subject to the BART regulation. Domtar's Ashdown Mill contains two sources, No. 1 Power Boiler (SN-03) and No. 2 Power Boiler (SN-05), which are subject to BART. Domtar's original BART determination was submitted to ADEQ on October 31, 2006. Then on March 26, 2007, a revised determination report was submitted which included updated maximum 24-hour average emission values for both No. 1 and No. 2 Power Boilers. The updated modeling information was also included in the revised BART determination report.

On June 21, 2007, Domtar and ADEQ met to discuss the emission limits that were included in the draft of Regulation 19. These limits are different than what Domtar proposed in the BART Determination Report. The units were changed from lb/hr to lb/MMBtu for SO2 and NOx on both boilers. This conversion in effect implemented more restrictive limits on our boiler operations than what we proposed would be done in our determination, which was supported through the modeling and analysis activities.

Table 4-4 below summarizes Domtar's proposed BART determination with emission limits and example technology, where applicable.

TABLE 4-4. SUMMARY OF PROPOSED BART DETERMINATIONS

Emission Unit	Pollutant	BART Limit	*Example Control Technology*
No. 1 Power Boiler	PM	0.07 lb/MMBtu (Boiler MACT)	*WESP*
	SO_2	442.5 lb/hr	*No additional add-on controls (existing fuel restrictions)*
	NO_X	179.6 lb/hr	*No add-on controls*
No. 2 Power Boiler	PM	0.07 lb/MMBtu (Boiler MACT)	*Wet Scrubber*
	SO_2	788.2 lb/hr	*Wet Scrubber*
	NO_X	368.7 lb/hr (30 Percent Control)	*LNB*

The attached charts (all located in Appendix A) were presented and discussed with ADEQ personnel (Mike Porta, Mary Pettyjohn, Bill Swafford and Wesley Crouch) during our meeting last week. Chart 1 shows our current SO2 limits on No. 2 Power Boiler, and the data footprint of how the boiler has typically operated over the past three and a half years. With the current 3-hour average limit of 1.20 lb/MMBtu, you can see that the majority of our emissions fall within this limit, on a 24-hour average basis. Chart 2 contains the same data but adds our proposed limit of 788.2 lb/hr. You can see that the majority of our data still falls under this limit. In our BART determination, we did not propose any additional SO2 reduction on No. 2 Power Boiler. The 788.2 lb/hr limit that was proposed was our 24-hour average maximum for the baseline period (2001-2003).

Chart 3 includes a third line indicating the lb/MMBtu limit of 0.961 stated in the draft Regulation 19. This "new" limit cuts out approximately 15% of our historical operating range, thus imposing a reduction in SO2 where one had not been proposed based on the BART analysis. This value was calculated by taking Domtar's proposed lb/hr limit and dividing by the Maximum Heat Capacity of the boiler. Chart 4 includes a plot of the distribution of the data, showing that the relationship between lb/hr of emissions and that of heat input in MMBtu/hr is not linear. Domtar is requesting that the proposed SO2 emission limit of 788.2 lb/hr be written into Regulation 19 in place of the 0.961 lb/MMBtu limit currently written in the draft. Domtar would also like to maintain the current 3-hour average limit of 1.20 lb/MMBtu.

Chart 5 shows our current NOx limits on No. 2 Power Boiler, and the data footprint of how the boiler has typically operated over the past three and a half years. With the current 3-hour average limit of 0.70 lb/MMBtu, all of our emissions fall within this limit on a 24-hour average basis. Chart 6 includes Domtar's proposed emission limit of 368.7 lb/hr NOx, which includes the 30% reduction in NOx that Domtar committed to in our BART Determination report. Chart 7 includes an additional plot of data based on a linear 30% reduction in NOx from actual emissions over the past three and a half years. This chart shows that if it is indeed a linear reduction, we can meet our proposed limit. Chart 8 includes the emission limit stated in the draft Regulation 19 of 0.450 lb/MMBtu. This limit cuts directly through the bottom end of current operating performance. Chart 9 displays the distribution of the data and shows that the relationship for NOx lb/hr and boiler heat input is much more linear than SO2, however, the basis for the calculation is the same as that for SO2. Therefore, Domtar is requesting that the proposed NOx emission limit of 368.7 lb/hr be written into Regulation 19 in place of the 0.450 lb/MMBtu limit currently written in the draft.

The impact on No. 1 Power Boiler SO2 emissions is similar to that on No. 2 Power Boiler. Chart 10 shows our current SO2 emissions (based on Fuel Oil consumption and % sulfur content of Fuel Oil received) versus Domtar's proposed limit of 442.5 lb/hr. All data falls below the proposed limit. Chart 11 adds the lb/MMBtu limit from the draft Regulation 19 of 0.763. This "new" limit cuts out approximately 21% of our historical operating range, thus once again imposing a reduction in SO2 where one had not been proposed based on the BART analysis. Domtar is requesting that the proposed SO2 emission limit of 442.5 lb/hr be written into Regulation 19 in place of the 0.763 lb/MMBtu limit currently written in the draft.

Chart 12 shows the range of NOx emission data available versus Domtar's proposed limit of 179.6 lb/hr. Chart 13 adds the limit as stated in the draft Regulation 19 of 0.310 lb/MMBtu. This "new" limit would cut out five of six available NOx emission data points and result in emissions above this limit. There were no NOx reductions committed to for No. 1 Power Boiler because the modeling data showed no negative impact at Caney Creek from NOx off of No. 1 Power Boiler. The calculated lb/MMBtu limit would impose a restriction where one was not determined to be necessary in the BART analysis. Therefore, Domtar is requesting that the proposed NOx emission limit of 179.6 lb/hr be written into Regulation 19 in place of the 0.310 lb/MMBtu limit currently written in the draft.

The final topic concerning BART that was discussed during our meeting last week was that of the PM limit proposed on No. 2 Power Boiler. In our determination report we stated a BART limit of 0.07

lb/MMBtu from the Boiler MACT regulation because we knew we would have to be in compliance with Boiler MACT requirements by the time we had to comply with BART. In the Boiler MACT regulations, there is a surrogate compliance method for PM, which is Total Selected Metals (TSM). In our case, it is a possibility that the TSM surrogate will be the compliance method for No. 2 Power Boiler. Considering this, Domtar would like to request that the PM limit for BART on No. 2 Power Boiler be changed to the original maximum 24-hour PM emission rate of 81.6 lb/hr instead of the proposed 0.07 lb/MMBtu which is also written in the draft Regulation 19. The pollutant specific modeling results using 81.6 lb/hr from No. 2 Power Boiler show zero days of visibility impact due to PM. There were actually zero days of visibility impact due to PM from either boiler individually or from the combined impact of both boilers.

In summary, Domtar would like to propose the following changes to the Regulation 19 draft.

Emission Unit	Pollutant	BART Limit
No. 1 Power Boiler	SO_2	442.5 lb/hr
	NO_X	179.6 lb/hr
	PM	81.6 lb/hr
No. 2 Power Boiler	SO_2	788.2 lb/hr
	NO_X	368.7 lb/hr (30 Percent Control)

Thank you for your consideration of Domtar's comments on the draft of Regulation 19. If you should have any questions please contact me at (870) 898-2711 ext. 6168 at your convenience. You may also reach me via email at Kelley.crouch@domtar.com.

Sincerely,

Kelley R. Crouch

Kelley R. Crouch
Sr. Process Engineer

Appendix A

Domtar BART Data – Emission Charts

Chart 1

#2 Power Boiler
Steaming Rate vs SO2 Emissions
2004-2007 YTD

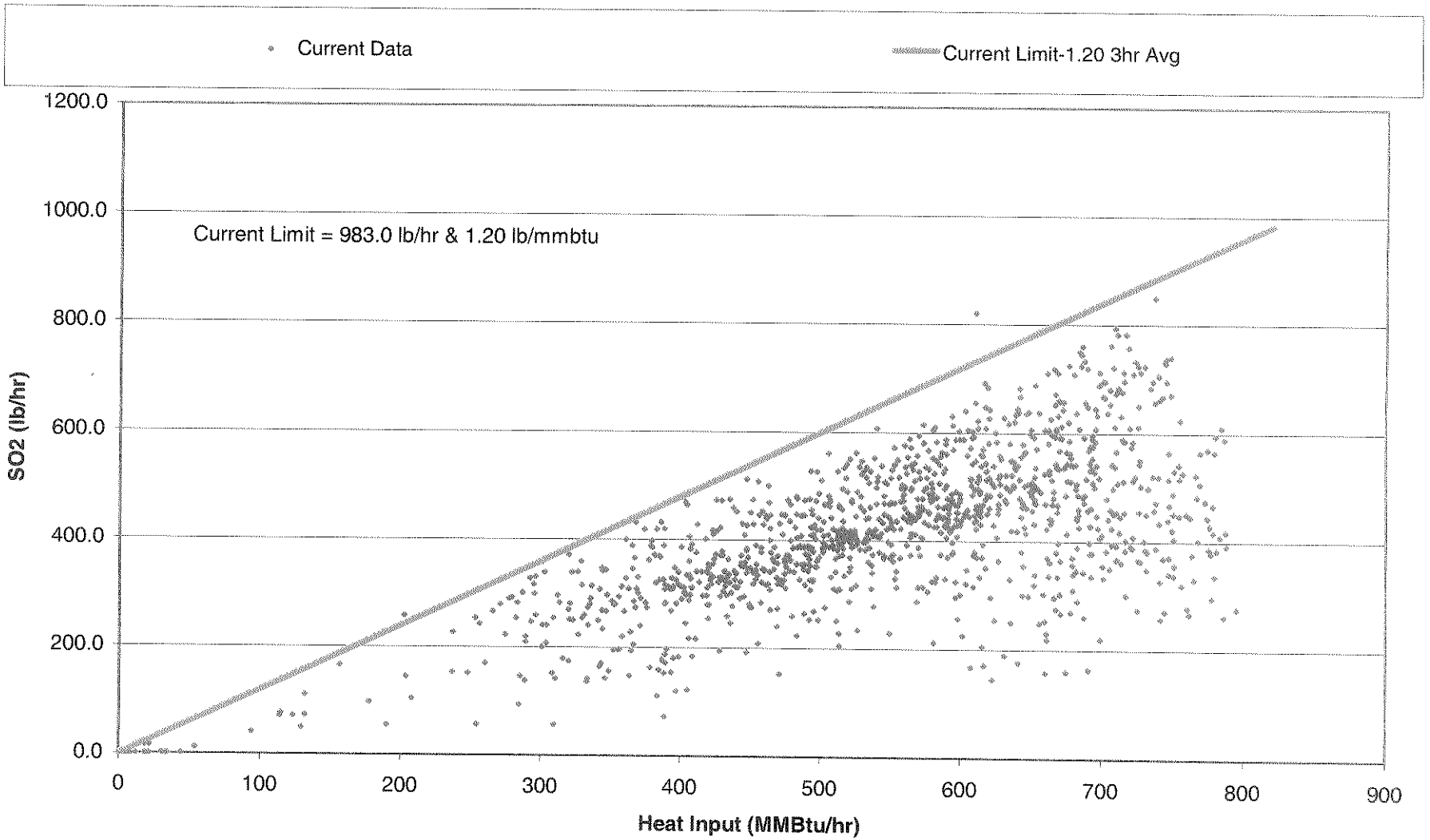


Chart 2

#2 Power Boiler
Steaming Rate vs SO2 Emissions
2004-2007 YTD

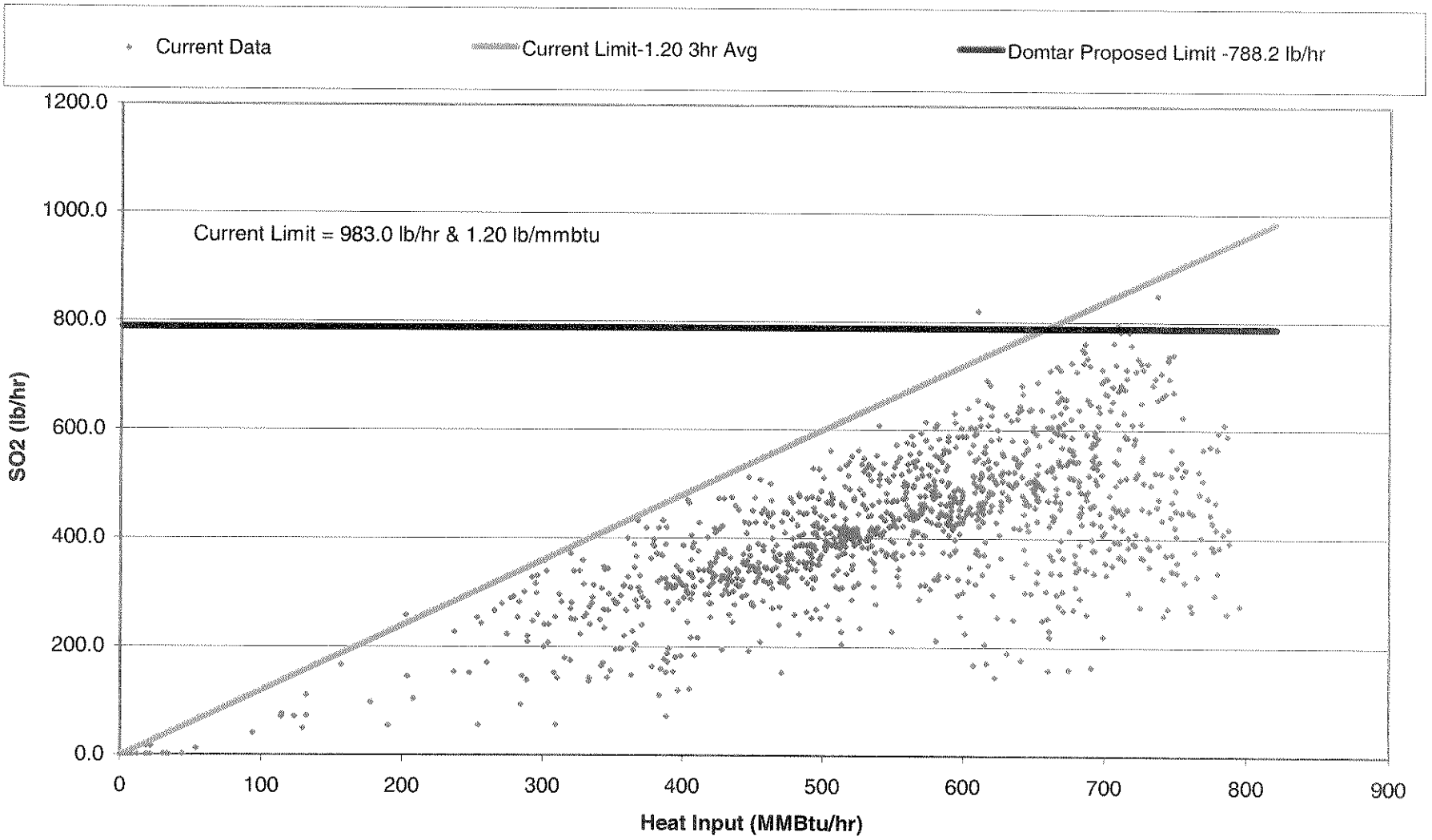


Chart 3

#2 Power Boiler
Steaming Rate vs SO2 Emissions
2004-2007 YTD

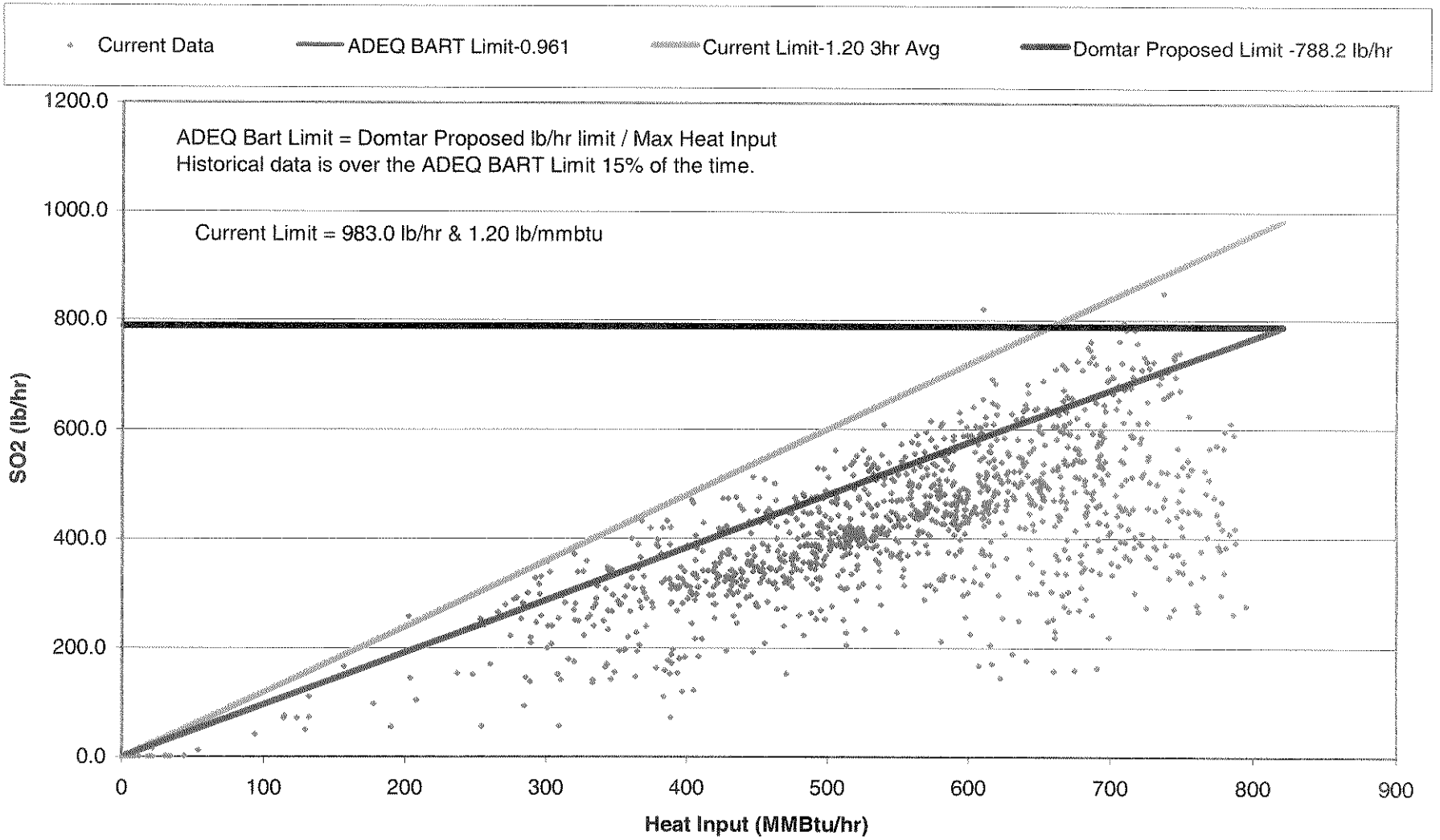


Chart 4

#2 Power Boiler
Steaming Rate vs SO2 Emissions
2004-2007 YTD

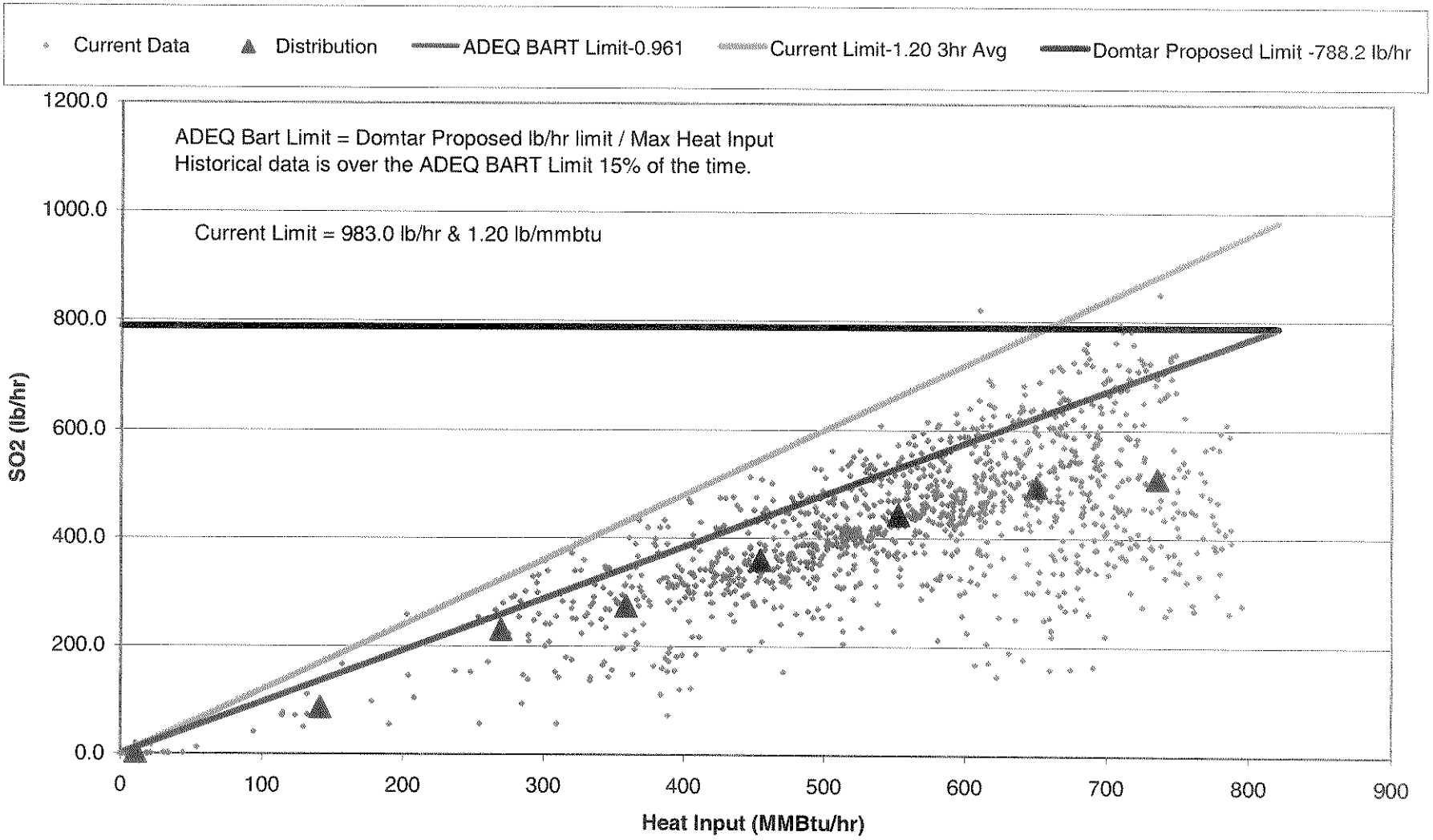


Chart 5

#2 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD

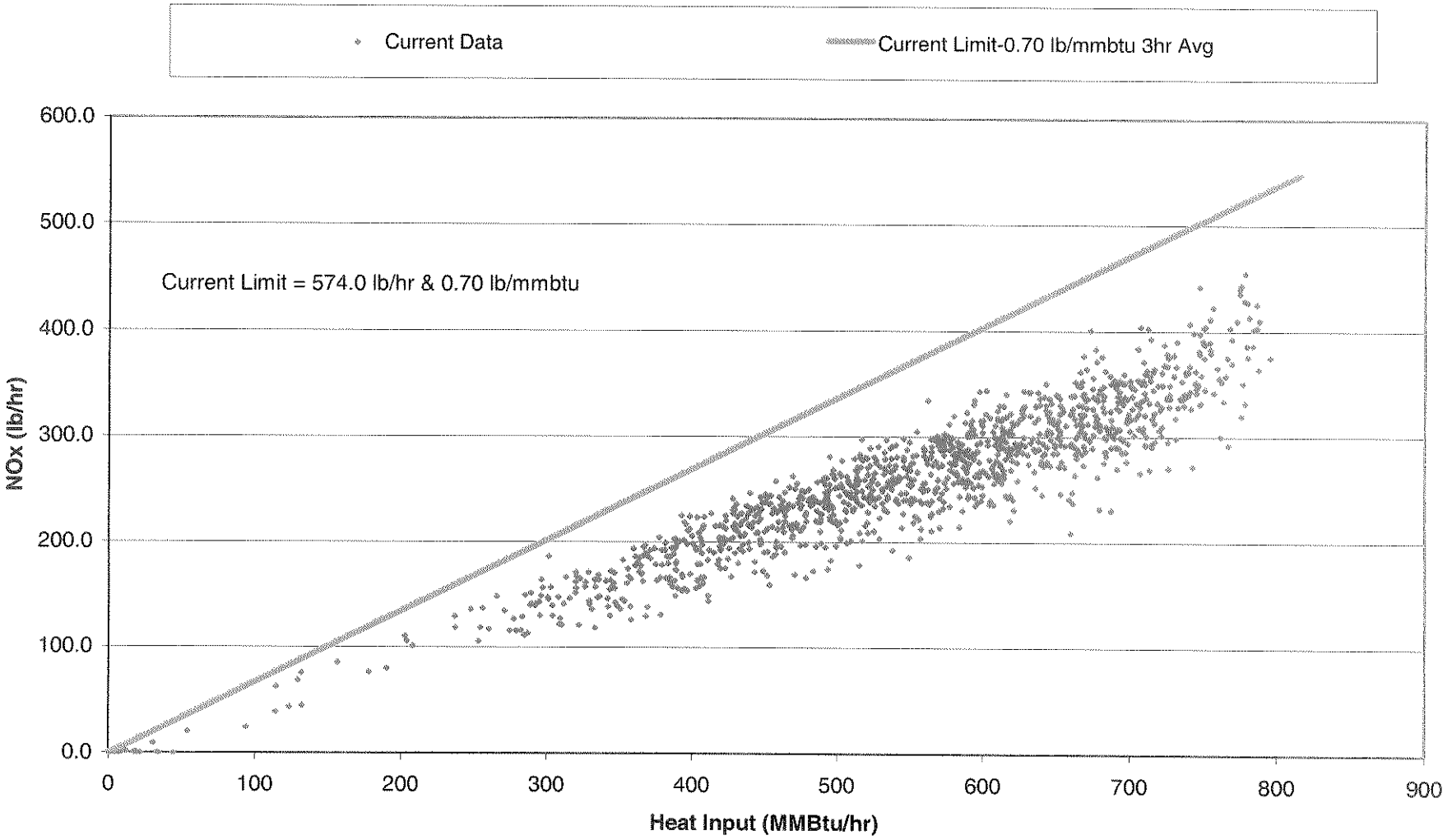


Chart 6
#2 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD

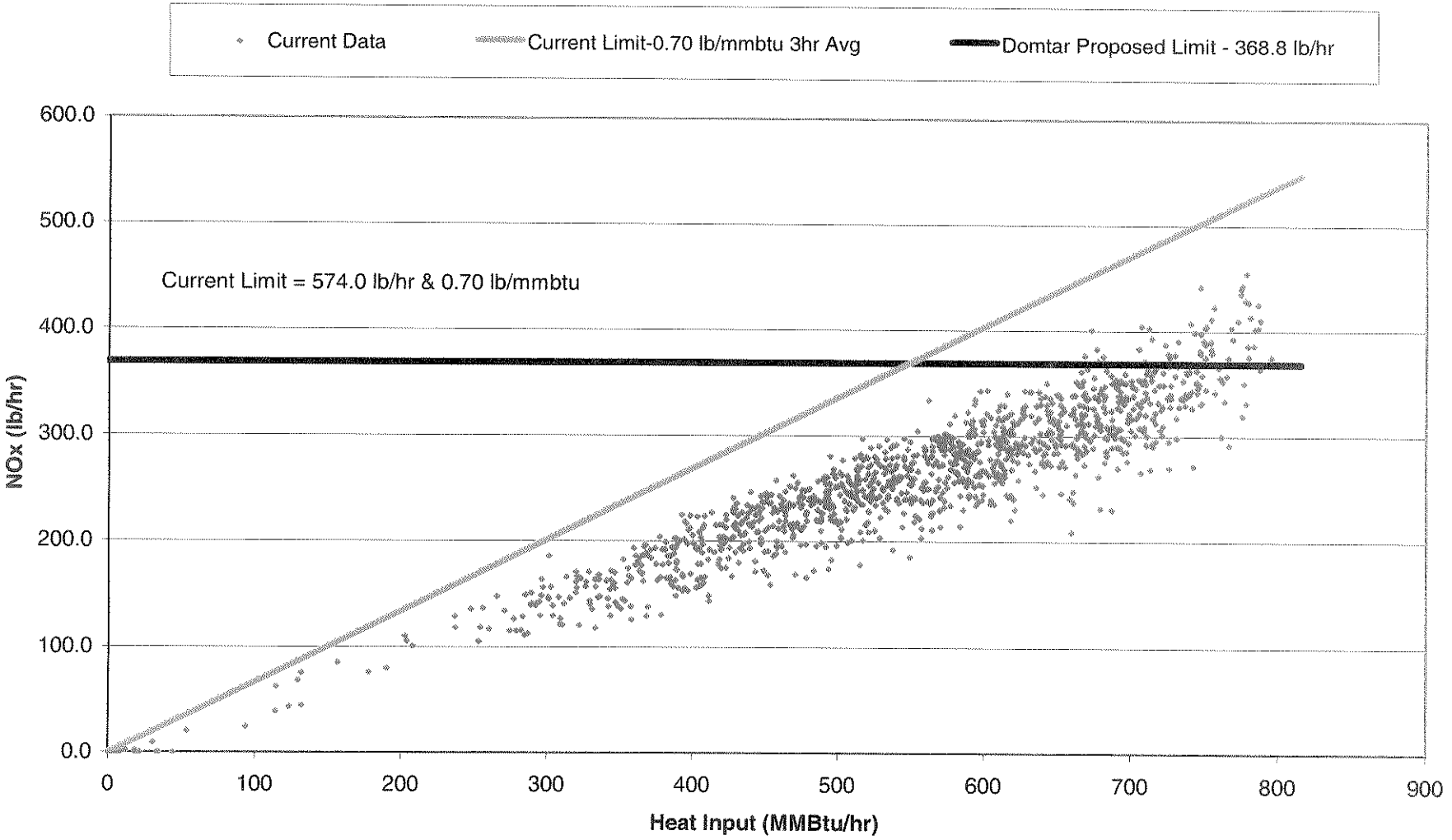


Chart 7

#2 Power Boiler

Steaming Rate vs NOx Emissions

2004-2007 YTD

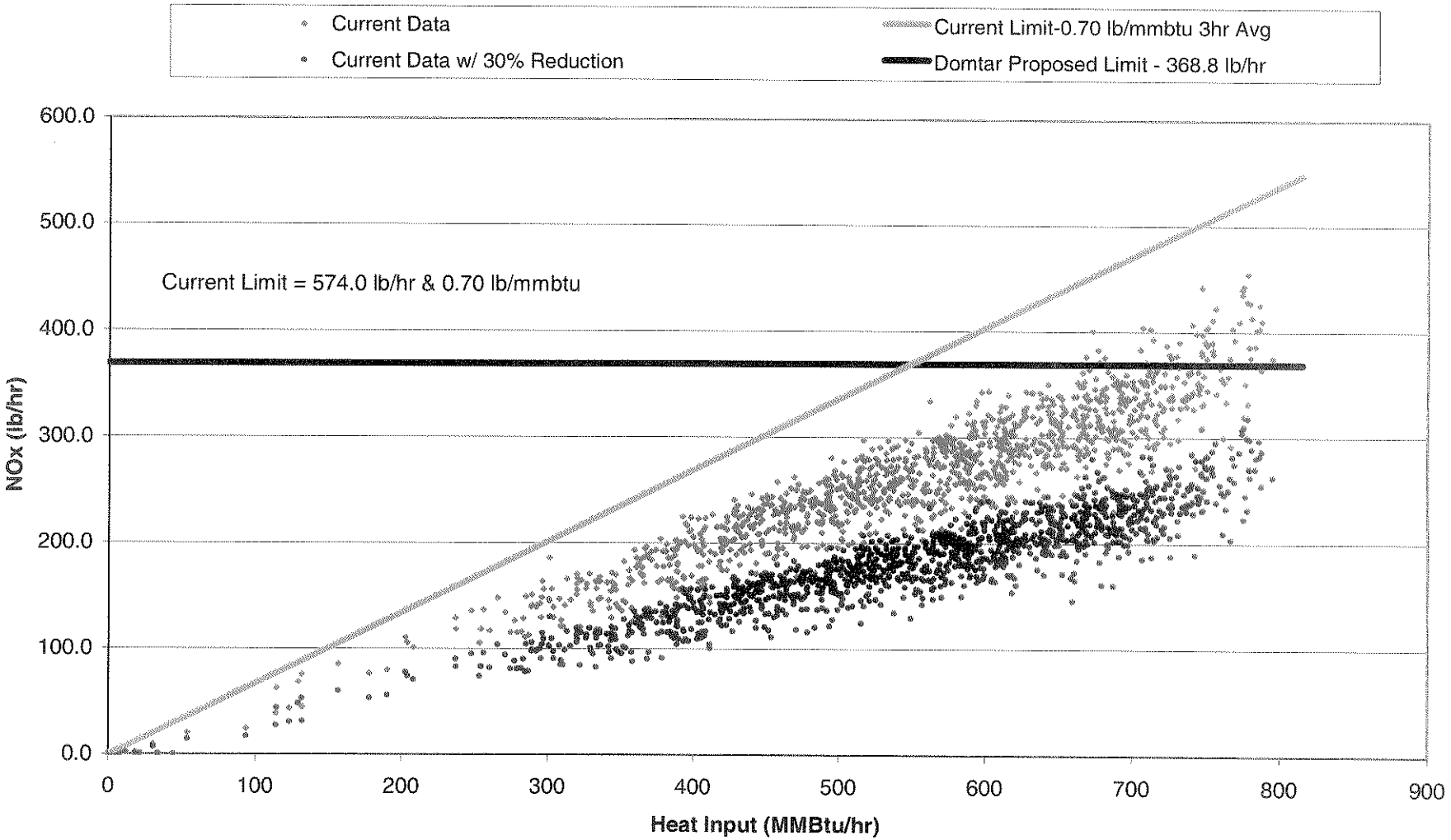


Chart 8

#2 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD

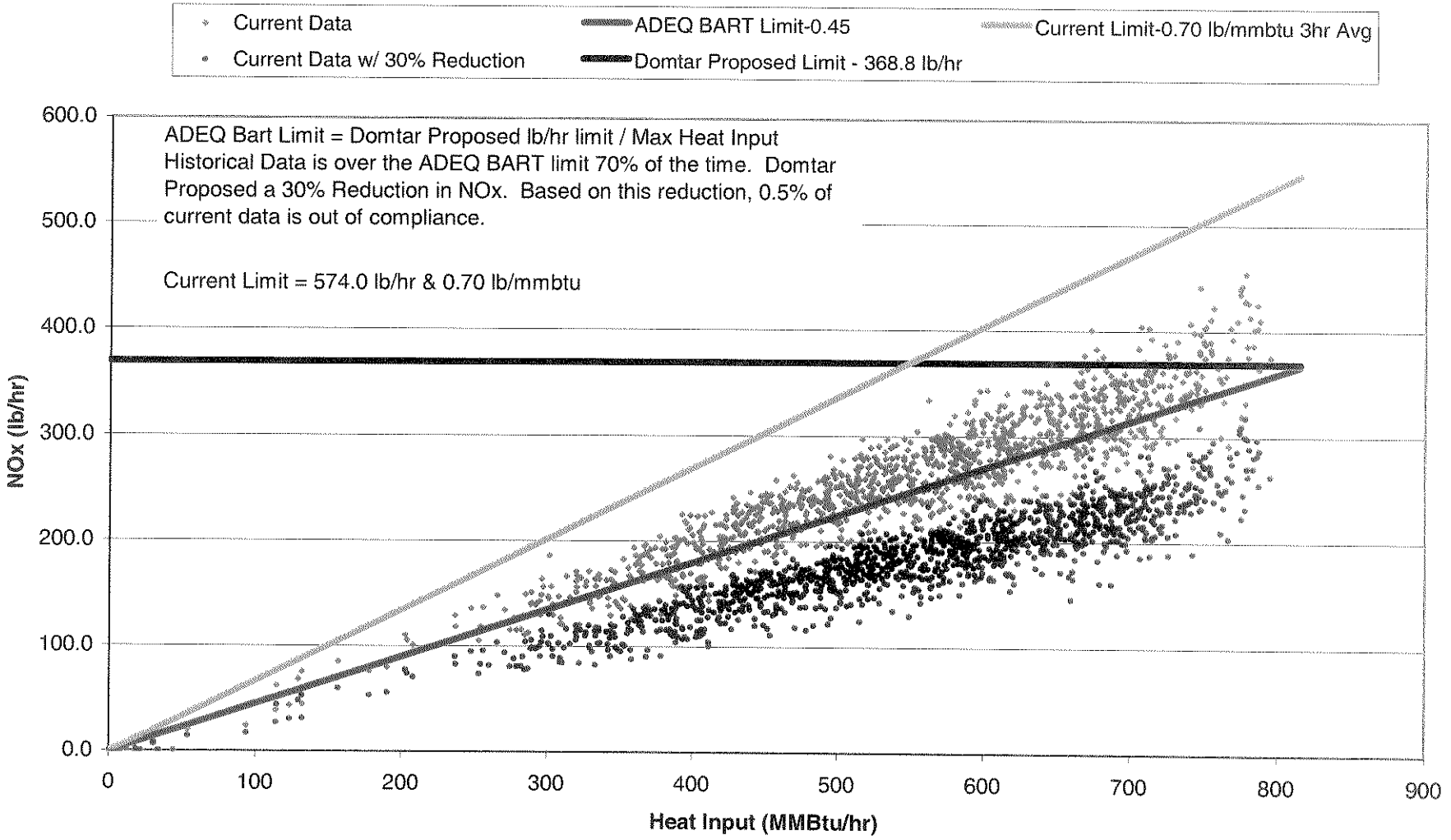


Chart 9

#2 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD

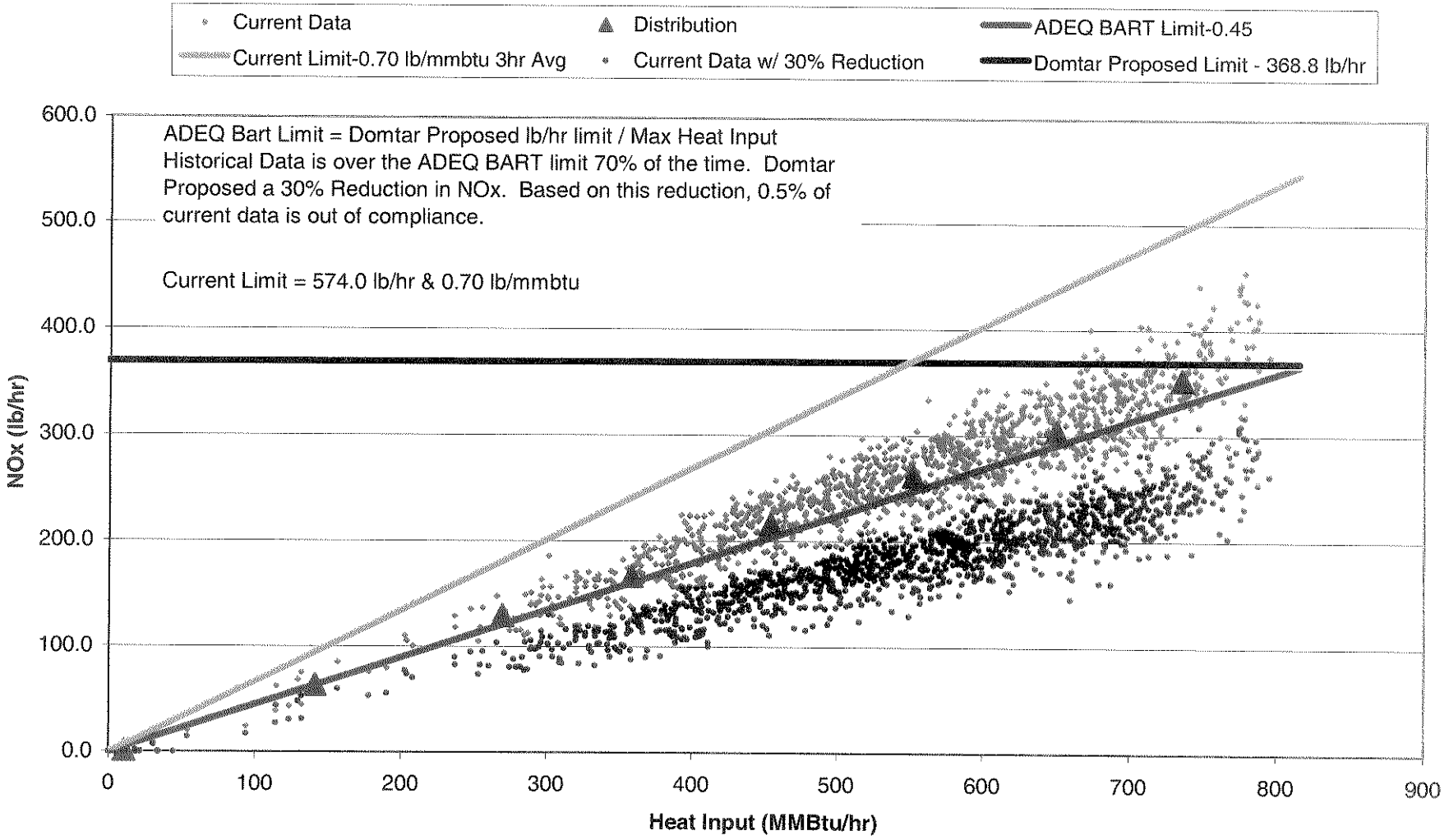


Chart 10

#1 Power Boiler

Steaming Rate vs SO2 Emissions

2004-2007 YTD

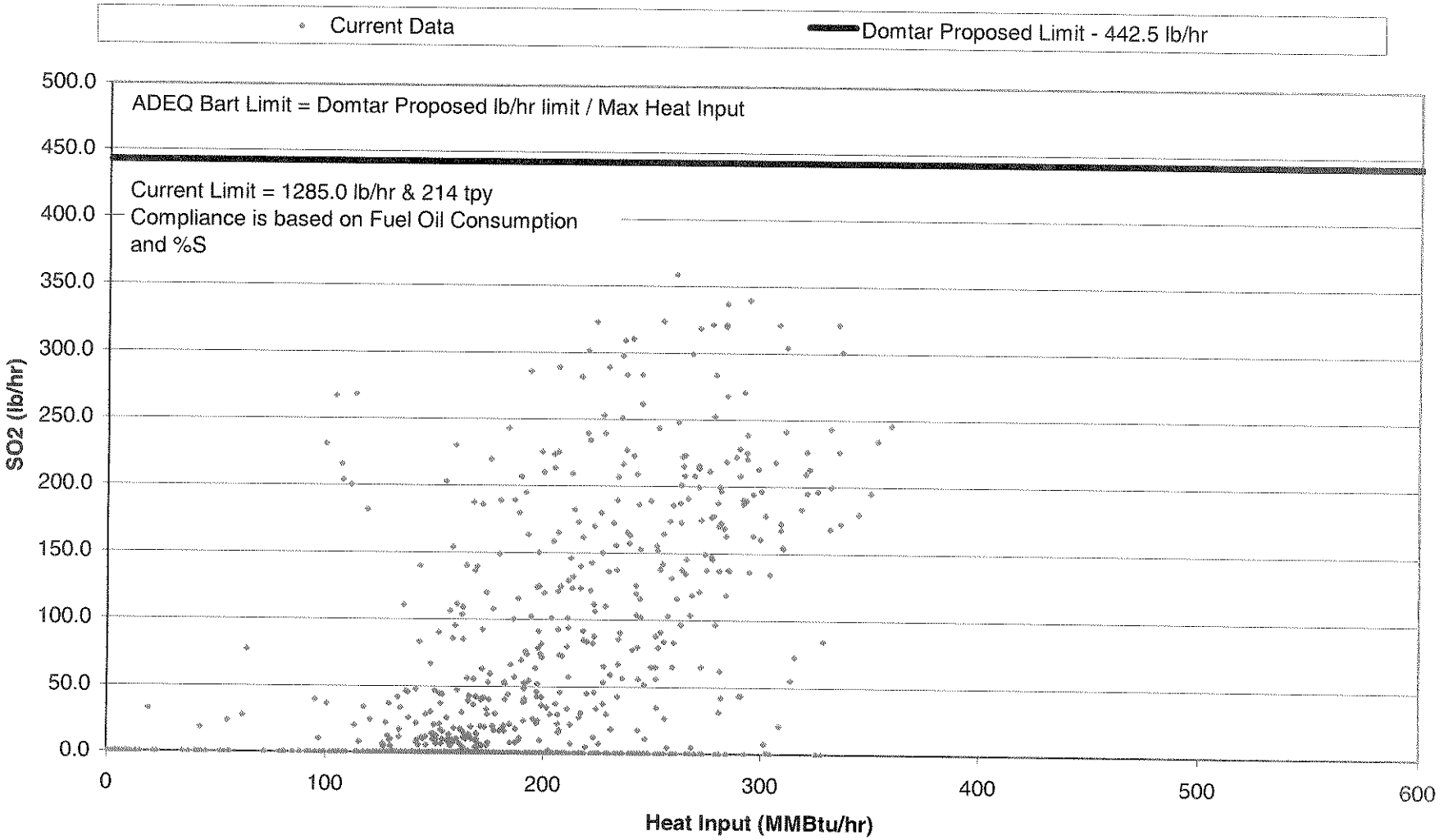


Chart 11
#1 Power Boiler
Steaming Rate vs SO2 Emissions
2004-2007 YTD

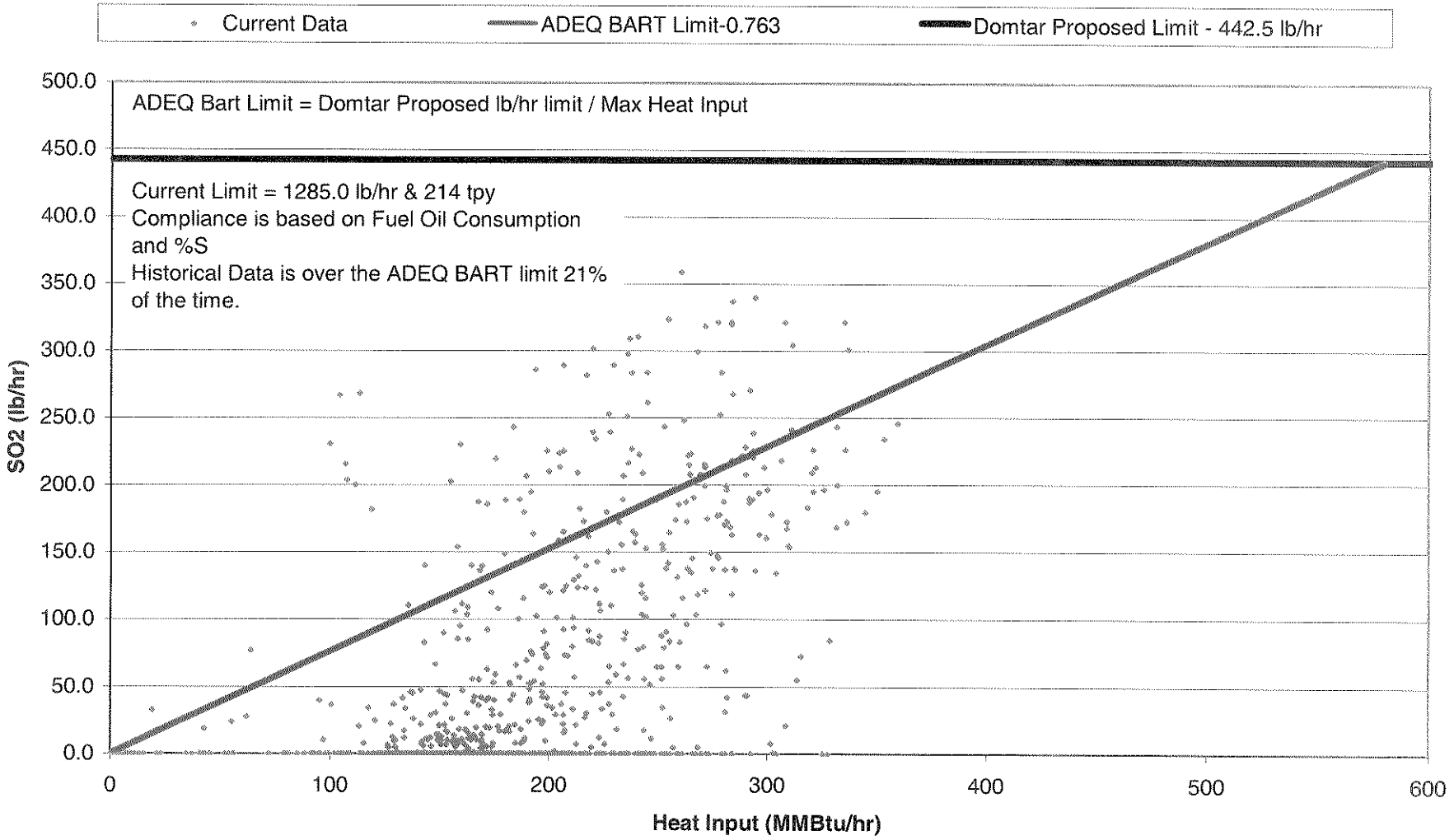


Chart 12

#1 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD

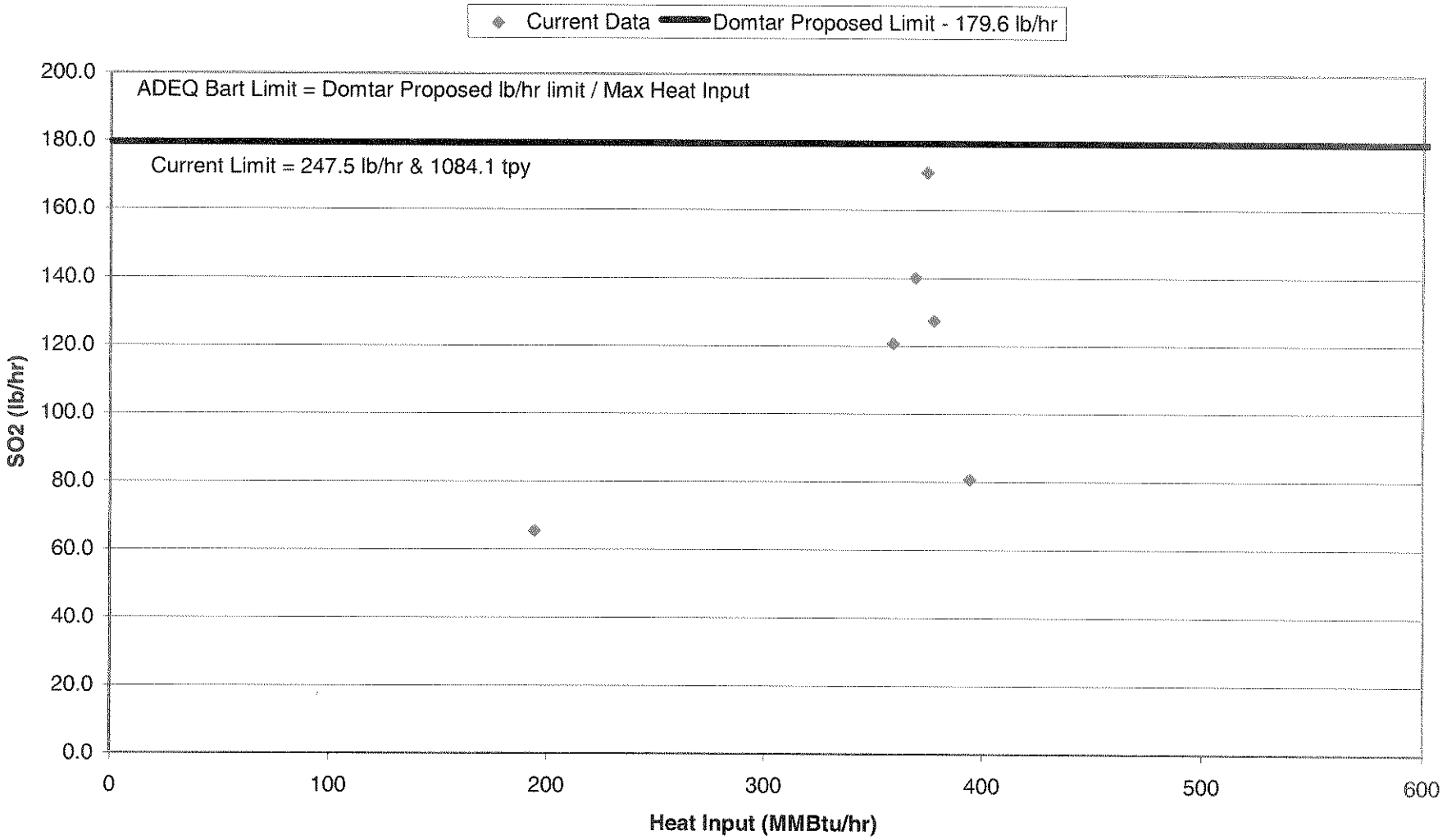
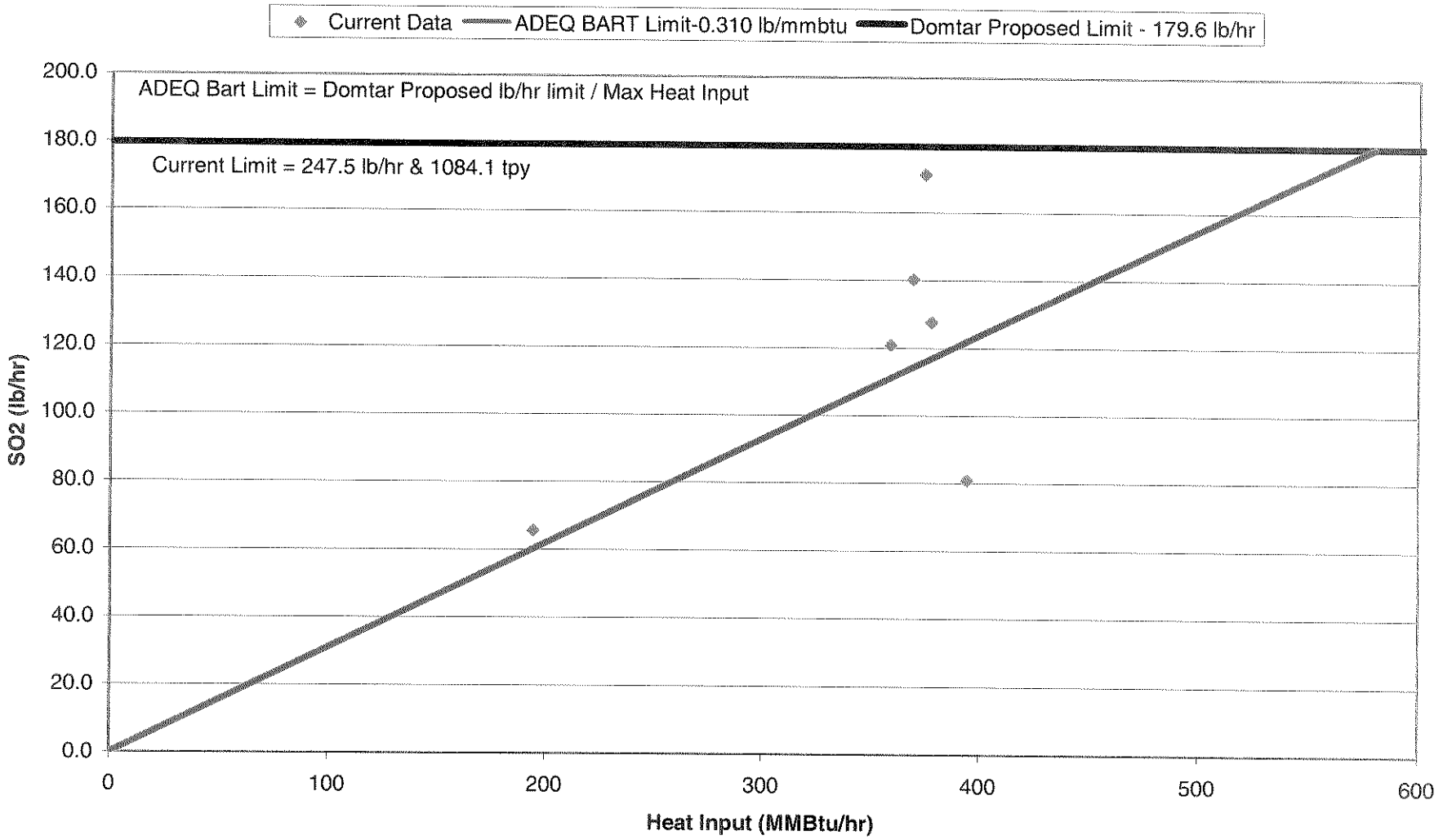


Chart 13

#1 Power Boiler
Steaming Rate vs NOx Emissions
2004-2007 YTD



PARTY INFORMATION

Docket No.: 07-006-R

MATTER OF: Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control

Date Filed: 05/15/07

ADEQ:

Represented By: Deborah Pitts
8001 Natural Drive
PO Box 8913
Little Rock, AR 72219-8913
Telephone: (501) 682-0884
Fax: (501) 682-0891

ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION

Petition to Initiate Rulemaking:
Regulation No. 19 Regulations of
the Arkansas Plan of Implementation
for Air Pollution Control

Docket No. 07-006-R

MINUTE ORDER NO. 07-15

On May 15, 2007, The Arkansas Department of Environmental Quality ("Department") filed a Petition to Amend Regulation Number 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control. The Petition has been designated as Docket No. 07-006-R.

The Commission's Regulations Committee met on May 24, 2007, to review the Petition. Having considered the Petition, the Regulations Committee recommends the Commission institute a rulemaking proceeding to consider adopting the proposed revisions to Regulation Number 19.

1. The Department shall file an original and two (2) copies and a computer disk in Word of all materials required under this Minute Order.

2. Persons submitting written public comments shall submit their written comments to the Department. Within ten (10) business days following the adoption or denial of the proposed rule, the Department shall deliver the originals of all comments to the Commission Secretary.

3. A public hearing shall be conducted on June 27, 2007 in the Arkansas Pollution Control and Ecology Commission Meeting Room located in the Arkansas State Police Building near Geyer Springs Road and Interstate 30, Little Rock, Arkansas.

4. Public Notice of the proposed rulemaking will be published beginning on or about May 27 and May 28. The period for receiving all written comments shall conclude on July 12 unless the Commission grants an extension of time.

5. The Department shall file, not later than 14 days before the Commission meets to consider adoption of the proposed rule, a Statement of Basis and Purpose as required by Regulation No. 8, Part 3, Section 3.6.2(1), (2) and (3).

6. The Department shall file, not later than 14 days before the Commission meets to consider adoption of the proposed rule, a proposed Minute Order deciding this matter.

7. The Department shall seek review of the proposed rule from the Joint Interim Committee on Public Health and Welfare and from the Joint Interim Committee on Administrative Rules and Regulations.

8. The Regulations Committee will consider this matter at its August 2007 meeting. Members of the Regulations Committee may ask questions of the Department and any person that made oral or written comments. The Regulations Committee will make a recommendation to the Commission.

9. At its regularly scheduled August 2007 meeting, the presentation of oral statements and legal arguments shall be regulated as follows:

a. The Chair of the Commission will permit members of the public to make a statement to the Commission. No more than three (3) minutes will be allowed for each statement. The period for statements will close at the end of one (1) hour, or sooner if all interested persons have completed their statements. The Chair, in his discretion, may extend the one (1) hour public comment period.

b. At the discretion of the Chair, an attorney representing one or more individuals, a corporation or other legal entity may be permitted five (5) minutes in which to address the Commission.

c. Department legal counsel or other designated Department employee will be permitted ten (10) minutes in which to address the Commission.

d. At the conclusion of all comments, the Chairman will call on each Commissioner for the purpose of asking the attorneys or persons sponsoring comments who are

present, any questions they may have. Attorneys will not be permitted to respond or ask follow-up questions of any person questioned by a Commissioner.

e. After each Commissioner has had an opportunity to ask questions, the Chair will entertain a motion on the matter, allow discussions, and call for a vote of the Commission members.

10. The Commission authorizes the Chair of the Regulations Committee, in consultation with the Chair of the Commission, to revise the procedures and schedules set out above.

11. Act 143 of 2007 requires that the Commission determine whether a proposed rule affects small businesses. Based on the information contained in the Petition, the Commission finds the proposed amendments to Regulation No. 19 are exempt from the requirements of Act 143 of 2007.

12. The Commission accepts the recommendation of the Regulations Committee and initiates the rulemaking proceeding Docket No. 07-006-R effective May 24, 2007. The Commission adopts, without modification, the procedural schedule set forth above.

COMMISSIONERS:

B. Ackerman
L. Bengal
S. Henderson
C. McGrew
D. Samples
T. Schueck
J. Shannon

L. Sickel
J. Simpson
W. Thompson
E. Valdez
B. White
R. Young

Chair

Submitted by: Deborah Pitts PASSED: May 24, 2007

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION
REGULATIONS COMMITTEE MEETING
Friday, September 28, 2007
8:30 a.m.

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
5301 NORTHSHORE DRIVE
NORTH LITTLE ROCK, ARKANSAS 72118

AGENDA

I. Call Meeting to Order – 8:30 a.m.

II. Roll Call

III. Approval of July 27, 2007 Regulations Committee Minutes

IV. Regulation No. 12, Storage Tank Regulation **APPENDIX I**
- **Docket No. 07-005-R**
- **Dawn Guthrie for Arkansas Department Of Environmental Quality**
- **Minute Order (Adopt)**

V. Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control **APPENDIX II**
- **Docket No. 07-006-R**
- **Deborah Pitts for Arkansas Department Of Environmental Quality**
- **Minute Order (Adopt)**

VI. Regulation No. 9, Fee Regulations **APPENDIX III**
- **Docket No. 07-009-R**
- **Jamie Ewing for Arkansas Department Of Environmental Quality**
- **Minute Order (Initiate)**

VII. Regulation No. 2, Regulations Establishing Water Quality Standards for Surface Waters of the State of Arkansas **APPENDIX IV**
- **Docket No. 06-010-R**
- **Mary Leath for Arkansas Department of Environmental Quality**
- **Minute Order (Adopt)**

VIII. Regulation No. 2, Regulations Establishing Water Quality Standards for Surface Waters of the State of Arkansas

APPENDIX V

- **Docket No. 07-003-R**
- **Mary Leath for Arkansas Department of Environmental Quality**
- **Minute Order (Adopt)**

IX. Adjourn

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION
REGULAR COMMISSION MEETING
Friday, September 28, 2007
9:00 a.m. (or immediately following the Regulations Committee Meeting)

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
5301 NORTHSHORE DRIVE
NORTH LITTLE ROCK, ARKANSAS 72118

AGENDA

I. Call Meeting to Order - 9:00 a.m.

II. Roll Call

III. Approval of August 24, 2007, Commission Meeting Minutes

IV. Department Reports

A. Director's Report

V. Public Comments

VI. Commission Reports

A. Regulations Committee – Randy Young

1. Regulation No. 12, Storage Tank Regulation **APPENDIX I**
- **Docket No. 07-005-R**
- **Dawn Guthrie for Arkansas Department Of Environmental Quality**
- **Minute Order (Adopt)**

2. Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control **APPENDIX II**
- **Docket No. 07-006-R**
- **Deborah Pitts for Arkansas Department Of Environmental Quality**
- **Minute Order (Adopt)**

3. Regulation No. 9, Fee Regulations **APPENDIX III**
- **Docket No. 07-009-R**
- **Jamie Ewing for Arkansas Department of Environmental Quality**
- **Minute Order (Initiate)**

4. Regulation No. 2, Regulations Establishing Water Quality Standards for Surface Waters of the State of Arkansas **APPENDIX IV**
- **Docket No. 06-010-R**

- Mary Leath for Arkansas Department of Environmental Quality
- Minute Order (Adopt)

5. Regulation No. 2, Regulations Establishing Water Quality Standards for Surface Waters of the State of Arkansas — APPENDIX V
- Docket No. 07-003-R
- Mary Leath for Arkansas Department of Environmental Quality
- Minute Order (Adopt)

VII. Umetco Minerals Corp., Wilson Mine — APPENDIX VI
- Docket No. 06-003-P
- Recommended Decision (Order No. 12)
- Request for Oral Argument
- David Page for Billy Wilson
- William A. Eckert III for Umetco Minerals Corp.
- Dawn Guthrie for Arkansas Department of Environmental Quality
- Minute Order (Adopt)
- Minute Order (Deny)

VIII. Administrative Hearing Officer – Michael O'Malley

A. Recommended Decision

1. In the Matter of Eaton-Moery Environmental Services, Inc. — APPENDIX VII
- Docket No. 07-001-MISC
- Recommended Decision (Order No 7)
- Minute Order (Adopt)

2. In the Matter of Eaton-Moery Environmental Services, Inc. — APPENDIX VIII
- Docket No. 07-003-MISC
- Recommended Decision (Order No 6)
- Minute Order (Adopt)

3. In the Matter of Equity Au, Inc. — APPENDIX IX
- Docket No. 07-010-P
- Recommended Decision (Order No 3)
- Minute Order (Adopt)

B. Settled Cases per Regulation No. 8 — APPENDIX X

1. In the Matter of Parker Solvents Company, Inc.
- Docket No. 07-004-MISC

IX. Adjourn

Appendix 9.4A

Charts Comparing Arkansas's subject-to-BART sources' Pre- and Post-control

As shown in Figures 9.4-a and 9.4-b, there appears to be a considerable improvement to visibility from American Electric Power's post-control emissions to Caney Creek Wilderness Area, Arkansas.

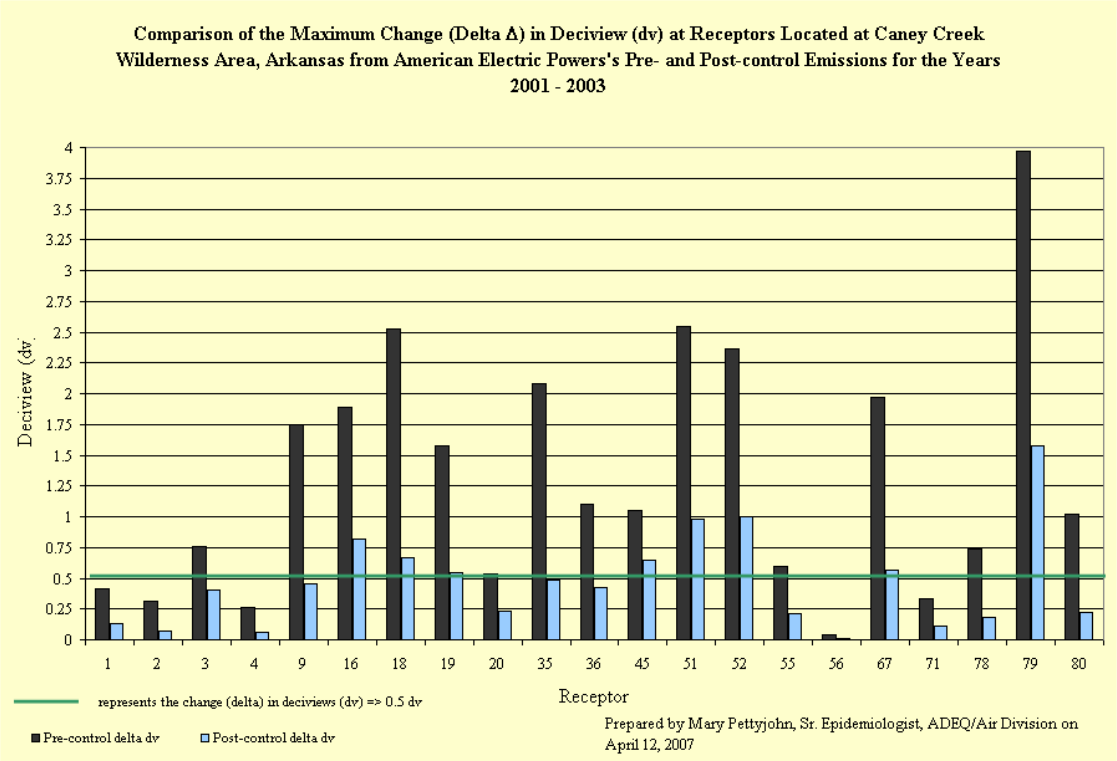


Figure 9.4-a

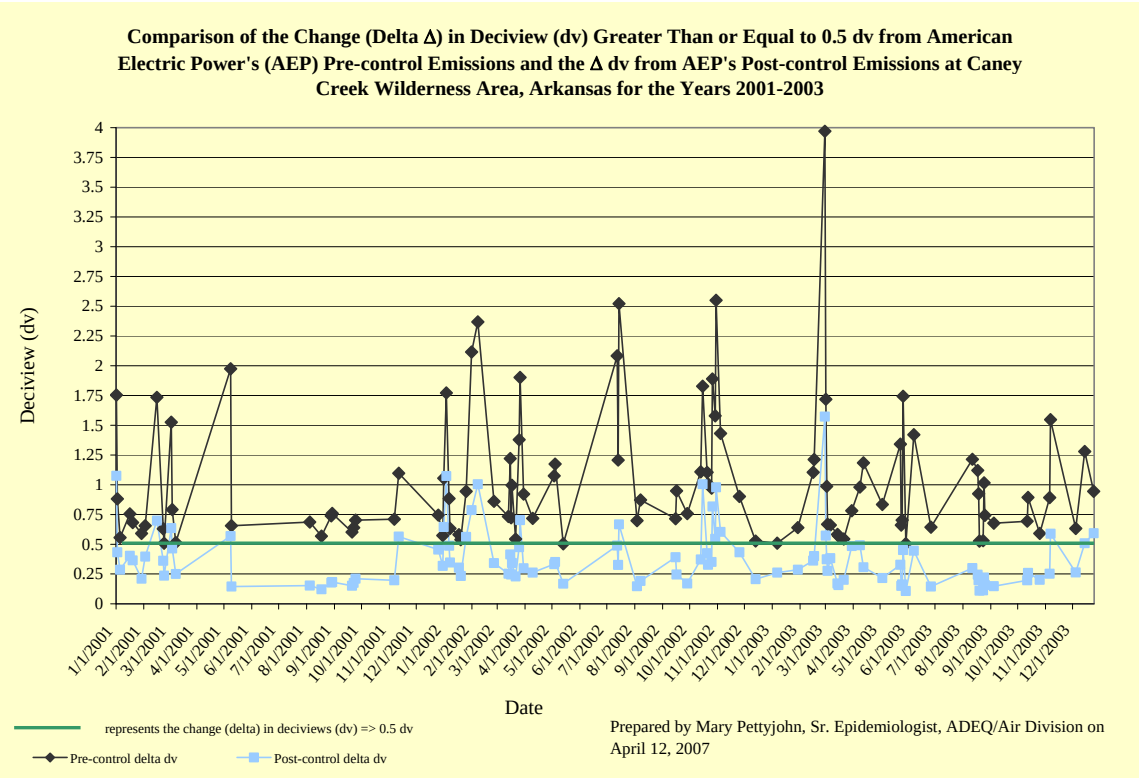

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from American Electric Power's (AEP) Pre-control Emissions and the Δ dv from AEP's Post-control Emissions at Caney Creek Wilderness Area, Arkansas for the Years 2001-2003
Deciview (dv)
4
3.75
3.5
3.25
3
2.75
2.5
2.25
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
1/1/2001
2/1/2001
3/1/2001
4/1/2001
5/1/2001
6/1/2001
7/1/2001
8/1/2001
9/1/2001
10/1/2001
11/1/2001
12/1/2001
1/1/2002
2/1/2002
3/1/2002
4/1/2002
5/1/2002
6/1/2002
7/1/2002
8/1/2002
9/1/2002
10/1/2002
11/1/2002
12/1/2002
1/1/2003
2/1/2003
3/1/2003
4/1/2003
5/1/2003
6/1/2003
7/1/2003
8/1/2003
9/1/2003
10/1/2003
11/1/2003
12/1/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 12, 2007

Figure 9.4-b

As shown in Figures 9.4-c and 9.4-d, sulfate dominates the pre- and post-control emissions from American Electric Power's contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 28.63% from the pre-control emissions to 50.27% from the post-control emissions).

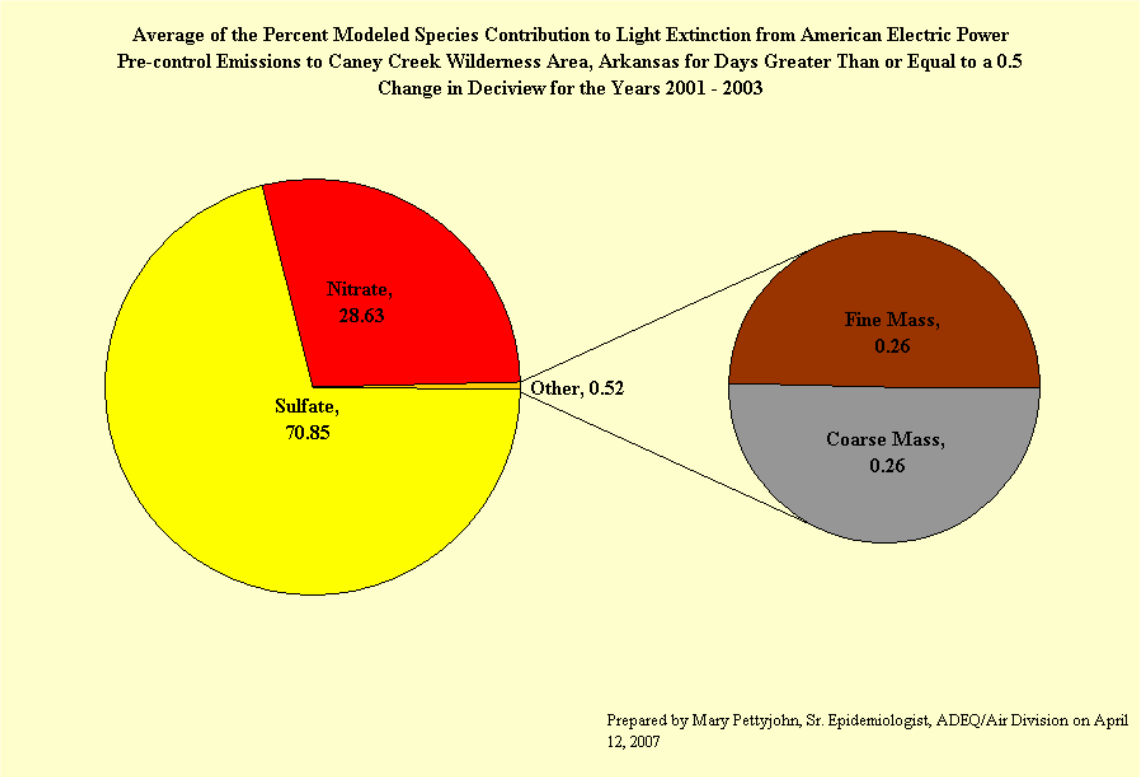


Figure 9.4-c

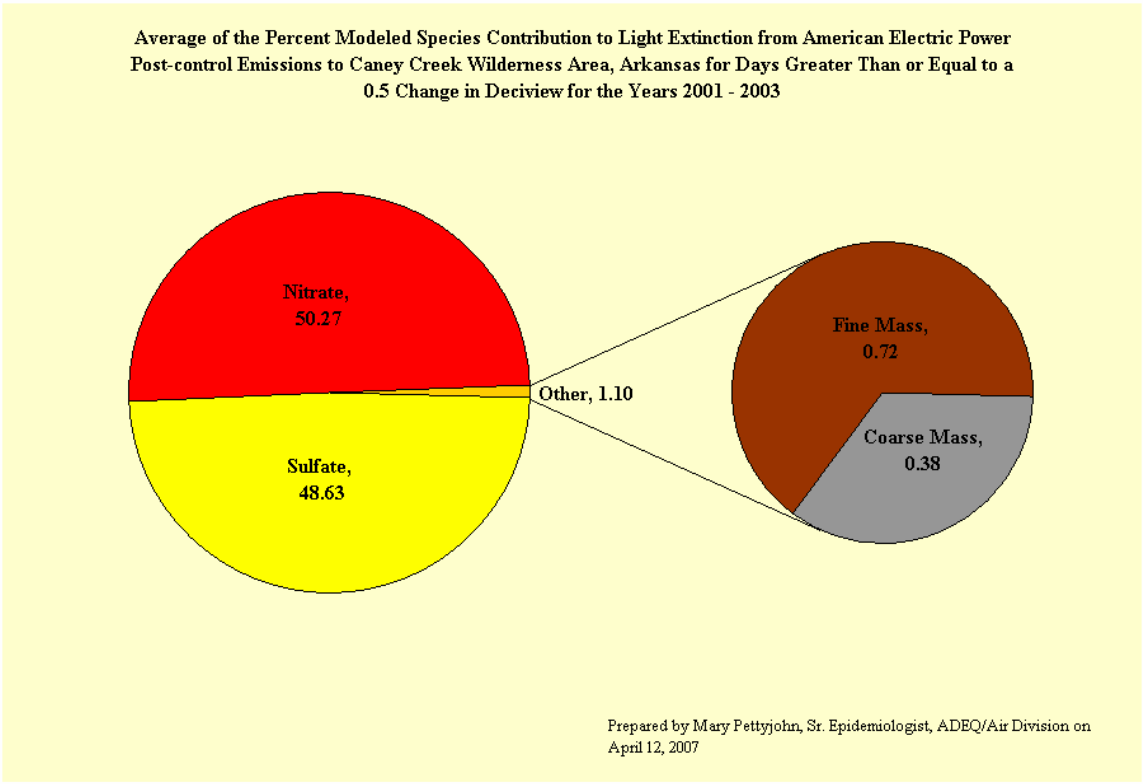

Average of the Percent Modeled Species Contribution to Light Extinction from American Electric Power Post-control Emissions to Caney Creek Wilderness Area, Arkansas for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001 - 2003
Nitrate, 50.27
Sulfate, 48.63
Other, 1.10
Fine Mass, 0.72
Coarse Mass, 0.38
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 12, 2007

Figure 9.4-d

As shown in Figures 9.4-e and 9.4-f, there appears to be a considerable improvement to visibility from American Electric Power's post-control emissions to Upper Buffalo Wilderness Area, Arkansas.

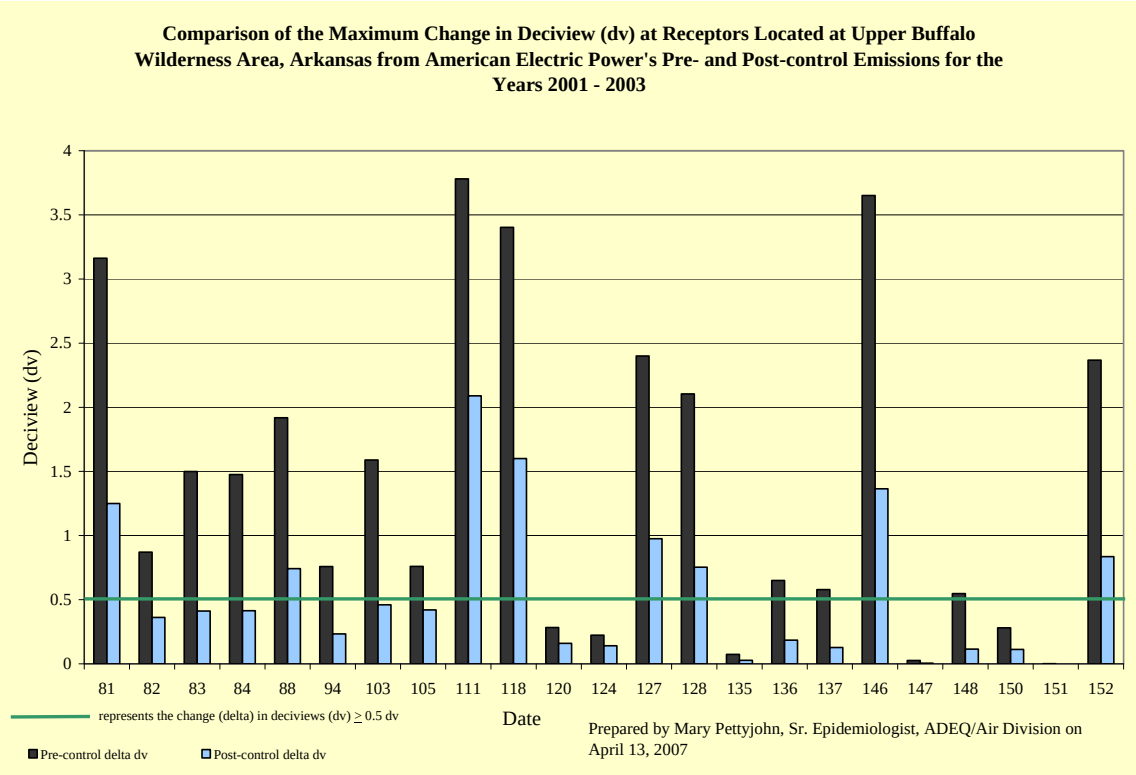


Figure 9.4-e

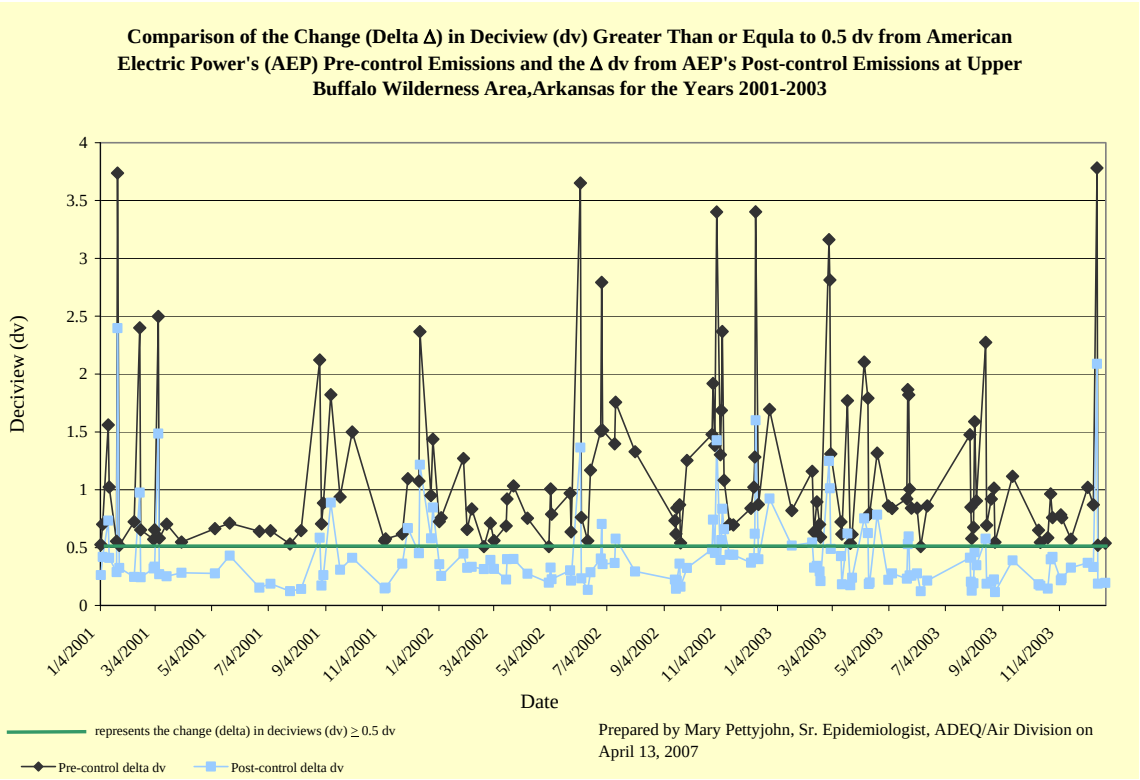

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equla to 0.5 dv from American Electric Power's (AEP) Pre-control Emissions and the Δ dv from AEP's Post-control Emissions at Upper Buffalo Wilderness Area,Arkansas for the Years 2001-2003
Deciview (dv)
4
3.5
3
2.5
2
1.5
1
0.5
0
1/4/2001
3/4/2001
5/4/2001
7/4/2001
9/4/2001
11/4/2001
1/4/2002
3/4/2002
5/4/2002
7/4/2002
9/4/2002
11/4/2002
1/4/2003
3/4/2003
5/4/2003
7/4/2003
9/4/2003
11/4/2003
Date
represents the change (delta) in deciviews (dv) ≥ 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 13, 2007

Figure 9.4-f

As shown in Figures 9.4-g and 9.4-h, sulfate dominates the pre- and post-control emissions from American Electric Power's contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 25.71% from the pre-control emissions to 45.38% from the post-control emissions).

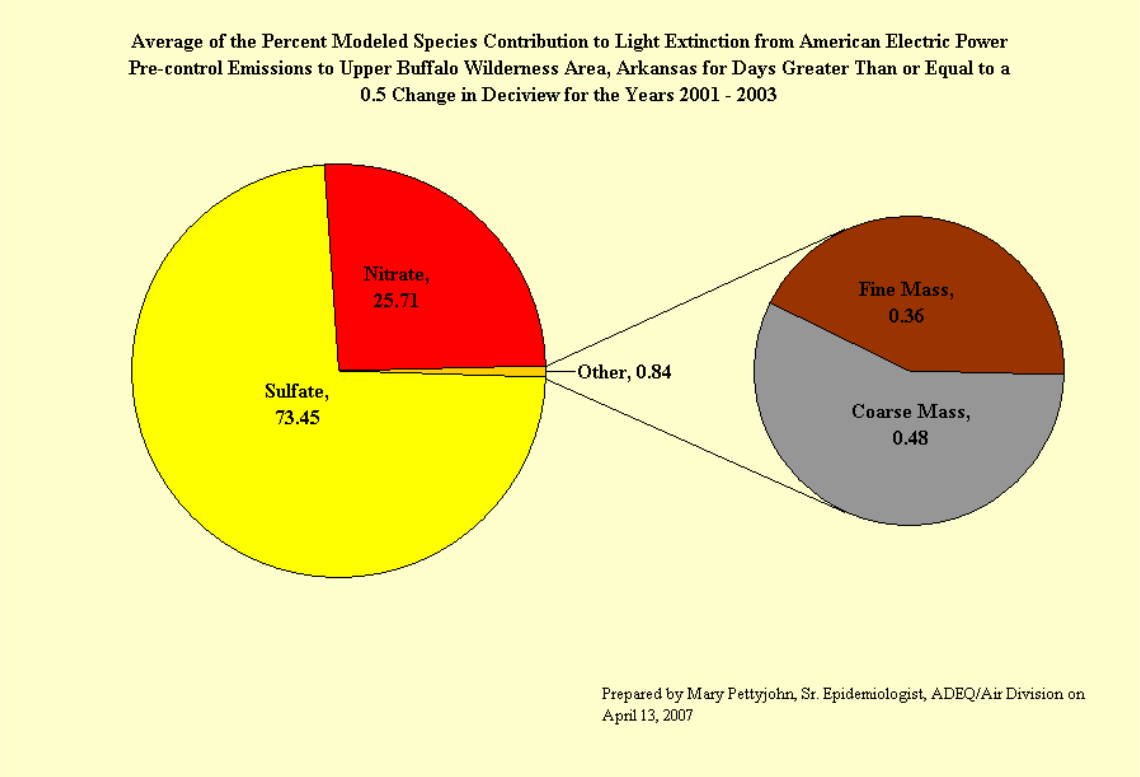


Figure 9.4-g

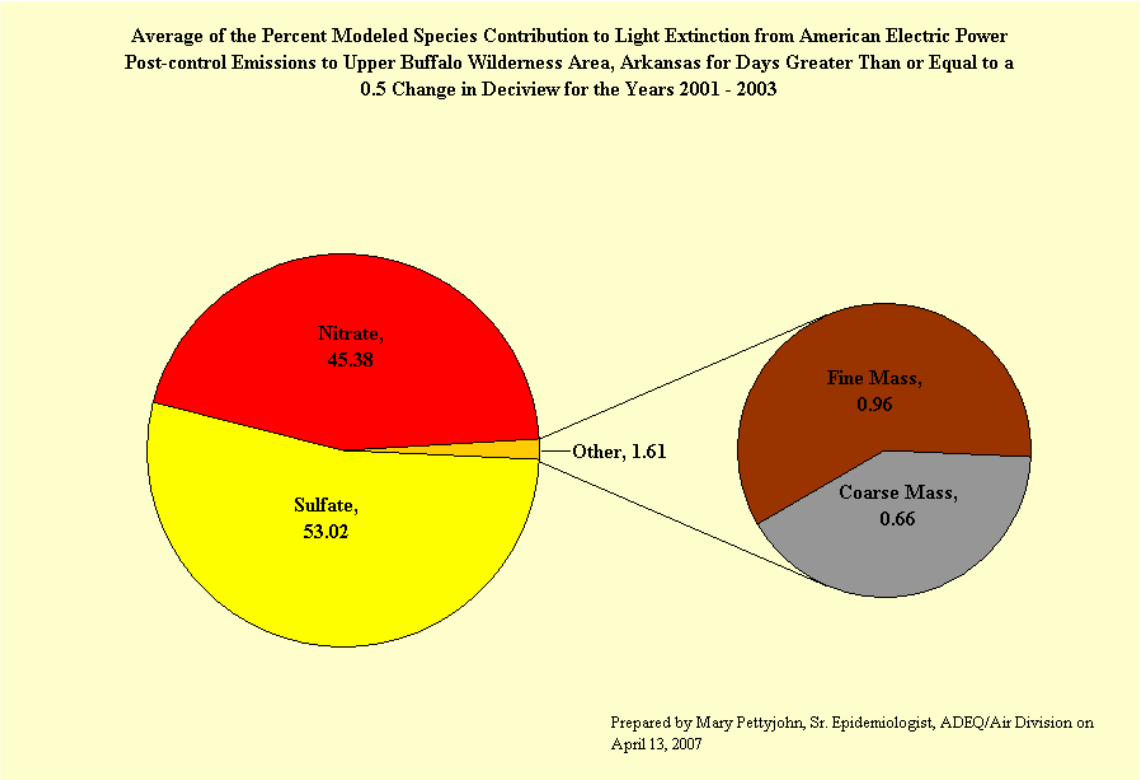

Average of the Percent Modeled Species Contribution to Light Extinction from American Electric Power Post-control Emissions to Upper Buffalo Wilderness Area, Arkansas for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001 - 2003
Nitrate, 45.38
Sulfate, 53.02
Other, 1.61
Fine Mass, 0.96
Coarse Mass, 0.66
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 13, 2007

Figure 9.4-h

As shown in Figures 9.4-i and 9.4-j, there appears to be a considerable improvement to visibility from American Electric Power's post-control emissions to Hercules-Glade Wilderness Area, Missouri.

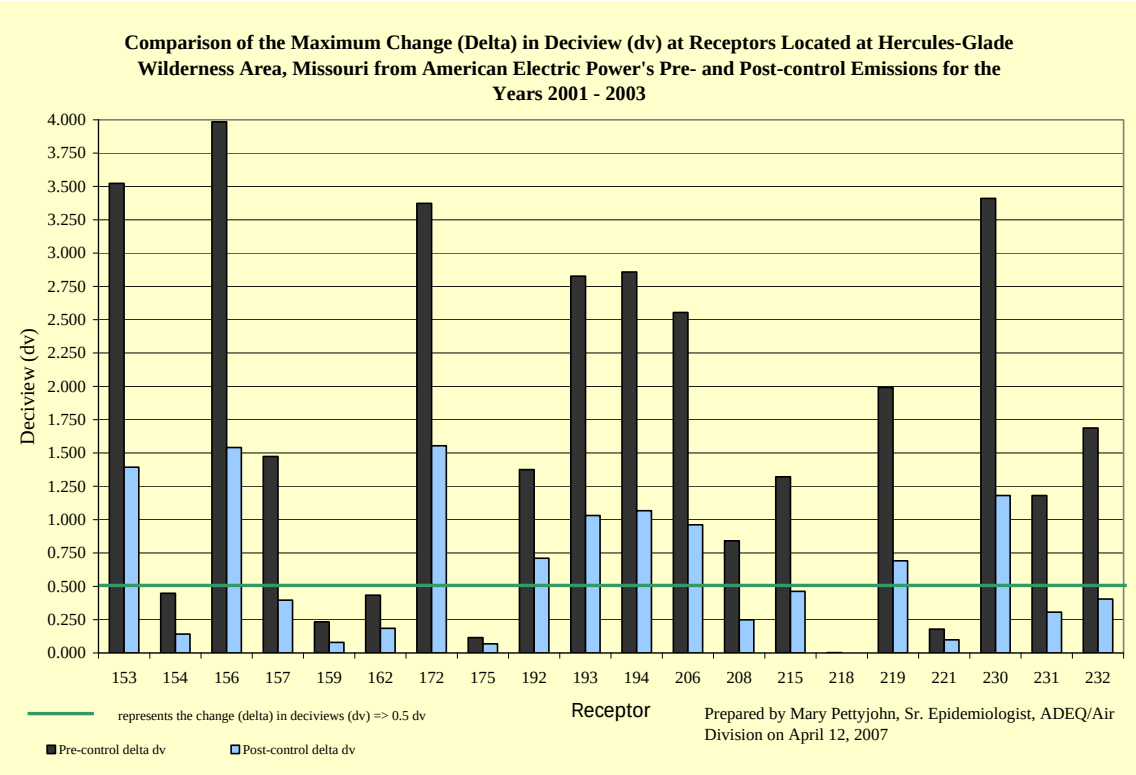


Figure 9.4-i

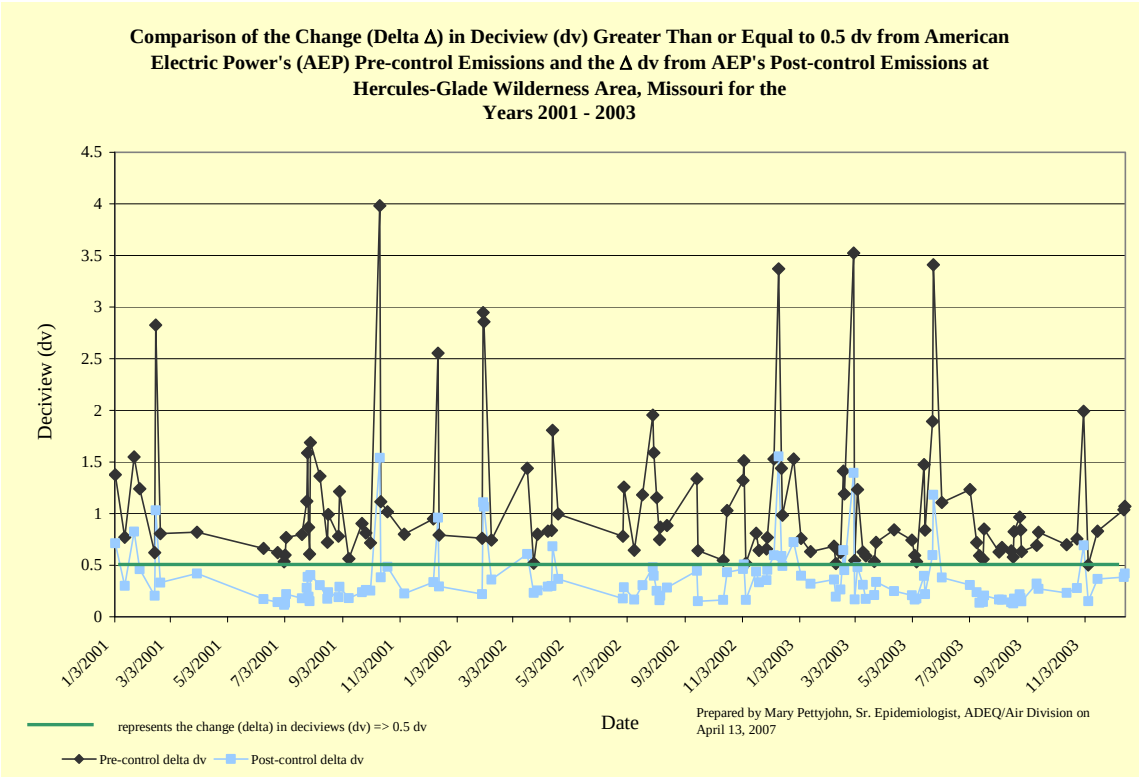

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from American Electric Power's (AEP) Pre-control Emissions and the Δ dv from AEP's Post-control Emissions at Hercules-Glade Wilderness Area, Missouri for the Years 2001 - 2003
Deciview (dv)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1/3/2001
3/3/2001
5/3/2001
7/3/2001
9/3/2001
11/3/2001
1/3/2002
3/3/2002
5/3/2002
7/3/2002
9/3/2002
11/3/2002
1/3/2003
3/3/2003
5/3/2003
7/3/2003
9/3/2003
11/3/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 13, 2007

Figure 9.4-j

As shown in Figures 9.4-k and 9.4-l, sulfate dominates the pre- and post-control emissions from American Electric Power's contribution to light extinction to Hercules-Glade Wilderness Area, Missouri. However, there is an increase of nitrate's contribution to light extinction (i.e. from 22.31% from the pre-control emissions to 44.40% from the post-control emissions)

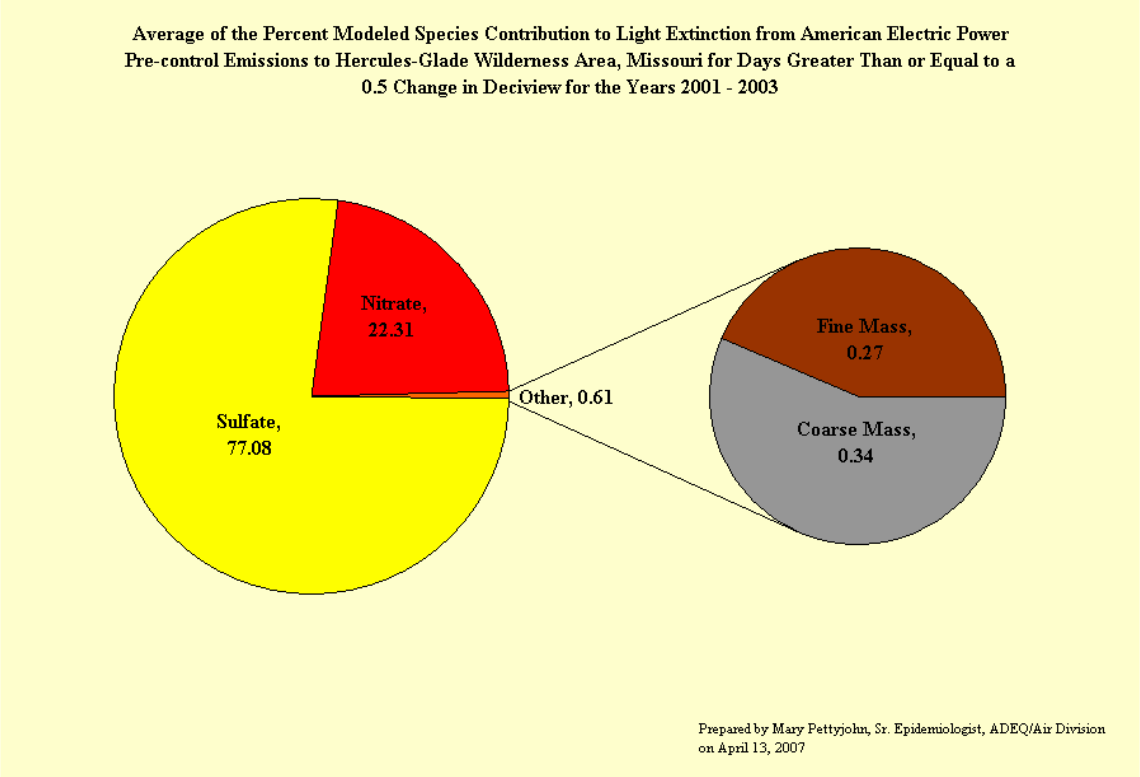


Figure 9.4-k

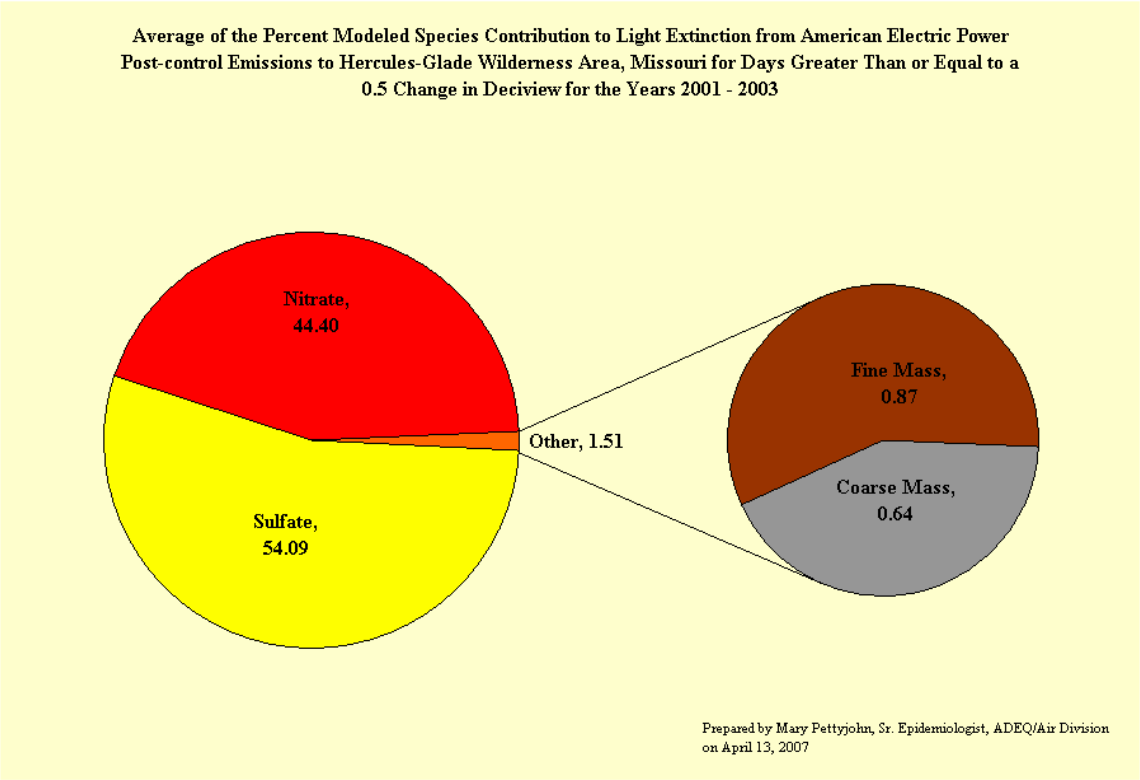

Average of the Percent Modeled Species Contribution to Light Extinction from American Electric Power Post-control Emissions to Hercules-Glade Wilderness Area, Missouri for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001 - 2003
Nitrate, 44.40
Sulfate, 54.09
Other, 1.51
Fine Mass, 0.87
Coarse Mass, 0.64
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 13, 2007

Figure 9.4-l

As shown in Figures 9.4-m and 9.4-n, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – Carl E. Bailey's post-control emissions to Caney Creek Wilderness Area, Arkansas.

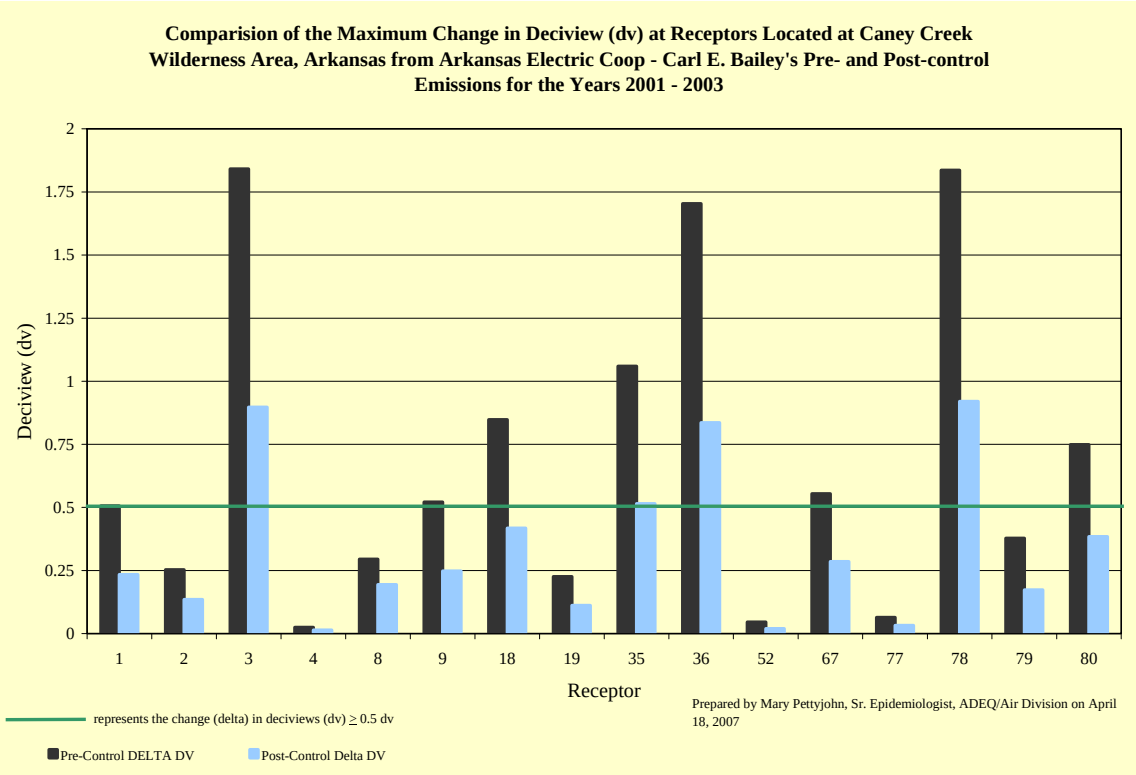


Figure 9.4-m

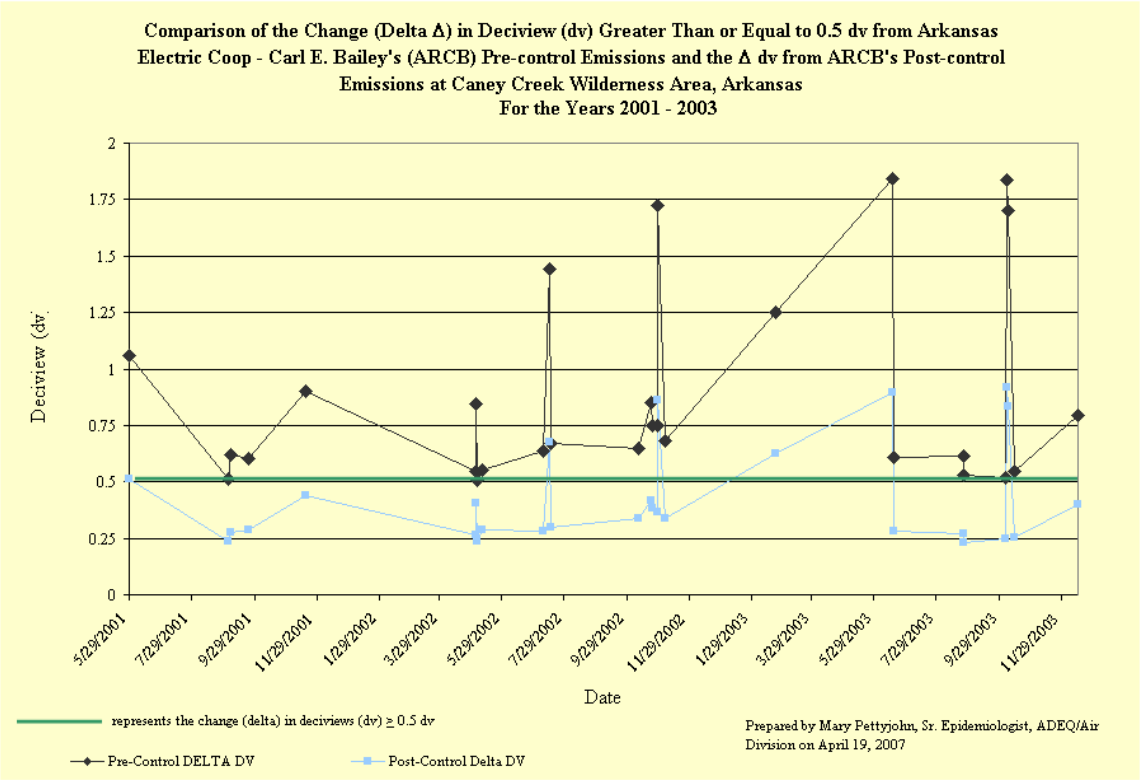

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Arkansas Electric Coop - Carl E. Bailey's (ARCB) Pre-control Emissions and the Δ dv from ARCB's Post-control Emissions at Caney Creek Wilderness Area, Arkansas
For the Years 2001 - 2003
Deciview (dv)
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
5/29/2001
7/29/2001
9/29/2001
11/29/2001
1/29/2002
3/29/2002
5/29/2002
7/29/2002
9/29/2002
11/29/2002
1/29/2003
3/29/2003
5/29/2003
7/29/2003
9/29/2003
11/29/2003
Date
represents the change (delta) in deciviews (dv) ≥ 0.5 dv
Pre-Control DELTA DV
Post-Control Delta DV
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 19, 2007

Figure 9.4-n

As shown in Figures 9.4-o and 9.4-p, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – Carl E. Bailey contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 6.16% from the pre-control emissions to 12.82% from the post-control emissions)

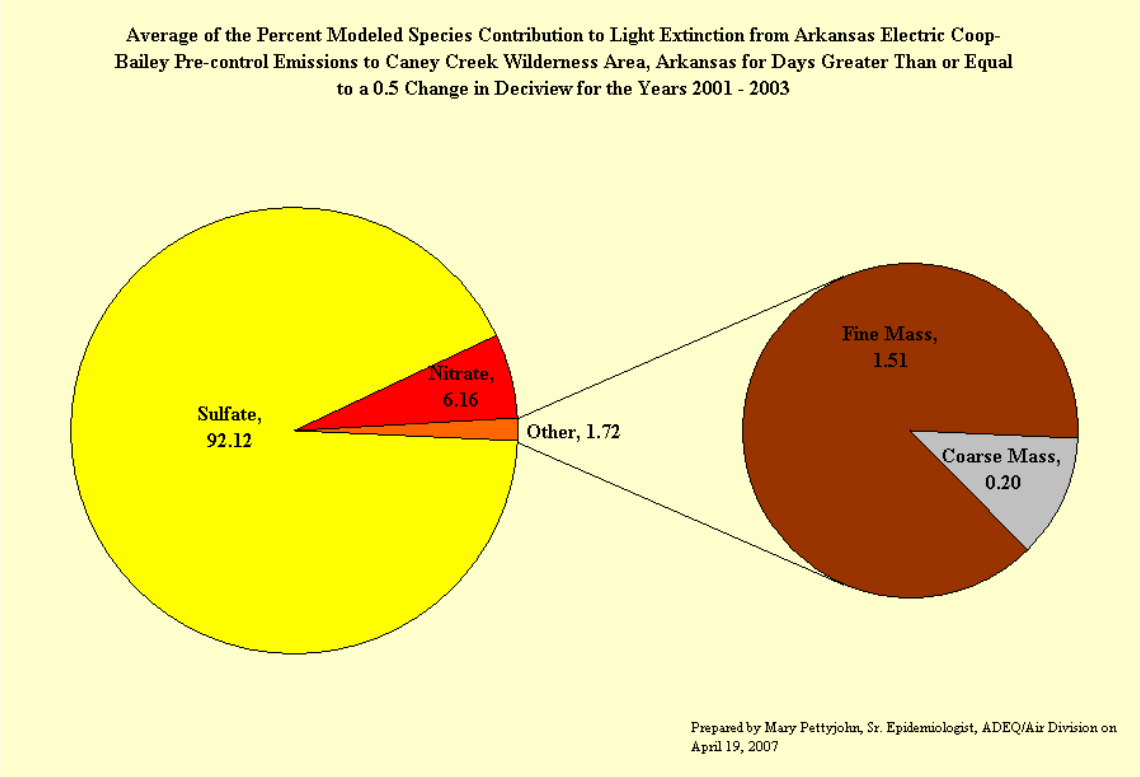


Figure 9.4-o

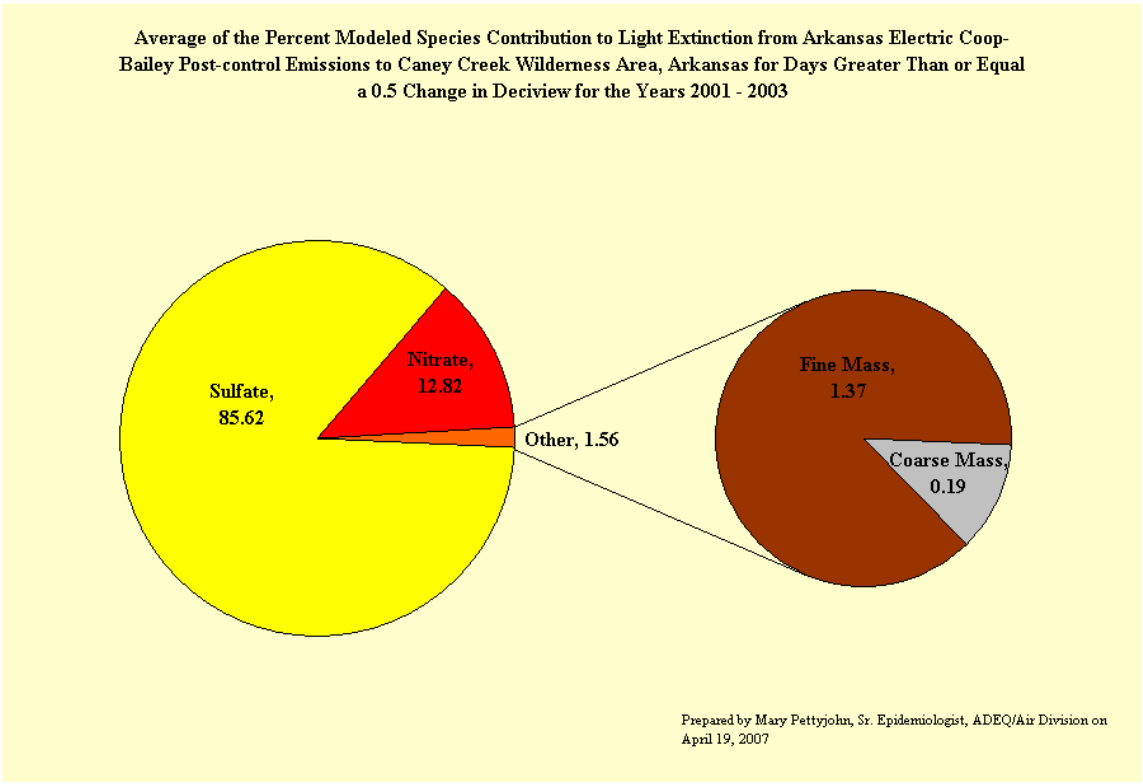

Average of the Percent Modeled Species Contribution to Light Extinction from Arkansas Electric Coop-Bailey Post-control Emissions to Caney Creek Wilderness Area, Arkansas for Days Greater Than or Equal a 0.5 Change in Deciview for the Years 2001 - 2003
Sulfate, 85.62
Nitrate, 12.82
Other, 1.56
Fine Mass, 1.37
Coarse Mass, 0.19
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 19, 2007

Figure 9.4-p

As shown in Figures 9.4-q and 9.4-r, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – Carl E. Bailey's post-control emissions to Upper Buffalo Wilderness Area, Arkansas.

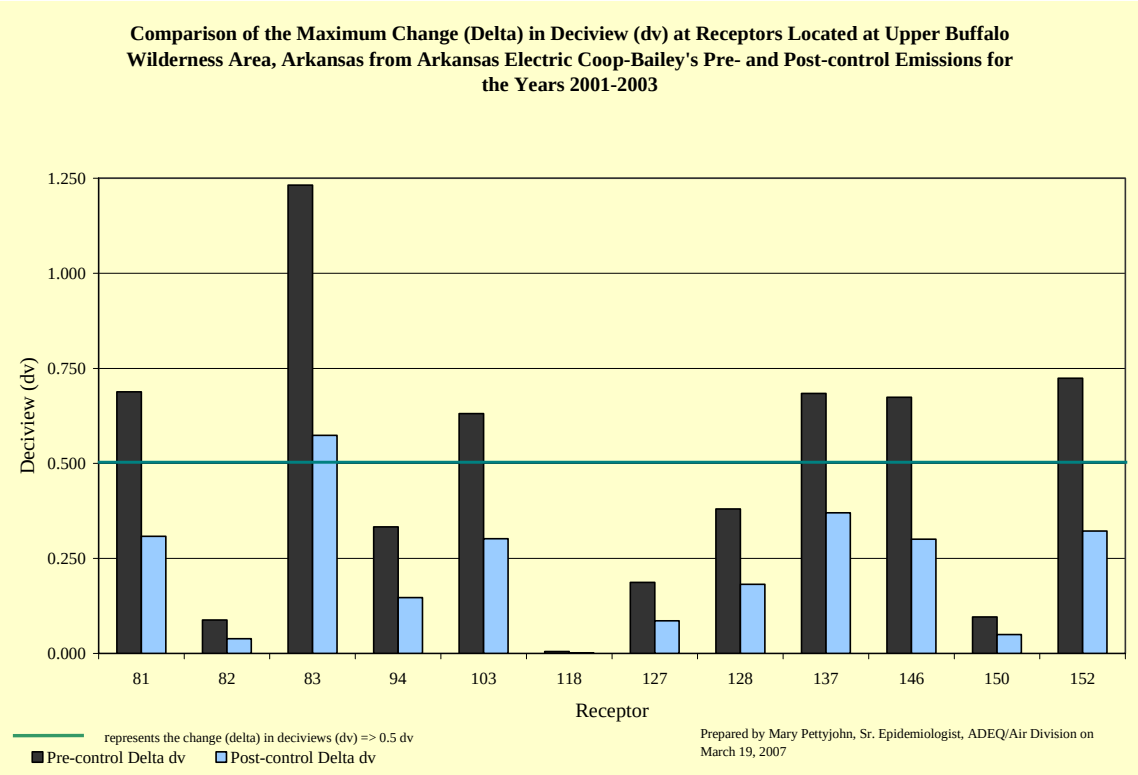


Figure 9.4-q

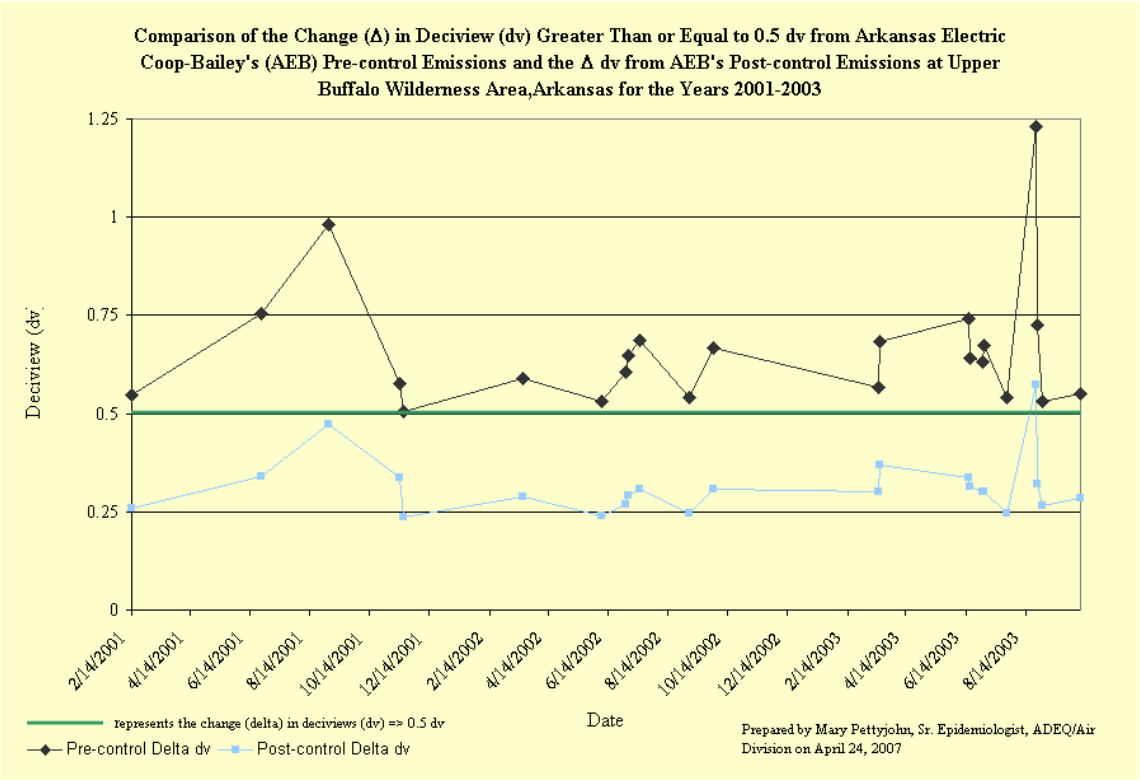

Comparison of the Change (Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Arkansas Electric Coop-Bailey's (AEB) Pre-control Emissions and the Δ dv from AEB's Post-control Emissions at Upper Buffalo Wilderness Area,Arkansas for the Years 2001-2003
Deciview (dv)
1.25
1
0.75
0.5
0.25
0
2/14/2001
4/14/2001
6/14/2001
8/14/2001
10/14/2001
12/14/2001
2/14/2002
4/14/2002
6/14/2002
8/14/2002
10/14/2002
12/14/2002
2/14/2003
4/14/2003
6/14/2003
8/14/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control Delta dv
Post-control Delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-r

As shown in Figures 9.4-s and 9.4-t, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – Carle E. Bailey contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 6.17% from the pre-control emissions to 12.82% from the post-control emissions)

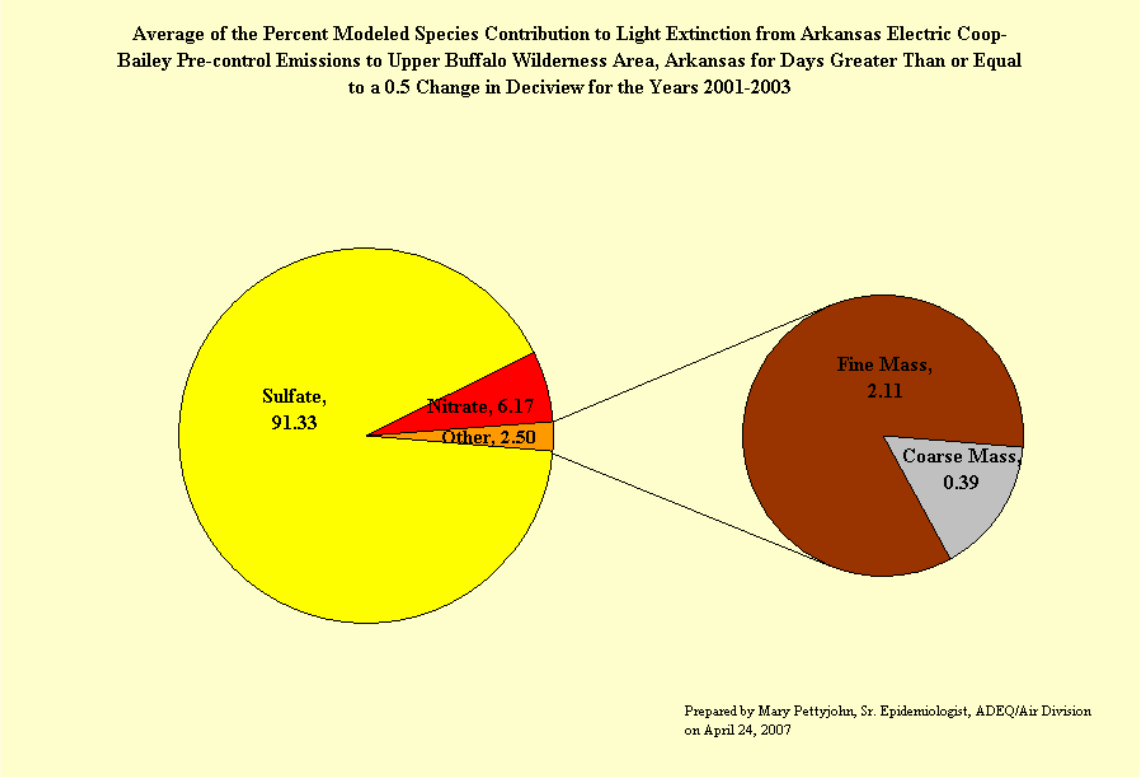


Figure 9.4-s

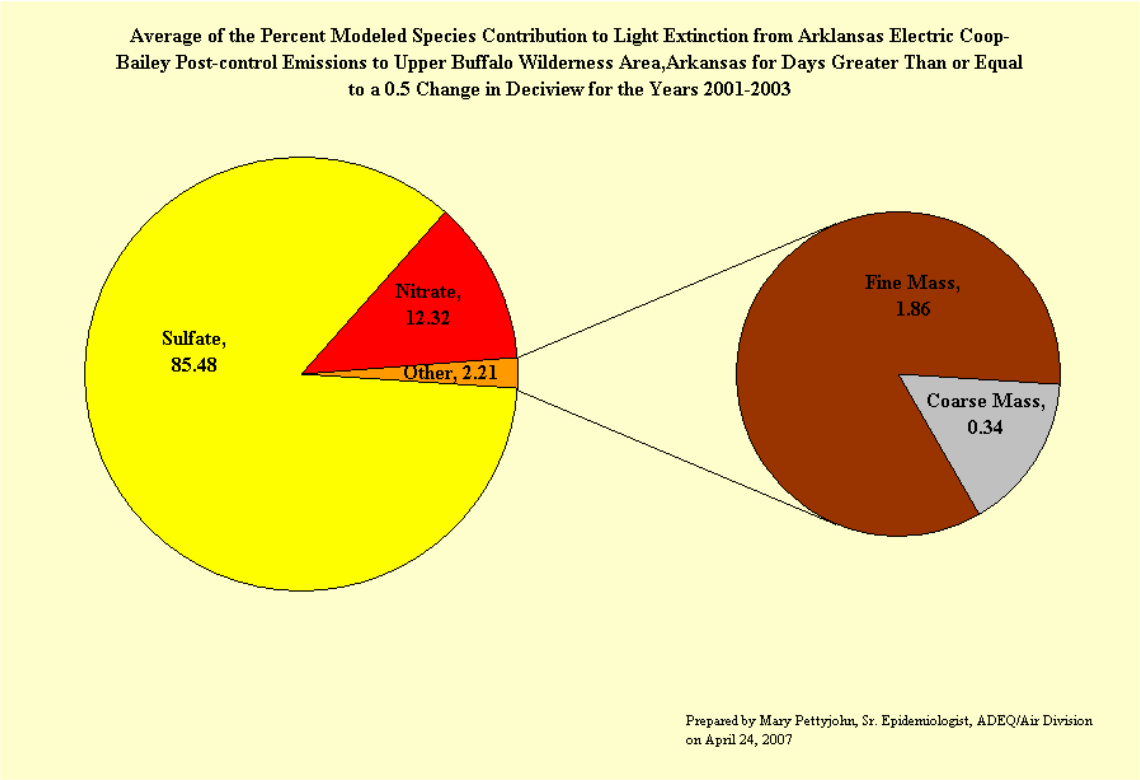

Average of the Percent Modeled Species Contribution to Light Extinction from Arklansas Electric Coop-Bailey Post-control Emissions to Upper Buffalo Wilderness Area,Arkansas for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Sulfate, 85.48
Nitrate, 12.32
Other, 2.21
Fine Mass, 1.86
Coarse Mass, 0.34
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-t

As shown in Figures 9.4-u and 9.4-v, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – Carl E. Bailey's post-control emissions to Hercules-Glade Wilderness Area, Missouri.

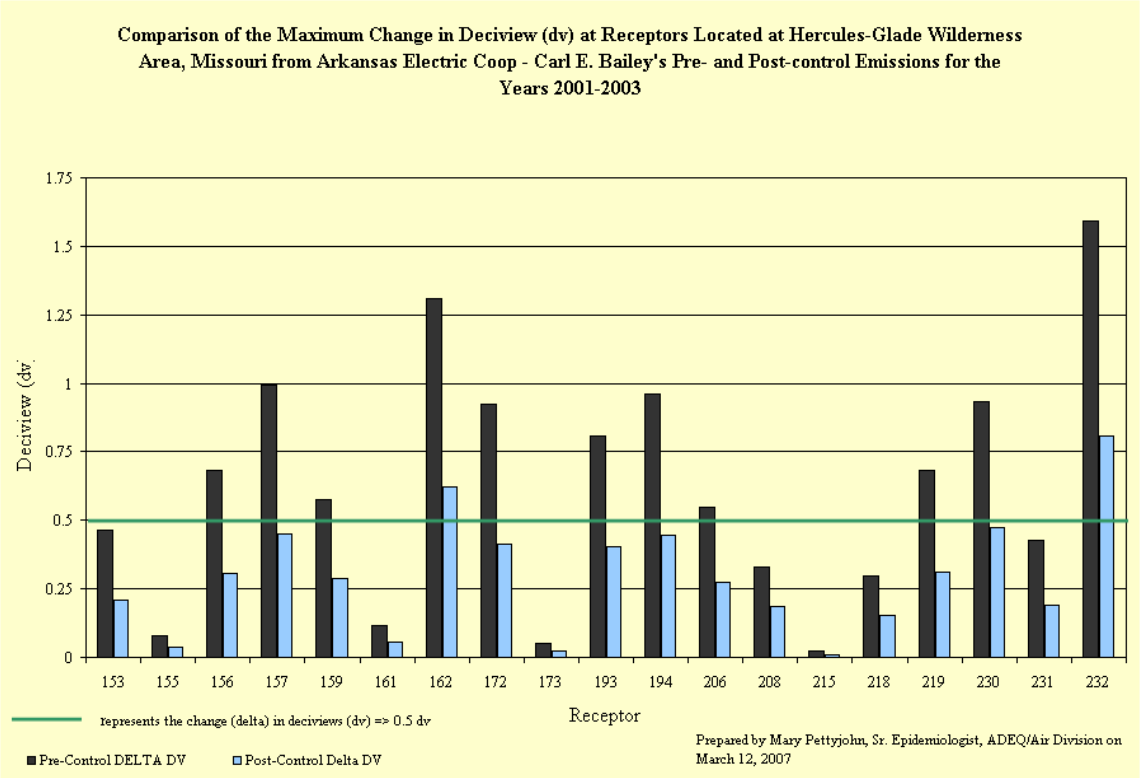


Figure 9.4-u

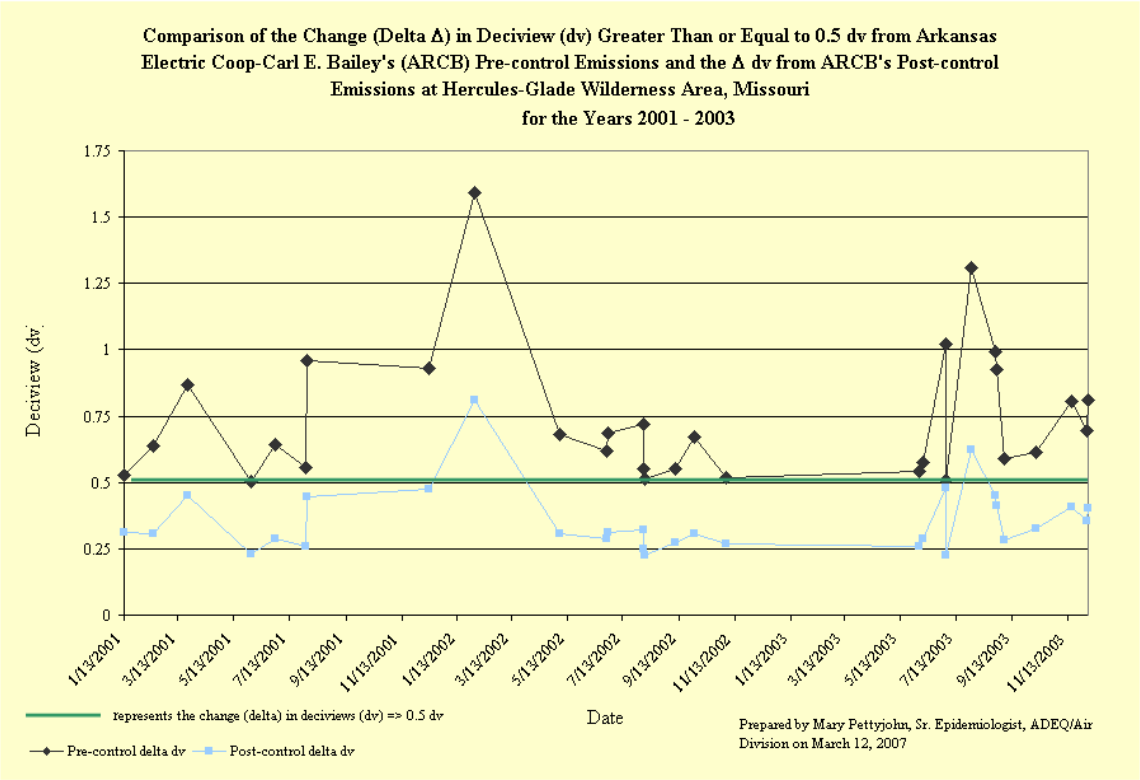

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Arkansas Electric Coop-Carl E. Bailey's (ARCB) Pre-control Emissions and the Δ dv from ARCB's Post-control Emissions at Hercules-Glade Wilderness Area, Missouri for the Years 2001 - 2003
Deciview (dv)
1.75
1.5
1.25
1
0.75
0.5
0.25
0
1/13/2001
3/13/2001
5/13/2001
7/13/2001
9/13/2001
11/13/2001
1/13/2002
3/13/2002
5/13/2002
7/13/2002
9/13/2002
11/13/2002
1/13/2003
3/13/2003
5/13/2003
7/13/2003
9/13/2003
11/13/2003
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control delta dv
Post-control delta dv
Date
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on March 12, 2007

Figure 9.4-v

As shown in Figures 9.4-w and 9.4-x, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – Carle E. Bailey contribution to light extinction to Hercules-Glade Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 6.57% from the pre-control emissions to 13.18% from the post-control emissions)

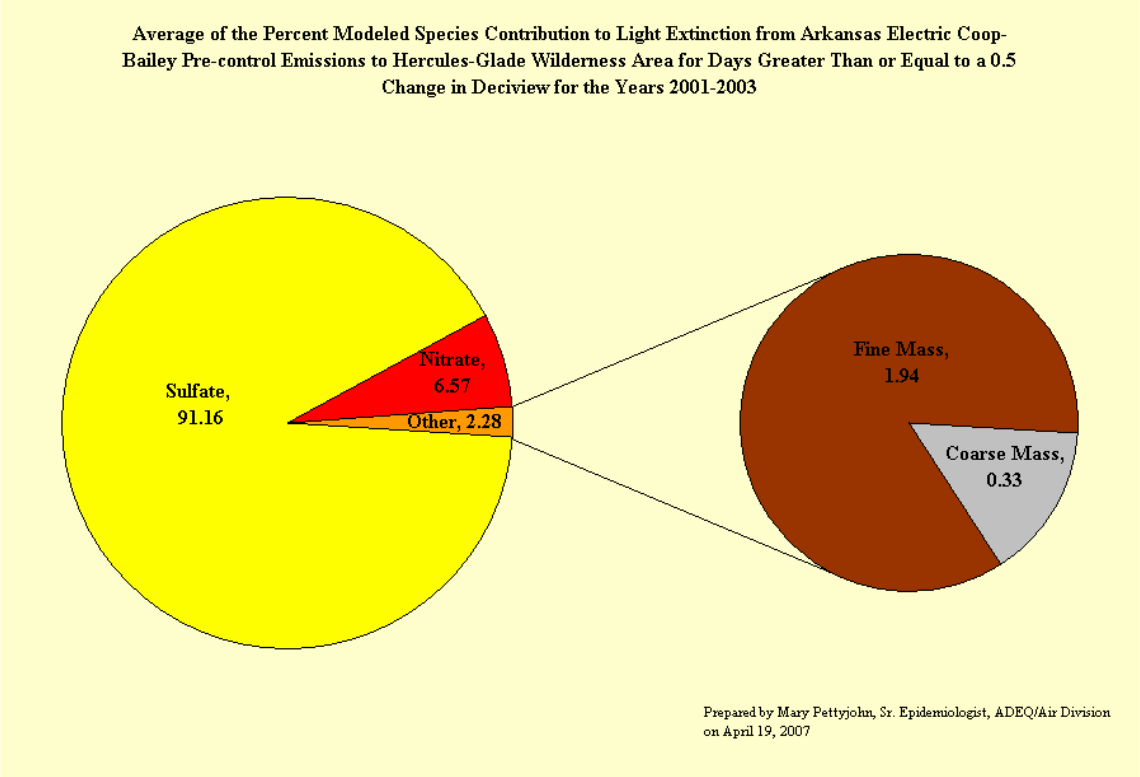


Figure 9.4-w

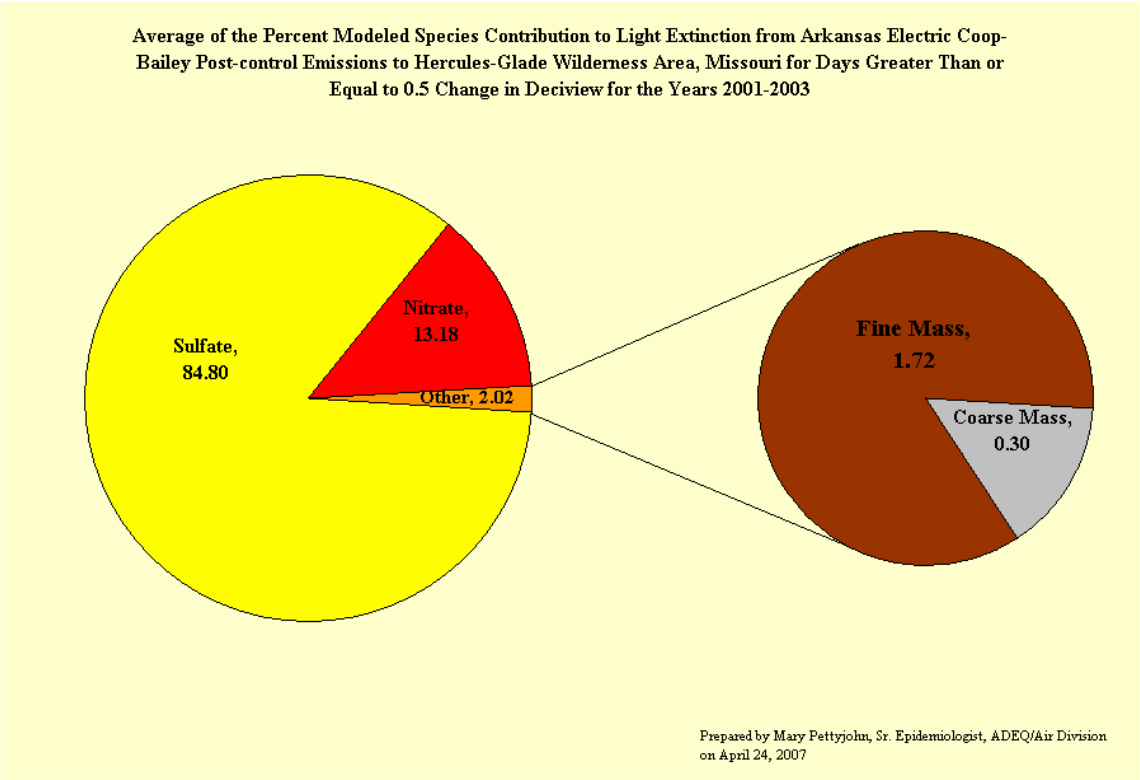

Average of the Percent Modeled Species Contribution to Light Extinction from Arkansas Electric Coop-Bailey Post-control Emissions to Hercules-Glade Wilderness Area, Missouri for Days Greater Than or Equal to 0.5 Change in Deciview for the Years 2001-2003
Sulfate, 84.80
Nitrate, 13.18
Other, 2.02
Fine Mass, 1.72
Coarse Mass, 0.30
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-x

As shown in Figures 9.4-y and 9.4-z, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – Carl E. Bailey's post-control emissions to Mingo Wilderness Area, Missouri.

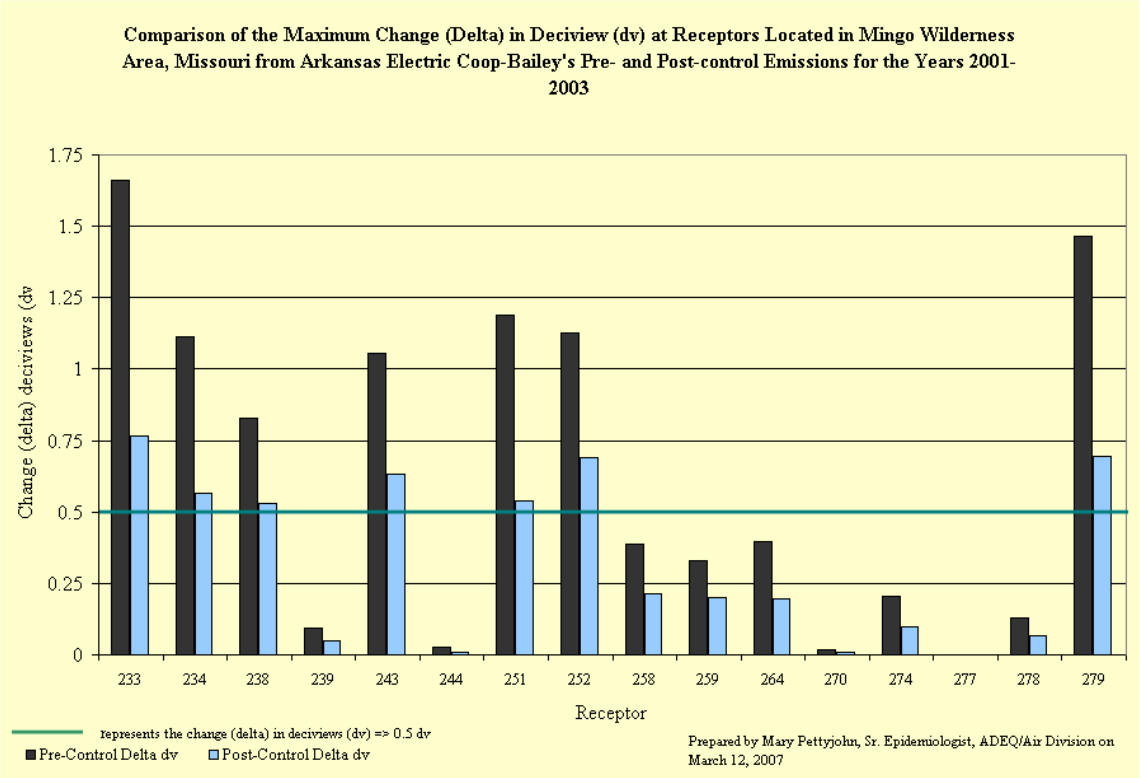


Figure 9.4-y

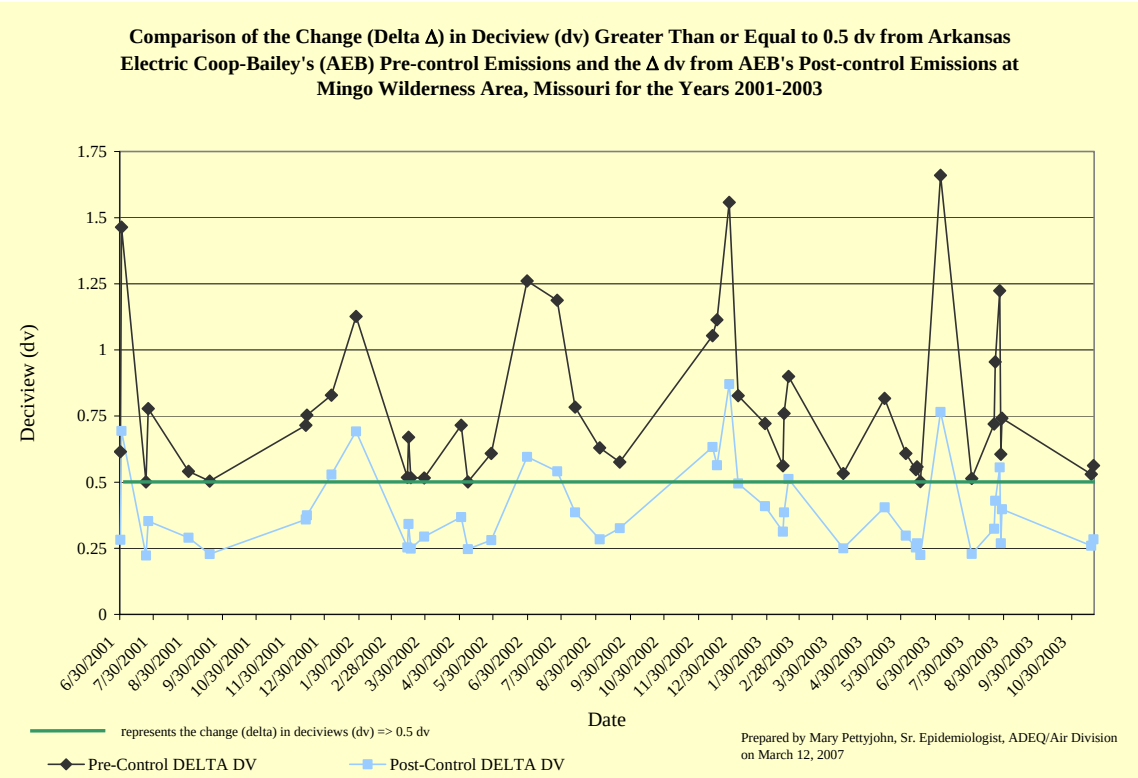

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Arkansas Electric Coop-Bailey's (AEB) Pre-control Emissions and the Δ dv from AEB's Post-control Emissions at Mingo Wilderness Area, Missouri for the Years 2001-2003
Deciview (dv)
1.75
1.5
1.25
1
0.75
0.5
0.25
0
6/30/2001
7/30/2001
8/30/2001
9/30/2001
10/30/2001
11/30/2001
12/30/2001
1/30/2002
2/28/2002
3/30/2002
4/30/2002
5/30/2002
6/30/2002
7/30/2002
8/30/2002
9/30/2002
10/30/2002
11/30/2002
12/30/2002
1/30/2003
2/28/2003
3/30/2003
4/30/2003
5/30/2003
6/30/2003
7/30/2003
8/30/2003
9/30/2003
10/30/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-Control DELTA DV
Post-Control DELTA DV
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on March 12, 2007

Figure 9.4-z

As shown in Figures 9.4-1 and 9.4-2, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – Carle E. Bailey contribution to light extinction to Mingo Wilderness Area, Missouri. However, there is an increase of nitrate's contribution to light extinction (i.e. from 10.15% from the pre-control emissions to 13.18% from the post-control emissions)

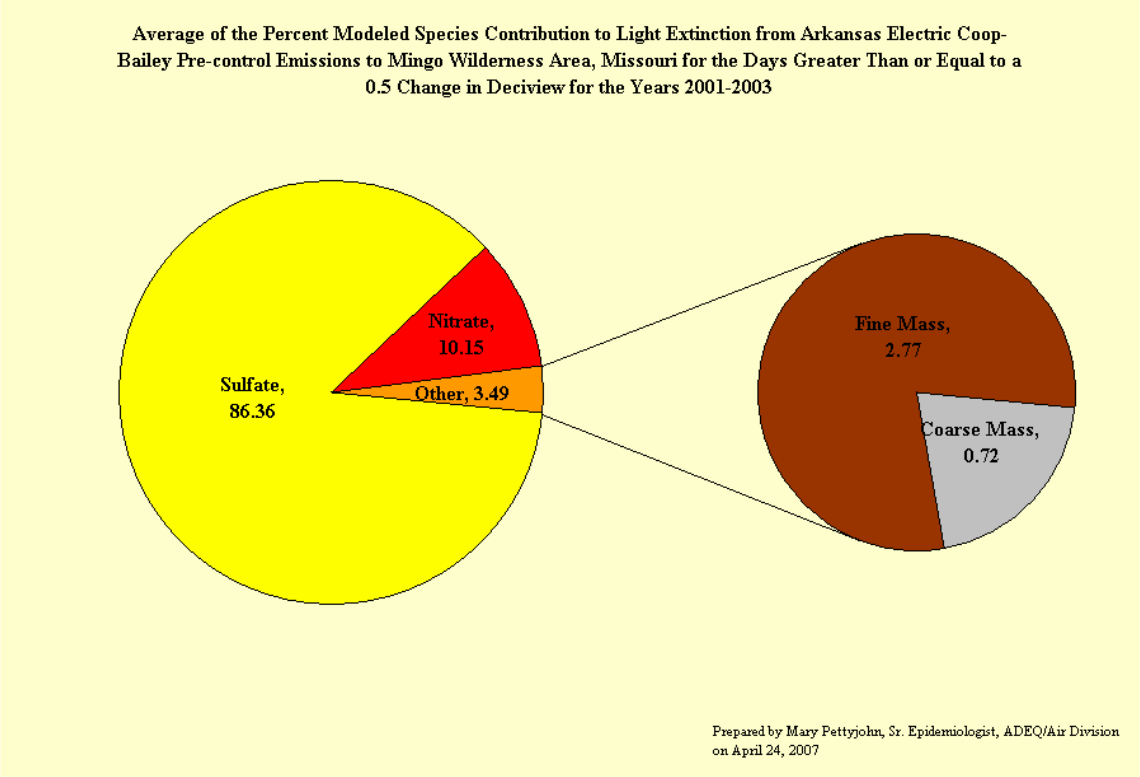


Figure 9.4-1

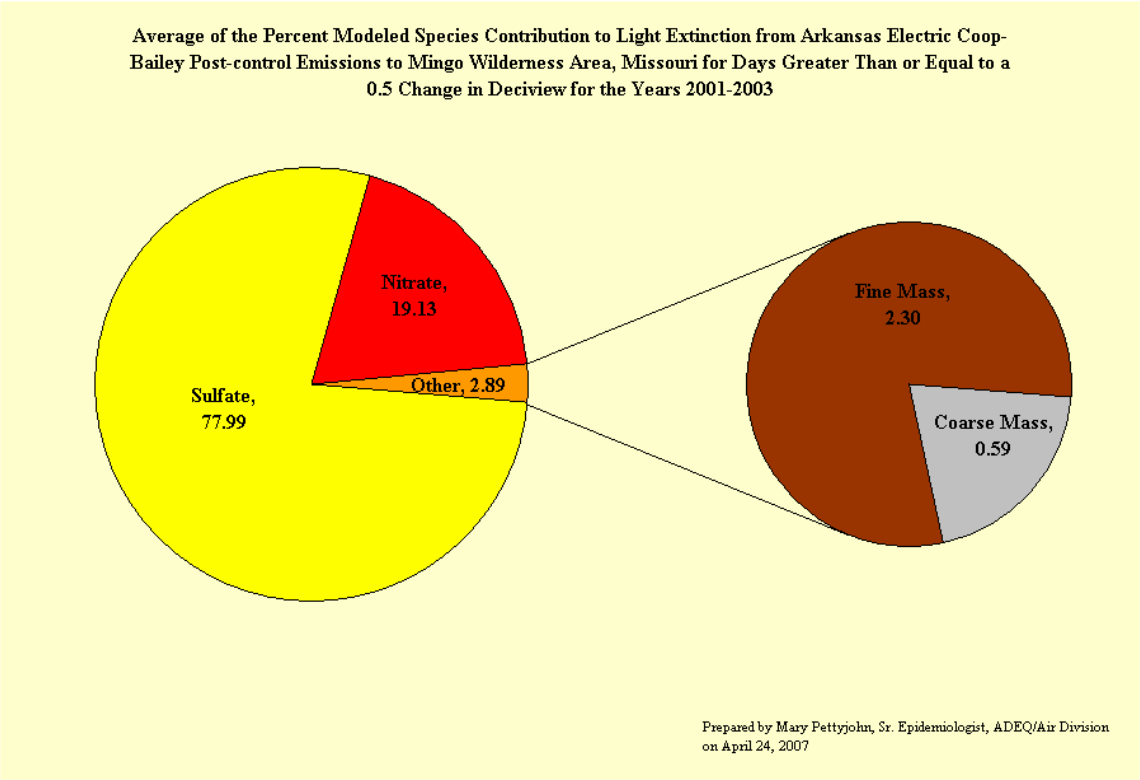

Average of the Percent Modeled Species Contribution to Light Extinction from Arkansas Electric Coop-Bailey Post-control Emissions to Mingo Wilderness Area, Missouri for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Nitrate, 19.13
Other, 2.89
Sulfate, 77.99
Fine Mass, 2.30
Coarse Mass, 0.59
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-2

As shown in Figures 9.4-3 and 9.4-4, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – John McClellan's post-control emissions to Caney Creek Wilderness Area, Arkansas.

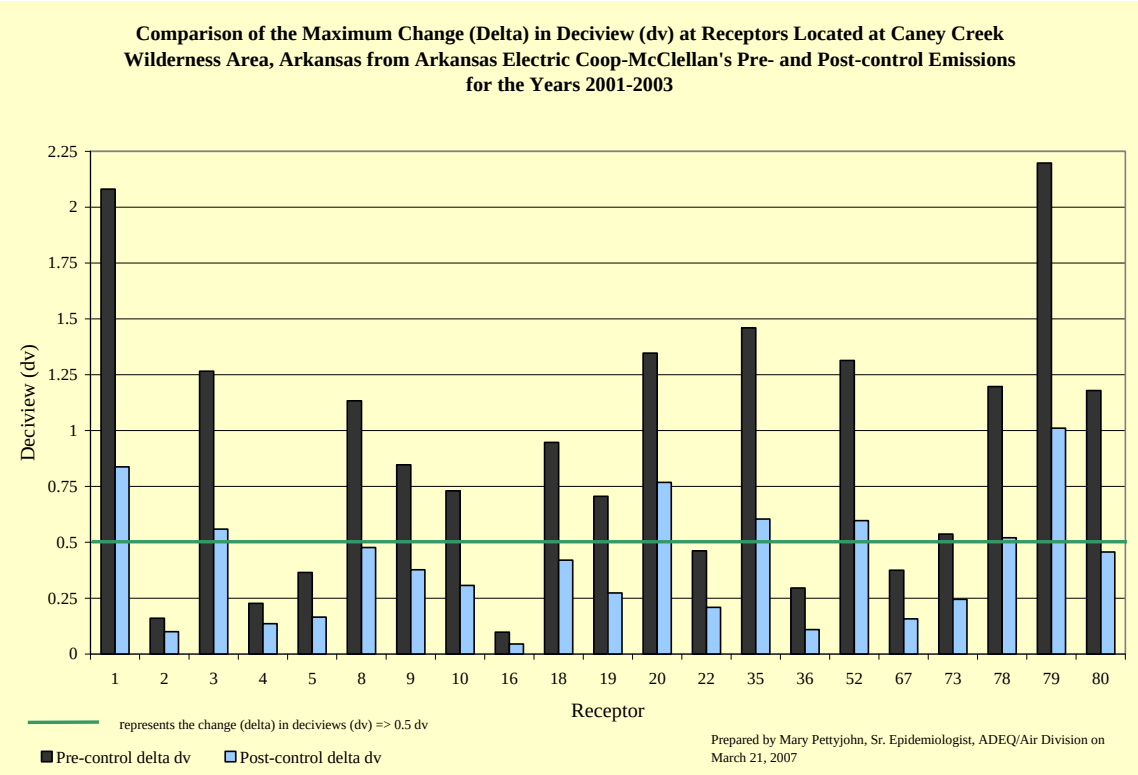


Figure 9.4-3

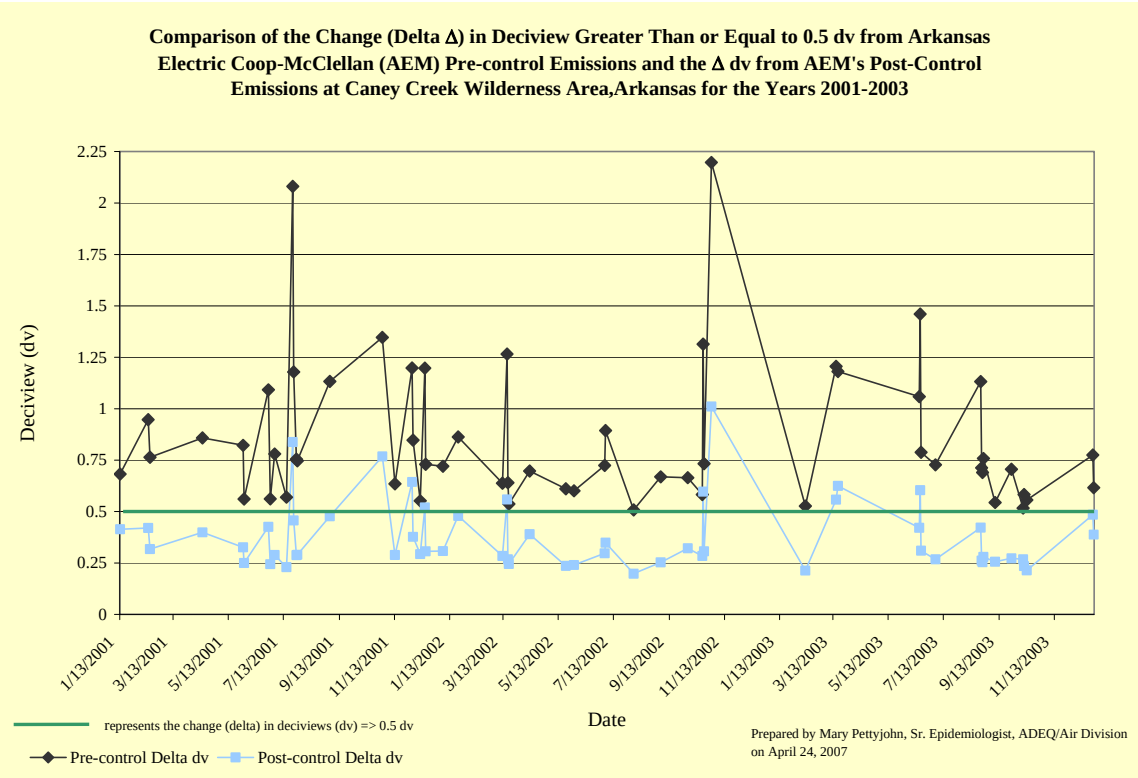

Comparison of the Change (Delta Δ) in Deciview Greater Than or Equal to 0.5 dv from Arkansas Electric Coop-McClellan (AEM) Pre-control Emissions and the Δ dv from AEM's Post-Control Emissions at Caney Creek Wilderness Area,Arkansas for the Years 2001-2003
Deciview (dv)
2.25
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
1/13/2001
3/13/2001
5/13/2001
7/13/2001
9/13/2001
11/13/2001
1/13/2002
3/13/2002
5/13/2002
7/13/2002
9/13/2002
11/13/2002
1/13/2003
3/13/2003
5/13/2003
7/13/2003
9/13/2003
11/13/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control Delta dv
Post-control Delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-4

As shown in Figures 9.4-5 and 9.4-6, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – John McClellan's contribution to light extinction to Caney Creek Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 10.91% from the pre-control emissions to 22.80% from the post-control emissions)

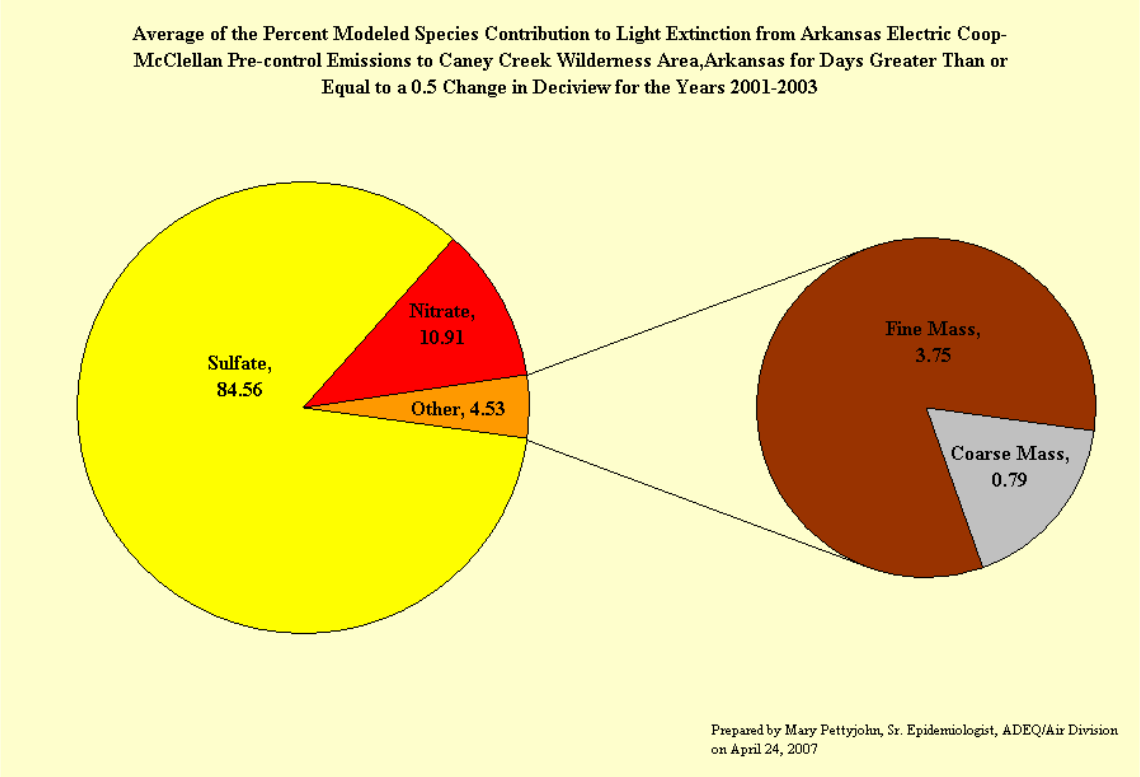


Figure 9.4-5

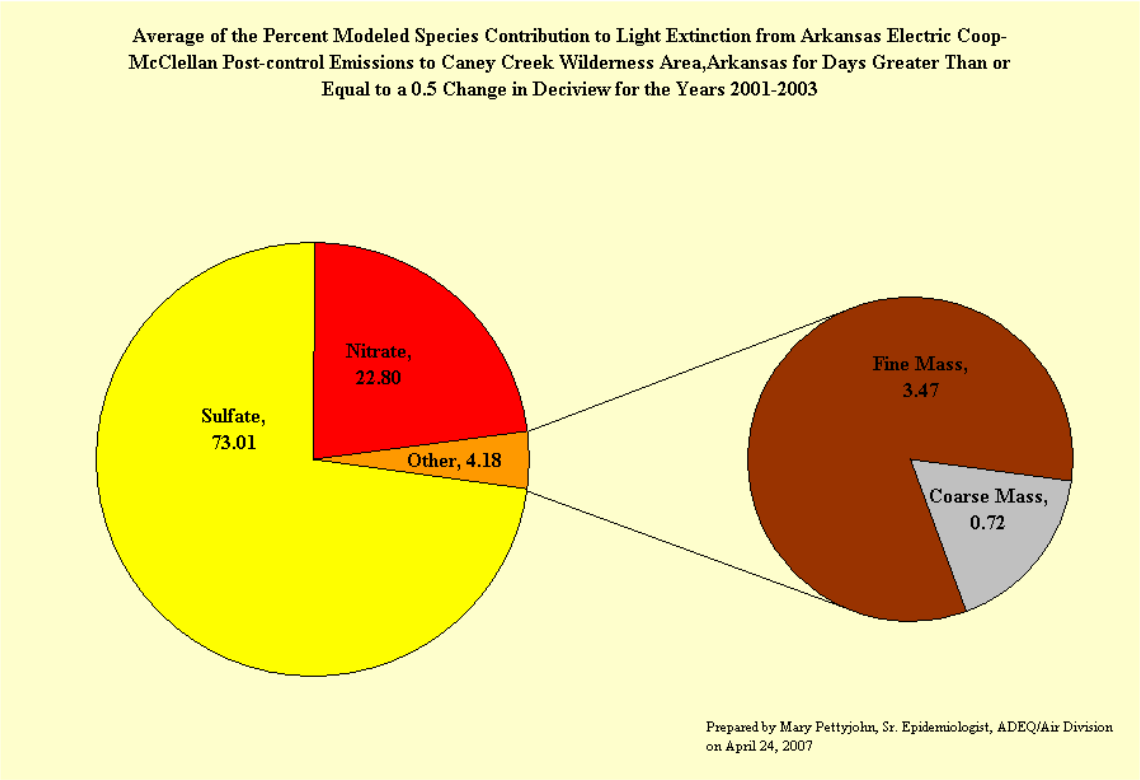

Average of the Percent Modeled Species Contribution to Light Extinction from Arkansas Electric Coop-McClellan Post-control Emissions to Caney Creek Wilderness Area,Arkansas for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Nitrate, 22.80
Sulfate, 73.01
Other, 4.18
Fine Mass, 3.47
Coarse Mass, 0.72
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-6

As shown in Figures 9.4-7 and 9.4-8, there appears to be a considerable improvement to visibility from Arkansas Electric Cooperative – John McClellan's post-control emissions to Upper Buffalo Wilderness Area, Arkansas.

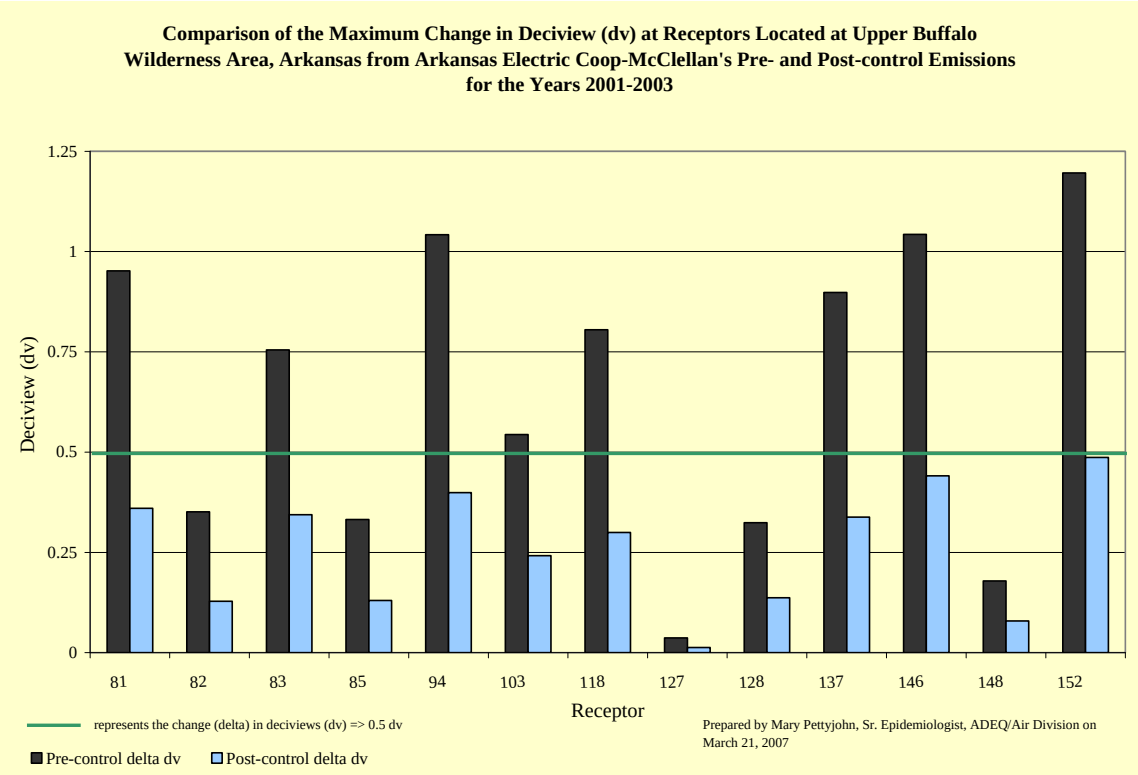


Figure 9.4-7

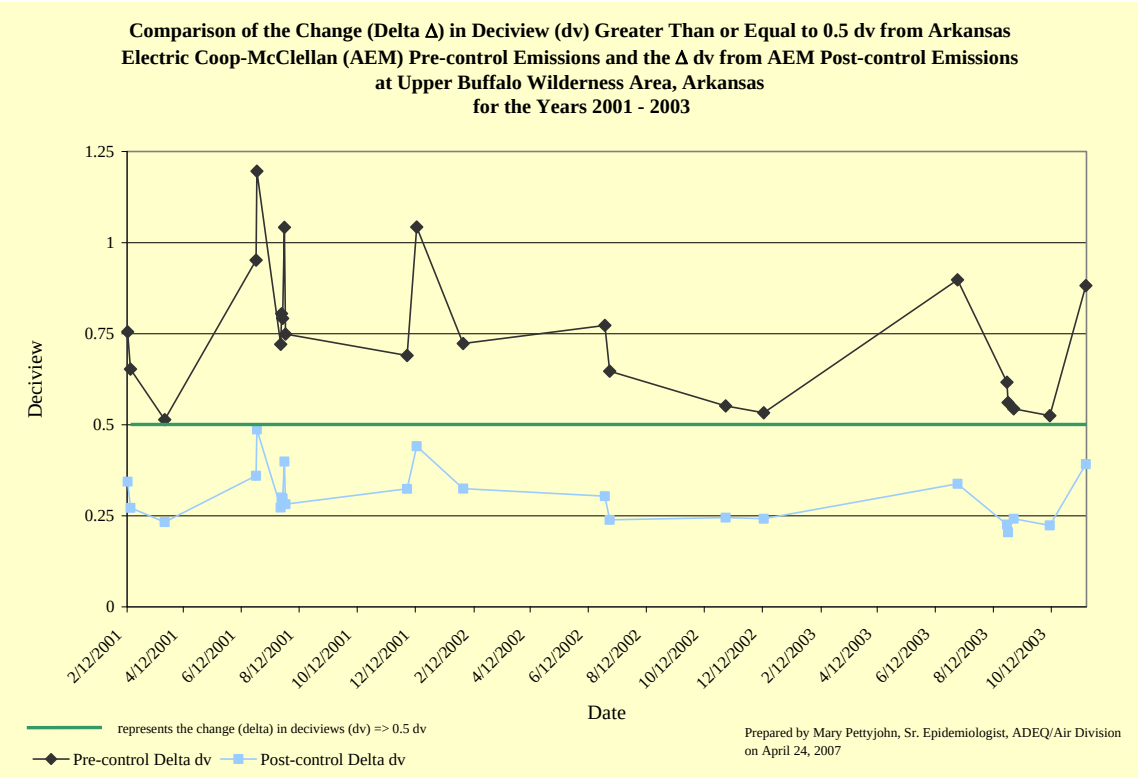

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Arkansas Electric Coop-McClellan (AEM) Pre-control Emissions and the Δ dv from AEM Post-control Emissions at Upper Buffalo Wilderness Area, Arkansas for the Years 2001 - 2003
Deciview
1.25
1
0.75
0.5
0.25
0
2/12/2001
4/12/2001
6/12/2001
8/12/2001
10/12/2001
12/12/2001
2/12/2002
4/12/2002
6/12/2002
8/12/2002
10/12/2002
12/12/2002
2/12/2003
4/12/2003
6/12/2003
8/12/2003
10/12/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control Delta dv
Post-control Delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-8

As shown in Figures 9.4-9 and 9.4-0, sulfate dominates the pre- and post-control emissions from Arkansas Electric Cooperative – John McClellan's contribution to light extinction to Caney Creek Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 6.58% from the pre-control emissions to 15.38% from the post-control emissions)

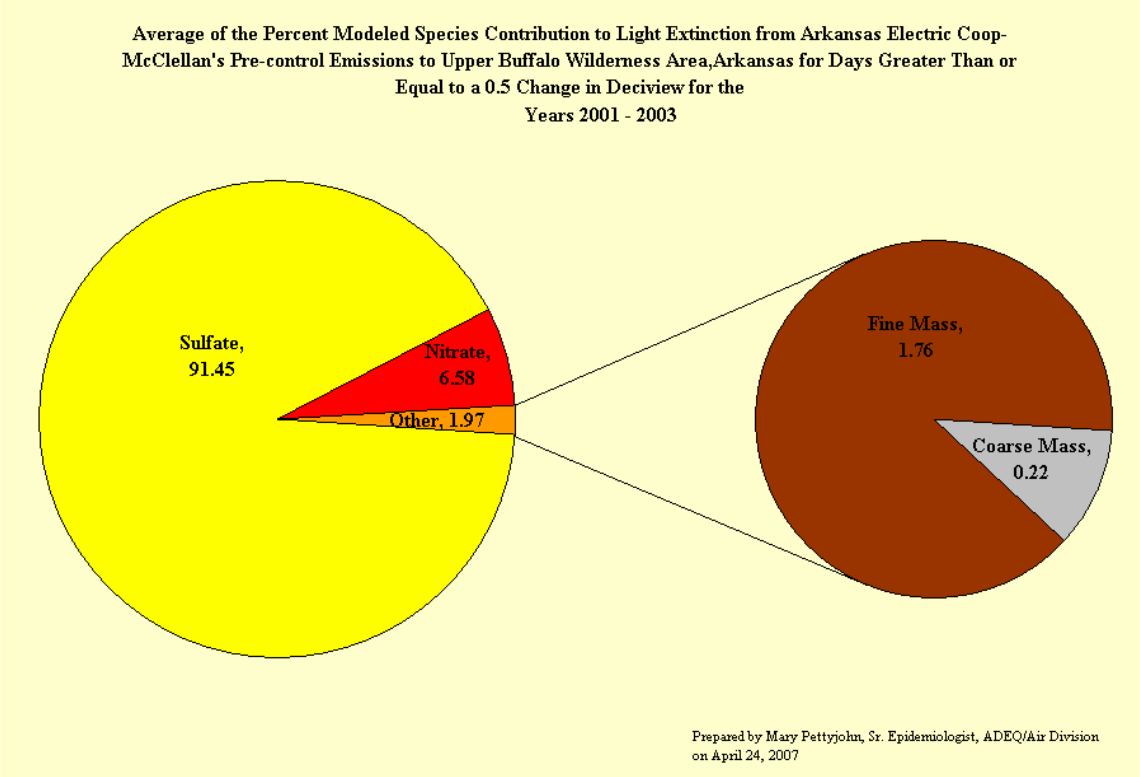


Figure 9.4-9

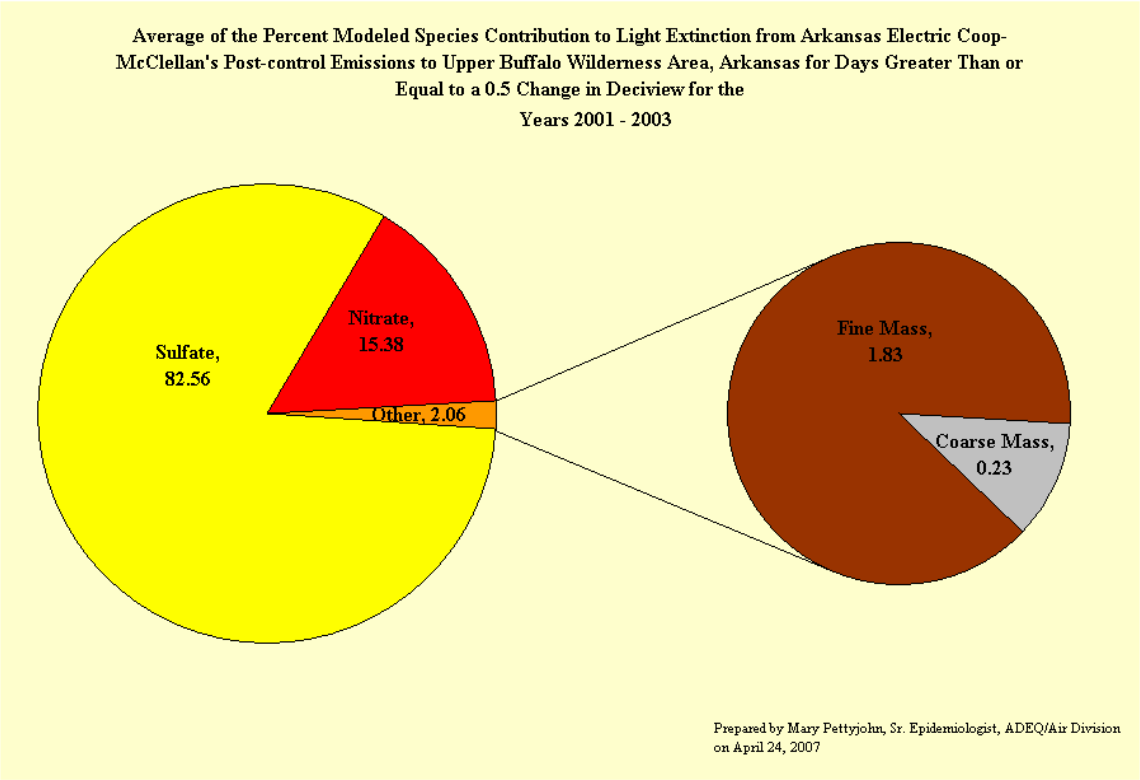

Average of the Percent Modeled Species Contribution to Light Extinction from Arkansas Electric Coop-McClellan's Post-control Emissions to Upper Buffalo Wilderness Area, Arkansas for Days Greater Than or Equal to a 0.5 Change in Deciview for the Years 2001 - 2003
Sulfate, 82.56
Nitrate, 15.38
Other, 2.06
Fine Mass, 1.83
Coarse Mass, 0.23
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 24, 2007

Figure 9.4-0

As shown in Figures 9.4-I and 9.4-II, there appears to not be a considerable improvement to visibility from Domtar's post-control emissions to Caney Creek Wilderness Area, Arkansas.

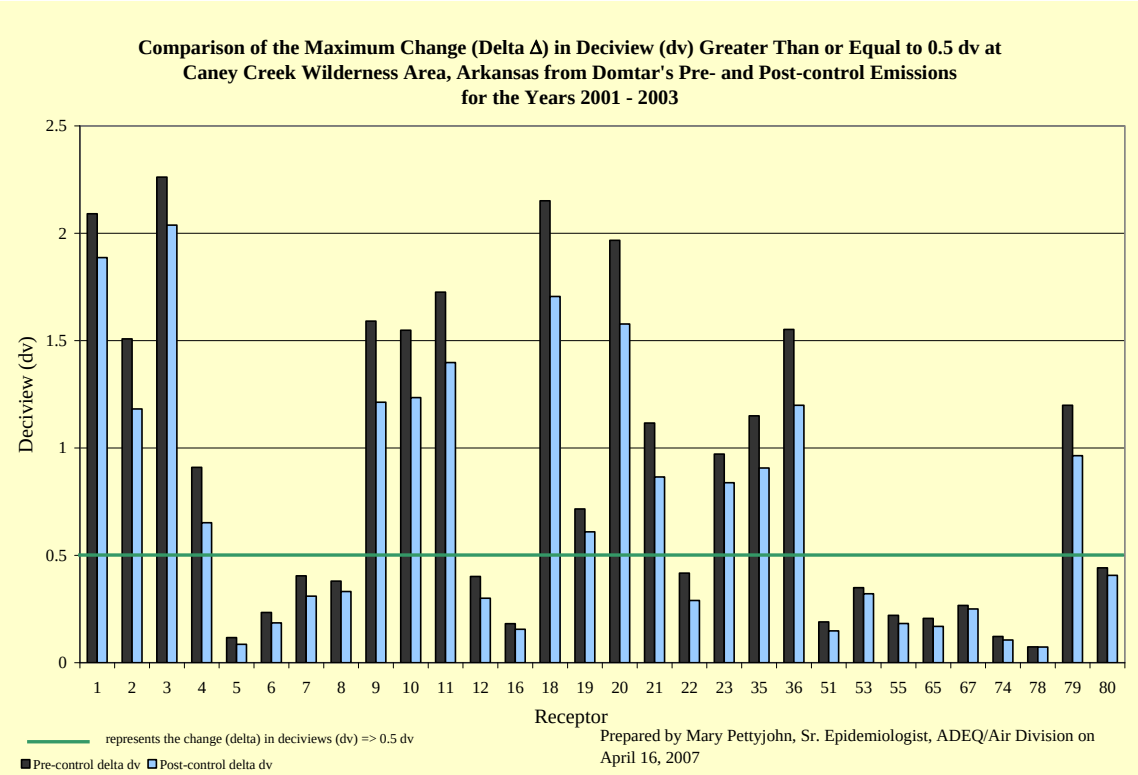


Figure 9.4-I

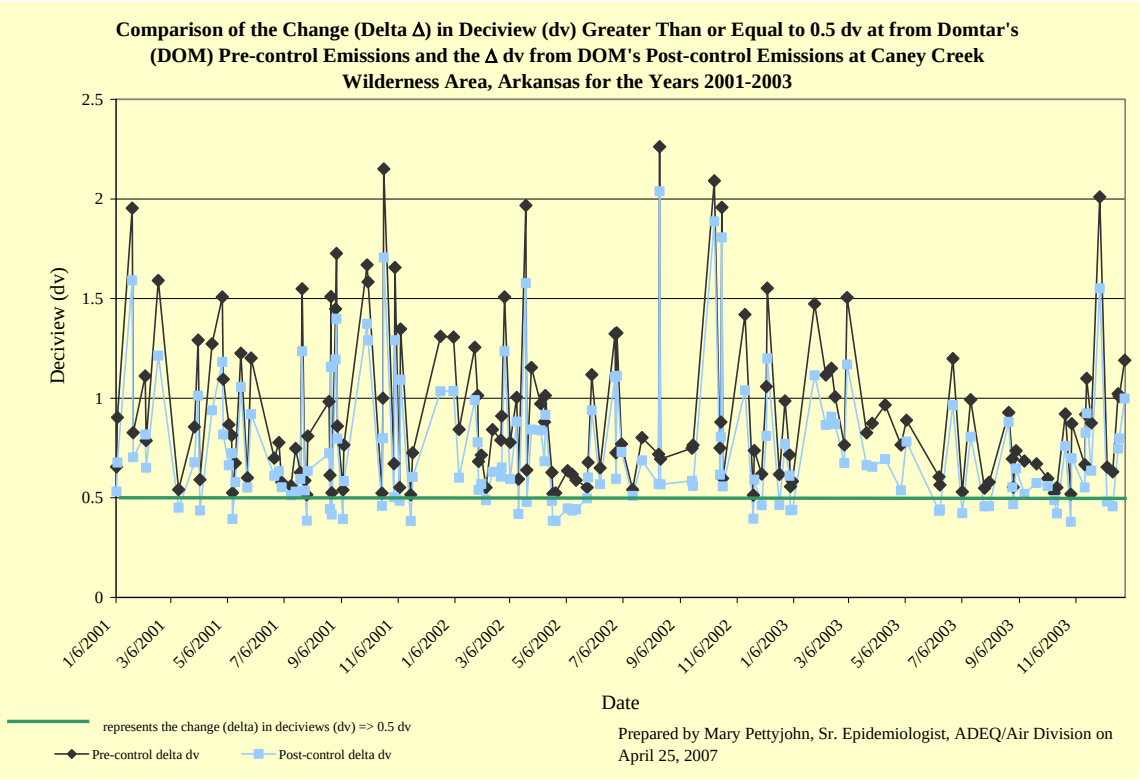
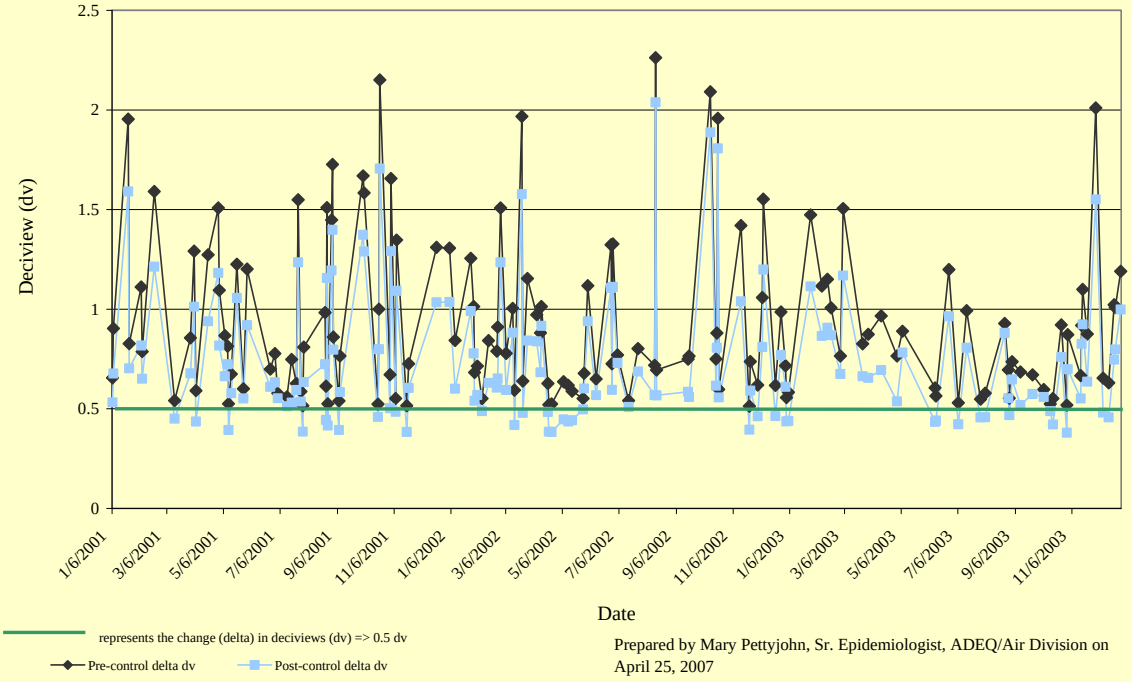

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv at from Domtar's (DOM) Pre-control Emissions and the Δ dv from DOM's Post-control Emissions at Caney Creek Wilderness Area, Arkansas for the Years 2001-2003
Deciview (dv)
2.5
2
1.5
1
0.5
0
1/6/2001
3/6/2001
5/6/2001
7/6/2001
9/6/2001
11/6/2001
1/6/2002
3/6/2002
5/6/2002
7/6/2002
9/6/2002
11/6/2002
1/6/2003
3/6/2003
5/6/2003
7/6/2003
9/6/2003
11/6/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 25, 2007

Figure 9.4II

Comparison of the Change (Delta Δ) in Deciview Greater Than or Equal to 0.5 dv at Caney Creek Wilderness Area, Arkansas from Domtar's Pre- and Post-control Emissions for the Years 2001 - 2003



Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 25, 2007

As shown in Figures 9.4-III and 9.4-IV, nitrate dominates the pre- and post-control emissions from Domtar's contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 38.11% from the pre-control emissions to 46.27% from the post-control emissions)

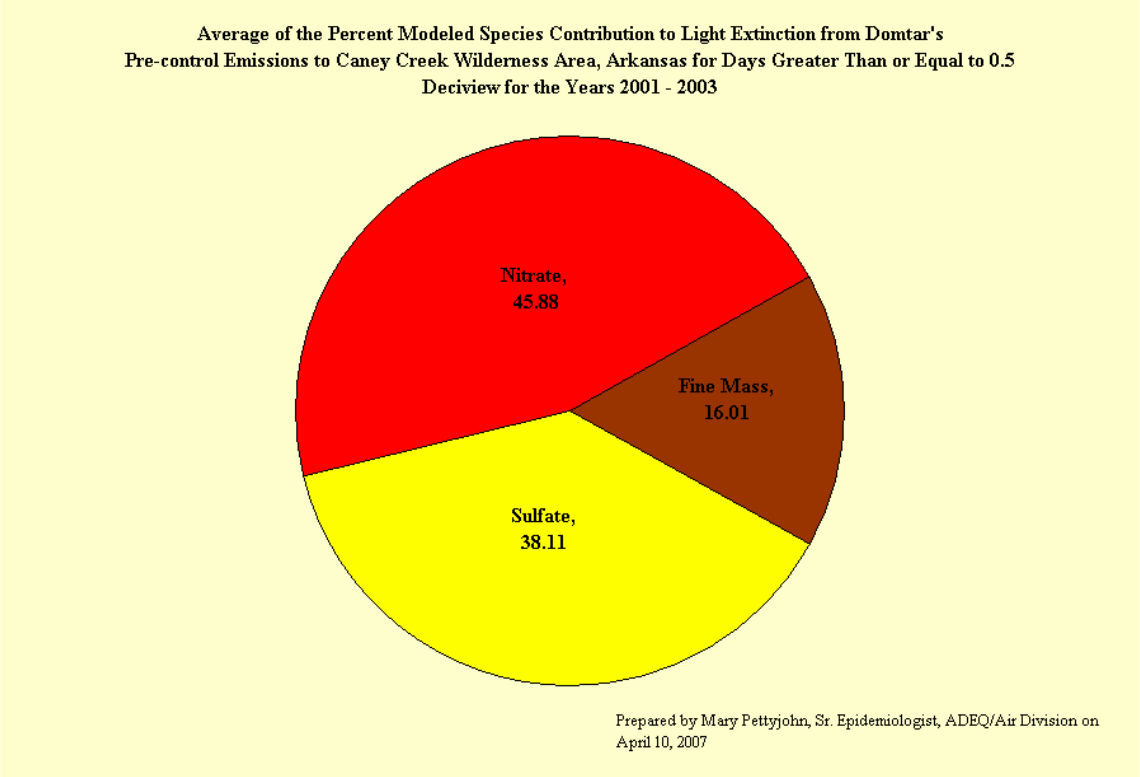


Figure 9.4-III

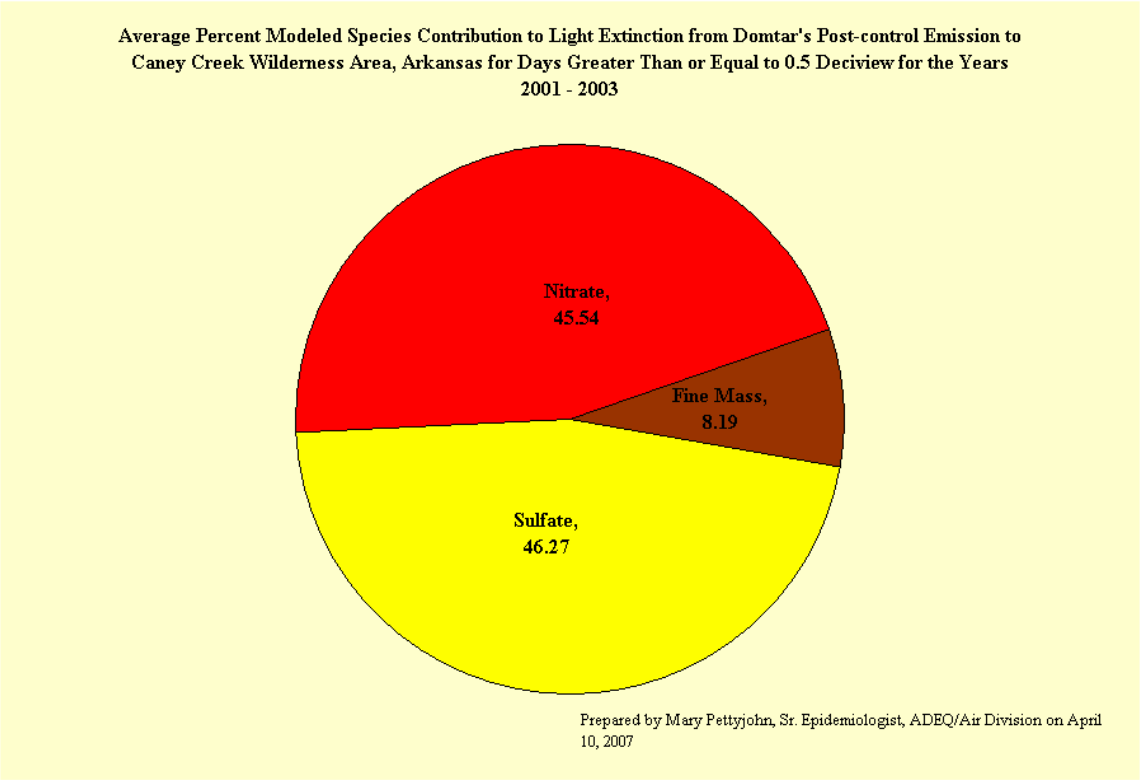

Average Percent Modeled Species Contribution to Light Extinction from Domtar's Post-control Emission to Caney Creek Wilderness Area, Arkansas for Days Greater Than or Equal to 0.5 Deciview for the Years 2001 - 2003
Nitrate, 45.54
Fine Mass, 8.19
Sulfate, 46.27
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 10, 2007

Figure 9.4-IV

As shown in Figures 9.4-V and 9.4-VI, there appears to not be a considerable improvement to visibility from Domtar's post-control emissions to Upper Buffalo Wilderness Area, Arkansas.

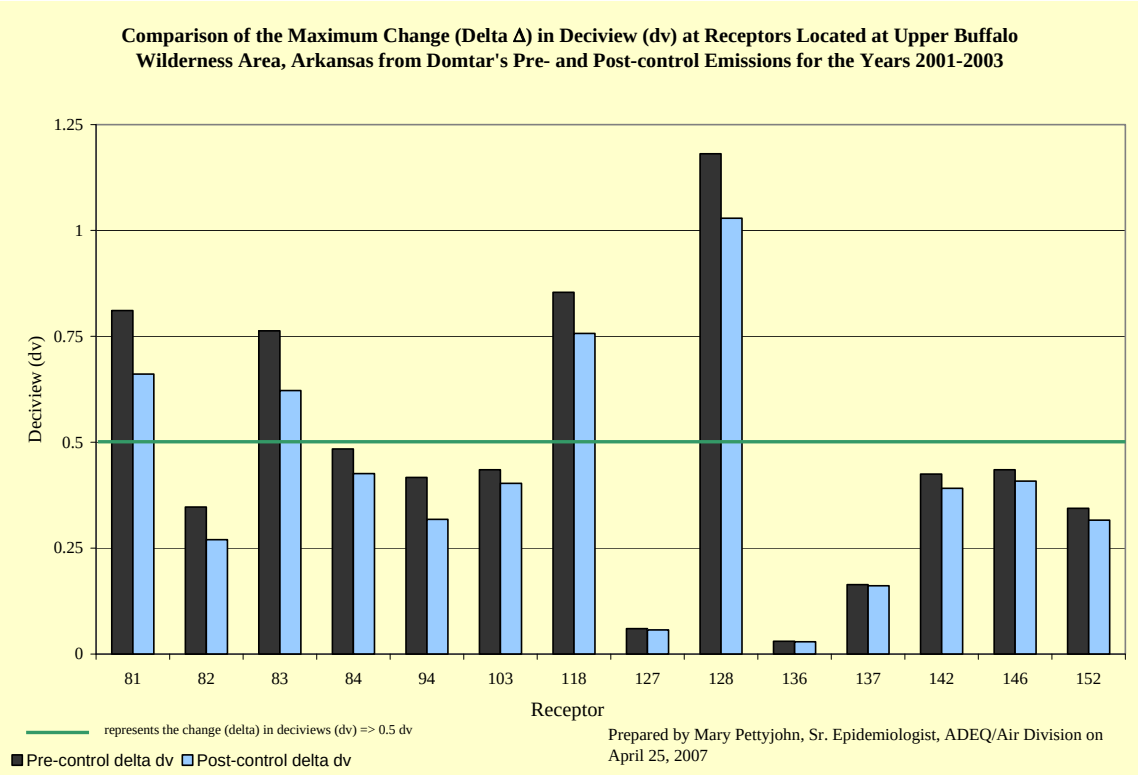


Figure V

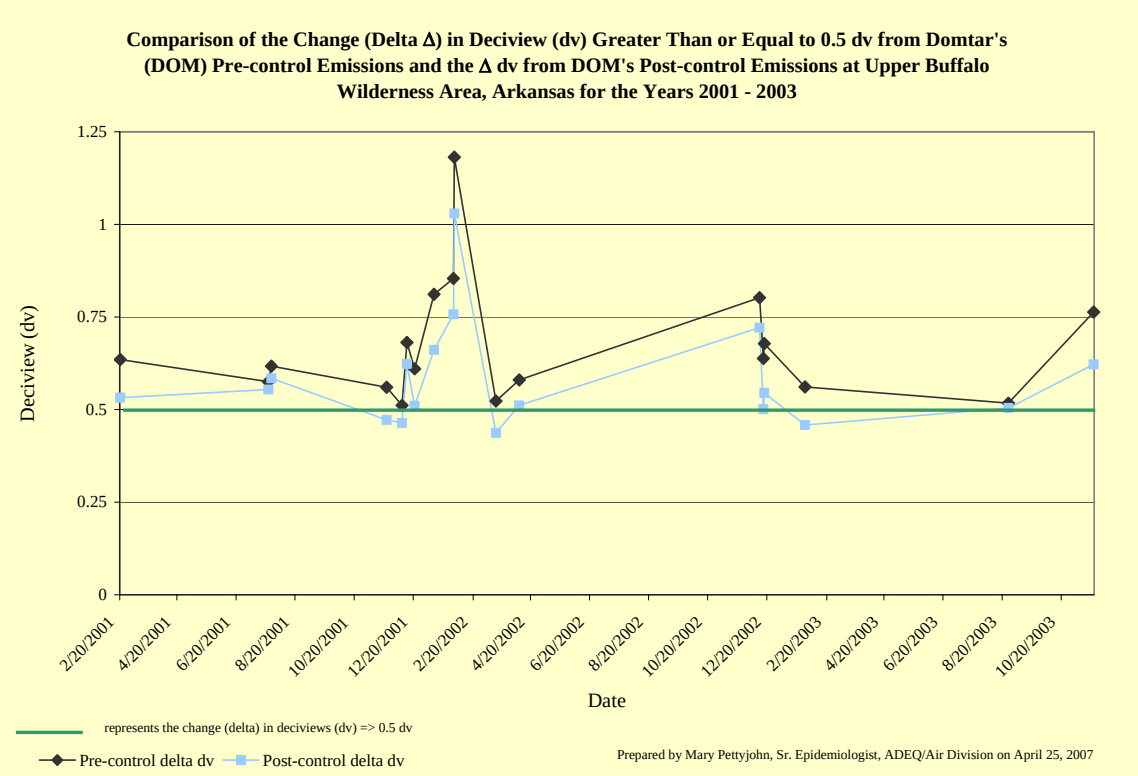

Comparison of the Change (Delta Δ) in Deciview (dv) Greater Than or Equal to 0.5 dv from Domtar's (DOM) Pre-control Emissions and the Δ dv from DOM's Post-control Emissions at Upper Buffalo Wilderness Area, Arkansas for the Years 2001 - 2003
Deciview (dv)
1.25
1
0.75
0.5
0.25
0
2/20/2001
4/20/2001
6/20/2001
8/20/2001
10/20/2001
12/20/2001
2/20/2002
4/20/2002
6/20/2002
8/20/2002
10/20/2002
12/20/2002
2/20/2003
4/20/2003
6/20/2003
8/20/2003
10/20/2003
Date
represents the change (delta) in deciviews (dv) => 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on April 25, 2007

Figure 9.4-VI

As shown in Figures 9.4-VI and 9.4-VII, sulfate and nitrate dominates the pre- and post-control emissions from Domtar's contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 50.31% from the pre-control emissions to 56.81% from the post-control emissions)

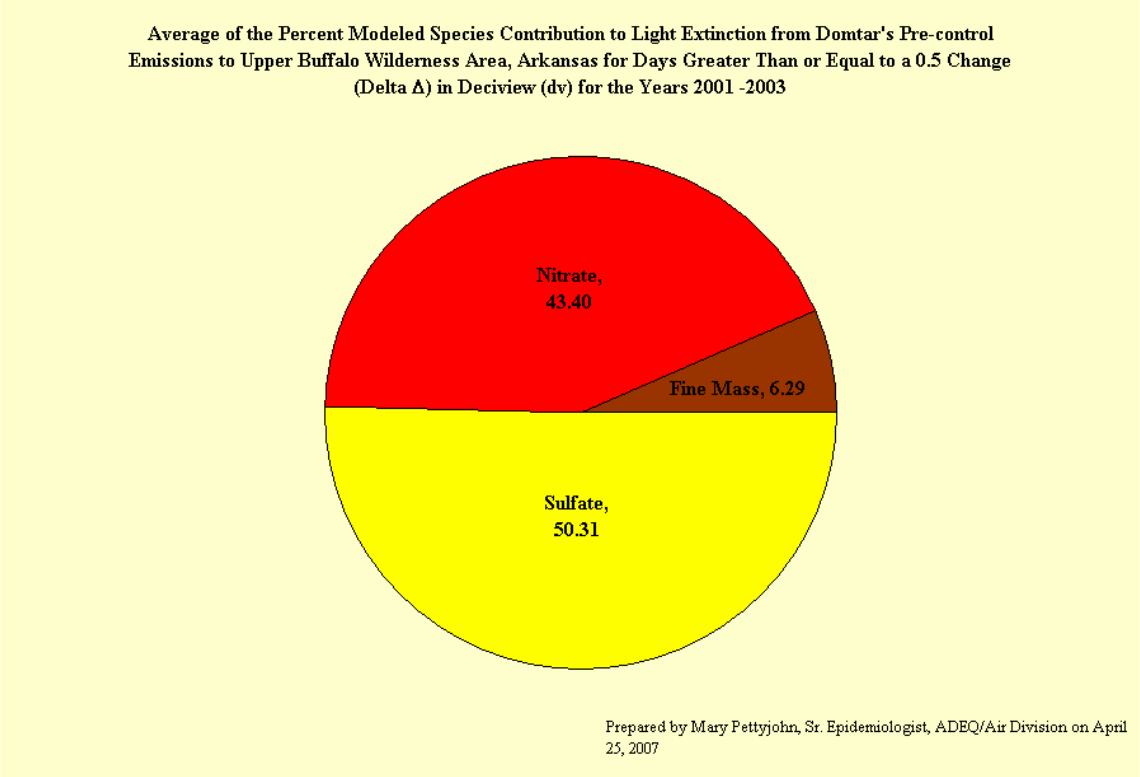


Figure 9.4-VI

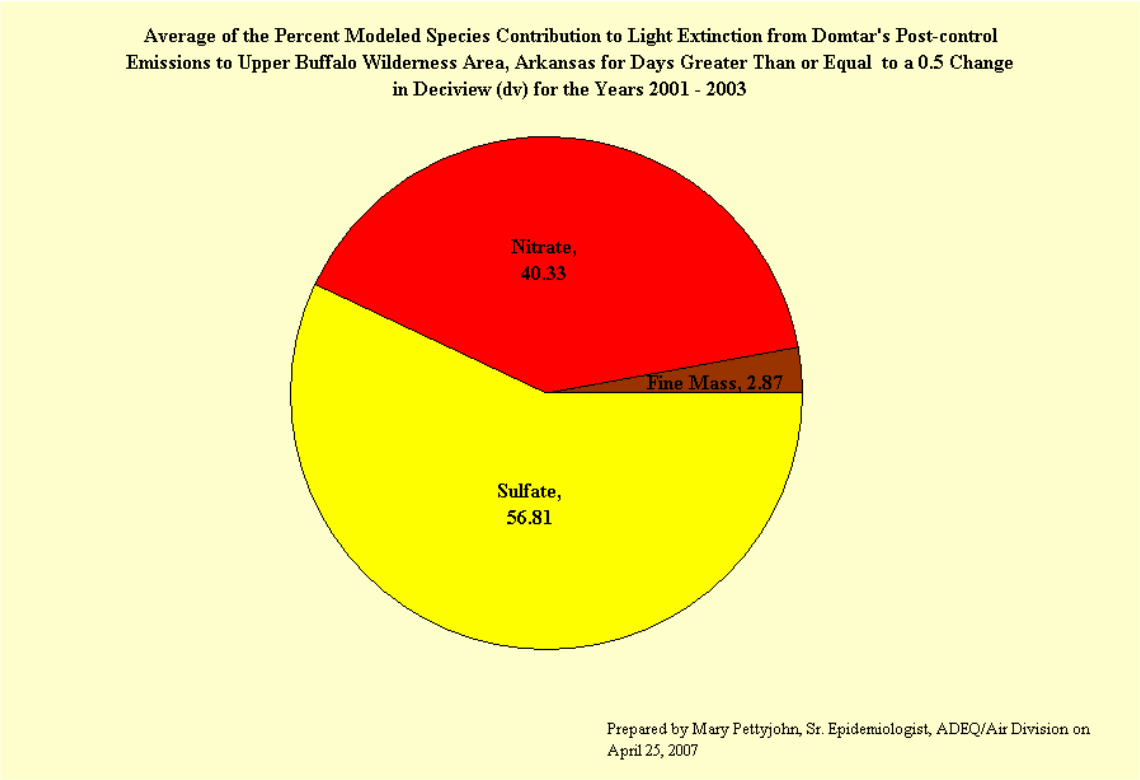


Figure 9.4-VII

As shown in Figures 9.4-VIII and 9.4-IX, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from natural gas to Caney Creek Wilderness Area, Arkansas.

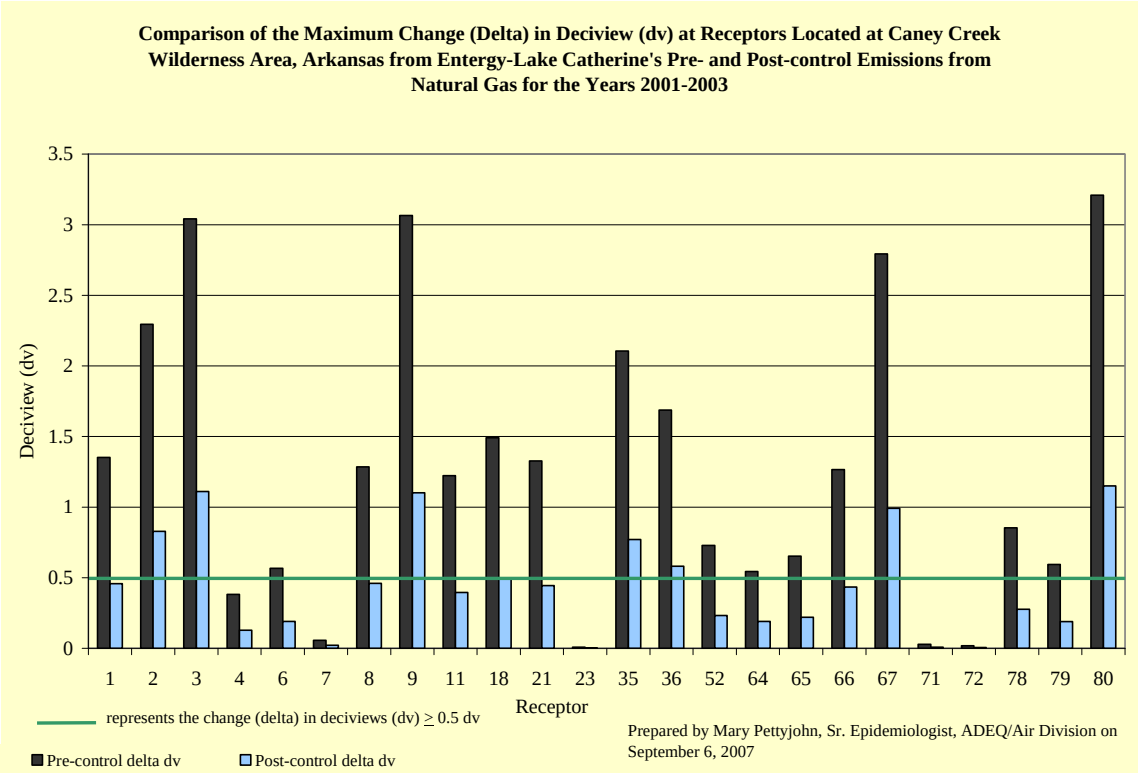


Figure 9.4-VIII

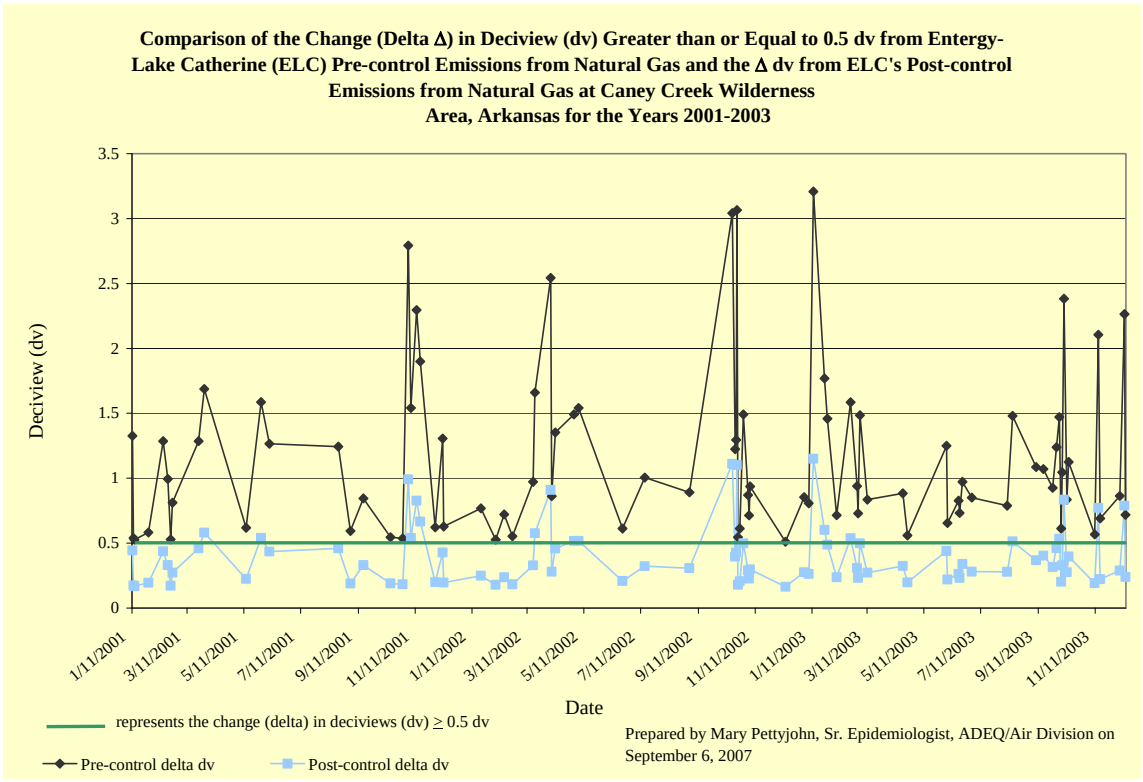

Comparison of the Change (Delta Δ) in Deciview (dv) Greater than or Equal to 0.5 dv from Entergy-Lake Catherine (ELC) Pre-control Emissions from Natural Gas and the Δ dv from ELC's Post-control Emissions from Natural Gas at Caney Creek Wilderness Area, Arkansas for the Years 2001-2003
Deciview (dv)
3.5
3
2.5
2
1.5
1
0.5
0
1/11/2001
3/11/2001
5/11/2001
7/11/2001
9/11/2001
11/11/2001
1/11/2002
3/11/2002
5/11/2002
7/11/2002
9/11/2002
11/11/2002
1/11/2003
3/11/2003
5/11/2003
7/11/2003
9/11/2003
11/11/2003
Date
represents the change (delta) in deciviews (dv) ≥ 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on September 6, 2007

Figure 9.4-IX

As shown in Figures 9.4-X and 9.4-XI, nitrate dominates the pre- and post-control natural gas emissions from Entergy – Lake Catherine's contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 0.07% from the pre-control emissions to 0.23% from the post-control emissions)

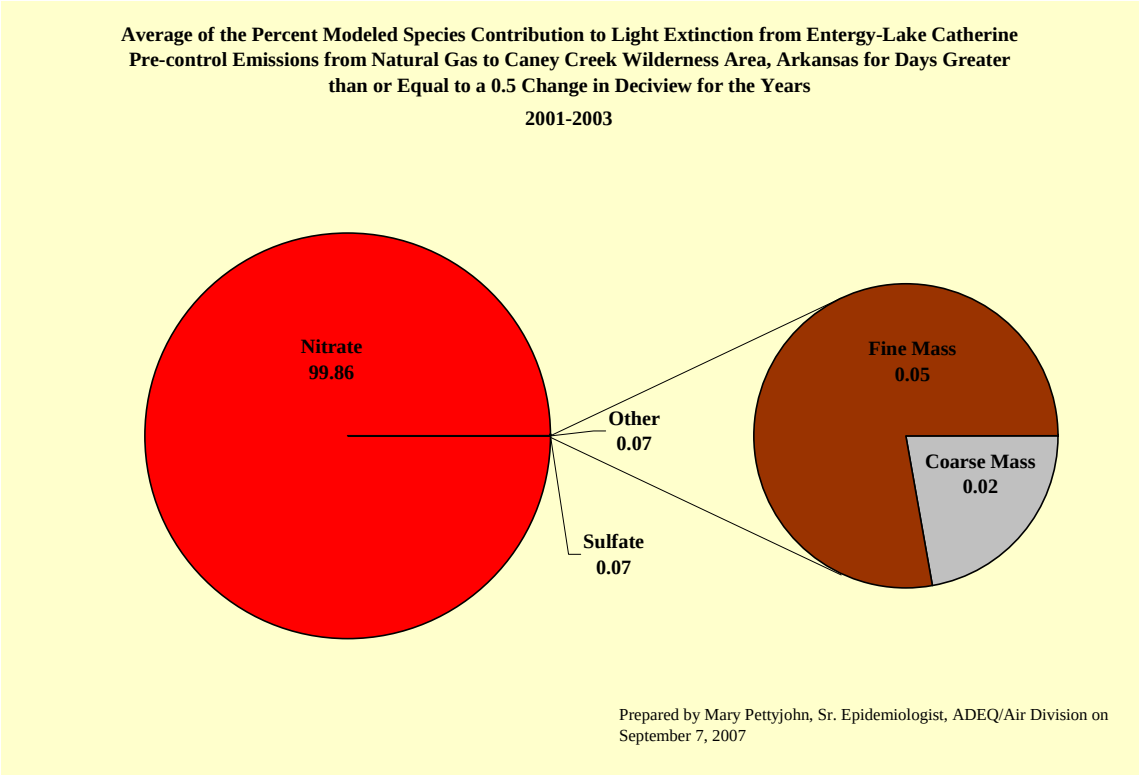


Figure 9.4-X

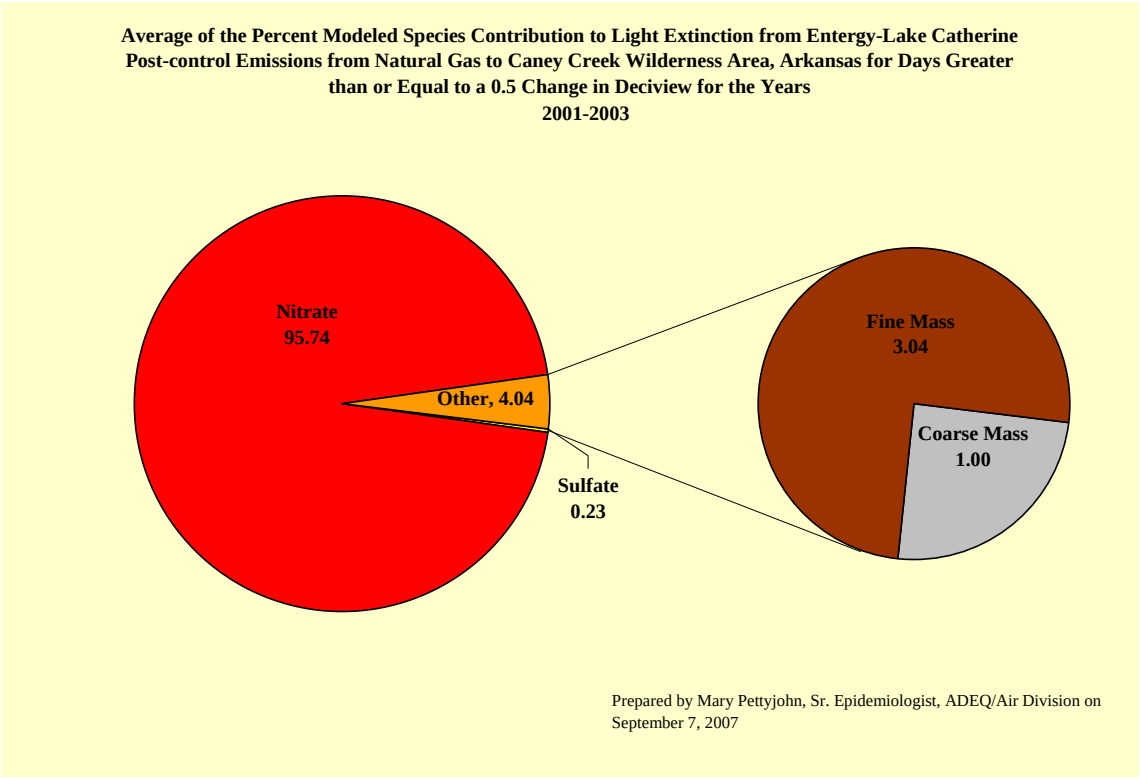

Average of the Percent Modeled Species Contribution to Light Extinction from Entergy-Lake Catherine Post-control Emissions from Natural Gas to Caney Creek Wilderness Area, Arkansas for Days Greater than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Nitrate 95.74
Other, 4.04
Sulfate 0.23
Fine Mass 3.04
Coarse Mass 1.00
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on September 7, 2007

Figure 9.4-XI

As shown in Figures 9.4-XII and 9.4-XIII, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from natural gas to Upper Buffalo Wilderness Area, Arkansas.

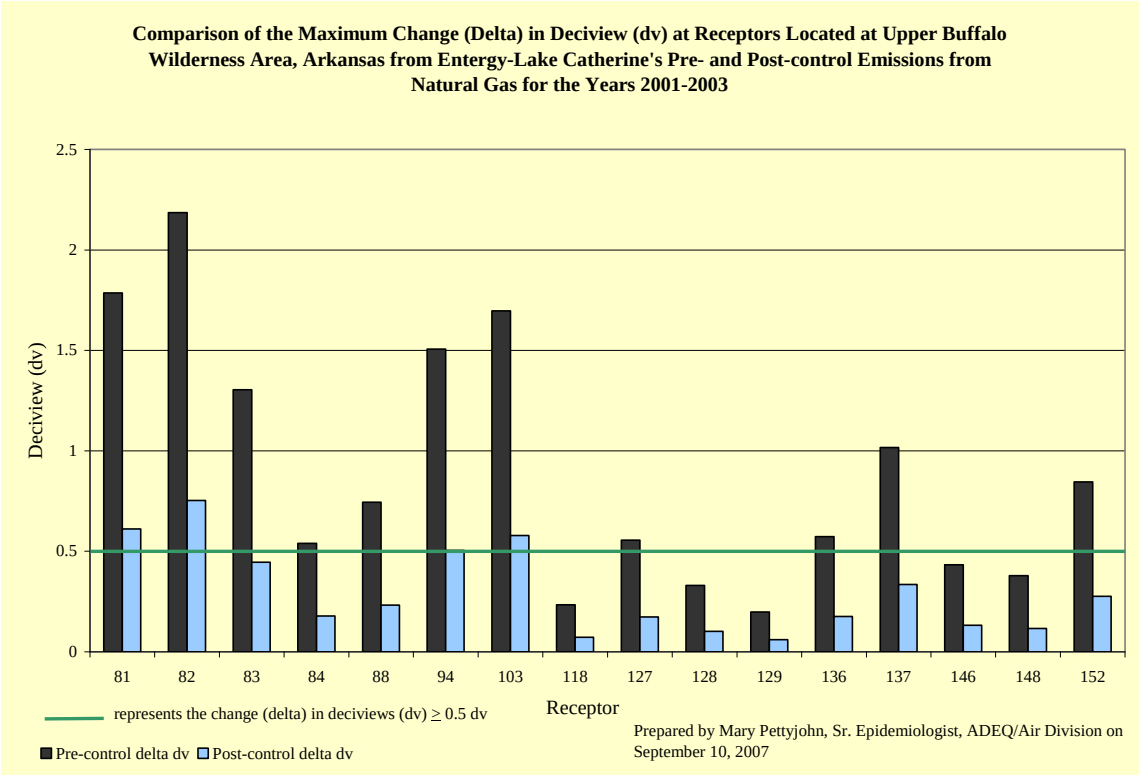


Figure XII

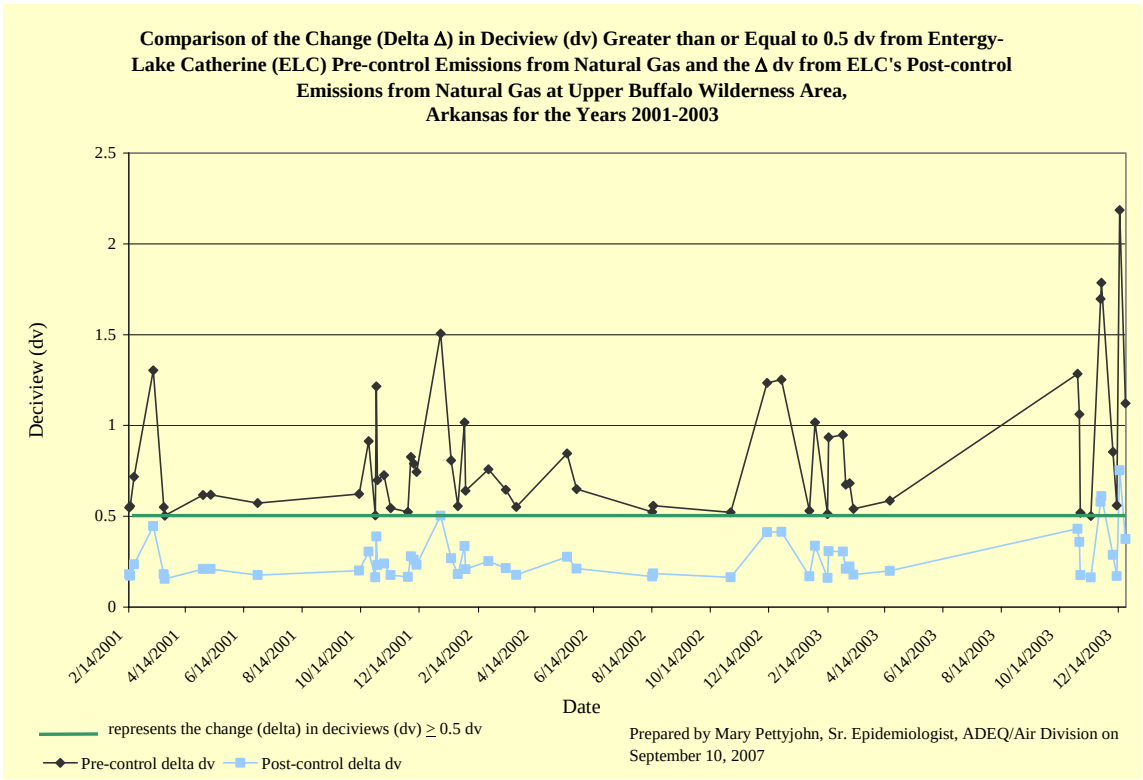

Comparison of the Change (Delta Δ) in Deciview (dv) Greater than or Equal to 0.5 dv from Entergy-Lake Catherine (ELC) Pre-control Emissions from Natural Gas and the Δ dv from ELC's Post-control Emissions from Natural Gas at Upper Buffalo Wilderness Area, Arkansas for the Years 2001-2003
Deciview (dv)
2.5
2
1.5
1
0.5
0
2/14/2001
4/14/2001
6/14/2001
8/14/2001
10/14/2001
12/14/2001
2/14/2002
4/14/2002
6/14/2002
8/14/2002
10/14/2002
12/14/2002
2/14/2003
4/14/2003
6/14/2003
8/14/2003
10/14/2003
12/14/2003
Date
represents the change (delta) in deciviews (dv) ≥ 0.5 dv
Pre-control delta dv
Post-control delta dv
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on September 10, 2007

Figure XIII

As shown in Figures 9.4-XIV and 9.4-XV, nitrate dominates the pre- and post-control natural gas emissions from Entergy – Lake Catherine's contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 0.07% from the pre-control emissions to 0.21% from the post-control emissions)

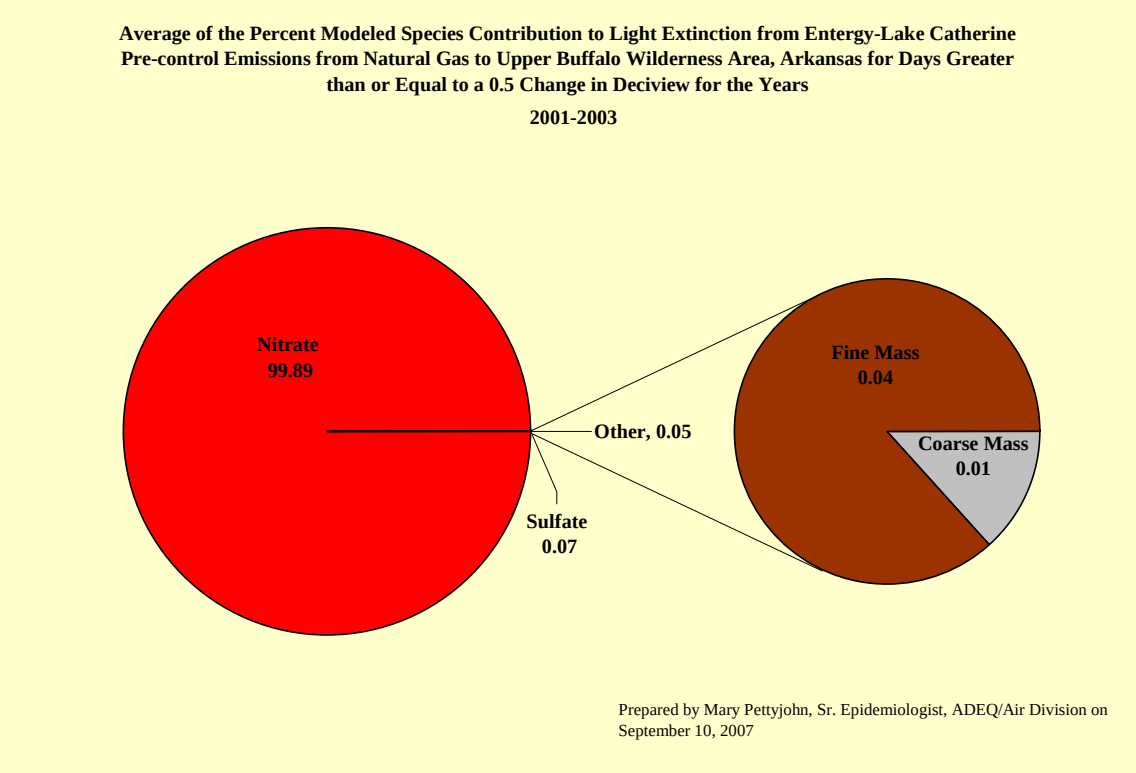


Figure 9.4-XIV

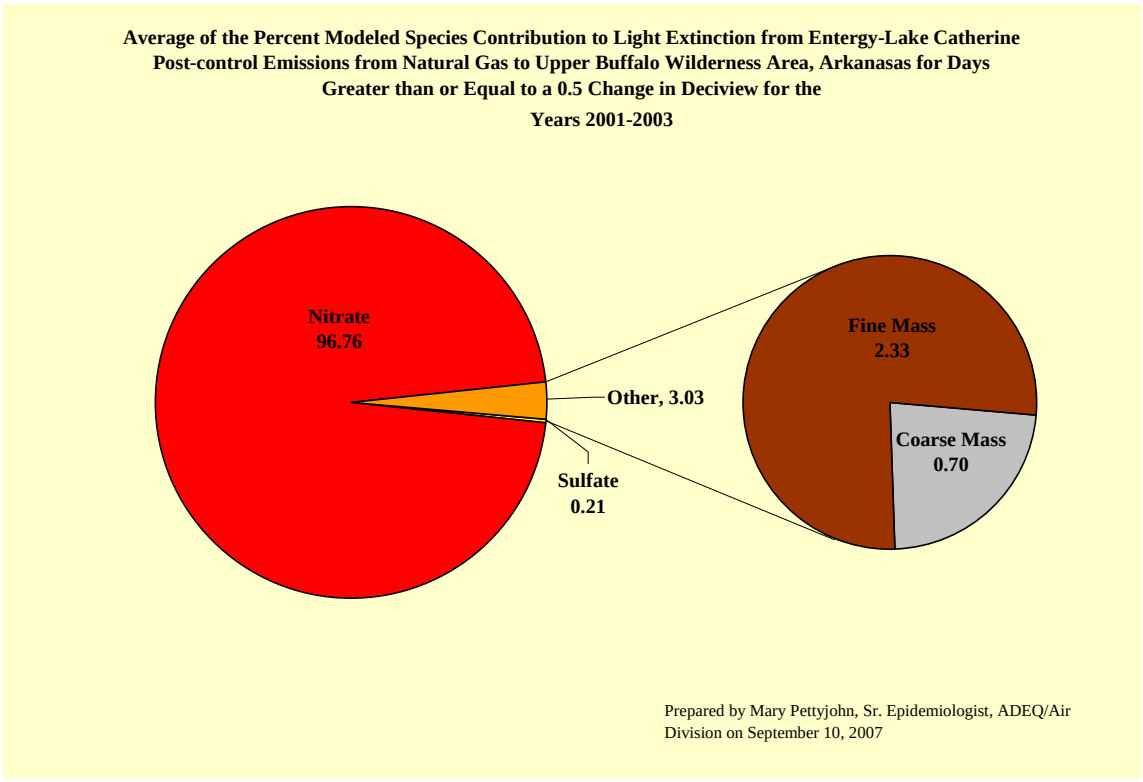

Average of the Percent Modeled Species Contribution to Light Extinction from Entergy-Lake Catherine Post-control Emissions from Natural Gas to Upper Buffalo Wilderness Area, Arkanasas for Days Greater than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Nitrate 96.76
Other, 3.03
Sulfate 0.21
Fine Mass 2.33
Coarse Mass 0.70
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on September 10, 2007

Figure 9.4-XV

As shown in Figures 9.4-XVI and 9.4-XVII, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from natural gas to Hercules-Glade Wilderness Area, Missouri.

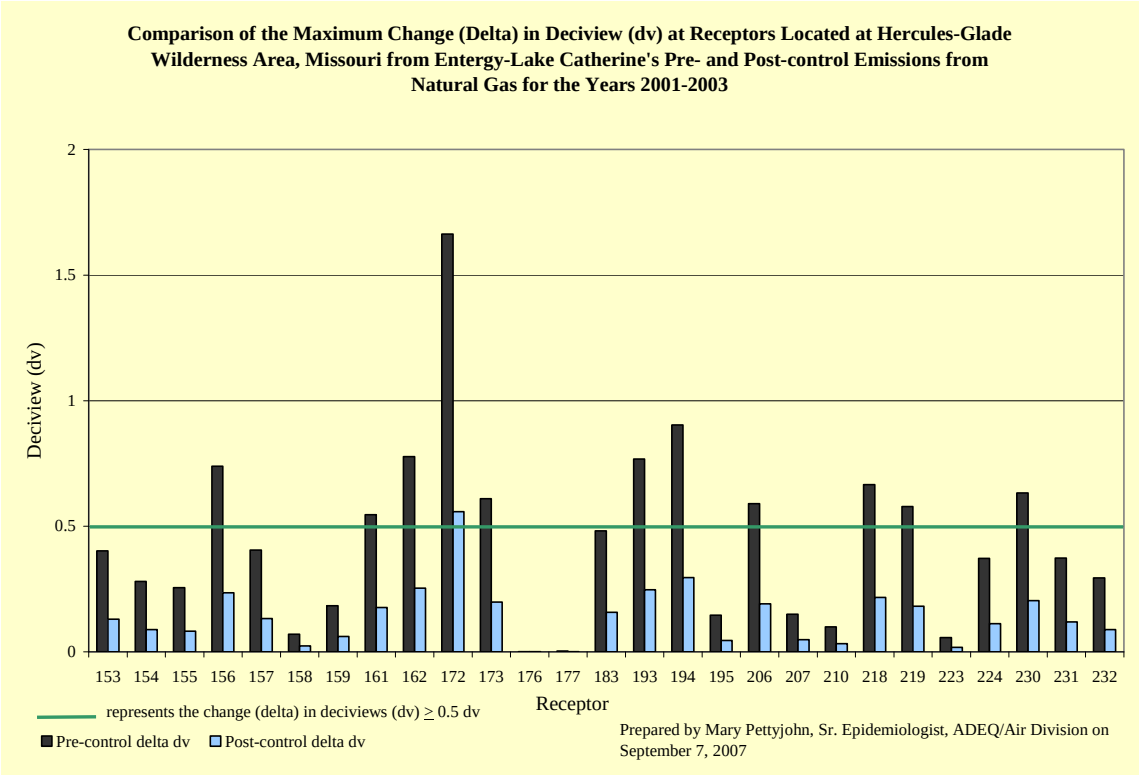


Figure 9.4-XVI

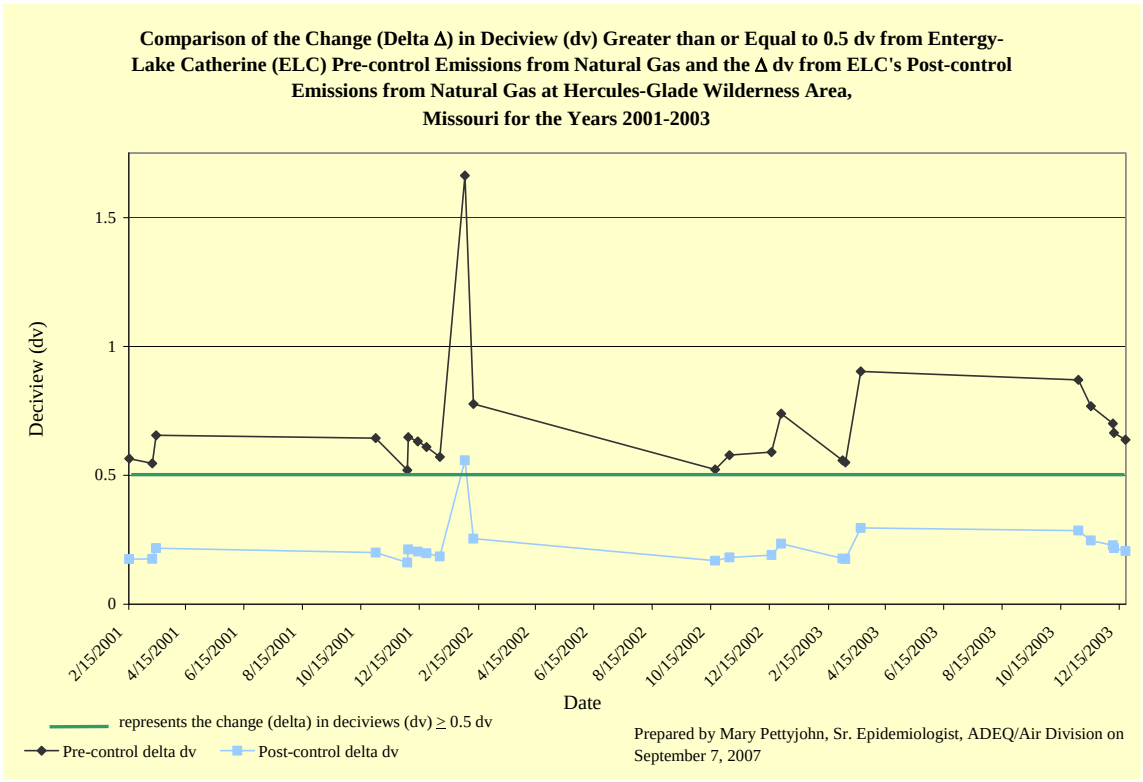


Figure 9.4-XVII

As shown in Figures 9.4-XVIII and 9.4-XIX, nitrate dominates the pre- and post-control natural gas emissions from Entergy – Lake Catherine's contribution to light extinction to Hercules-Glade Wilderness Area, Missouri. However, there is an increase of sulfate's contribution to light extinction (i.e. from 0.07% from the pre-control emissions to 0.22% from the post-control emissions)

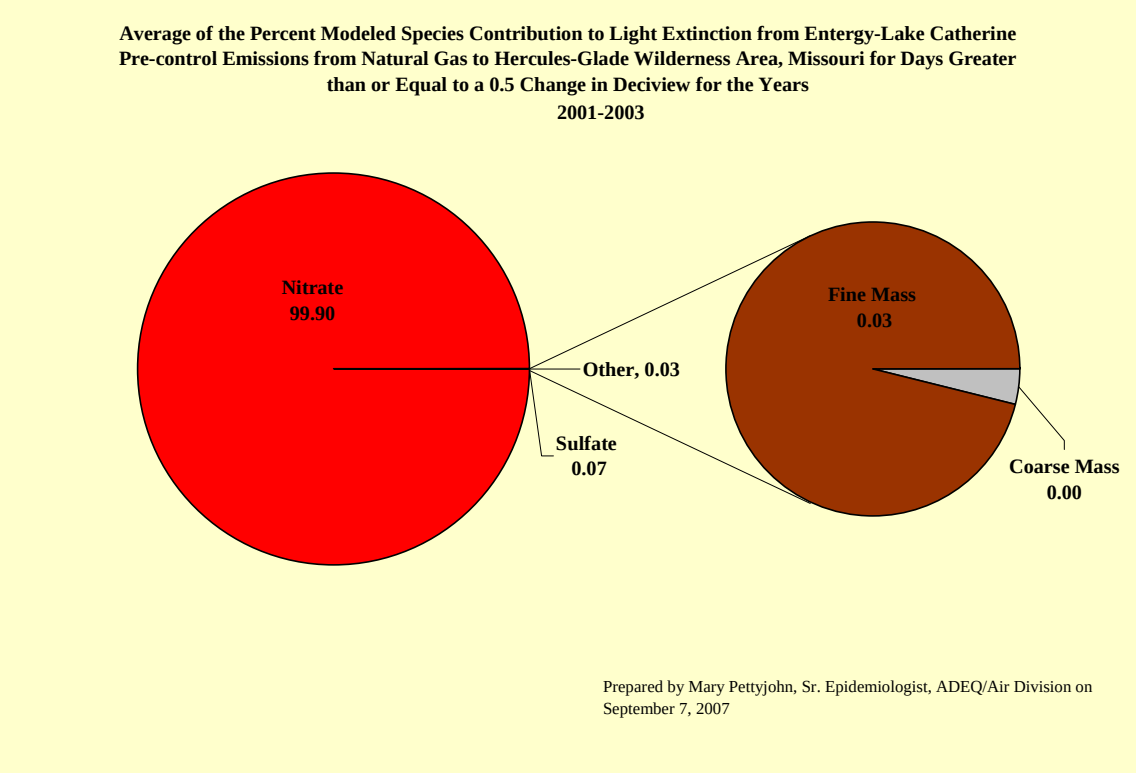


Figure 9.4-XVIII

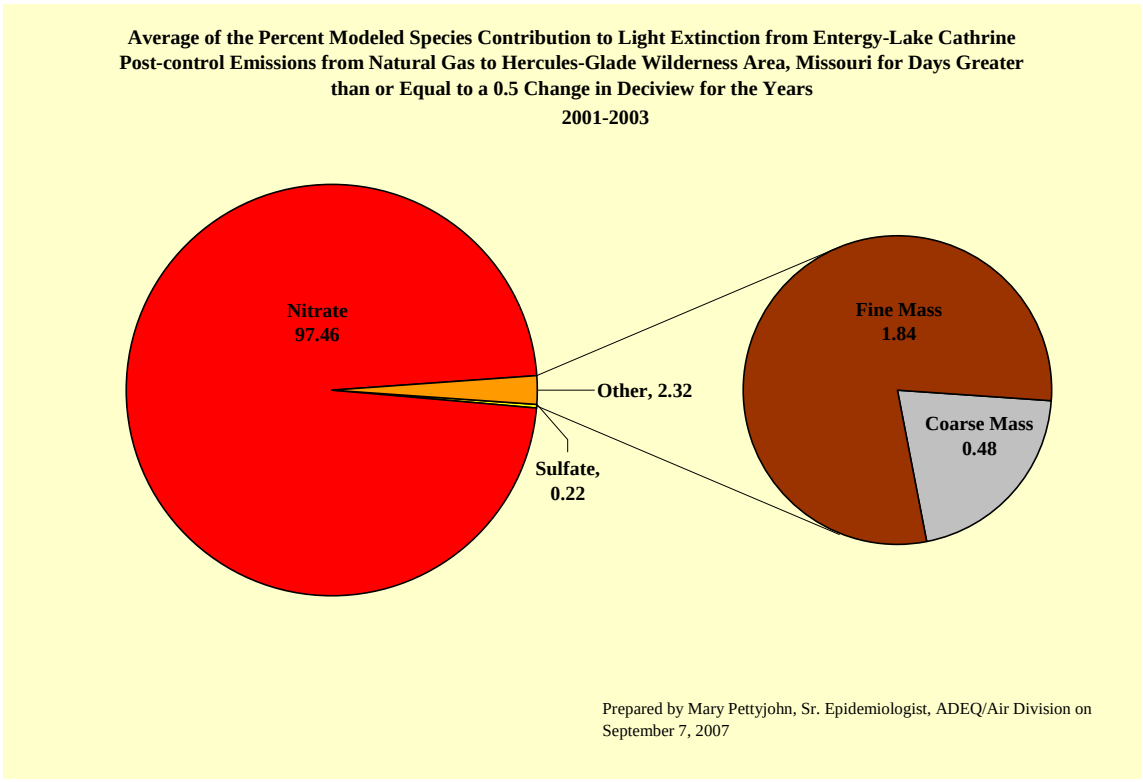


Figure 9.4-XIX

As shown in Figures 9.4-XX and 9.4-XXI, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from fuel oil to Caney Creek Wilderness Area, Arkansas.

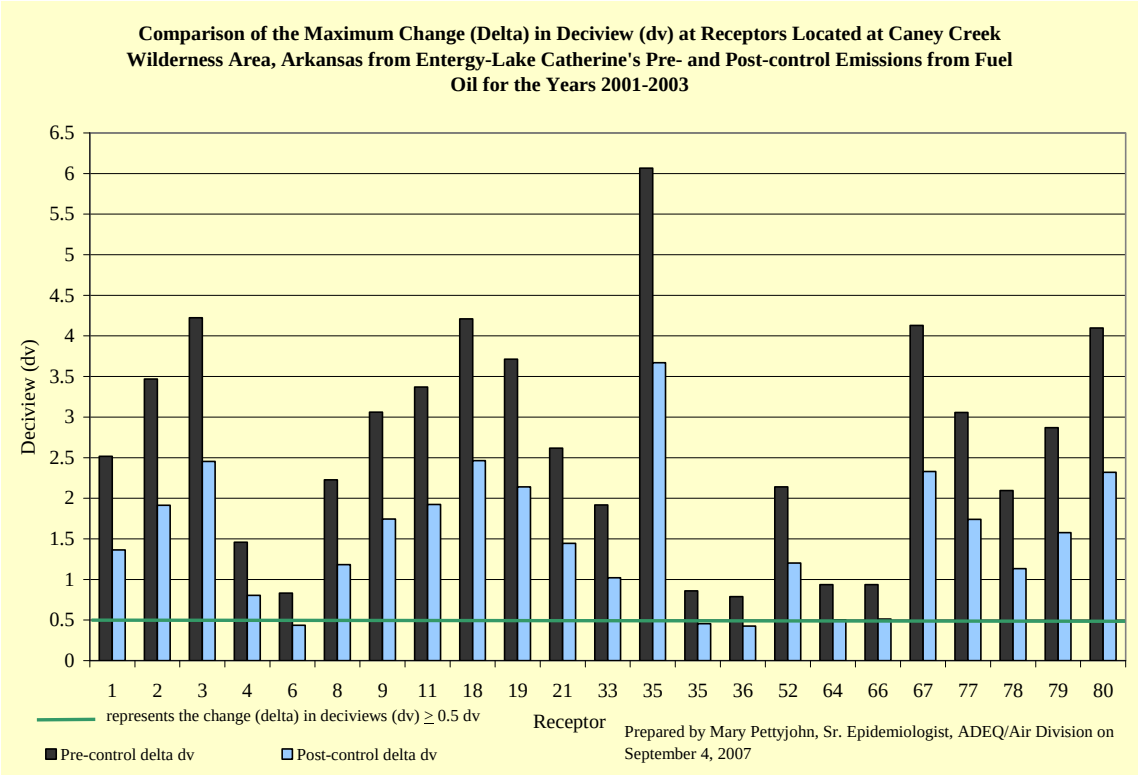


Figure 9.4-XX

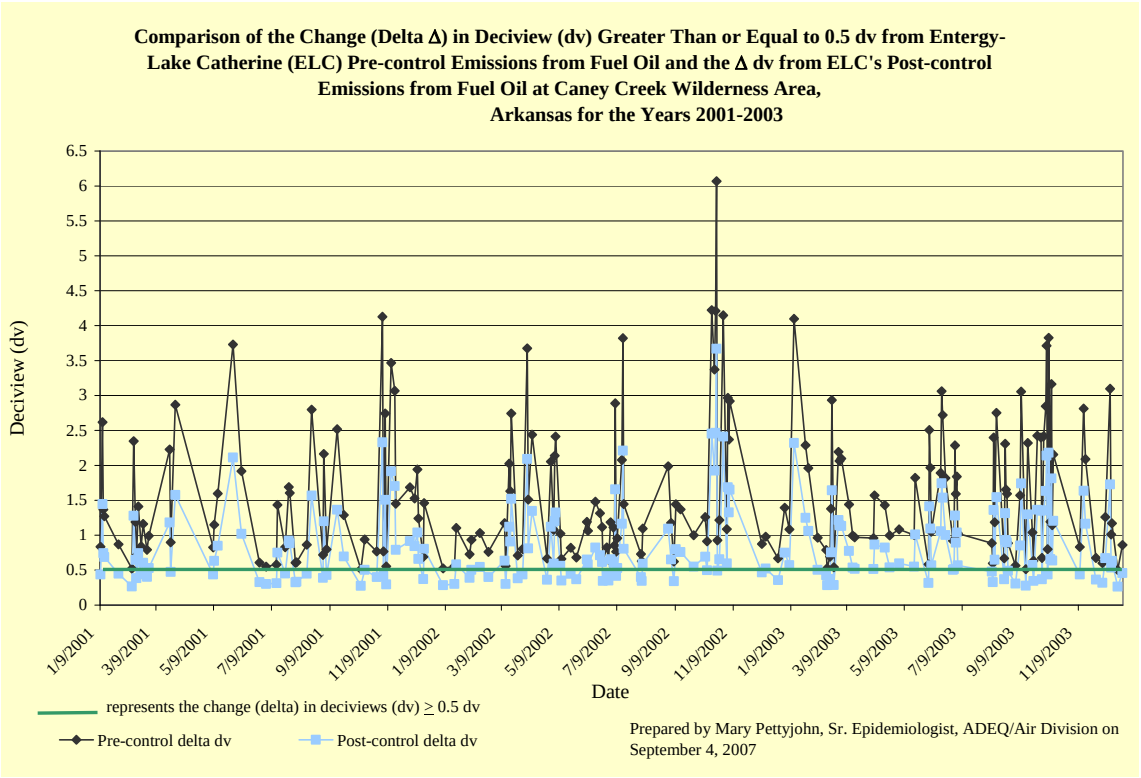


Figure 9.4-XXI

As shown in Figures 9.4-XXII and 9.4-XIII, sulfate dominates the pre- and post-control fuel oil emissions from Entergy – Lake Catherine's contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 63.55% from the pre-control emissions to 64.93% from the post-control emissions).

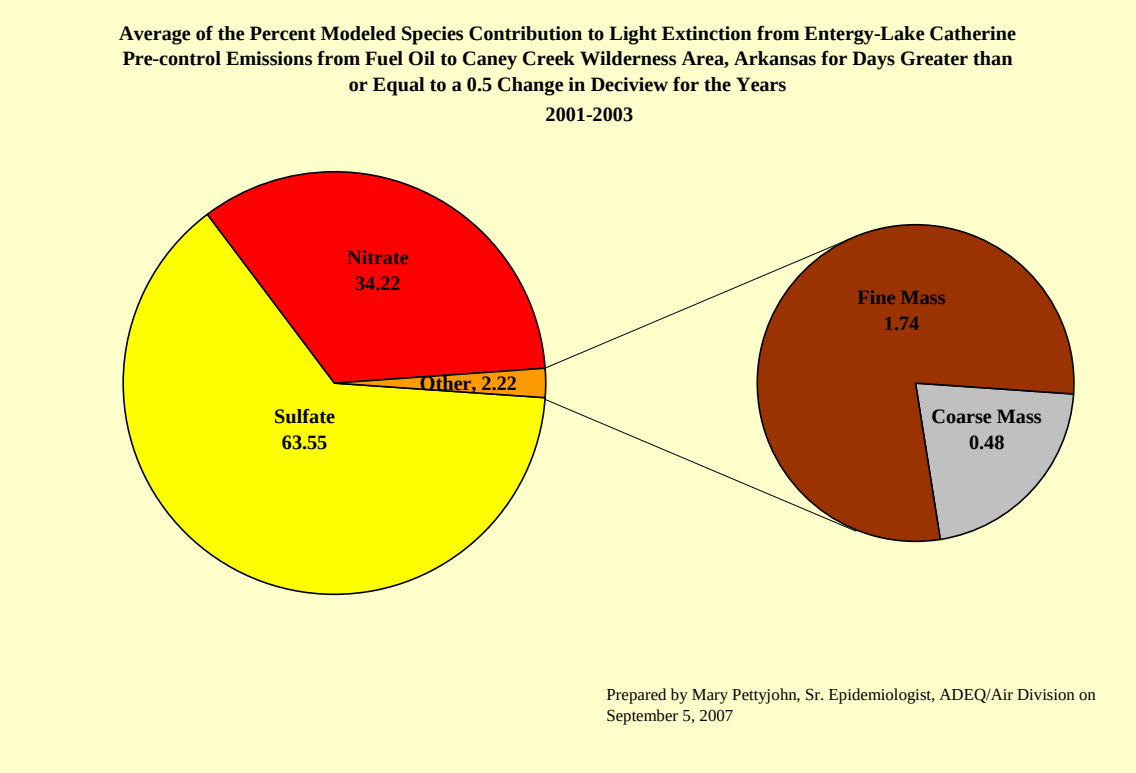


Figure 9.4-XXII

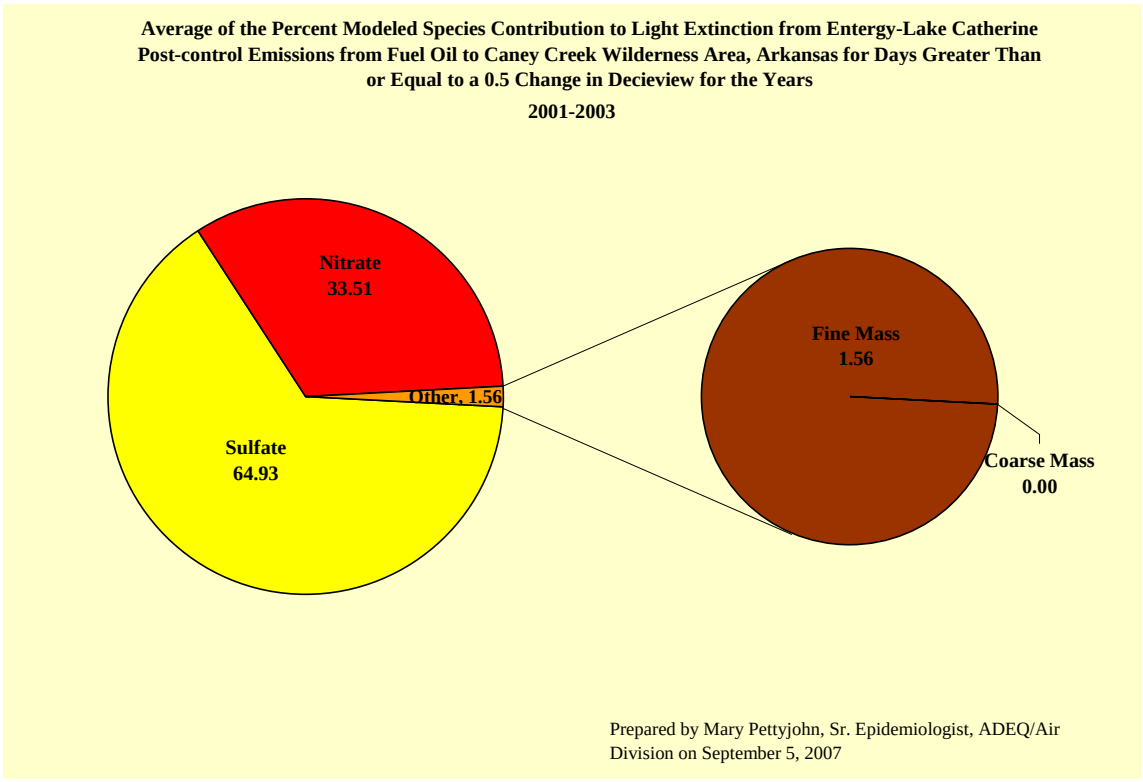


Figure 9.4-XXIII

As shown in Figures 9.4-XXIV and 9.4-XXV, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from fuel oil to Upper Buffalo Wilderness Area, Arkansas.

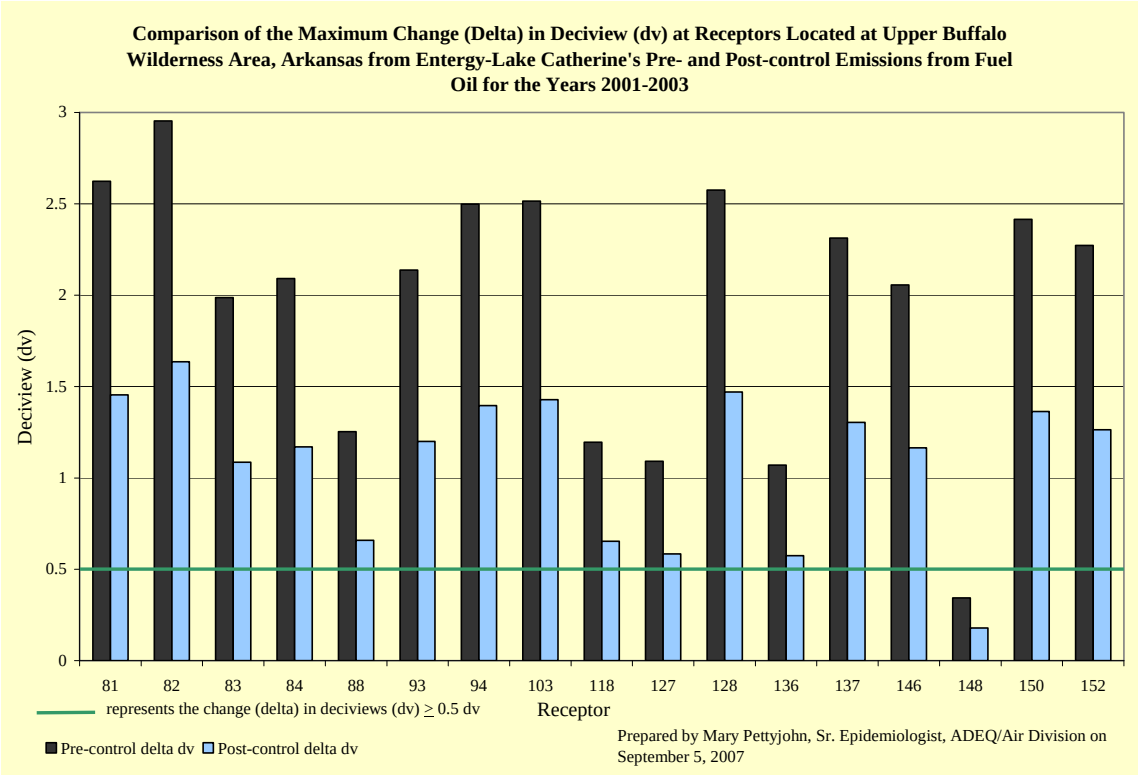


Figure 9.4-XXIV

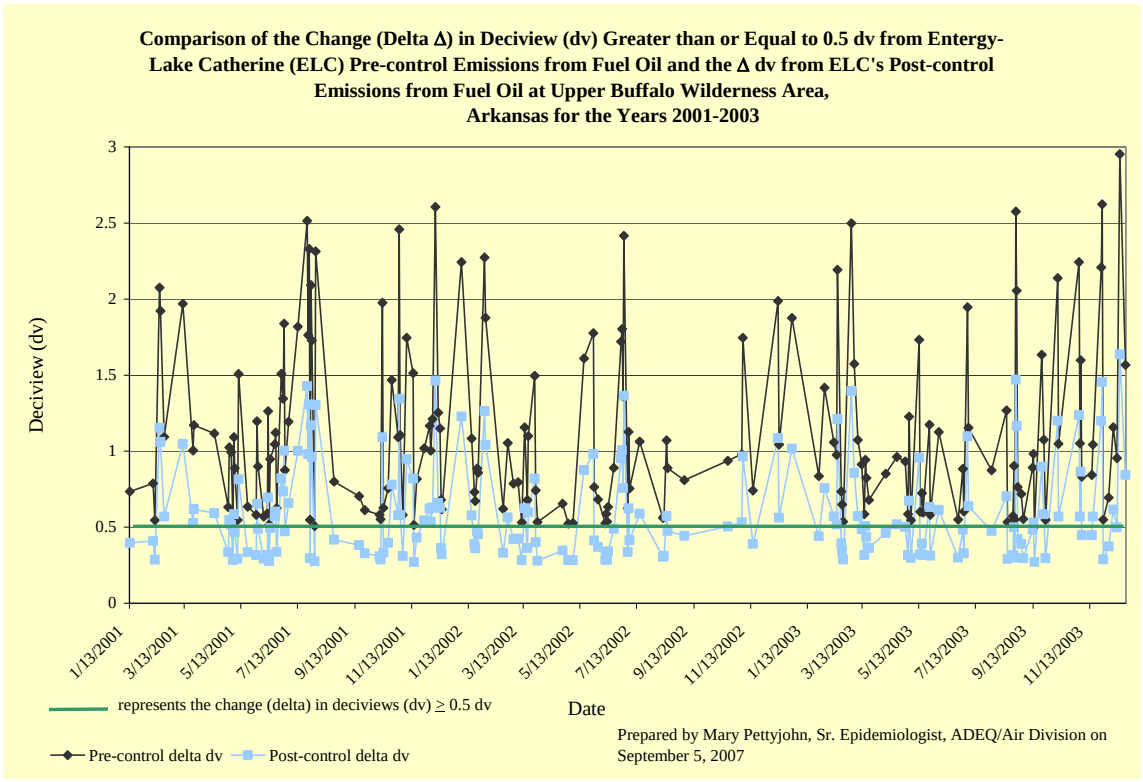


Figure 9.4-XXV

As shown in Figures 9.4-XXVI and 9.4-XXVII, sulfate dominates the pre- and post-control fuel oil emissions from Entergy – Lake Catherine's contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of sulfate's contribution to light extinction (i.e. from 64.25% from the pre-control emissions to 65.83% from the post-control emissions).

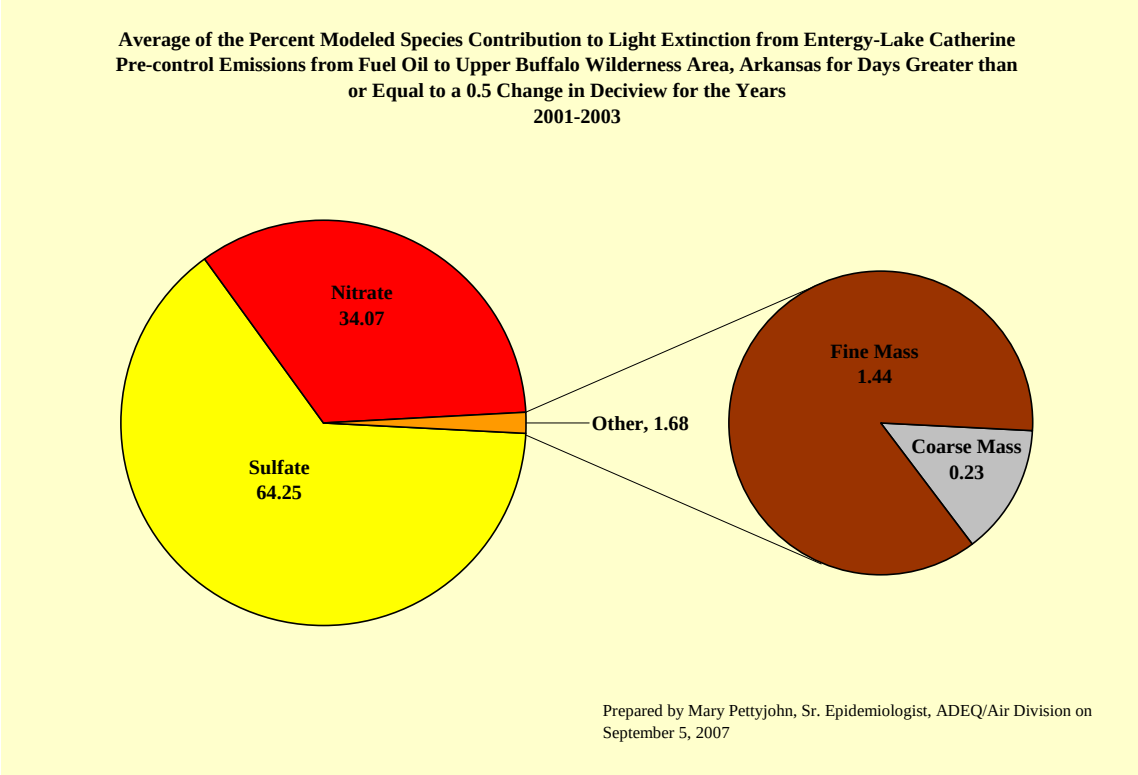


Figure 9.4-XXVI

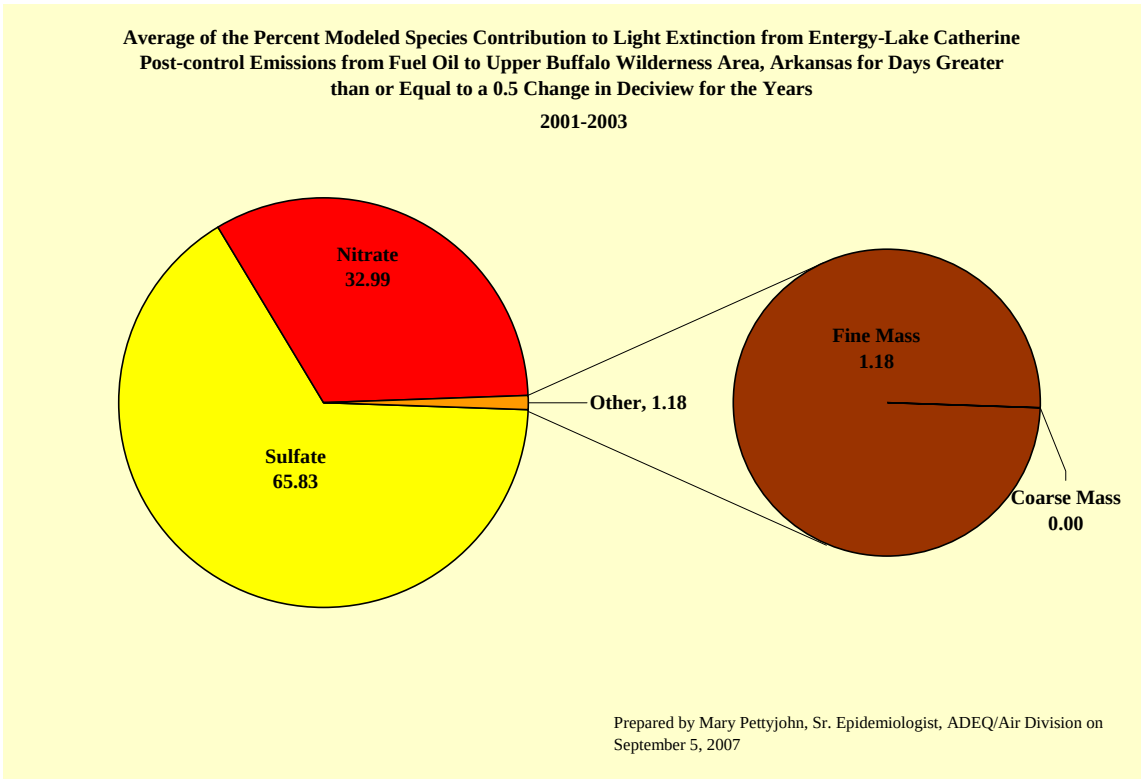


Figure 9.4-XXVII

As shown in Figures 9.4-XXVIII and 9.4-XXIX, there appears to be a considerable improvement to visibility from Entergy – Lake Catherine's post-control emissions from fuel oil to Hercules-Glade Wilderness Area, Missouri.

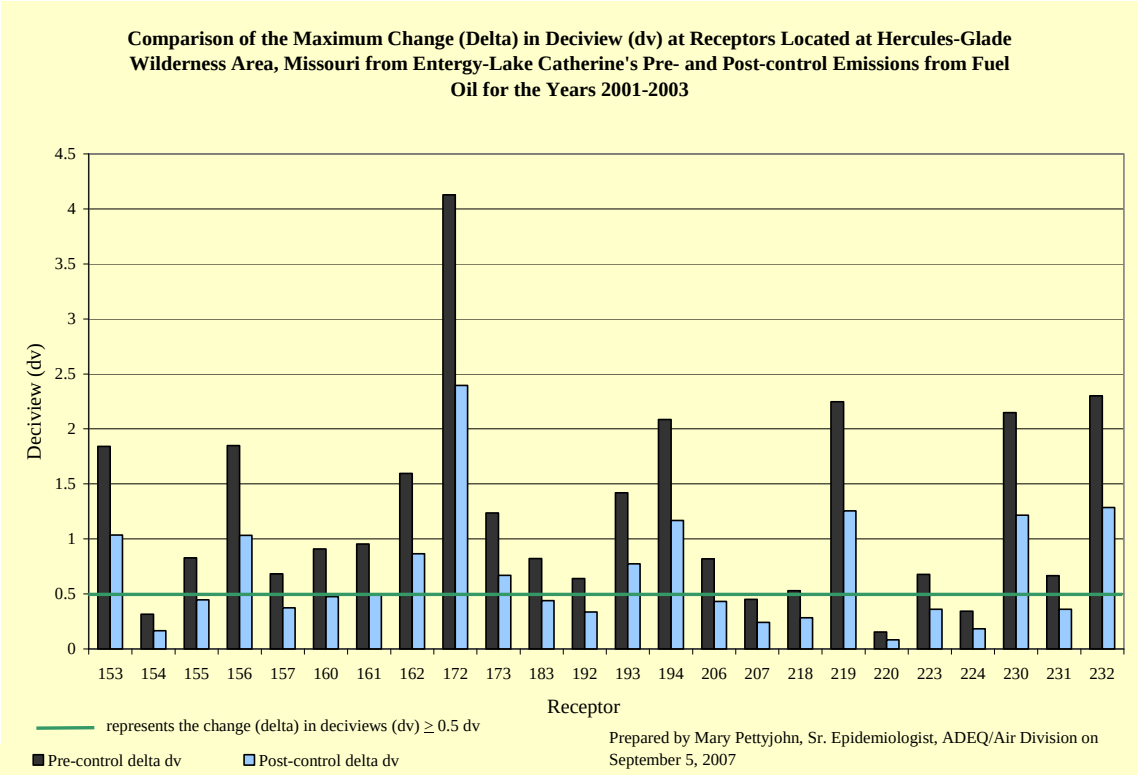


Figure 9.4-XXVIII

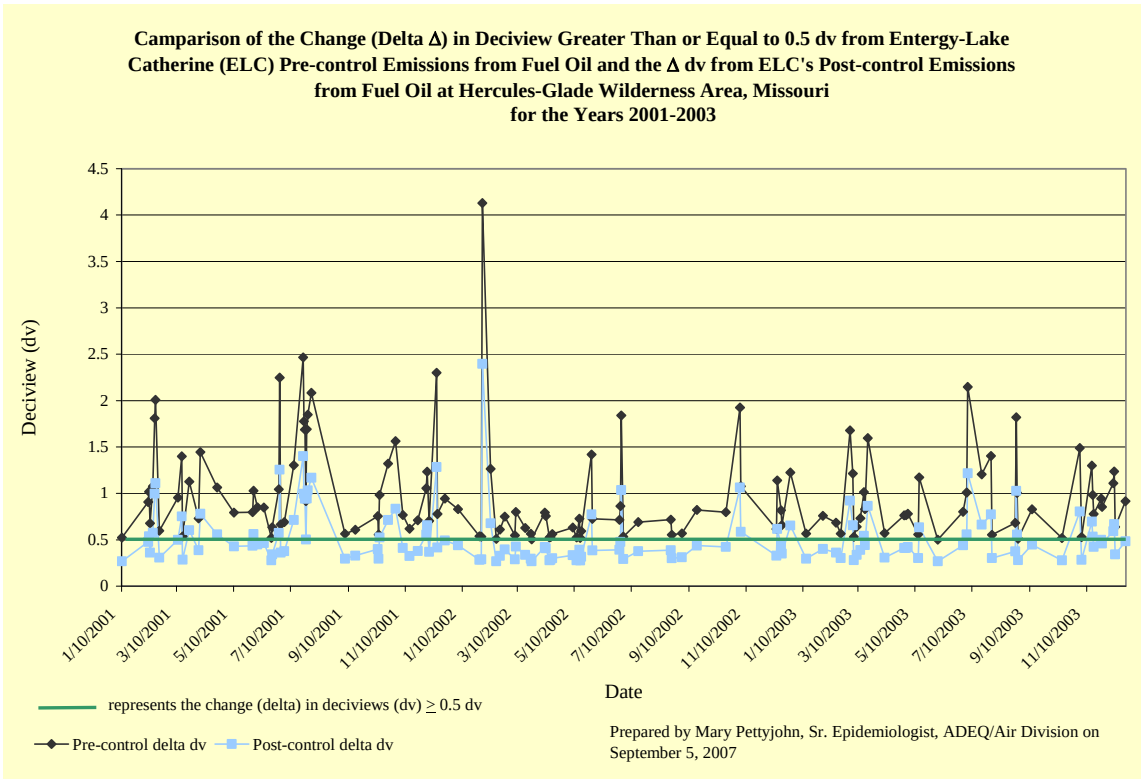


Figure 9.4-XXIX

As shown in Figures 9.4-XXX and 9.4-XXXI, sulfate dominates the pre- and post-control fuel oil emissions from Entergy – Lake Catherine's contribution to light extinction to Hercules-Glade Wilderness Area, Missouri. However, there is an increase of nitrate's contribution to light extinction (i.e. from 33.05% from the pre-control emissions to 45.66% from the post-control emissions).

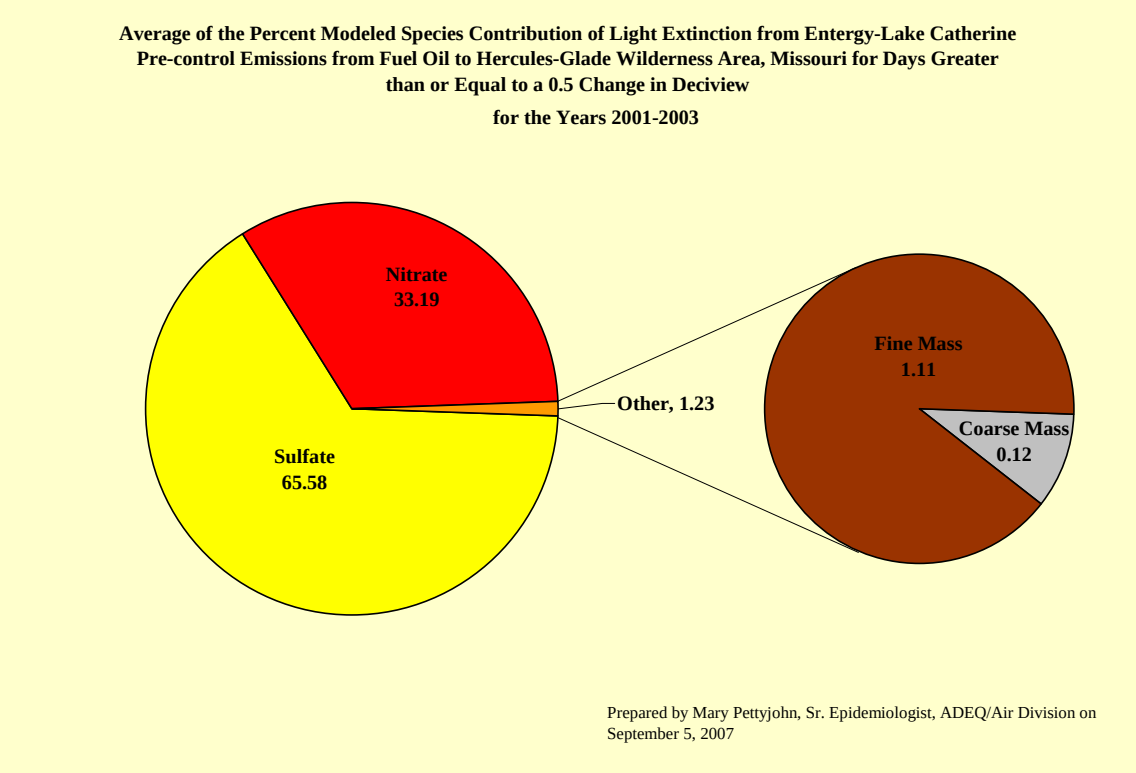


Figure 9.4-XXX

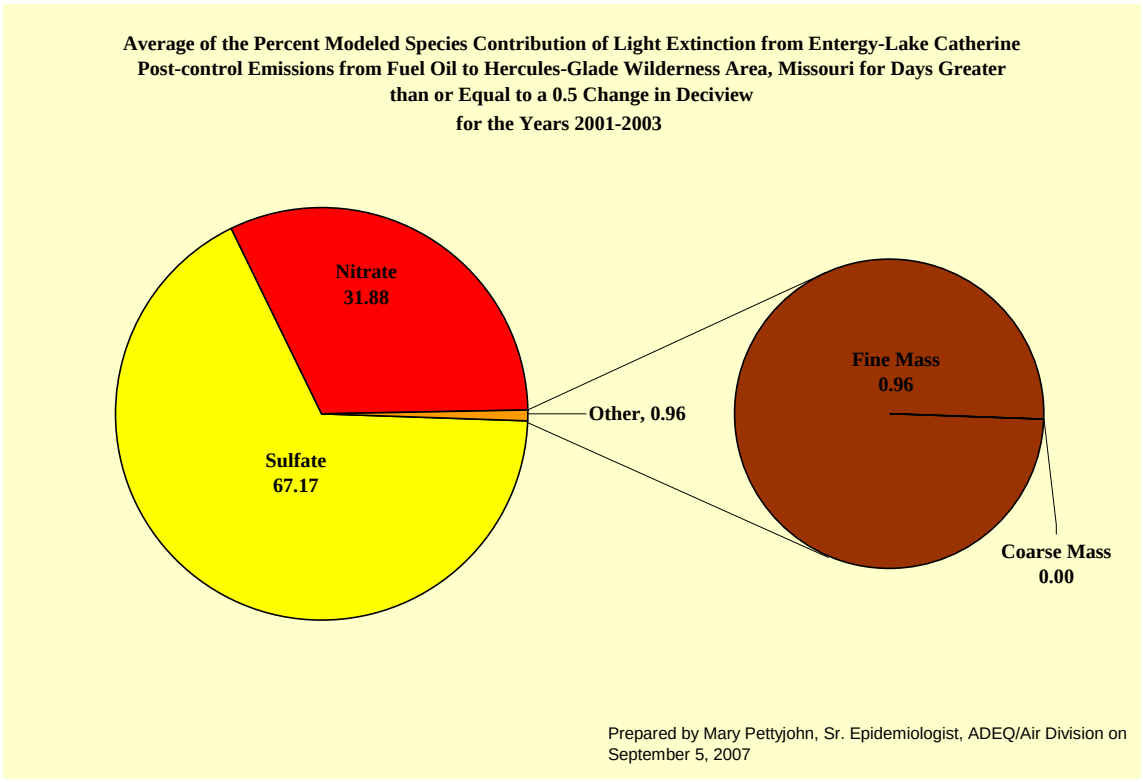

Average of the Percent Modeled Species Contribution of Light Extinction from Entergy-Lake Catherine Post-control Emissions from Fuel Oil to Hercules-Glade Wilderness Area, Missouri for Days Greater than or Equal to a 0.5 Change in Deciview for the Years 2001-2003
Nitrate 31.88
Sulfate 67.17
Other, 0.96
Fine Mass 0.96
Coarse Mass 0.00
Prepared by Mary Pettyjohn, Sr. Epidemiologist, ADEQ/Air Division on September 5, 2007

Figure XXXI

As shown in Figures 9.4-XXXII and 9.4-XXXIII, there appears to be a considerable improvement to visibility from Entergy – White Bluff's post-control emissions to Caney Creek Wilderness Area, Arkansas.

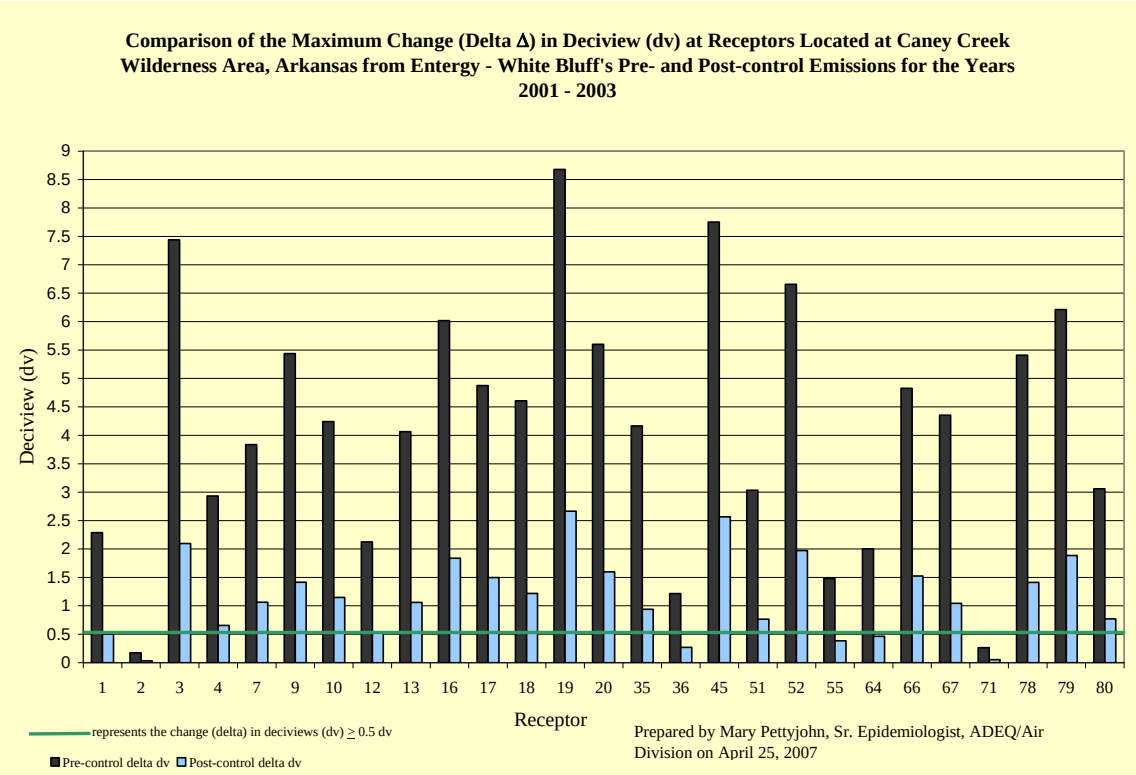


Figure 9.4-XXXII

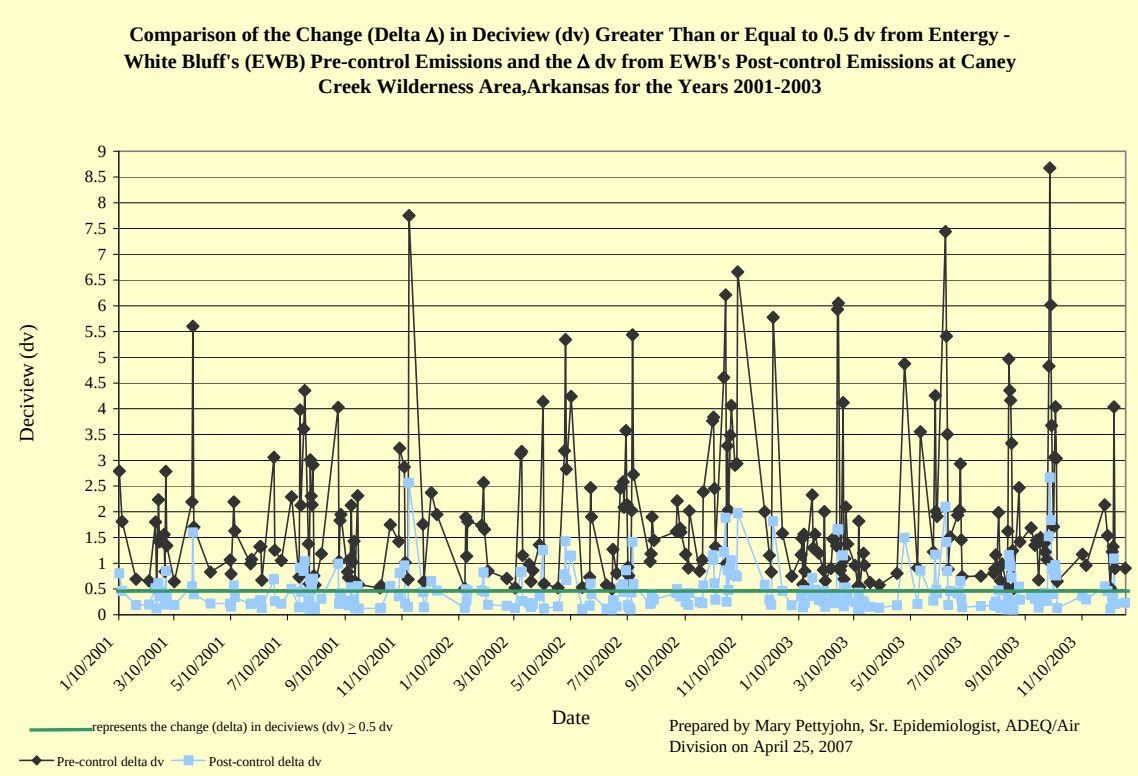


Figure 9.4-XXXIII

As shown in Figures 9.4-XXXIV and 9.4-XXXV, sulfate dominates the pre- and post-control fuel oil emissions from Entergy – White Bluff's contribution to light extinction to Caney Creek Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 27.53% from the pre-control emissions to 34.86% from the post-control emissions).

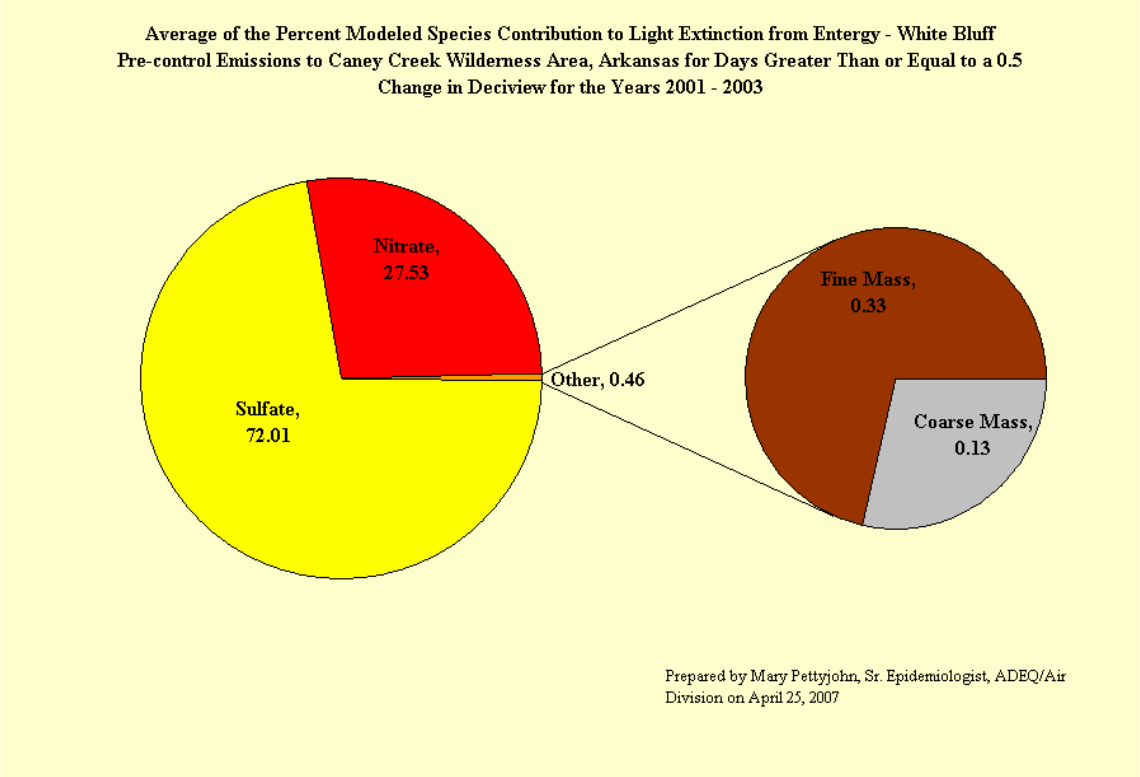


Figure 9.4-XXXIV

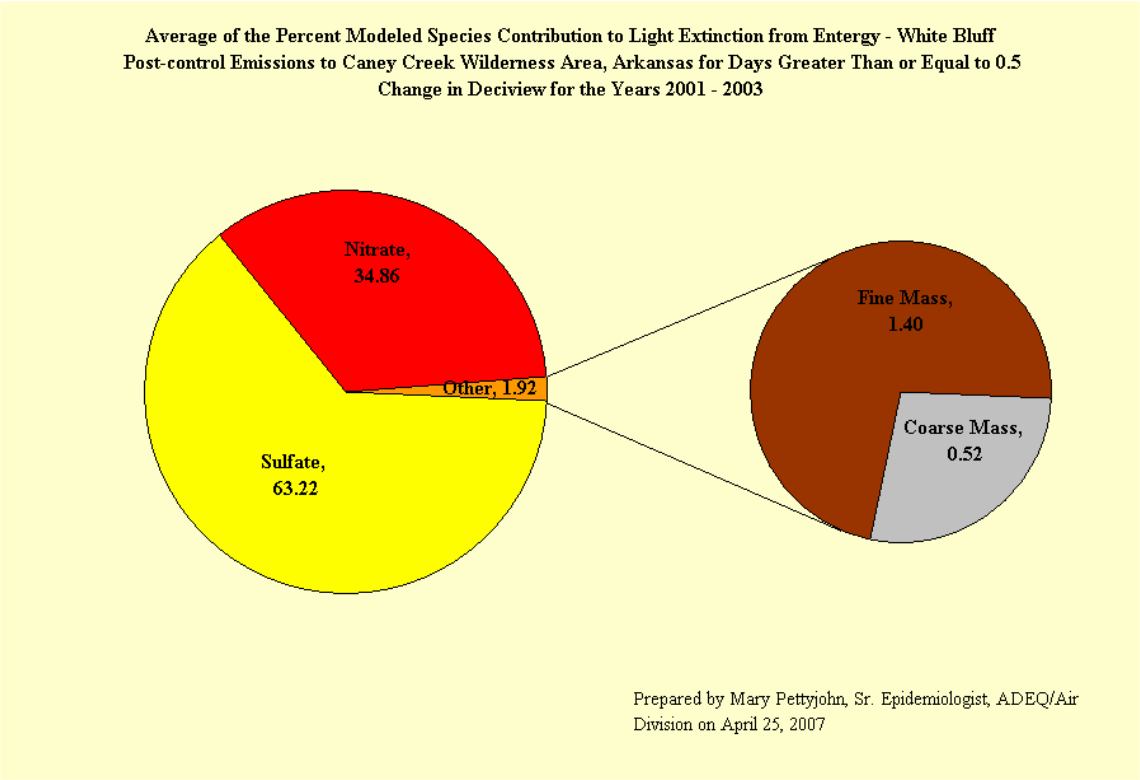


Figure 9.4-XXXV

As shown in Figures 9.4-XXXVI and 9.4-XXXVII, there appears to be a considerable improvement to visibility from Entergy – White Bluff's post-control emissions to Upper Buffalo Wilderness Area, Arkansas

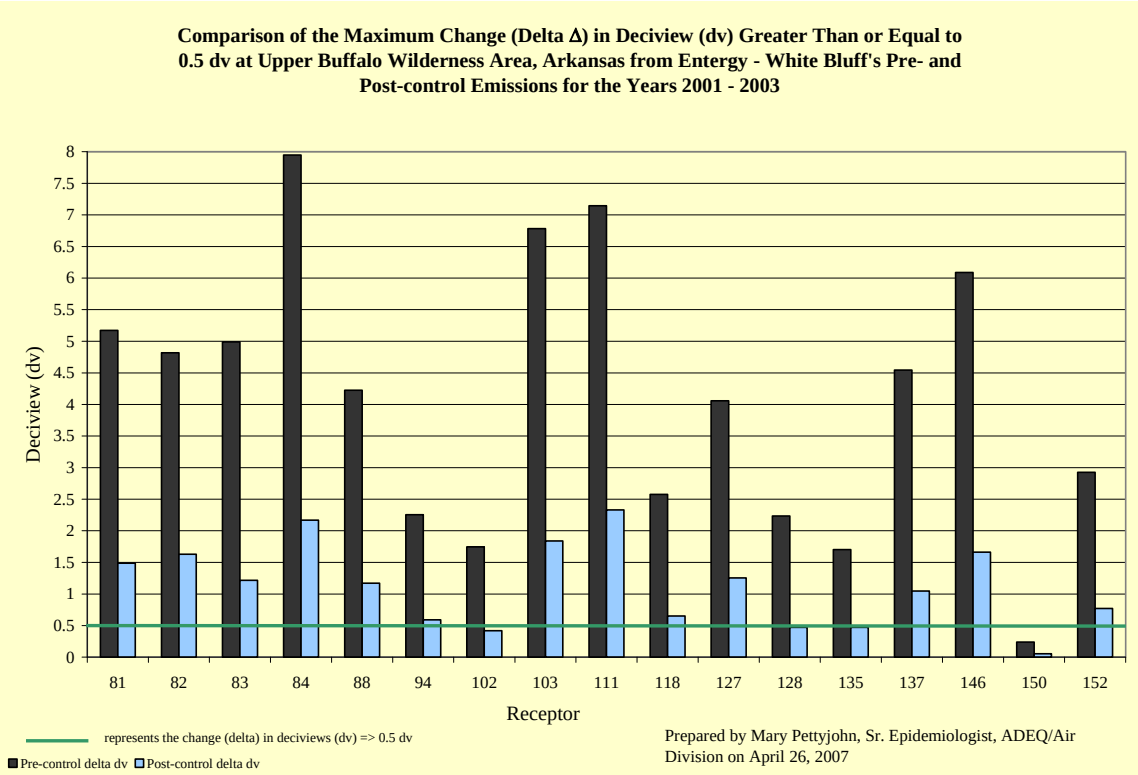


Figure 9.4-XXXVI

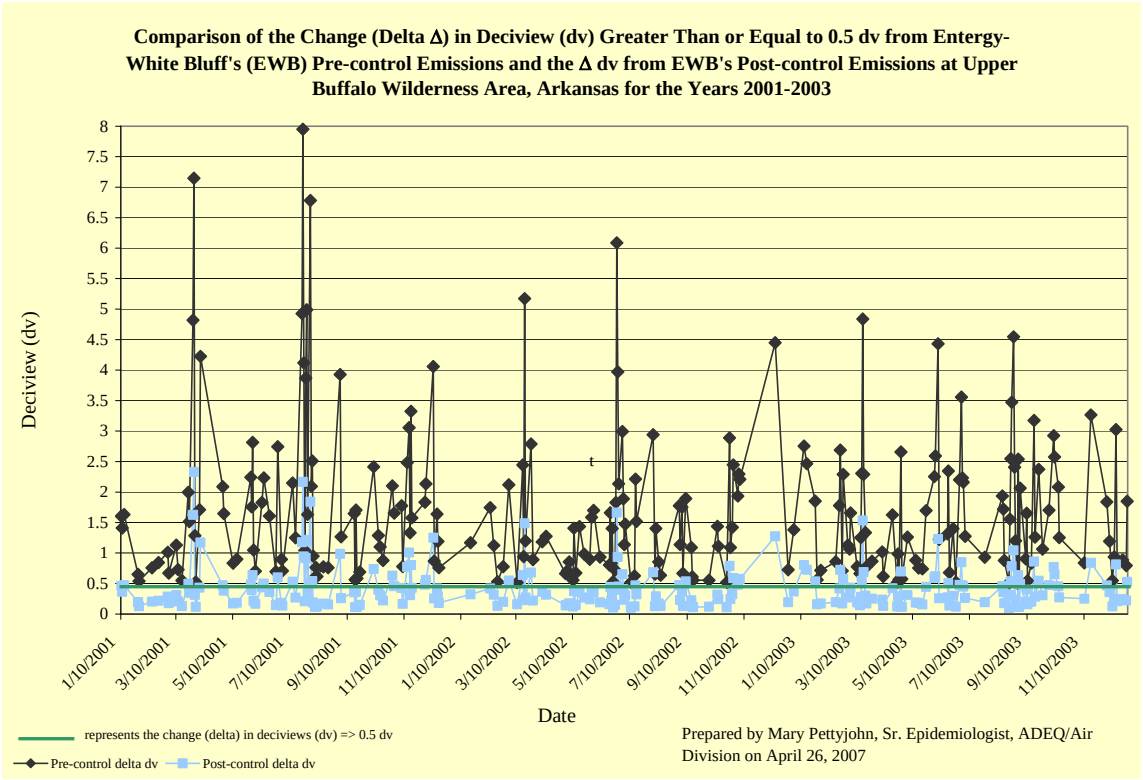


Figure 9.4-XXXVII

As shown in Figures 9.4-XXXVIII and 9.4-XXXIX, sulfate dominates the pre- and post-control fuel oil emissions from Entergy –White Bluff's contribution to light extinction to Upper Buffalo Wilderness Area, Arkansas. However, there is an increase of nitrate's contribution to light extinction (i.e. from 28.36% from the pre-control emissions to 35.72% from the post-control emissions).

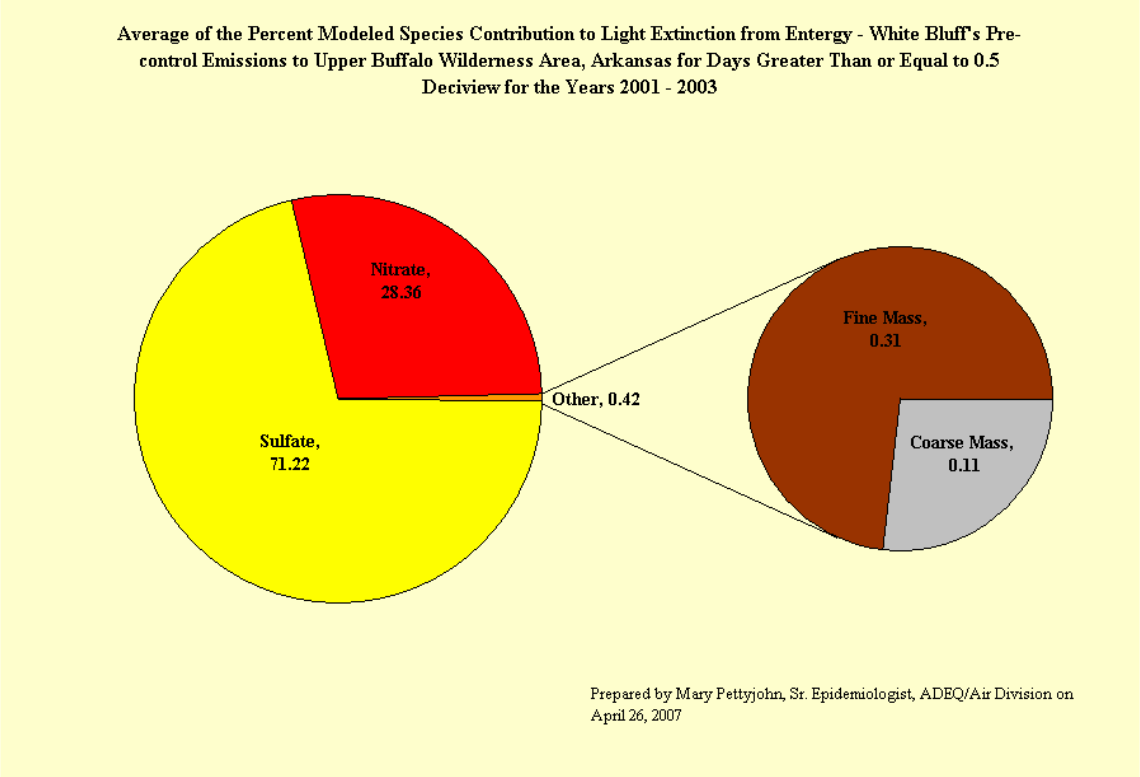


Figure 9.4-XXVIII

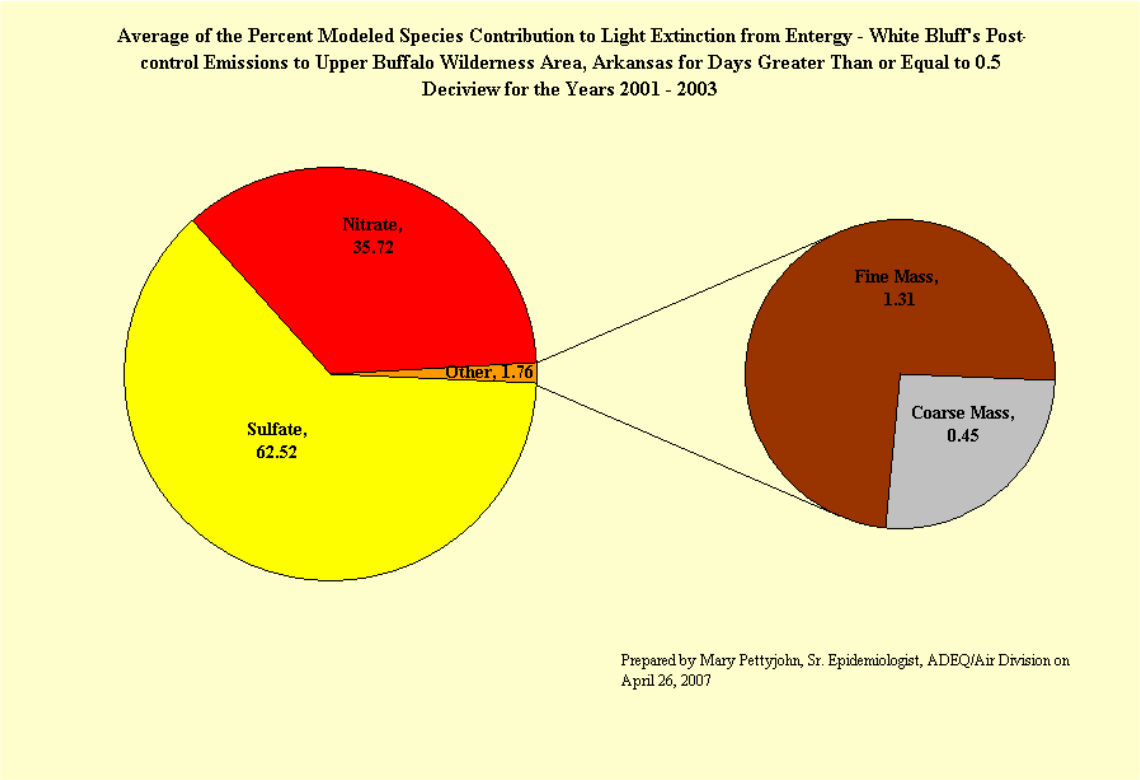


Figure 9.4-XXXIX

As shown in Figures 9.4-XL and 9.4-XLI, there appears to be a considerable improvement to visibility from Entergy – White Bluff's post-control emissions to Hercules-Glade Wilderness Area, Missouri.

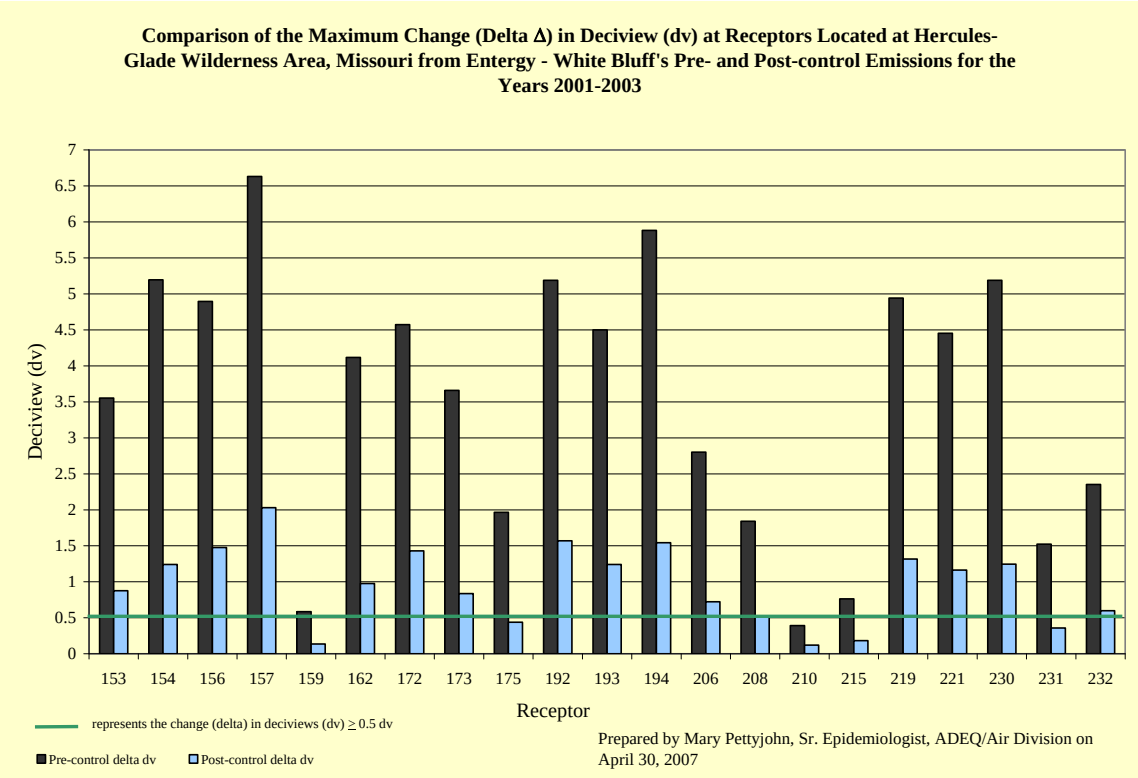


Figure 9.4-XL

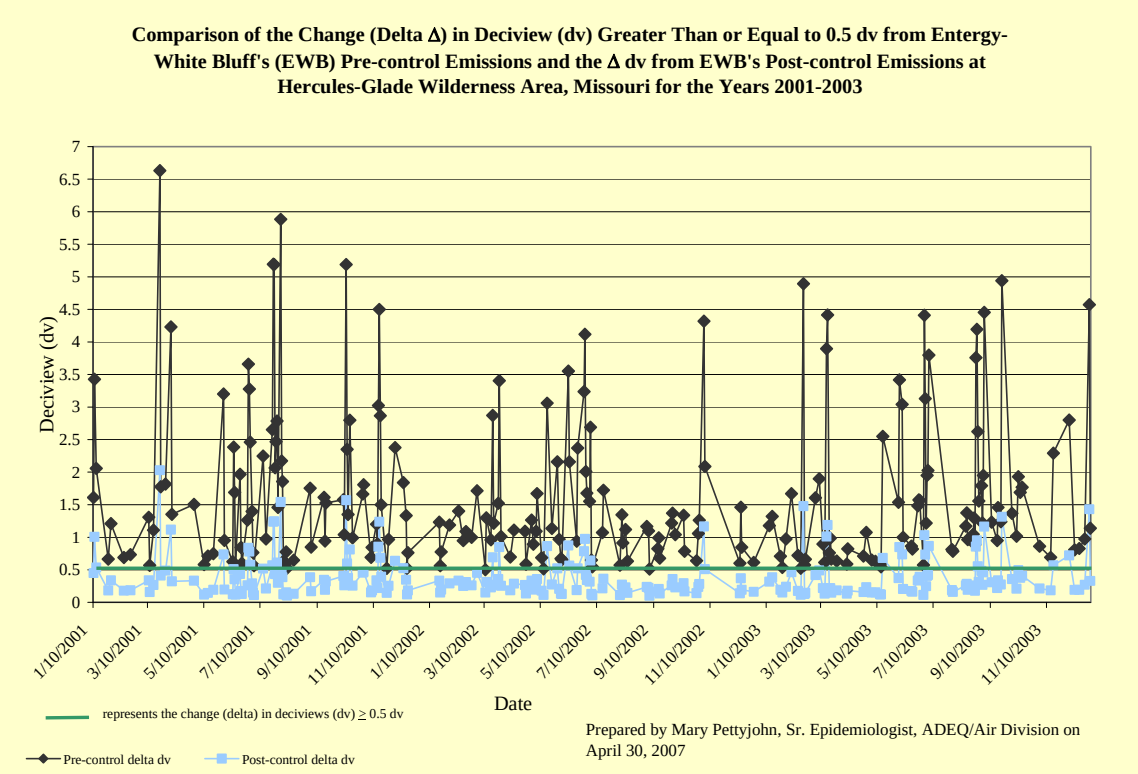


Figure 9.4-XLI

As shown in Figures 9.4-XLII and 9.4-XLIII, sulfate dominates the pre- and post-control fuel oil emissions from Entergy –White Bluff's contribution to light extinction to Hercules-Glade Wilderness Area, Missouri. However, there is an increase of nitrate's contribution to light extinction (i.e. from 26.44% from the pre-control emissions to 33.57% from the post-control emissions).

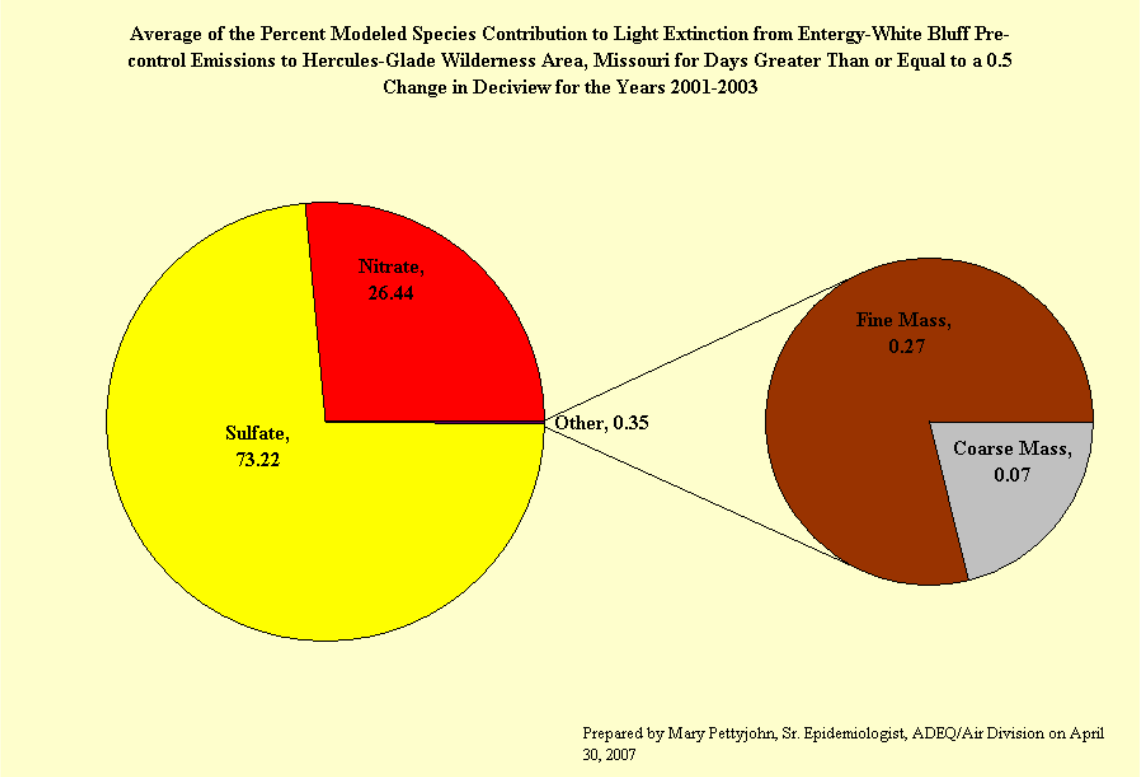


Figure 9.4-XLII

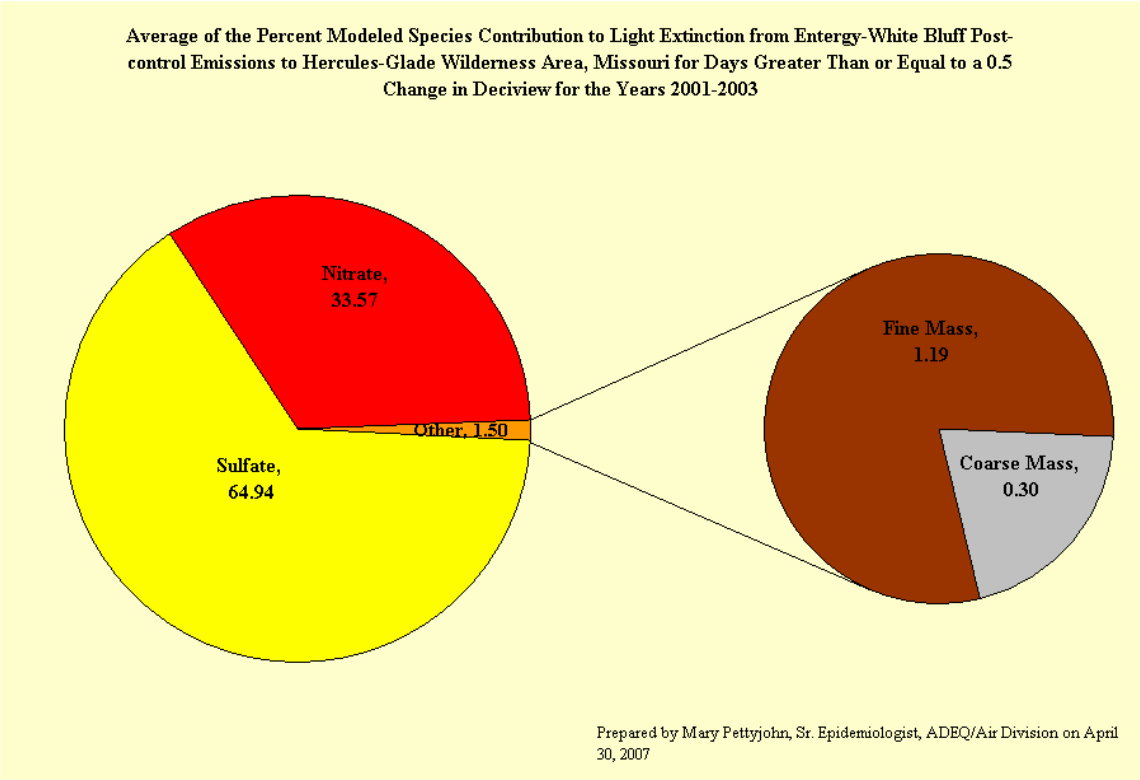


Figure 9.4-XLII

Appendix 9.4B
Correspondence

ADEQ

ARKANSAS
Department of Environmental Quality

September 8, 2006

Ms. Kelley Crouch, Sr. Process Engineer
Domtar
285 Highway 71 South
Ashdown, AR 71822

RE: Domtar BART Analysis

Dear Ms. Crouch,

This letter serves as a confirmation of agreements made on August 24, 2006 in a meeting between members of my staff and representatives of Domtar concerning the steps required for Domtar to comply with applicable provisions of the federal "BART Rule". The agreements, subject to your concurrence, are:

1. ADEQ agrees to allow Domtar to use the presumptive BART limits as set forth in the July 6, 2005 *Federal Register* (FR 39131 – 39136) as BART controls.

2. ADEQ agrees Domtar may use the MACT control as their BART control measure. Please see the note below the list of agreements.

3. Domtar agrees to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze (RH) SIP.

4. Domtar agrees to work closely with ADEQ engineers in developing the five-factor engineering analysis.

5. Domtar agrees to consider the following options: 1. perform CALPUFF post-control modeling using the CENRAP 6 km central domain CALMET no-obs meteorological data and to use the maximum change in deciviews rather than the 98th percentile; 2. perform a refined meteorological CALPUFF modeling in order to use the 98th percentile.

6. Domtar agrees to prepare an EPA approvable modeling protocol which will contain a meteorological modeling performance evaluation if Domtar chooses to use option number two which is shown in the previous agreement.

7. Domtar agrees to send ADEQ the post-control CALPUFF, POSTUTIL, and CALPOST input files as well as the CALPOST output files, the post-control emissions, stack parameters, and the five-factor engineering analysis no later than October 23, 2006.

Note: According to the July 6, 2005 *Federal Register* (FR 39164), it is the State's responsibility to "… provide the public with a discussion of whether any new technologies have subsequently become available". Therefore, Domtar will be required to consult with the ADEQ Air Division regarding whether the wet electrostatic precipitator (MACT control) is the best available and cost effective control technology for $PM_{2.5}$.

Please respond with your concurrence or suggested changes to Mary Pettyjohn, Senior Epidemiologist – Air Division at your earliest convenience. Thank you.

Sincerely,

Mike Bates

Mike Bates, Chief
Air Division

cc: Scott Simmons, Manager of Quality, Environmental, and Technical - Domtar
Jeremy Jewell, Senior Consultant – Trinity Consultants
Mary Pettyjohn, Senior Epidemiologist - ADEQ

Domtar

September 24, 2006

Arkansas Department of Environmental Quality
Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913

Attention: Ms. Mary Pettyjohn, Senior Epidemiologist
RE: Domtar BART Analysis Letter

Dear Ms. Pettyjohn:

This letter serves as confirmation that the Domtar, Ashdown Mill concurs with the stated agreements in your letter dated September 8, 2006. Domtar has every intention of meeting the requirements and deadlines stated in your letter, with assistance from Trinity Consultants.

Thank you for your summary of the agreements. If you should have any questions please contact me at (870) 898-2711 Ext. 6168 at your convenience. You may also reach me via email at Kelley.crouch@domtar.com.

Sincerely,

Kelley R. Crouch

Kelley R. Crouch
Sr. Process Engineer

ADEQ

ARKANSAS
Department of Environmental Quality

June 7, 2007

Kelley R. Crouch, Sr. Process Engineer
Domtar Industries Inc.
285 Highway 71 South
Ashdown, Arkansas 71822

Re: Domtar Industries Inc. – BACT determination for Lime Kilns
AFIN: 41-00002, Permit 1287-AOP-R6

Dear Ms. Crouch:

In a letter dated April 18, 2007, Domtar states that BACT for the SO_2 from No. 3 Lime Kiln is the inherent scrubbing of the lime kiln. The Department disagrees with this determination. A review of the RBLC database shows that none of the sources listed in your letter specifically state that control of SO_2 is achieved through inherent scrubbing of the lime kiln. However, at least 6 sources list a scrubber a BACT for SO_2.

A BACT determination from May 24, 2006, for a lime kiln burning pet coke at the Weyerhaeuser Company, Red River Mill, lists an ESP for particulate matter control with flue gas desulfurization for SO_2 control. The method of flue gas desulfurization at this facility will be a wet scrubber. Also, a May 10, 2001 determination for the International Paper Company, Riegelwood Mill shows that both an ESP and wet scrubber are BACT for particulate matter and SO_2 control, respectively.

Based on a review of the RBLC, the Department maintains that BACT for SO_2 from the lime kilns is a wet scrubber.

If you have any questions, please feel free to contact me at (501) 682-0764.

Sincerely,

Wesley Crouch

Wesley Crouch, P.E.
Engineer P.E.
ADEQ, Air Division

Pettyjohn, Mary

From: jjewell@trinityconsultants.com
Sent: Tuesday, August 22, 2006 5:04 PM
To: Pettyjohn, Mary
Subject: BART Modeling Issues

E01_ADEQ.doc (49 KB)

Mary,

As I promised during our conversation this morning, I have researched further the issue related to using CENRAP's MM5 extraction in GMT in a refined CALPUFF analysis. Per one of our BART and CALPUFF experts (Kasi Dubbs) in Kansas City, the issue is summarized as follows:

******
CENRAP's CALMET screening runs are the only runs I have ever seen that run CALMET in GMT. This would create a problem in the models meteorological analysis. He specifically indicated that the Planetary Boundary Layer (PBL) theory is based on the turbulence that gets generated in the atmosphere, either by mechanical processes (surface roughness) or buoyancy processes (surface heating). The parameters required to solve the PBL equations are based on empirical relationships and may have to be determined iteratively. The key parameter to the buoyancy portion of the PBL theory is the sensible heat flux. The sensible heat flux is the amount of radiation received at the surface that can be used to heat the surface. It is a function of time of day, day of the year, cloud cover and landuse. The time of day and domain location are used to determine sunrise and sunset times, which have an effect on how the solar energy is partitioned in the atmosphere. Since an average day might have a sunrise of 6AM local time and a sunset of 6PM local time, that would equate to GMT times (for the central time zone) of 1 AM and 1 PM. This discrepancy would upset the heat balance inherent in the empirical equations that govern PBL theory and could potentially cause significant results differences in the CALPUFF model. I am not aware of any studies that have been performed to quantify the effect so I do not have a range of differences that I can quote you.
******

Also, I have attached a summary of our Kansas City office's e-mails with KDHE and EPA Region VII regarding this issue. My take from all this regarding your suggestion to adjust the observations data is that you can't just adjust the observations data by six hours (to correct from GMT to CST) because it would mess up the meteorology. I will be in and out tomorrow, but feel free to call if you want to discuss. Otherwise, we can talk about it more Thursday morning.

Also, I would like to confirm that we can use the screening analyses you have already setup for our pre-control and post-control BART determination modeling. If this is the case, and the results are such that we do not feel refined modeling is necessary, the issue discussed above may be moot. We can talk about this Thursday as well.

Regards,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive

Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

(See attached file: E01_ADEQ.doc)

To: Will Adler, NDEQ; Andy Hawkins, KDHE
From: Kelli Deuth Johnson, Trinity Consulants
Date: 08/18/2006
Subject: CENRAP CALMM5 Data Issues

I wanted to write and make you aware of a challenge that has come up with conducting refined CALPUFF modeling using the CALMM5 data sets provided to CENRAP by Alpine Geophysics (EPA 2001 12 km, IDNR 2002 36 km, MRPO 2003 36 km). This challenge is relevant to the refined CALPUFF BART modeling protocol that Trinity submitted to the NDEQ on behalf of Ash Grove, because in this protocol Trinity proposed to incorporate the CALMM5 data extracted by Alpine/CENRAP into CALMET . It is somewhat relevant to the refined CALPUFF BART modeling protocol that Trinity prepared for Westar that was submitted to the KDHE, although in this protocol Trinity proposed to conduct our own CALMM5 data extractions using the national mm5 data sets provided to us directly by IDNR and LADCO (note that IDNR sent us the EPA's national 36 km data set, and Trinity does not have EPA's national 12km data set). The reason it is still relevant to the Westar protocol is because comments on the Westar protocol have indicated that we should use 12 km mm5 data a rather than 36 km mm5 data, and at this point the only 12 km mm5 data made available for distribution is the CALMM5 data extracted by Alpine. The national 12 km mm5 data are not readily available; thus, we have to rely on data already extracted rather than conducting our own extraction.

Refined CALMET modeling that incorporates surface observations must be run in the local time zone. Since refined CALMET modeling is run in the local time zone, it is a challenge to set up refined CALMET model runs using CENRAP's CALMM5 data. This is due to a mismatch in the GMT hours for the CALMM5 data and the run times for CALMET. Typically, when Trinity extracts mm5 data for use in refined CALMET modeling using the CALMM5 program, we extract the data in blocks of GMT time that match the local time run hours we are trying to accomplish. This allows us to have enough data in GMT hours to match our observation data in a local time zone. If mm5 data is not extracted this way, then CALMET will run out of mm5 data before it runs out of surface data. When Alpine generated the CALMET screening files for CENRAP by running CALMET in "NOOBS" mode, they ran CALMET in GMT, since there were no surface observations that required CALMET to be run in the local time zone. However, when conducting refined CALMET modeling, where the local time zone is used to accommodate the addition of surface observations, the CALMM5 files from Alpine can not be used "as is".

As an example, let's start with the 2001 12 km data set, since the largest challenge is with using this data set. The CALMM5 extraction was performed by Alpine in 10-11 day increments such that each month has three sets of CALMM5 data. January, for instance, has three files covering the following times:

1) January 1, Hour 0 GMT through January 10, Hour 23 GMT
2) January 11, Hour 0 GMT through January 20, Hour 23 GMT
3) January 21, Hour 0 GMT through January 31, Hour 23 GMT

When the above CALMM5 files are incorporated into CALMET, CALMET is run in CST to match the surface observation data. Versions of CALMET prior to

Version 6 released in April of this year only allow a single mm5 data file per CALMET run. So runs for January would be set up for the following run times:

1) January 1, Hour 0 CST through January 10, Hour 23 CST (equivalent to Jan 1, Hour 6 GMT through Jan 11, Hour 5 GMT)

2) January 11, Hour 0 CST through January 20, Hour 23 CST (equivalent to Jan 11, Hour 6 GMT through Jan 21, Hour 5 GMT)

3) January 21, Hour 0 CST through January 31, Hour 23 CST (equivalent to Jan 21, Hour 6 GMT through Feb 1, Hour 5 GMT)

As you can see by comparing the "equivalent to" hours to the CALMM5 available data, the mm5 runs cover a shorter period of time than the CALMM5 data, and thus the CALMET runs can not include the run times listed above. If CALMET is run starting at hour 0 CST, we will not have the last 6 hours needed (i.e. Jan 10, Hours 18-23 CST) because they are the first 6 hours in the next file.

One solution is for Trinity to use the national 2001 - 2003 36 km MM5 data sets and run our own extractions to match Jan 1, Hour 0 CST through Dec 31, Hour 23 CST. This is the most feasible and efficient way to set up and get CALMM5 data that covers the entire three-year period. However, we would not be using the 2001 12 km set as requested.

There are several other approaches that may come up as possible solutions to allow us to use the actual CALMM5 data extracted by Alpine, but we have identified issues with these. We are listing the approaches here so that it documents methods that others may initially think would be solutions:

1) Start the CALMET run hours to match the CALMM5 times. Since CALMET requires each run to start between hours 0-5 LST, we cannot modify our run times to match the CALMM5 run times exactly (January 11, Hour 0 GMT would be January 10, Hour 18 CST)

2) Use the newest version of CALMET that allows you to input more than one CALMM5 file at a time. This version of the CALMET program isn't compatible with the version of CALMM5 that was used to create these files.

3) Cut and paste the six hours that are needed into each file. There are 36 files associated with the 2001 12 km data set. Each one of these files is approximately 30 GB in size. To open and edit each of these very large files takes a considerable amount of time - on my laptop, it takes about 15-20 minutes just to get the file to open, add 15-20 minutes needed to search for the particular times needed, plus 10 minutes or so to copy. Then the process starts all over to open the previous 30 GB file that the data needs to be pasted into (plus, you must be working on a computer with enough memory to copy 2-3 GB worth of data). I would estimate that it will take around 2 hours per file and, as stated earlier, there are 36 different files for 2001. I've been told that a program may be able to be written in Microsoft Access to do the data modifications, but again, that will take additional time, effort and cost.

4) Run the files filling every 6 hours that is lost with observation data only. This option does not conform to the CENRAP recommended protocol.

Please advise whether we can move forward with using the national 36 km mm5 data seta and conducting our own mm5 extractions.

To: Kelli Deuth Johnson and Kasi Dubbs, Trinity Consulants
Cc: Will Adler, NDEQ; Bret Anderson, EPA Region VII
From: Andy Hawkins, KDHE
Date: 08/21/2006
Subject: RE: CENRAP CALMM5 Data Issues

KDHE would like to see the best data sets used for all BART modeling. Before we abandon the 12km data can you please try the following awk script and see if it will allow you to more easily use the 12km dataset you have. If you don't have access to linux to manipulate the data you can try cygwin under windows (note I've only tested in linux).

```
{
         if (substr($1,1,8) >= "01090100" && substr($1,1,8) <=
"01090106")
{
          u = 0
               while (u < 34 ) {
                print
                getline
                u=u+1
               }
         } else
        endif
     }
```

The command to run will be

awk -f program_file < input_file > output_file.

so for example
awk -f andy.awk < extracted_2001_09a_epa_12km.unx > output.test

So, put the above awk text into a file (program_file) and modify the time period you're interested in. Once you have an output file I believe you can concatenate this to the initial 10day block of data. Note I believe you will have to delete the first few lines of the output_file before concatenation.

The logic behind the script is to find a relevant day/hour and then grab that period of data and dump into another file. You can wrap this script in a shell script and modify all the files. You would first need to fix my script above which grabs some extra data since the time period is seen in the header file and also in the underlying data. I'll work on this and a shell script wrapper to automate things a bit more.

If this solution is unworkable we can move on to just using the 36km dataset you have in-house.

To: Andy Hawkins, KDHE
Cc: Kelli Deuth Johnson and Kasi Dubbs, Trinity Consulants; Will Adler, NDEQ
From: Bret Anderson, EPA Region VII
Date: 08/21/2006
Subject: RE: CENRAP CALMM5 Data Issues

Thank you for sharing your email with me. In general, I agree with the approach that you propose. File concatenation is pretty routine with this, and is usually what I do when I run into this. I have discussed this issue a little bit internally here at Region 7 and while we have not arrived at a final conclusion regarding the 12/36 km issue, we clearly would encourage all preprocessing avenues to be exhausted prior to making a decision on abandoning the 12 km data. As we indicated before during our protocol discussions, there are clear scientific motivations for running 12km meteorological data sets, including enhancing the accuracy of meteorological fields by resolving features which could not be resolved at 36 km. If this were not the case, then it would be probable that all MM5 runs would be at resolutions greater than 36 km for sake of ease and run times. Ultimately, diagnostic meteorological models such as CALMET will perform only as well as the input prognostic data, and if the prognostic data cannot resolve certain features, it cannot be expected that a diagnostic model would be able to due to the lack of physics in the model.

If we can be of any assistance helping you with the awk/sed scripting, please do not hesitate to ask.

To: Bret Anderson, EPA Region VII
Cc: Will Adler, NDEQ; Kelli Deuth Johnson and Kasi Dubbs, Trinity Consulants
From: Andy Hawkins, KDHE
Date: 08/21/2006
Subject: RE: CENRAP CALMM5 Data Issues

I've added one more variable to my last script that gets rid of the unwanted header info...
All you have to do is change the time period and point to a file that contains the period of interest.

```
{
        if (substr($1,1,8) >= "01090100" && substr($1,1,8) <= "01090106"
&& $6 >= 0) {
          u = 0
            while (u < 34 ) {
             print
             getline
             u=u+1
            }
        } else
          endif
}
```

A 6 hour output is ~800MB uncompressed (170MB compressed). If necessary, I'm willing to extract the periods you need, compress the files, and place them on a DVD or two and mail them to you. Then you could just merge the files you currently have with these.

Pettyjohn, Mary

From: jjewell@trinityconsultants.com
Sent: Thursday, August 24, 2006 4:18 PM
To: Pettyjohn, Mary
Subject: BART Meeting / Follow-up Question

Thanks for meeting with us and Domtar today regarding BART. Now that I have had a chance to digest some of our discussions I have three quick questions for you.

1. Did you say that you used the new IMPROVE algorithm in your analyses? Will ADEQ and Region VI allow us to?

2. What version of CALPUFF did you use?

3. What does ADEQ think about applying the EGU presumptive NOX and SO2 limits to industrial boilers? That is, if somebody proposes these limits, do they have to go through the pre- and post-control modeling?

Thanks,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Thursday, October 05, 2006 1:25 PM
To: 'Crouch, Kelley R.'; 'Jeremy Jewell'
Subject: RE: BART - Domtar

I forgot to ask about the time. The best time for us would be 9:00 AM.

Mary

-----Original Message-----
From: Crouch, Kelley R. [mailto:KELLEY.CROUCH@domtar.com]
Sent: Thursday, October 05, 2006 12:44 PM
To: 'Jeremy Jewell'; Pettyjohn, Mary
Subject: RE: BART - Domtar

Yes, that would work best. If you need us to set up a call in number let me know.

Thanks,
Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Thursday, October 05, 2006 12:23 PM
To: Pettyjohn, Mary
Cc: Crouch, Kelley R.
Subject: RE: BART - Domtar

We (Domtar and I) will be calling from two different locations, so it would probably be best if we had a call in number.

Thanks,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

"Pettyjohn, Mary"

<PETTYJOHN@adeq.state.ar.

us>
To
"Jeremy Jewell"

10/05/2006 08:50 AM
<jjewell@trinityconsultants.com>

cc

Subject
RE: BART - Domtar

Good morning Jeremy,

You picked a perfect time for a conference call. Do you want to call in or would you rather us call? Just let me know and I will send out a meeting notice.

Mary

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Thursday, October 05, 2006 10:29 AM
To: Pettyjohn, Mary
Cc: KELLEY.CROUCH@domtar.com
Subject: BART - Domtar

Mary,

Can we setup a conference call next week to discuss with you and Tony, Mark, Bill, etc. where we are at and ADEQ's expectations? Specifically, we will be prepared to discuss the possible control options we have looked into, their costs, and what effects (or lack of) they have on the modeling results. If your schedule allows, we propose Thursday (10/12) morning. I am open
all next week, so please communicate with Mr. Kelley Crouch to set a specific time (and then just let me know).

Thanks,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive

Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

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Pettyjohn, Mary

From: Crouch, Kelley R. [KELLEY.CROUCH@domtar.com]
Sent: Tuesday, October 10, 2006 2:05 PM
To: Pettyjohn, Mary
Subject: RE: BART - Domtar - Conference Call in number

Yes Mary. We are actually putting together a brief power point presentation that we will be sending to you before our call. It will cover the discussion points we are planning. In the meantime, the intent of the call is to go over with you our current progress and some of the concerns/questions that have come up that we would like to have resolved during the call. Coming out of the meeting we had with you back in August, we agreed to work closely with ADEQ and we just want to make sure you know our progress and our concerns.

Hope this helps some. I will send you the presentation when we finish--it might be tomorrow afternoon though.

Thank you,
Kelley

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, October 10, 2006 1:49 PM
To: Crouch, Kelley R.
Subject: RE: BART - Domtar - Conference Call in number

Kelley,

Thank you for the call in number. I forwarded this to Tony.

Could you give us a heads up on what you will be talking about on Thursday?

Best wishes,
Mary

-----Original Message-----
From: Crouch, Kelley R. [mailto:KELLEY.CROUCH@domtar.com]
Sent: Tuesday, October 10, 2006 12:30 PM
To: Pettyjohn, Mary; Jeremy Jewell
Subject: BART - Domtar - Conference Call in number

The conference call number to use for our call on Thursday morning at 9:00 AM is:

866-567-5484, then enter code 357685

If I should send this to anyone else, please let me know. I look forward to talking with everyone on Thursday.

Thank you,
Kelley

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, October 05, 2006 2:49 PM
To: Crouch, Kelley R.; Jeremy Jewell
Subject: RE: BART - Domtar

Thank you,

Mary

-----Original Message-----
From: Crouch, Kelley R. [mailto:KELLEY.CROUCH@domtar.com]
Sent: Thursday, October 05, 2006 2:43 PM
To: Pettyjohn, Mary; Jeremy Jewell
Subject: RE: BART - Domtar

I will set it up here for 9:00 AM, and I'll send you a call in number.

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, October 05, 2006 1:25 PM
To: Crouch, Kelley R.; Jeremy Jewell
Subject: RE: BART - Domtar

I forgot to ask about the time. The best time for us would be 9:00 AM.

Mary

-----Original Message-----
From: Crouch, Kelley R. [mailto:KELLEY.CROUCH@domtar.com]
Sent: Thursday, October 05, 2006 12:44 PM
To: 'Jeremy Jewell'; Pettyjohn, Mary
Subject: RE: BART - Domtar

Yes, that would work best. If you need us to set up a call in number let me know.

Thanks,
Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Thursday, October 05, 2006 12:23 PM
To: Pettyjohn, Mary
Cc: Crouch, Kelley R.
Subject: RE: BART - Domtar

We (Domtar and I) will be calling from two different locations, so it would probably be best if we had a call in number.

Thanks,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211

Phone: (501) 225-6400
Fax: (501) 225-8802

"Pettyjohn, Mary"
<PETTYJOHN@adeq.state.ar.us>

To: "Jeremy Jewell" <jjewell@trinityconsultants.com>

10/05/2006 08:50 AM

cc:

Subject: RE: BART - Domtar

Good morning Jeremy,

You picked a perfect time for a conference call. Do you want to call in or would you rather us call? Just let me know and I will send out a meeting notice.

Mary

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Thursday, October 05, 2006 10:29 AM
To: Pettyjohn, Mary
Cc: KELLEY.CROUCH@domtar.com
Subject: BART - Domtar

Mary,

Can we setup a conference call next week to discuss with you and Tony, Mark, Bill, etc. where we are at and ADEQ's expectations? Specifically, we will be prepared to discuss the possible control options we have looked into, their costs, and what effects (or lack of) they have on the modeling results. If your schedule allows, we propose Thursday

(10/12) morning. I am open
all next week, so please communicate with Mr. Kelley Crouch to set a specific time (and then just let me know).

Thanks,

Jeremy Jewell
Senior Consultant

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Suite 120, The Searcy Building
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Phone: (501) 225-6400
Fax: (501) 225-8802

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entities other than the intended recipient is prohibited. If you
Received this in error, please contact the sender and delete the material
from any computer.

Pettyjohn, Mary

From: Jeremy Jewell [jjewell@trinityconsultants.com]
Sent: Wednesday, October 18, 2006 10:02 AM
To: Pettyjohn, Mary
Subject: BART Determination Report Submittal

Are there any signature/certification (by the Responsible Official) requirements for these reports?

Also, off the record (i.e., this is me asking, not Domtar), is the Monday (10/23) deadline absolute? We can have something done by then, but a couple more days would be welcomed and appreciated.

Thank You,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, October 18, 2006 10:49 AM
To: 'Jeremy Jewell'
Subject: RE: BART Determination Report Submittal

Hi Jeremy,

There is no need for a signature/certification by the "Responsible Official" at this point in the process.

Yes, you may have a couple more days to submit the report. As you are aware, the RFP was issued October 6th and the closing date for submitting a proposal is October 27th which is the same date for the bid opening. The contract is scheduled to be awarded October 30th. Therefore, I am able to extend the deadline to October 31st. If this date is still a problem, please let me know and I will be more than happy to work with you.

Best wishes,
Mary

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Wednesday, October 18, 2006 10:02 AM
To: Pettyjohn, Mary
Subject: BART Determination Report Submittal

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Also, off the record (i.e., this is me asking, not Domtar), is the Monday (10/23) deadline absolute? We can have something done by then, but a couple more days would be welcomed and appreciated.

Thank You,

Jeremy Jewell
Senior Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

Pettyjohn, Mary

From: Crouch, Kelley R. [KELLEY.CROUCH@domtar.com]
Sent: Monday, February 26, 2007 10:46 AM
To: Pettyjohn, Mary
Cc: Jeremy Jewell (E-mail); Simmons, R. Scott; Martin, Guy
Subject: BART Update

REVISED BART Emission Data.xls...

Mary,

In the process of trying to answer some of the questions from our call on 2/14, I've unfortunately discovered some errors in the data used for the modeling. First, I was trying to look into Bill Swafford's question about our emissions inventory from 2001, and what I found was that we had reported 128.5 tpy (he had mentioned 1285 lb/hr, but that is our current permit limit, not what I could find was reported as emissions.) When I performed my calculations for the data you had requested for BART, I used the current AP-42 factor of .025 lb SO2/MMBTU, and did not include additional SO2 tons from the burning of fuel oil. 2001 was the only year of the 3 years that we burned fuel oil in No. 1 Power Boiler, so that was the only year affected by this.

Second, upon discovering this, and realizing from the conference call just how critical the values were going to be (since they will likely become our new permit limits), I took a closer look into the rest of the data and I have come up with more accurate estimates that should be considered. It appears I originally used 24 hour averages for each year, but not one-day MAXIMUM 24 hour averages. It looks like I just backed out from total tons per year reported to a 24 hour ton rate and that is the value that I sent to you and was used in the modeling.

I revised the BART emission data to the actual 24 hour MAXIMUM emissions. The only thing that didn't change was NOx on No. 1 PB (because it was a stack test). Everything else did change though. This data is in the attached file. The boxes in red include the revised data as compared to the original data used.

I've asked Jeremy to go ahead and work on re-running the modeling. If we re-run the pre- and post-control modeling, I was informed that it will take at least a couple weeks to get a full update prepared.

Let me know how you see that we need to proceed with this new information.

I apologize for this inconvenience.

<<REVISED BART Emission Data.xls>>

Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

Pettyjohn, Mary

From: Jeremy Jewell [jjewell@trinityconsultants.com]
Sent: Monday, February 26, 2007 11:12 AM
To: Pettyjohn, Mary
Cc: KELLEY.CROUCH@domtar.com
Subject: Fw: BART Update

REVISED BART
Emission Data.xls...

Mary,

As Kelley stated below, I anticipate that we will have to re-run all pre- and post-control modeling. As such, I wanted to confirm with you what version of the model should be used. I recall some correspondence about a month ago about updating the models from the VISTAS version to the most current version. What ever happened with this? If we need to change from the VISTAS version, then I have one additional complicating factor we need to consider. Trinity (one of our CALPUFF gurus in Dallas) has discovered an error in the current EPA-approved version of CALMET. See his description below:

In the process of debugging a runtime error with the EPA-approved version of CALMET, I found a bug associated with the calculation of the daytime mixing heights. This bug will cause the use of an incorrect air density value in the calculation of the daytime convective and mechanical mixing heights. The problematic subroutine is called "mixht". The rho(mxss) variable in the subroutine should be defined as 2-dimension (refer to the grid point index) rather than 1-dimension (refer to the index of surface station). I notice that this bug has been fixed in the VISTA version. I did not check other places inside the code for similar problem. If the problem is only limited to the mixht subroutine, it would be an easy fix. However, whatever datasets (e.g., 2001-2003 CENRAP CALMET data for BART) generated by this EPA-approved version of CALMET will be subject to the code error.

Have you heard of this issue yet? (EPA has only recently been notified).

Regards,

Jeremy Jewell
Managing Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

----- Forwarded by Jeremy Jewell/Trinity Consultants on 02/26/2007 11:04 AM -----

"Crouch, Kelley R."
<KELLEY.CROUCH@domtar.com
>
To
"Mary Pettyjohn (E-mail)"
02/26/2007 10:45 AM <PETTYJOHN@adeq.state.ar.us>

cc "Jeremy Jewell (E-mail)" <jjewell@trinityconsultants.com>, "Simmons, R. Scott" <SCOTT.SIMMONS@domtar.com>, "Martin, Guy" <Guy.Martin@domtar.com>

Subject BART Update

Mary,
In the process of trying to answer some of the questions from our call on 2/14, I've unfortunately discovered some errors in the data used for the modeling. First, I was trying to look into Bill Swafford's question about our emissions inventory from 2001, and what I found was that we had reported 128.5 tpy (he had mentioned 1285 lb/hr, but that is our current permit limit, not what I could find was reported as emissions.) When I performed my calculations for the data you had requested for BART, I used the current AP-42 factor of .025 lb SO2/MMBTU, and did not include additional SO2 tons from the burning of fuel oil. 2001 was the only year of the 3 years that we burned fuel oil in No. 1 Power Boiler, so that was the only year affected by this.

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I revised the BART emission data to the actual 24 hour MAXIMUM emissions. The only thing that didn't change was NOx on No. 1 PB (because it was a stack test). Everything else did change though. This data is in the attached file. The boxes in red include the revised data as compared to the original data used.

I've asked Jeremy to go ahead and work on re-running the modeling. If we re-run the pre- and post-control modeling, I was informed that it will take at least a couple weeks to get a full update prepared.

Let me know how you see that we need to proceed with this new information.

I apologize for this inconvenience.

<<REVISED BART Emission Data.xls>>

Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

(See attached file: REVISED BART Emission Data.xls)

---

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Pettyjohn, Mary

From: Crouch, Kelley R. [KELLEY.CROUCH@domtar.com]
Sent: Monday, February 26, 2007 2:12 PM
To: Pettyjohn, Mary
Cc: McCorkle, Mark; Jeremy Jewell
Subject: RE: BART Update

Mary,
I think there is still an issue with the data that I originally sent to you. If "Highest 24 hour avg" should represent the "Maximum 24 hour avg emission day", then I'm afraid that is not what I gave you. It appears as though I originally used 24 hour averages for each year, but not one-day MAXIMUM 24 hour averages. It looks like I just backed out from total tons per year reported to a 24 hour ton rate and that is the value that I sent to you and was used in the modeling. Reviewing the data you sent to me, we are in agreement on the lb/hr modeled rates for SN-03 (No. 1 Power Boiler) for NOX and PM, however SO2 is low because of the 2001 error that did not include fuel oil SO2 emissions. This changes what was modeled at 6.1 lb/hr to 442.5 lb/hr with the revised data.

For SN-05 (No. 2 Power Boiler), all pollutant data is lower in the model than what the actual "Maximum 24 hour avg emission day" really was. The original NOx data showed 412.8 lb/hr in your model, and I now show 526.8 lb/hr. The PM was 62.5 and is now 81.6. The SO2 data was 557 lb/hr and is now 788.2. I think we need to take this data into consideration, especially if these rates are going to become our new permit limits.

Thank you,
Kelley

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Monday, February 26, 2007 1:22 PM
To: Jeremy Jewell
Cc: Crouch, Kelley R.; McCorkle, Mark
Subject: RE: BART Update

Kelley and Jeremy,

Bill made a mistake when he mentioned 1285 lb/hr of SO2 being in the 2002 emission inventory. Please be assured that I modeled the emission rates you sent last year. Therefore, there will be no need for you to remodel. To put your mind at ease, I am sending you the Excel file you sent last year that contains the emission rates and another Excel file titled Domtar Modeled Emission Rates. This file contains the rates Domtar sent in lb/day, the calculation steps to go from lb/day to lb/hr to g/sec. Also, if you look at the CALPUFF input files for Domtar that are on the listserv site, you will see that rates that were modeled.

If I can be of further assistance, please feel free to contact me.

Best wishes,
Mary

-----Original Message-----
From: Jeremy Jewell [mailto:jjewell@trinityconsultants.com]
Sent: Monday, February 26, 2007 11:12 AM
To: Pettyjohn, Mary
Cc: KELLEY.CROUCH@domtar.com
Subject: Fw: BART Update

Mary,

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Have you heard of this issue yet? (EPA has only recently been notified).

Regards,

Jeremy Jewell
Managing Consultant

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----- Forwarded by Jeremy Jewell/Trinity Consultants on 02/26/2007 11:04 AM -----

"Crouch, Kelley R." <KELLEY.CROUCH@domtar.com>

02/26/2007 10:45 AM

To: "Mary Pettyjohn (E-mail)" <PETTYJOHN@adeq.state.ar.us>

cc: "Jeremy Jewell (E-mail)" <jjewell@trinityconsultants.com>, "Simmons, R. Scott" <SCOTT.SIMMONS@domtar.com>, "Martin, Guy"

<Guy.Martin@domtar.com>

Subject

BART Update

Mary,
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Let me know how you see that we need to proceed with this new information.

I apologize for this inconvenience.

<<REVISED BART Emission Data.xls>>

Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

(See attached file: REVISED BART Emission Data.xls)

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Pettyjohn, Mary

From: Weiping Dai [wdai@trinityconsultants.com]
Sent: Monday, February 26, 2007 3:24 PM
To: Pettyjohn, Mary
Cc: Jeremy Jewell
Subject: RE: BART Update

Hi Mary,

The error I found out was associated with the EPA-approved version of the CALMET program. The air density variable used in a subroutine for calculating the daytime convective mixing height was mis-defined. We found out this error when we tried to generate a set of refined meteorological data with observations (note that the CENRAP data was provided in NOOBS mode).

From your email, it seems you compare the CALPUFF results from the VISTA version to those of the EPA version. If both runs are based on the same CALMET dataset, the bug associated with the CALMET may have been factored in.

I reported the bug to EPA and I attached the response from Dennis Atkinson for your reference.

Please feel free to let me know if you have any questions.

Best regards,

Weiping

****
Weiping Dai, PhD, PE, Certified Manager
Managing Consultant, SMU Adjunct Faculty
Trinity Consultants
12770 Merit Drive, Suite 900
Dallas, TX 75251
Phone: 972-661-8100
Fax: 972-385-9203
www.trinityconsultants.com
****

----- Forwarded by Weiping Dai/Trinity Consultants on 02/26/2007 03:12 PM -----

Atkinson.Dennis@epamail.epa.gov

02/21/2007 02:54 PM

To Weiping Dai <wdai@trinityconsultants.com>
cc
Subject Re: Bug inside the EPA-approved version of CALMET

Hi Weiping,

Thank you for the bug report on the EPA-approved version of CALMET. Currently, EPA is trying to obtain documentation from the CALPUFF developer to determine/understand what is causing the differences between the 2 version that we see. It is our hope to get this

information soon and resume our investigation of the differences and what has caused them. After we understand the differences, EPA will approve the latest VISTAS version as the new regulatory model.

Best regards,
Dennis

Dennis Atkinson
Meteorologist
NOAA Atmospheric Sciences Modeling Division**
** In partnership with the U.S. Environmental Protection Agency
Mail Code: D243-01
Research Triangle Park, NC 27711

919-541-0518
919-541-0044 (fax)
dennis.atkinson@noaa.gov
atkinson.dennis@epa.gov

Weiping Dai
<wdai@trinitycon
sultants.com>

02/16/2007 07:29
PM

To
Dennis Atkinson/RTP/USEPA/US@EPA
cc
Weiping Dai
<wdai@trinityconsultants.com>
Subject
Bug inside the EPA-approved
version of CALMET

Hi Dennis, I would like to report a bug in the EPA-approved version of CALMET (Version: 5.53a, Level: 040716).

This bug will cause the use of an incorrect air density value in the calculation of the daytime convective and mechanical mixing heights. The problematic subroutine is called "mixht". The rho(mxss) varible in the subroutine should be defined as 2-dimension (refer to the grid point index) rather than 1-dimension (refer to the index of surface station). I notice that this bug has been fixed in the VISTA version. I did not check other places inside the code for similar problem.

Please look into the situation and make the corrected vesion available as soon as possible. Please feel free to let me know if you have any questions.

Thanks!

Weiping

****
Weiping Dai, PhD, PE, Certified Manager
Managing Consultant, SMU Adjunct Faculty
Trinity Consultants
12770 Merit Drive, Suite 900
Dallas, TX 75251
Phone: 972-661-8100
Fax: 972-385-9203
www.trinityconsultants.com
****

Pettyjohn, Mary

From: Weiping Dai [wdai@trinityconsultants.com]
Sent: Monday, February 26, 2007 5:22 PM
To: Pettyjohn, Mary
Cc: Jeremy Jewell; Weiping Dai
Subject: RE: BART Update

Hi Mary,

The short answer to your question is "Yes". As I know, the CENRAP CALMET 2001-2003 datasets was prepared with the EPA-approved version (V5.53a). If this understanding holds, the datasets we have are subject to the bug in the current EPA-approved version. We did not evaluate how big the impact is, though.

In addition, the CENRAP datasets were developed using the Greenwich Mean Time, rather than our local standard time. I think this also affects the CALPUFF dispersion.

Hope this info answers your question.

Thanks!

Weiping

****
Weiping Dai, PhD, PE, Certified Manager
Managing Consultant, SMU Adjunct Faculty
Trinity Consultants
12770 Merit Drive, Suite 900
Dallas, TX 75251
Phone: 972-661-8100
Fax: 972-385-9203
www.trinityconsultants.com
****

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

02/26/2007 04:11 PM

To "Weiping Dai" <wdai@trinityconsultants.com>
cc "Jeremy Jewell" <jjewell@trinityconsultants.com>
Subject RE: BART Update

Hi Weiping,

Thank you for the information. I guess I am a little confused. Does this mean the CENRAP post-processed CALMET noobs mode was affected by the bug you found and hence the results from my BART-determination modeling might be wrong?

Mary

-----Original Message-----
From: Weiping Dai [mailto:wdai@trinityconsultants.com]
Sent: Monday, February 26, 2007 3:24 PM
To: Pettyjohn, Mary
Cc: Jeremy Jewell
Subject: RE: BART Update

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Please feel free to let me know if you have any questions.

Best regards,

Weiping

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Managing Consultant, SMU Adjunct Faculty
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www.trinityconsultants.com
****

----- Forwarded by Weiping Dai/Trinity Consultants on 02/26/2007 03:12 PM -----

Atkinson.Dennis@epamail.epa.gov

02/21/2007 02:54 PM

To Weiping Dai <wdai@trinityconsultants.com>
cc
Subject Re: Bug inside the EPA-approved version of CALMET

Hi Weiping,

Thank you for the bug report on the EPA-approved version of CALMET. Currently, EPA is trying to obtain documentation from the CALPUFF developer to determine/understand what is causing the differences between the 2 version that we see. It is our hope to get this information soon and resume our investigation of the differences and what has caused them. After we understand the differences, EPA will approve the latest VISTAS version as the new regulatory model.

Best regards,
Dennis

Additional changes no doc

Dennis Atkinson
Meteorologist
NOAA Atmospheric Sciences Modeling Division**
** In partnership with the U.S. Environmental Protection Agency
Mail Code: D243-01
Research Triangle Park, NC 27711

919-541-0518
919-541-0044 (fax)
dennis.atkinson@noaa.gov
atkinson.dennis@epa.gov

Weiping Dai
<wdai@trinitycon
sultants.com>

02/16/2007 07:29
PM

To
Dennis Atkinson/RTP/USEPA/US@EPA
cc
Weiping Dai
<wdai@trinityconsultants.com>
Subject
Bug inside the EPA-approved
version of CALMET

Hi Dennis, I would like to report a bug in the EPA-approved version of CALMET (Version: 5.53a, Level: 040716).

This bug will cause the use of an incorrect air density value in the calculation of the daytime convective and mechanical mixing heights. The problematic subroutine is called "mixht". The rho(mxss) varible in the subroutine should be defined as 2-dimension (refer to the grid point index) rather than 1-dimension (refer to the index of surface station). I notice that this bug has been fixed in the VISTA version. I did not check other places inside the code for similar problem.

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, February 28, 2007 9:44 AM
To: 'Crouch, Kelley R.'; Jeremy Jewell
Subject: Results from the rerun using the updated emission rates and CALPOST output files

Good morning,

Here are the CALPOST output files (change file ext from .zap to .zip) from the rerun and an Excel spreadsheet that contains the results. I used the same version of CALPUFF I originally used for the BART-determination runs (this was approved by Bret Anderson, EPA Region VII).

Would you please be so kind as to let me know when to expect the results from the post-control runs and the engineering analysis?

If you have any questions, please fell free to contact me.

Best regards,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Please look into the situation and make the corrected vesion available as soon as possible. Please feel free to let me know if you have any questions.

Thanks!

Weiping

****
Weiping Dai, PhD, PE, Certified Manager
Managing Consultant, SMU Adjunct Faculty
Trinity Consultants
12770 Merit Drive, Suite 900
Dallas, TX 75251
Phone: 972-661-8100
Fax: 972-385-9203
www.trinityconsultants.com
****

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you Received this in error, please contact the sender and delete the material from any computer.

Pettyjohn, Mary

From: Simmons, R. Scott [SCOTT.SIMMONS@domtar.com]
Sent: Wednesday, June 13, 2007 1:35 PM
To: Pettyjohn, Mary; Porta, Mike
Cc: Crouch, Kelley R.; Haywood, Josh R.
Subject: FW: Domtar Ashdown Mill Response to PSD letter, AFIN:41-00002, Permit # 287-AOP-R6

Mary or Mike,
We are trying to plan a visit to Little Rock next week to discuss two topics. One is noted in the correspondence below with Wesley.

We would also like to discuss with you the proposed BART limits for Ashdown. Tentative dates are 6/20 or 21. Could we arrange a time to meet and discuss the limits?

Scott Simmons

-----Original Message-----
From: Crouch, Wesley [mailto:CROUCH@adeq.state.ar.us]
Sent: Wednesday, June 13, 2007 1:19 PM
To: Simmons, R. Scott
Subject: RE: Domtar Ashdown Mill Response to PSD letter, AFIN:41-00002, Permit # 287-AOP-R6

You will need to go through the planning branch to do that. Probably Mark McCorkle or Mary Pettyjohn.

-----Original Message-----
From: Simmons, R. Scott [mailto:SCOTT.SIMMONS@domtar.com]
Sent: Wednesday, June 13, 2007 1:15 PM
To: Crouch, Wesley
Subject: RE: Domtar Ashdown Mill Response to PSD letter, AFIN:41-00002, Permit # 287-AOP-R6

While we are there we also would like to discuss the BART limits. Mike Porta was involved in that discussion. Is that something you can arrange, or should we work that out with Mike?

-----Original Message-----
From: Crouch, Wesley [mailto:CROUCH@adeq.state.ar.us]
Sent: Wednesday, June 13, 2007 12:36 PM
To: Simmons, R. Scott
Subject: RE: Domtar Ashdown Mill Response to PSD letter, AFIN:41-00002, Permit # 287-AOP-R6

Either the 20th or 21st would be fine.

Wesley

-----Original Message-----
From: Simmons, R. Scott [mailto:SCOTT.SIMMONS@domtar.com]
Sent: Wednesday, June 13, 2007 11:33 AM
To: Crouch, Wesley
Cc: Martin, Guy; 'Barry. Zuercher (E-mail)'; Crouch, Kelley R.
Subject: RE: Domtar Ashdown Mill Response to PSD letter, AFIN:41-00002, Permit # 287-AOP-R6

Wesley,
Domtar received your response regarding the No 3 Lime Kiln as Ashdown. We would like to discuss the response further. Can you find a time for us to come to Little Rock to discuss this issue?

Kelley is out this week, so 6/20-22/07 would be the earliest preferable dates.

> -----Original Message-----
> From: Crouch, Kelley R.
> Sent: Wednesday, April 18, 2007 2:49 PM
> To: Wesley Crouch (E-mail)
> Cc: 'rheaume@adeq.state.ar.us'; Simmons, R. Scott; Martin, Guy;
Barry.
> Zuercher (E-mail)
> Subject: Domtar Ashdown Mill Response to PSD letter,
AFIN:41-00002,
> Permit # 287-AOP-R6
>
> Wesley,
> I have attached Domtar's response to your letter of April 10, 2007
> concerning our PSD application to burn petroleum coke in our lime
> kilns. I hope you will find some clarification to our original BACT
> analysis, and that we can bring this matter to resolution.
>
> We would like to request a face to face meeting to discuss this matter

> further. Let me know if you have any additional questions.
>
> You should also receive a hard copy of this letter by mail tomorrow.
>
> Thanks,
> Kelley
>
> << File: Domtar Response Letter.pdf >>
>
>
> Kelley R. Crouch
> Domtar Industries Inc.
> Ashdown Mill
> 870-898-2711 ext. 6168
>

ADEQ

ARKANSAS
Department of Environmental Quality

September 8, 2006

Mr. T. Brian Bond, Vice President
Southwestern Electric Power Company
P.O. Box 21106
Shreveport, LA 71156 0001

RE: American Electric Power and BART Analysis

Dear Mr. Bond,

This letter serves as a confirmation of agreements made on August 23, 2006 in a meeting between members of my staff and representatives of American Electric Power (AEP) concerning the steps required for AEP to comply with applicable provisions of the federal "BART Rule". The agreements, subject to your concurrence, are:

1. AEP agrees to accept the presumptive BART limits as set forth in the July 6, 2005 *Federal Register* (FR 39131 – 39136).

2. AEP agrees to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze SIP.

3. AEP agrees to send ADEQ estimates of post-control emissions and stack parameters.

4. ADEQ will perform post-control CALPUFF modeling and evaluate the maximum change in deciviews using CENRAP 6 km no-obs post-processed CALMET meteorological data.

5. ADEQ agrees to perform post-control CALPUFF modeling for cumulative and individual emissions of SO_2 NO_x PM_{10} and $PM_{2.5}$ and to provide AEP with the results.

Please respond with your concurrence or suggested changes to Mary Pettyjohn, Senior Epidemiologist – Air Division at your earliest convenience. Thank you.

Sincerely,

Mike Bates

Mike Bates, Chief
Air Division

cc: N. N. Dharmarajan, Senior Member Strategy Planning
Curtis Q. Warner, Principal Engineer
Mary Pettyjohn, Senior Epidemiologist - ADEQ

AIR DIVISION
8001 NATIONAL DRIVE / POST OFFICE BOX 8913 / LITTLE ROCK, ARKANSAS 72219-8913 / TELEPHONE 501-682-0739 / FAX 501-682-0753
www.adeq.state.ar.us

AEP
SOUTHWESTERN ELECTRIC POWER COMPANY
A unit of American Electric Power

Southwestern Electric Power Company
P. O. Box 21106
Shreveport, LA 71156-0001
aep.com

T. Brian Bond
Vice President
External Affairs

318-673-3595
Fax 318-673-3011

September 26, 2006

Mike Bates, Chief
Arkansas Department of Environmental Quality
Air Division
Post Office Box 8913
Little Rock, Arkansas 72219-8913

RE: AEP Southwestern Electric Power Company
Flint Creek Power Plant and BART Analysis

Dear Mr. Bates,

AEP Southwestern Electric Power Company (SWEPCO) acknowledges receipt of your September 8, 2006 correspondence documenting the agreements made in our August 23, 2006 meeting. We are responding to each item in the letter, with appropriate comments and/or concurrence as detailed below.

1. SWEPCO **concurs** with your statement about our agreement to accept the presumptive BART limits for the Flint Creek Power Plant (FLC) as set forth in the July 6, 2005 *Federal Register* (FR 39131-39136). These agreed to presumptive limits, as indicated in our August 23, 2006 meeting between members of your staff and representatives of SWEPCO and the Arkansas Electric Cooperatives Corporation (AECC) are as follows: 0.15 lbs/mmBtu for SO2 and 0.23 lbs/mmBtu for NOx.

   As noted at the meeting, these presumptive limits correspond to the limits set forth in the regional haze rules (RHR), for this site-specific fuel and boiler design. LNB/OFA for NOx and FGD for SO2 technologies will be BART to help meet these limits.

2. SWEPCO **concurs** with your statement about our agreement to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze SIP. In the August 23, 2006 meeting we emphasized the benefits of delaying the implementation date to the end of 2013, if at all possible, in recognition of the anticipated increased demand for construction labor and material resources in the 2010-2012 timeframe that will be needed by the electric utility industry as it constructs

power plants to keep up with electricity demand and installs pollution control equipment related to CAIR compliance.

3. SWEPCO **concurs** with your statement about our agreement to send ADEQ estimates of post-control emissions and stack parameters. AEP's N. N. Dharmarajan in our Dallas office provided this information via e-mail to Mary Pettyjohn on Friday, September 1, 2006.

4. SWEPCO **concurs** with your statement that the ADEQ will perform post-control CALPUFF modeling and evaluate the maximum change in deciviews using CENRAP 6 km no-obs post-processed CALMET meteorological data.

   ADEQ shared with SWEPCO the modeling findings, for informational purposes, in an e-mail letter from Mary Pettyjohn to N. N. Dharmarajan dated September 11, 2006.

5. SWEPCO **concurs** with your statement that ADEQ agreed to perform post-control CALPUFF modeling for cumulative and individual emissions of SO2, NOx, PM10, and PM2.5 and to provide SWEPCO with the results.

   Again, as stated above, ADEQ performed the post-control modeling and provided SWEPCO with the results and observations, for informational purposes, in the e-mail letter referenced in item 4 above.

Please be advised that SWEPCO will be providing some additional feedback to ADEQ staff related to the above referenced modeling efforts and interpretations shared in the e-mail letter of September 11th. We greatly appreciate the attention ADEQ is giving to BART compliance and look forward to continued dialogue on this important issue. Should you have any questions or comments, please do not hesitate to call me at (318) 673-3595.

Sincerely,

T. Brian Bond

cc: Curtis Warner–AECC
Steve Cain–AECC
N.N. Dharmarajan-AEP
Mary Pettyjohn-ADEQ

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Tuesday, October 03, 2006 10:36 AM
To: 'tbbond@aep.com'
Cc: nndharmarajan@aep.com
Subject: RE: Lunch on October 12th with Dharma and myself

Good morning Brian,

I am doing great – thank you.

I want to also thank you for your invitation. Unfortunately, Mark and I will be unable to accept your offer of lunch. We will be more than happy to meet with you here on October 12th to discuss the RHR modeling an implementation process. Please let me know the best time for you.

Best wishes,
Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Monday, October 02, 2006 8:42 AM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: Lunch on October 12th with Dharma and myself

Mary:

How are you doing??? Dharma and I would like to invite you and Mark to lunch on October 12th to have further discussion on the RHR modeling and implementation process. By the way, everthing looked fine in the letter we received from you documenting our discussions on BART. I submitted our response to ADEQ last week confirming this. Can you please check with Mark and let us know of your availability?
Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: tbbond@aep.com
Sent: Tuesday, October 03, 2006 10:57 AM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: RE: Lunch on October 12th with Dharma and myself

Mary:

How about a 1:00 p.m. meeting on October 12th at your location? BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

10/03/2006 10:36 AM

To <tbbond@aep.com>
cc <nndharmarajan@aep.com>
Subject RE: Lunch on October 12th with Dharma and myself

Good morning Brian,

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Best wishes,
Mary

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To: Pettyjohn, Mary
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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: tbbond@aep.com
Sent: Tuesday, October 03, 2006 11:13 AM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: RE: Lunch on October 12th with Dharma and myself

Good deal. BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

10/03/2006 11:08 AM

To <tbbond@aep.com>
cc
Subject RE: Lunch on October 12th with Dharma and myself

Hi Brian,

1:00 PM works. I will be sending out a meeting invitation today.

Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Tuesday, October 03, 2006 10:57 AM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: RE: Lunch on October 12th with Dharma and myself

Mary:

How about a 1:00 p.m. meeting on October 12th at your location? BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

10/03/2006 10:36 AM

To <tbbond@aep.com>
cc <nndharmarajan@aep.com>
Subject RE: Lunch on October 12th with Dharma and myself

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Best wishes,
Mary

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Sent: Monday, October 02, 2006 8:42 AM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: Lunch on October 12th with Dharma and myself

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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

SOUTHWESTERN ELECTRIC POWER COMPANY
A unit of American Electric Power

Southwestern Electric Power Company
P. O. Box 21106
Shreveport, LA 71156-0001
aep.com

T. Brian Bond
Vice President
External Affairs

318-673-3595
Fax 318-673-3011

October 26, 2006

Mike Bates, Chief
Arkansas Department of Environmental Quality
Air Division
Post Office Box 8913
Little Rock, Arkansas 72219-8913

RE: AEP Southwestern Electric Power Company
Flint Creek Power Plant and BART Analysis
October 13, 2006 Meeting

Dear Mr. Bates,

AEP Southwestern Electric Power Company (SWEPCO) representatives met with your staff on October 13, 2006 to discuss the results of the air modeling conducted by ADEQ in conjunction with the Flint Creek BART analysis. SWEPCO requested the meeting in order to make sure that we have a common understanding of the BART requirements, specifically as it relates to how modeling results are to be interpreted. As the result of our discussions, we are requesting ADEQ concurrence on the following issues:

1. ADEQ performed modeling results for primary particulate matter (PM) impacts indicates that the Flint Creek PM emissions do not trip the BART impact threshold values at Class 1 areas of interest to the ADEQ. Consequently, existing electrostatic precipitators at Flint Creek are BART for PM.
2. In meeting the presumptive limits of 0.15 lbs/mmBTU for SO2 and 0.23 lbs/mmBTU for NOx, SWEPCO is not required to undertake the five-factor analysis specified in the BART rulemaking. As we indicated at the meeting, it was our belief that in developing the presumptive limits, EPA may have gone through such an analysis. We can now reconfirm our beliefs based on the following language reflected in the preamble to the final regional haze rules and BART determinations (F.R. Vol. 70, No. 128, July 6, 2005 at 39131). To cite the specifics, the language in preamble section "6). What should be the presumptive limits for SO2 and NOx for utility boilers?" reads: "In addition, while States are not required to follow guidelines ("presumptive limits" - AEP amplification) for EGUs located at power plants with generating capacity of less than 750 MW (emphasis added), based on our analysis detailed below, we believe that States will find that these same

presumptive controls (emphasis added) to be highly cost effective and to result in a significant degree of visibility improvement, for most EGUs greater than 200 MW (emphasis added), regardless of the size of the plant at which they are located..... Nevertheless, our analysis indicates that these controls are likely to be among the most cost effective controls available for any source subject to BART and that they are likely to result in a significant degree of visibility improvement."

3. ADEQ's post-control CALPUFF modeling for cumulative and individual emissions of SO2, NOx, PM10 and PM2.5 indicate that visibility improvements should be realized at the Class I areas modeled. However, as we indicated at the meeting, BART is a site-specific control program and would be deemed to be satisfied if presumptive limits are met. Our BART offerings will satisfy such presumptive limits. We would also like to restate that BART and the reasonable progress goal glide slope analysis are on separate regulatory tracks and individual source BART limits are not set with the intent to solely help meet the glide slope for a Class 1 area. Achievement of reasonable progress goals for a given Class 1 area specified under the Regional Haze Rule is predicated on a cumulative effect of emissions reductions from other utility and non-utility sources covering several states.

We appreciate the effort that your staff is putting forth to meet the aggressive timelines required to implement BART. SWEPCO looks forward to your response to the above items. Should you have any questions or comments, please do not hesitate to call me at (318) 673-3595.

Sincerely,

T. Brian Bond
External Affairs Vice President

cc: Curtis Warner – AECC
Steve Cain – AECC
N.N. Dharmarajan-AEP
Mark McCorkle-ADEQ
Mary Pettyjohn-ADEQ

Pettyjohn, Mary

From: nndharmarajan@aep.com
Sent: Friday, September 01, 2006 9:27 AM
To: Pettyjohn, Mary
Cc: McCorkle, Mark; tbbond@aep.com
Subject: Re: Post control emission data

Mary - Sorry for being a little recalcitrant. Per your note below, you are desirous of **the highest 24-hour post (BART) control emissions** estimate for Flint Creek Power station for SO2, NOx, PM10 and PM2.5 for further modeling, to help understand impacts at select Class 1areas. Here is the information, along with an explanation of the presumptive limits used for NOX, SO2.

max 24-hr ave HI mmbtu/hr	Estimated Maximum 24- hr PM lb/hr			Estimated Post BART control SO2 lb/hr 24 -hr Avg. Max	Estimated Post BART control NOx lb/hr 24 -hr Avg. Max
HI	PM	PM10	PM2.5	SO2	NOx
6324	158.08	105.98	45.84	948.60	1454.52
	12,353	5.776		119.522	183.266

1). BART NOx limit based on 0.23 lb/mmbtu
2). BART SO2 limit based on 0.15 lb/mmbtu
3). PM and PM10/PM2.5 emissions based on stack testing data and corrected to maximum 24-hr heat input

I would appreciate hearing from you the results of your analysis along with the assumptions used in the modeling exercise. Please feel free to call me should you need any clarifications. Thanks.

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373
(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

08/25/2006 02:04 PM

To <nndharmarajan@aep.com>
cc "McCorkle, Mark" <MAC@adeq.state.ar.us>
Subject Post control emission data

Hi Dharma,

As per your request, I am requesting from you the highest 24- hour post-control emissions of SO_2, NO_x, PM_{10}, and $PM_{2.5}$. I will use these emissions to perform a post-control CALPUFF modeling analysis.

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Monday, September 11, 2006 11:05 AM
To: 'nndharmarajan@aep.com'
Subject: RE: Post control emission data

Hi Dharma,

Sorry that it took me until today to get them to you.

Here are the results from the post-control modeling. According to the results, the Flint Creek facility still causes and contributes to visibility impairment at Caney Creek, Upper Buffalo, Hercules-Glade, and Mingo but the amount of impact decreased dramatically. These impacts were due to modeling all pollutants, modeling NOx only, and modeling SO_2 only.

In a previous email you requested that I also let you know the assumptions that were made for the modeling. I did not change any of the assumptions that were used for the BART-determination modeling. I am using the CENRAP BART Modeling Guidelines. The post-control modeling was species specific as well as a cumulative run.

If you have any questions, please feel free to contact me.

Best wishes,
Mary

-----Original Message-----
From: nndharmarajan@aep.com [mailto:nndharmarajan@aep.com]
Sent: Friday, September 08, 2006 3:27 PM
To: Pettyjohn, Mary
Cc: tbbond@aep.com
Subject: RE: Post control emission data

Hi Mary - How did the modeling effort turn out with the expected BART limits offered up stakeholders?

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373
(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

09/01/2006 02:01 PM

To <nndharmarajan@aep.com>
cc
Subject RE: Post control emission data

Hi Dharma,

Thank you for the information. We will do the modeling Tuesday and then let you know the results.

Have a great Labor Day weekend,

Mary

-----Original Message-----
From: nndharmarajan@aep.com [mailto:nndharmarajan@aep.com]
Sent: Friday, September 01, 2006 9:27 AM
To: Pettyjohn, Mary
Cc: McCorkle, Mark; tbbond@aep.com
Subject: Re: Post control emission data

Mary - Sorry for being a little recalcitrant. Per your note below, you are desirous of **the highest 24-hour post (BART) control emissions** estimate for Flint Creek Power station for SO2, NOx, PM10 and PM2.5 for further modeling, to help understand impacts at select Class 1areas. Here is the information, along with an explanation of the presumptive limits used for NOX, SO2.

max 24-hr ave HI mmbtu/hr	Estimated Maximum 24- hr PM lb/hr			Estimated Post BART control SO2 lb/hr 24 -hr Avg. Max	Estimated Post BART control NOx lb/hr 24 -hr Avg. Max
HI	PM	PM10	PM2.5	SO2	NOx
6324	158.08	105.98	45.84	948.60	1454.52

1). BART NOx limit based on 0.23 lb/mmbtu
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I would appreciate hearing from you the results of your analysis along with the assumptions used in the modeling exercise. Please feel free to call me should you need any clarifications. Thanks.

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373

(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

08/25/2006 02:04 PM

To <nndharmarajan@aep.com>
cc "McCorkle, Mark" <MAC@adeq.state.ar.us
Subject Post control emission data

Hi Dharma,

As per your request, I am requesting from you the highest 24- hour post-control emissions of SO_2, NO_x, PM_{10}, and $PM_{2.5}$. I will use these emissions to perform a post-control CALPUFF modeling analysis.

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	34	9	1.974	47	21	2.550	49	19	3.970
	HEGL	46	16	3.983	42	20	3.372	50	13	3.523
	MING	27	17	2.068	35	9	2.596	34	6	2.335
	SIPS	10	1	1.205	11	0	0.977	13	4	1.420
	UPBU	47	16	3.737	56	27	3.651	60	21	3.781

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

Post-control Runs for the BART Presumptive Controls
Cumulative Post-control Run

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	8	1	1.076	13	3	7	7	1	1.573
	HEGL	6	2	1.541	10	3	6	6	2	1.393
	MING	7	0	0.806	4	0	4	4	0	0.827
	SIPS	0	0	0.292	0	0	0	0	0	0.467
	UPBU	13	4	2.397	12	4	12	12	3	2.089

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

NOx Only Post-control Run

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	2	0	0.96	5	0	0.951	2	0	0.943
	HEGL	5	0	0.88	5	1	1.119	2	0	0.841
	MING	2	0	0.667	1	0	0.508	0	0	0.446
	SIPS	0	0	0.189	0	0	0.149	0	0	0.232
	UPBU	10	2	2.143	6	1	1.18	4	1	1.696

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

SO_2 Only Post-control Run

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	0	0	0.376	1	0	0.520	1	0	0.683
	HEGL	1	0	0.71	0	0	0.497	2	0	0.632
	MING	0	0	0.392	1	0	0.533	0	0	0.396
	SIPS	0	0	0.239	0	0	0.164	0	0	0.259
	UPBU	1	0	0.536	3	0	0.705	1	0	0.516

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

$PM_{2.5}$ Only Post-control Run

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	0	0	0.009	0	0	0.011	0	0	0.008
	HEGL	0	0	0.009	0	0	0.014	0	0	0.006
	MING	0	0	0.004	0	0	0.004	0	0	0.003
	SIPS	0	0	0.001	0	0	0.001	0	0	0.002
	UPBU	0	0	0.031	0	0	0.015	0	0	0.030

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

PM_{10} Only Post-control Run

Facility Name/Location (BART File Name)	Class I Area*	No of days with Δ-dv =>0.50 for 2001	No of days with Δ-dv =>1.00 for 2001	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2002	No of days with Δ-dv =>1.00 for 2002	Maximum Δ dv	No of days with Δ-dv =>0.50 for 2003	No of days with Δ-dv =>1.00 for 2003	Maximum Δ dv
American Electric Power (SWEPCO)/Gentry (AMGE)	CACR	0	0	0.011	0	0	0.011	0	0	0.007
	HEGL	0	0	0.009	0	0	0.014	0	0	0.006
	MING	0	0	0.002	0	0	0.002	0	0	0.002
	SIPS	0	0	0.000	0	0	0.000	0	0	0.000
	UPBU	0	0	0.037	0	0	0.016	0	0	0.035

Note: Δdv = change in deciview

* CACR = Caney Creek Wilderness Area, AR; HEGL = Hercules-Glade Wilderness Area, MO; MING = Mingo Wilderness, MO; SIPS = Sipsey Wilderness Area, AL; UPBU = Upper Buffalo Wilderness Area, AR

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Monday, January 22, 2007 3:53 PM
To: Joe Kordzi (kordzi.joe@epa.gov)
Subject: FW: CAIR and BART compliance strategy-Flint Creek Power Plant

Joe,

Thank you for looking at this and for helping me to develop a reply.

Cheers!

Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Thursday, January 18, 2007 2:37 PM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

I want to share with you our current thinking with respect to compliance with CAIR in Arkansas. Please share with Mike P. As you know, we are planning to install low NOx burners/overfire air to comply with the BART requirements. The controls will be in place in time to comply with BART which currently is projected to be required in 2013.

SWEPCO will not need to install the low NOx burners/overfire air at Flint Creek for CAIR's Phase I NOx ozone season compliance (2009-2014), as we will generate enough allowances through our existing retrofits at AEP power plants to cover any incremental emissions above our allocations. In other words, we will go to the market to purchase adequate allowances to cover our incremental emissions during the period 2009-2012. However, reductions derived from the installation of low NOx burners/overfire air at Flint Creek by 2013 necessary for BART compliance will contribute to our meeting the Phase I NOx ozone season compliance requirements (years 2013 and 2014) and our Phase II CAIR compliance requirements (2015-beyond).

Please feel free to call me at (318) 673-3595. I will be glad to answer any further questions you may have.
Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: tbbond@aep.com
Sent: Friday, January 26, 2007 9:00 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

Yes, we will install controls in time to meet our BART compliance obligations projected to be **2013**. It is more economical (better for our ratepayers) to purchase NOx allowances to cover emissions above our projected allocations under CAIR until such time that we install Low NOx Burners/Overfire Air for BART compliance.

We agree fully that ADEQ can require additional controls on other emission sources (as well as BART sources) if we are not achieving the reasonable progress goals. We also agree that objectives of the CAIR ozone season program, BART and Reasonable Progress intiatives are three separate initiatives. They have one common thread, they all contribute to improved air quality. I would go on to say that they impact different sources and subsets of sources. For instance:

BART: Impacts multiple industries, but a limited number of point sources;

CAIR: Impacts electric utility industry only, but a much broader number of generating units in the state of Arkansas compared to the handful of electric utility BART elgible sources. It also impacts natural-gas and fuel-oil fired units;

Reasonable Progress: Impacts multiple industries and a ***very broad*** list of potential sources.

Now, hows that! It is important for us to have a common understanding of the three programs. Based on my response, are we in agreement? Call me with any questions. Thanks, BB

Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/25/2007 02:49 PM

To <tbbond@aep.com>
cc
Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Hi Brian,

Thank you for sharing your understanding of BART and CAIR with me. You are correct about BART controls satisfying CAIR's Phase I NOx ozone season compliance. However, I do have concerns which are expressed below.

In other words, we will go to the market to purchase adequate allowances to cover our incremental emissions during the period 2009-2012. Are you implying SWEPCO is opting to purchase allowances during 2009-2012 rather than to install BART controls? You are aware AR is only in CAIR for the ozone season NOx and it has been determined CAIR does not satisfy BART in AR (ADEQ BART Modeling Protocol and personal communications)?

Additionally, BART is a one time analysis, but that does not mean a State can not require a BART source to install additional or better controls if that State is not meeting the reasonable progress goal (51.308). CAIR, BART, and reasonable progress are three separate requirements. To reiterate, AR is only in CAIR for ozone season NOx and CAIR does not satisfy BART in AR.

If I have misunderstood your response, please let me know as soon as possible.

Best regards,
Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Thursday, January 18, 2007 2:37 PM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

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Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Friday, January 26, 2007 3:13 PM
To: 'tbbond@aep.com'
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good afternoon Brian,

Thank you and am happy to know we are in agreement.

Have a great weekend,

Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Friday, January 26, 2007 9:00 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

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Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/25/2007 02:49 PM

To <tbbond@aep.com>

cc

Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

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Cc: nndharmarajan@aep.com
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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: tbbond@aep.com
Sent: Monday, January 29, 2007 8:10 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Thanks Mary. Are you still planning on sending us a formal response to our request for concurrence specifically related to BART? In other words, we are not asking for any guarantees associated with meeting reasonalbe progress reductions in the future, just the BART requirements. By the way, I am hearing the updated modeling protocol likely will not change the course of action we had previously discussed for Flint Creek Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/26/2007 03:12 PM

To <tbbond@aep.com>
cc
Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good afternoon Brian,

Thank you and am happy to know we are in agreement.

Have a great weekend,

Mary

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From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Friday, January 26, 2007 9:00 AM
To: Pettyjohn, Mary
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Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/25/2007 02:49 PM

To <tbbond@aep.com>

cc

Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Hi Brian,

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Sent: Thursday, January 18, 2007 2:37 PM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: CAIR and BART compliance strategy-Flint Creek Power Plant

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Please feel free to call me at (318) 673-3595. I will be glad to answer any further questions you may have.
Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Monday, January 29, 2007 8:14 AM
To: 'tbbond@aep.com'
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good morning Brian,

You are very welcome.

Yes, I am still planning on sending SWEPCO a formal response.

What updated modeling protocol? You must know something I don't know.

Cheers!!!
Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Monday, January 29, 2007 8:10 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/26/2007 03:12 PM

To <tbbond@aep.com>
cc
Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good afternoon Brian,

Thank you and am happy to know we are in agreement.

Have a great weekend,

Mary

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From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Friday, January 26, 2007 9:00 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/25/2007 02:49 PM

To <tbbond@aep.com>
cc
Subject RE: CAIR and BART compliance strategy-Flint Creek P
Plant

Hi Brian,

Thank you for sharing your understanding of BART and CAIR with me. You are correct about BART controls satisfying CAIR's Phase I NOx ozone season compliance. However, I do have concerns which are expressed below.

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Additionally, BART is a one time analysis, but that does not mean a State can not require a BART source to install additional or better controls if that State is not meeting the reasonable progress goal (51.308). CAIR, BART, and reasonable progress are three separate requirements. To reiterate, AR is only in CAIR for ozone season NOx and CAIR does not satisfy BART in AR.

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Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: tbbond@aep.com
Sent: Monday, January 29, 2007 8:34 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Groovy! BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/29/2007 08:32 AM

To <tbbond@aep.com>
cc
Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

I was talking about the EPA approved version of the model CALPUFF. As far as I can tell right now, the new version should not change the results. Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Monday, January 29, 2007 8:19 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

You mentioned the other day in our telephone call that EPA had revised the CAMX or Calpuff protocol and you were going to have to re-model the post control emissions for various sources. We asked Trinity about the changes and they provided the assessment that it would not likely impact Flint Creek. Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

purpose, and is protected by law. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message, or the taking of any action based on it, is strictly prohibited.

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/29/2007 08:14 AM

To <tbbond@aep.com>

cc

Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good morning Brian,

You are very welcome.

Yes, I am still planning on sending SWEPCO a formal response.

What updated modeling protocol? You must know something I don't know.

Cheers!!!
Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Monday, January 29, 2007 8:10 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Thanks Mary. Are you still planning on sending us a formal response to our request for concurrence specifically related to BART? In other words, we are not asking for any guarantees associated with meeting reasonalbe progress reductions in the future, just the BART requirements. By the way, I am hearing the updated modeling protocol likely will not change the course of action we had previously discussed for Flint Creek Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/26/2007 03:12 PM

To <tbbond@aep.com>

cc

Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Good afternoon Brian,

Thank you and am happy to know we are in agreement.

Have a great weekend,

Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Friday, January 26, 2007 9:00 AM
To: Pettyjohn, Mary
Subject: RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

Yes, we will install controls in time to meet our BART compliance obligations projected to be **2013**. It is more economical (better for our ratepayers) to purchase NOx allowances to cover emissions above our projected allocations under CAIR until such time that we install Low NOx Burners/Overfire Air for BART compliance.

We agree fully that ADEQ can require additional controls on other emission sources (as well as BART sources) if we are not achieving the reasonable progress goals. We also agree that objectives of the CAIR ozone season program, BART and Reasonable Progress intiatives are three separate initiatives. They have one common thread, they all contribute to improved air quality. I would go on to say that they impact different sources and subsets of sources. For instance:

BART: Impacts multiple industries, but a limited number of point sources;

CAIR: Impacts electric utility industry only, but a much broader number of generating units in the state of Arkansas compared to the handful of electric utility BART elgible sources. It also impacts natural-gas and fuel-oil fired units;

Reasonable Progress: Impacts multiple industries and a ***very broad*** list of potential sources.

Now, hows that! It is important for us to have a common understanding of the three programs. Based on my response, are we in agreement? Call me with any questions. Thanks, BB

Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/25/2007 02:49 PM

To <tbbond@aep.com>

cc

Subject RE: CAIR and BART compliance strategy-Flint Creek Power Plant

Hi Brian,

Thank you for sharing your understanding of BART and CAIR with me. You are correct about BART controls satisfying CAIR's Phase I NOx ozone season compliance. However, I do have concerns which are expressed below.

In other words, we will go to the market to purchase adequate allowances to cover our incremental emissions during the period 2009-2012. Are you implying SWEPCO is opting to purchase allowances during 2009-2012

rather than to install BART controls? You are aware AR is only in CAIR for the ozone season NOx and it has been determined CAIR does not satisfy BART in AR (ADEQ BART Modeling Protocol and personal communications)?

Additionally, BART is a one time analysis, but that does not mean a State can not require a BART source to install additional or better controls if that State is not meeting the reasonable progress goal (51.308). CAIR, BART, and reasonable progress are three separate requirements. To reiterate, AR is only in CAIR for ozone season NOx and CAIR does not satisfy BART in AR.

If I have misunderstood your response, please let me know as soon as possible.

Best regards,
Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Thursday, January 18, 2007 2:37 PM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

I want to share with you our current thinking with respect to compliance with CAIR in Arkansas. Please share with Mike P. As you know, we are planning to install low NOx burners/overfire air to comply with the BART requirements. The controls will be in place in time to comply with BART which currently is projected to be required in 2013.

SWEPCO will not need to install the low NOx burners/overfire air at Flint Creek for CAIR's Phase I NOx ozone season compliance (2009-2014), as we will generate enough allowances through our existing retrofits at AEP power plants to cover any incremental emissions above our allocations. In other words, we will go to the market to purchase adequate allowances to cover our incremental emissions during the period 2009-2012. However, reductions derived from the installation of low NOx burners/overfire air at Flint Creek by 2013 necessary for BART compliance will contribute to our meeting the Phase I NOx ozone season compliance requirements (years 2013 and 2014) and our Phase II CAIR compliance requirements (2015-beyond).

Please feel free to call me at (318) 673-3595. I will be glad to answer any further questions you may have.
Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, February 07, 2007 10:58 AM
To: (tbbond@aep.com); (nndharmarajan@aep.com)
Subject: Conference call request

Good morning Brian,

Our engineer has some questions on SWEPCO/Flint Creek/AEP's letter. We would like to have a conference call with everyone involved with the letter. Would you please find some dates and times everyone can be one the call? This will serve has my reply to your letter for now.

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: nndharmarajan@aep.com
Sent: Thursday, March 01, 2007 10:57 AM
To: Pettyjohn, Mary
Cc: Stephen Cain; tbbond@aep.com; McCorkle, Mark
Subject: Re: SWEPCO Flint Creek - CenRAP modeling data

Mary - I am following up on my telecon of earlier this afternoon. **I am really getting concerned with the 2018 Base case emissions data for SO2 and NOx in the attached spreadsheet for our SWEPCO Flint Creek unit (Benton County),** as used by CenRAP's consultant. These emissions number **do not reflect the BART level reductions** that will be in place well before 2018, ala, late 2013 or 2014, as indicated in our letter to the ADEQ of October 26, 2006 and subsequent confirmation of those numbers with the control technologies in a letter that Brian Bond sent the ADEQ earlier this month. **Please recognize that the 2018 numbers are intended to determine incremental emissions reductions to help make the reasonable progress goal determinations at the affected Class 1 areas and the incremental cost information (based on the technology developed by the contractor) for ranking and developing control strategies. Using these erroneous (HIGHER) numbers in the spreadsheet in the modeling and control strategy development will give the wrong answer.**

The correct numbers for SO2 and NOx, based on the presumptive limits we have agreed to, will result in **Annual SO2 of 2860 TPY and NOX of 4370 TPY**. The spreadsheet shows the **2018 annual tons for SO2 as 11,437 and NOx 5162.** Moreover, **the SO2 control is indicated as wet FGD at 90% removal and in our letter, we have indicated we will be meeting the BART presumptive limit of 0.15 Lbs/MMBTu using DRY FGD.** In the interest of the correctness of the reasonable progress goal determination and force ranking sources to control, it would seem important to work to the correct data. (Furthermore, I noticed that the information for the Entergy units at White Bluff may also be high). **Since reasonable progress goal is a cumulative impact assessment of sources, it is doubly important to have Entergy's correct information reflected in the spreadsheet.** Please let me know if you need further clarifications.

Please share this information with Lee Warden at the ODEQ who is the modeling co-chair for CenRAP. If you are not chasing down this informational the ADEQ, kindly reach it to the responsible person for transmittal to Lee Warden. I am copying Mark McCorkle on this memo. Thanks.

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373
(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Friday, February 23, 2007 8:48 AM
To: (tbbond@aep.com)
Cc: (nndharmarajan@aep.com); Stephen Cain
Subject: SWEPCO

Good morning,

As soon as Mike Porta, Wesley Crouch, and Bill Swafford informs me they concur with the additional information you submitted, a letter will be developed and sent to SWEPC. By the way, would you please send me an electronic copy of the letter.

Thank you and have a great weekend,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Stephen Cain [SCain@aecc.com]
Sent: Friday, August 18, 2006 8:19 AM
To: Pettyjohn, Mary
Cc: Curtis Warner
Subject: RE: Results from the cumulative modeling using emissions from 1% S content fuel

Mary,

Thanks for the results. It looks like quite a large difference from the previous modeling results.

I guess I find it ironic that impacts are shown in 2002 because out of the three years modeled, that year shows the lowest emissions at both plants.

I got your voice mail - if you still need to discuss anything, feel free to call me.

Regarding the pollutant specific modeling, we just appreciate you doing that for us. Look forward to seeing the results next week.

Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, August 17, 2006 3:54 PM
To: Stephen Cain
Subject: Results from the cumulative modeling using emissions from 1% S content fuel

Hi Stephen,

The lower sulfur fuel did help, but the Bailey and McClellan Plants both still impact. What I need to do next is do pollutant specific model runs to determine the driving pollutant. I can get the six CALPUFF input files, the six POSTUTIL input files, and the 30 CALPOST input files ready tomorrow for the SO2 specific run. I will try to get the 42 input files for the NOx specific run done tomorrow as well. However, I will be out of the office Monday and will not be able to get you the results until Tuesday or Wednesday.

Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913

Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

ADEQ

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

October 11, 2006

Mr. Curtis Q. Warner, P.E., Principal Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219-4208

RE: Bailey and McClellan Plants and BART Analysis

Dear Mr. Warner,

This letter serves as a confirmation of agreements made on August 15, 2006 in a meeting between members of my staff and representatives of Arkansas Electric Cooperative (Coop) Corporation concerning the steps required for Arkansas Electric Coop to comply with applicable provisions of the federal "BART Rule". The agreements, subject to your concurrence, are:

1. ADEQ agrees to allow Arkansas Electric Coop to use the presumptive BART limits as BART controls.

2. Arkansas Electric Coop agrees to accept the presumptive BART limits as set forth in the July 6, 2005 *Federal Register* (FR 39131 – 39136).

3. Arkansas Electric Coop agrees to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze SIP.

4. Arkansas Electric Coop agrees to send ADEQ estimates of post-control emissions and stack parameters using a 1% sulfur content fuel.

5. ADEQ will perform post-control CALPUFF modeling and evaluate the maximum change in deciviews using CENRAP 6 km no-obs post-processed CALMET meteorological data.

6. ADEQ agrees to perform post-control CALPUFF modeling for cumulative and individual emissions of SO_2 and NO_x and to provide Arkansas Electric Coop with the results.

7. Arkansas Electric Coop agrees to work closely with ADEQ engineers in developing the five-factor engineering analysis.

8. Arkansas Electric Coop agrees to use the maximum change in deciviews rather than the 98^{th} percentile.

9. Arkansas Electric Coop agrees to send ADEQ all post-control emissions, stack parameters, and the five-factor engineering analysis no later than October 23, 2006.

Additionally, Arkansas Electric Coop will be required to perform additional CALPUFF modeling to justify not using the presumptive controls and the results from ADEQ post-control modeling. The modeling input and output files will be due to ADEQ no later than October 23, 2006.

Please respond with your concurrence or suggested changes to Mary Pettyjohn, Senior Epidemiologist – Air Division at your earliest convenience. Thank you.

Sincerely,

Mike Bates, Chief
Air Division

cc: Mary Pettyjohn, Senior Epidemiologist - ADEQ

Pettyjohn, Mary

From: Stephen Cain [SCain@aecc.com]
Sent: Wednesday, October 11, 2006 9:27 AM
To: Pettyjohn, Mary
Subject: BART Information

Mary,

I've been working on AECC's response to Mike Bates' letter dated September 8 regarding the Bailey and McClellan BART analyses. I have a couple of questions:

1. The first two items in the letter refer to "presumptive BART limits." I'm not sure that these apply to Bailey and McClellan because both of these EGUs are less than 200 MW. I believe the presumptive BART limits for EGUs are for units that are 200 MW or greater. Do you agree with this?

2. Items 5 and 6 refer to CALPUFF modeling. Will the CALPUFF modeling that ADEQ did for AECC suffice for this information?

3. The second paragraph on page 2 of the letter refers to "additional" CALPUFF modeling information and refers to "the presumptive controls and the results from ADEQ post-control modeling." If the presumptive limits aren't applicable to these units, is this information required? I believe that if the presumptive limits are not applicable that this modeling would not be any different than the modeling mentioned in items 5 and 6.

Please contact me if you have any questions or comments.

Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, October 11, 2006 1:09 PM
To: 'Stephen Cain'
Cc: Davis, Anthony; McCorkle, Mark
Subject: RE: BART Information

Good afternoon Stephen,

I have inserted my answers in your questions below. If you still need clarification, please feel free to contact me.

Best wishes,
Mary

-----Original Message-----
From: Stephen Cain [mailto:SCain@aecc.com]
Sent: Wednesday, October 11, 2006 9:27 AM
To: Pettyjohn, Mary
Subject: BART Information

Mary,

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1. The first two items in the letter refer to "presumptive BART limits." I'm not sure that these apply to Bailey and McClellan because both of these EGUs are less than 200 MW. I believe the presumptive BART limits for EGUs are for units that are 200 MW or greater. Do you agree with this? Answer: Yes, you are correct. Neither Bailey nor McClellan fit the presumptive BART definition. During our meeting, we agreed to allow AR Electric Coop to use the presumptive BART controls as a control measure (i.e. low sulfur fuel) and you were in agreement. This is what the first two items are referring to – limit of sulfur content. Please refer to the attached 40 CFR Part 51 (FR 39133, 2nd column, third paragraph) for a better understanding of "limits".

2. Items 5 and 6 refer to CALPUFF modeling. Will the CALPUFF modeling that ADEQ did for AECC suffice for this information? Answer: Yes, if you use the results from ADEQ's post-control CALPUFF modeling which used the highest 24-hr emission rate AR Electric Coop provided. If you remember, the emission rate was calculated from using low sulfur fuel.

3. The second paragraph on page 2 of the letter refers to "additional" CALPUFF modeling information and refers to "the presumptive controls and the results from ADEQ post-control modeling." If the presumptive limits aren't applicable to these units, is this information required? I believe that if the presumptive limits are not applicable that this modeling would not be any different than the modeling mentioned in items 5 and 6. Answer: If AR Electric Coop decides not use low sulfur fuel (a presumptive BART control) as a control measure, then additional CALPUFF modeling will be required. Please see the reply to question 1 and 2.

Please contact me if you have any questions or comments.

Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Thursday, October 19, 2006 7:43 AM
To: 'Stephen Cain'
Subject: RE: Results from the SO2 and NOx modeling

Good morning Stephen,

I apologize for not getting back to you sooner. I was out of the office the 17th and did not get to my emails until this morning.

That is a good question. I was wondering about that as well. I will be talking to EPA, Region VI today and will ask them about it. In my opinion there would be no need to include NOx and PM but I want to be sure. I will get back to you as soon as I can.

Mary

> -----Original Message-----
> **From:** Stephen Cain [mailto:SCain@aecc.com]
> **Sent:** Tuesday, October 17, 2006 1:26 PM
> **To:** Pettyjohn, Mary
> **Cc:** Curtis Warner
> **Subject:** RE: Results from the SO2 and NOx modeling
>
> Mary,
>
> When ADEQ did the pollutant specific modeling for AECC's two BART units, the modeling determined that both NOx and PM don't have any impacts at the Class I areas. Is AECC still required to perform the five factor engineering analyses for NOx and PM controls?
>
> I'm wondering this because the visibility impact is the fifth factor in EPA's guidelines - which is after determining what controls are technically feasible. If I following the EPA protocol the the analysis, it seems that I can't rule out NOx and PM controls based on CALPUFF modeling until the end of the analysis.
>
> Can I just begin the analysis with discussion regarding the fact that the five factor analysis will be performed for SO2 only since NOx and PM emissions from AECC's two units don't impact the Class I areas?
>
> Thanks,
>
> Stephen Cain
> Senior Environmental Engineer
> Arkansas Electric Cooperative Corporation
> P.O. Box 194208
> Little Rock, AR 72219
> Phone: (501) 570-2420
> Fax: (501) 570-2498

Pettyjohn, Mary

From: Stephen Cain [SCain@aecc.com]
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Cc: Curtis Warner
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Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, September 12, 2006 11:07 AM
To: Stephen Cain
Subject: RE: Results from the SO2 and NOx modeling

Hi Stephen,

You are very welcome.

Yes, you do need to do the 5 factor engineering analysis. I am sending you the Final Guidelines which contain the 5 factor engineering analysis steps. The steps start on page 56.

Mary

-----Original Message-----
From: Stephen Cain [mailto:SCain@aecc.com]
Sent: Tuesday, September 12, 2006 9:21 AM
To: Pettyjohn, Mary
Subject: RE: Results from the SO2 and NOx modeling

Mary,

Thanks for the information.

What is our next step? Do we just need to do the engineering analysis? Is there a guidance for this? If so, where can I find it?

Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Friday, August 25, 2006 1:38 PM
To: Stephen Cain
Subject: Results from the SO2 and NOx modeling

Hi Stephen,

Here are the results from the separate pollutant modeling. As you will see, there are some differences between the cumulative and the species only runs. What I find interesting are the 2003 results for the Bailey plant. There was an increase in the maximum change in deciview. When I have the time, I will do some research on these findings,

Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

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Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Thursday, October 19, 2006 8:20 AM
To: Joe Kordzi (kordzi.joe@epa.gov)
Subject: FW: Results from the SO2 and NOx modeling

Good morning Joe,

I am sending you a question that was sent to me by one of our subject-to-BART facilities. It is my opinion that because the pollutant specific modeling showed there wasn't an impact from NOx and PM there would be no need to include these two pollutants. Your advise on the matter is greatly appreciated.

Talk to you later.

Mary

-----Original Message-----
From: Stephen Cain [mailto:SCain@aecc.com]
Sent: Tuesday, October 17, 2006 1:26 PM
To: Pettyjohn, Mary
Cc: Curtis Warner
Subject: RE: Results from the SO2 and NOx modeling

Mary,

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I'm wondering this because the visibility impact is the fifth factor in EPA's guidelines - which is after determining what controls are technically feasible. If I following the EPA protocol the the analysis, it seems that I can't rule out NOx and PM controls based on CALPUFF modeling until the end of the analysis.

Can I just begin the analysis with discussion regarding the fact that the five factor analysis will be performed for SO2 only since NOx and PM emissions from AECC's two units don't impact the Class I areas?

Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]

Sent: Tuesday, September 12, 2006 11:07 AM
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Stephen Cain
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P.O. Box 194208
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Mary

Mary Pettyjohn
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8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Stephen Cain [SCain@aecc.com]
Sent: Thursday, October 19, 2006 8:37 AM
To: Pettyjohn, Mary
Subject: RE: Results from the SO2 and NOx modeling

Mary,

I hope you are correct. I've prepared the report based on SO2 controls only. If I have to add NOx and PM, then the report may not make the Oct. 23 deadline.

SDC

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, October 19, 2006 7:43 AM
To: Stephen Cain
Subject: RE: Results from the SO2 and NOx modeling

Good morning Stephen,

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> **Subject:** RE: Results from the SO2 and NOx modeling
>
> Mary,
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Thanks,

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
Phone: (501) 570-2420
Fax: (501) 570-2498

From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, September 12, 2006 11:07 AM
To: Stephen Cain
Subject: RE: Results from the SO2 and NOx modeling

Hi Stephen,

You are very welcome.

Yes, you do need to do the 5 factor engineering analysis. I am sending you the Final Guidelines which contain the 5 factor engineering analysis steps. The steps start on page 56.

Mary

-----Original Message-----
From: Stephen Cain [mailto:SCain@aecc.com]
Sent: Tuesday, September 12, 2006 9:21 AM
To: Pettyjohn, Mary
Subject: RE: Results from the SO2 and NOx modeling

Mary,

Thanks for the information.

What is our next step? Do we just need to do the engineering analysis? Is there a guidance for this? If so, where can I find it?

Thanks,

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From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Friday, August 25, 2006 1:38 PM
To: Stephen Cain
Subject: Results from the SO2 and NOx modeling

Hi Stephen,

Here are the results from the separate pollutant modeling. As you will see, there are some differences between the cumulative and the species only runs. What I find interesting are the 2003 results for the Bailey plant. There was an increase in the maximum change in deciview. When I have the time, I will do some research on these findings,

Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Friday, October 20, 2006 7:49 AM
To: 'Stephen Cain'
Subject: RE: Results from the SO2 and NOx modeling

Good morning Stephen,

I haven't heard from EPA yet. Don't worry about getting your report in by the 23rd. Just wait until I hear from EPA. As I mentioned the other day, I think the NOx and PM do not have to be included. My reasoning is that the pollutant specific modeling showed NOx and PM did not contribute to visibility impact.

Mary

> -----Original Message-----
> **From:** Stephen Cain [mailto:SCain@aecc.com]
> **Sent:** Thursday, October 19, 2006 8:37 AM
> **To:** Pettyjohn, Mary
> **Subject:** RE: Results from the SO2 and NOx modeling
>
> Mary,
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> I hope you are correct. I've prepared the report based on SO2 controls only. If I have to add NOx and PM, then the report may not make the Oct. 23 deadline.
>
> SDC
>
> ---
>
> **From:** Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
> **Sent:** Thursday, October 19, 2006 7:43 AM
> **To:** Stephen Cain
> **Subject:** RE: Results from the SO2 and NOx modeling
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> Good morning Stephen,
>
> I apologize for not getting back to you sooner. I was out of the office the 17th and did not get to my emails until this morning.
>
> That is a good question. I was wondering about that as well. I will be talking to EPA, Region VI today and will ask them about it. In my opinion there would be no need to include NOx and PM but I want to be sure. I will get back to you as soon as I can.
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> > -----Original Message-----
> > **From:** Stephen Cain [mailto:SCain@aecc.com]
> > **Sent:** Tuesday, October 17, 2006 1:26 PM
> > **To:** Pettyjohn, Mary
> > **Cc:** Curtis Warner
> > **Subject:** RE: Results from the SO2 and NOx modeling
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Can I just begin the analysis with discussion regarding the fact that the five factor analysis will be performed for SO2 only since NOx and PM emissions from AECC's two units don't impact the Class I areas?

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P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Stephen Cain [SCain@aecc.com]
Sent: Friday, October 20, 2006 8:41 AM
To: Pettyjohn, Mary
Cc: Curtis Warner
Subject: RE: Results from the SO2 and NOx modeling

Mary,

OK - I'll hold off until I hear back from you. I have it ready to send with the five factor analysis for SO2, but not for NOx and PM.

Have a great weekend.

Stephen Cain
Senior Environmental Engineer
Arkansas Electric Cooperative Corporation
P.O. Box 194208
Little Rock, AR 72219
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Office phone 501-682-0070
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ADEQ
ARKANSAS
Department of Environmental Quality

September 7, 2006

Mr. Mark Bowles, Arkansas Environmental Support Manager
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203

RE: Lake Catherine and White Bluff Facilities and BART Analysis

Dear Mr. Bowles,

This letter serves as a confirmation of agreements made on August 22, 2006 in a conference call between members of my staff and representatives of Entergy concerning the steps required for Lake Catherine and White Bluff to comply with applicable provisions of the federal "BART Rule". The agreements, subject to your concurrence, are:

1. Entergy agrees to accept the presumptive BART limits for both facilities as set forth in the July 6, 2005 *Federal Register* (FR 39131 – 39136).

2. Entergy agrees to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze (RH) SIP.

3. Entergy agrees to work closely with ADEQ engineers in developing the five-factor engineering analysis for Lake Catherine.

4. Entergy agrees to perform CALPUFF post-control modeling using the CENRAP 6 km central domain CALMET no-obs meteorological data.

5. Entergy agrees to use the maximum change in deciviews rather than the 98th percentile

6. Entergy agrees to send ADEQ post-control emissions and stack parameters for the White Bluff facility no later than October 23, 2006.

7. Entergy agrees to send ADEQ the post-control CALPUFF, POSTUTIL, and CALPOST input files as well as the CALPOST output files, the post-control emissions, stack parameters, and the five-factor engineering analysis for the Lake Catherine facility no later than October 23, 2006.

ADEQ has consulted with EPA Region VI, regarding your question about potentially avoiding a BART designation by adding controls to the Lake Catherine facility prior to the public hearing of

the Arkansas RH SIP. According to Region VI, a source can opt to revise its permit to provide for synthetic minor limits so that it falls under the BART emission cap. However, the permit modification must be done prior to the public hearing on the RH SIP and the relevant elements of the modified permit have to be referenced in the SIP. The limits must be in place for as long as the SIP is applicable or for as long as the source is operational. Therefore, the Lake Catherine facility will be designated as a subject-to-BART facility even if Entergy opts to revise the Lake Catherine facility's permit.

Please respond with your concurrence or suggested changes to Mary Pettyjohn, Senior Epidemiologist – Air Division at your earliest convenience.

Sincerely,

Mike Bates, Chief
Air Division

cc: Mary Pettyjohn, Senior Epidemiologist - ADEQ

Entergy

Arkansas Environmental Support
425 West Capitol Avenue
A-TCBY-22D
Little Rock, AR 72203
Tel 501-377-3958
Fax 281-297-6132
Mark C. Bowles, Manager

AR-06-076

September 26, 2006

Mike Bates, Chief
Arkansas Department of Environmental Quality
Air Division
Post Office Box 8913
Little Rock, Arkansas 72219-8913

RE: Lake Catherine and White Bluff Facilities and BART Analysis

Dear Mr. Bates,

This letter is intended as an interim response to Arkansas Department of Environmental Quality's request for confirmation of agreements reached during a conference call between members of Arkansas Department of Environmental Quality (ADEQ) staff and representatives of Entergy on August 22, 2006. The discussion during the conference call addressed the steps required for Lake Catherine and White Bluff to comply with applicable provisions of the federal "BART Rule". We received your letter asking for concurrence to the agreements reached during the conference call on September 15, 2006. Our concurrence or comment for each item is listed below.

1. **Entergy agrees to accept the presumptive BART limits for both facilities as set forth in the July 6, 2005 Federal Register (FR 39131-39136).**

   Presumptive BART limits for both facilities represent a substantial financial commitment for Entergy. Entergy is currently evaluating the impact of presumptive controls and will advise ADEQ of our position following senior management approval of recommended emission limits.

2. **Entergy agrees to be in BART compliance (i.e. have the presumptive BART controls operational) no later than 5 years after EPA approves the Arkansas Regional Haze (RH) SIP.**

   Entergy concurs with Item 2.

3. **Entergy agrees to work closely with ADEQ engineers in developing the five-factor engineering analysis for Lake Catherine.**

Entergy is currently in the process of evaluating compliance options for Lake Catherine 4. In the event Entergy concludes that the best compliance option for Lake Catherine 4 is to utilize the five factor test as outlined in the July 6, 2005 Federal Register, Entergy staff will work closely with ADEQ engineers in developing the analysis. . However, see below our comments on whether BART exemption is still potentially possible for Lake Catherine, especially with the use of refined meteorological data.

4. **Entergy agrees to perform CALPUFF post-control modeling using the CENRAP 6 km central domain CALMET no-obs meteorological data.**

   This was not Entergy's understanding of the conversation concerning post control modeling. It was our understanding that the obs meteorological data could be used and refined modeling could be used. Entergy is developing such a database, which will be provided (with documentation in protocol format) to ADEQ by October 10.

5. **Entergy agrees to use the maximum change in deciviews rather than the 98th percentile.**

   This was not Entergy's understanding of the conversation concerning maximum change in deciviews. It was our understanding that the obs meteorological data could be used and refined modeling could be used which would allow selection of the 98th percentile for the maximum change in deciviews.

6. **Entergy agrees to send ADEQ post-control emissions and stack parameters for the White Bluff facility no later than October 23, 2006.**

   Entergy concurs with Item 6 contingent upon internal review and approval of related capital expenditures. It is our intention to work with ADEQ to develop the SIP for compliance with the federal BART rule as expeditiously as possible. However, Entergy only became aware on August 22, 2006 that ADEQ would require confirmation of emission controls by October 23, 2006. As stated above Entergy will work as expeditiously as possible but ADEQ must understand that commitments of this nature require significant financial analysis and approvals.

7. **Entergy agrees to send ADEQ the post-control CALPUFF, POSTUTIL, and CALPOST input files as well as the CALPOST output files, the post-control emissions, stack parameters, and the five-factor engineering analysis for the Lake Catherine facility no later than October 23, 2006.**

   Entergy concurs with Item 7 contingent upon internal review and approval of related capital expenditures unless we are able to reach an alternative agreement with ADEQ regarding enforceable permit limits, as discussed below.

<u>Additional Issue Raised</u> - ADEQ has consulted with EPA Region VI, regarding your question about potentially avoiding a BART designation by adding controls to the Lake Catherine facility prior to the public hearing of the Arkansas RH SIP. According to Region VI, a source can opt to revise its permit to provide for synthetic minor limits so that if falls under the BART emission cap. However, the permit modification must be done prior to the public hearing on the RH SIP and the relevant elements of the modified permit have to be referenced in the SIP. The limits must be in place for as long as the SIP is applicable or for as long as the source is operational. Therefore, the Lake Catherine facility will be designated as a subject-to-BART facility even if Entergy opts to revise the Lake Catherine

facility's permit.

Response: During the conference call Entergy requested compliance with an enforceable permit limit that would be in place prior to the final SIP. This enforceable limit would be based on modeled emissions that show the facility does not have an effect on the visibility for any Class I area. This is different than limits that would classify the unit as a synthetic minor. Other states have indicated that they will allow enforceable limits to exempt a facility from BART so long as the limits are in place by the time the SIP is submitted to EPA. Entergy requests that ADEQ allows Entergy to propose early NO_x emission reductions for Lake Catherine unit 4 that would demonstrate via refined CALPUFF modeling imperceptible visibility impacts (less than 0.5 delta-deciviews) at Class I areas within 300 km. This would replace the five-factor test mentioned above.

Entergy appreciates the open discussions regarding these regulations and the significant efforts undertaken by ADEQ staff to address BART compliance within the State of Arkansas. Should you have any questions or need additional information, please call me or Tracy Johnson at 501-377-3958 or 501-377-4033, respectively.

Sincerely,

For: Mark C. Bowles, Manager
Arkansas Environmental Support
Cc: Mary Pettyjohn, Senior Epidemiologist - ADEQ

Arkansas Environmental Support
425 West Capitol Avenue
A-TCBY-22D
Little Rock, AR 72203
Tel 501-377-3958
Fax 501-377-5656
Mark C. Bowles, Manager
Arkansas Environmental Support

AR-07-016

March 1, 2007

Ms. Mary Pettyjohn
Air Division
Arkansas Department of Environmental Quality
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913

Reference: **White Bluff and Lake Catherine BART Reports**
Supplemental Information Submittal per February 15, 2007 Conference Call

Ms. Pettyjohn:

Provided below are responses to questions the Agency raised during our discussions regarding BART compliance at our White Bluff and Lake Catherine Unit 4 plants. Our response follows the questions which appear in bold text.

Questions/Issues regarding Lake Catherine Unit 4 and responses are as follows:

1. **ADEQ requested the modeling files.**

Modeling files were e-mailed by Bob Paine with ENSR on February 22, 2007. ADEQ confirmed receipt of these files on February 26, 2007.

2. **ADEQ requested the control cost in $/ton rather than $/deciview.**

Entergy's BART submittal provided costs using both units. ADEQ will review the report and advise if additional information is needed.

3. **ADEQ requested the citation regarding why LC4 was exempt from installing post combustion controls.**

The excerpt from page 367 of the final BART guidelines is below

> *For oil-fired and gas-fired EGUs larger than 200MW, we believe that installation of current combustion control technology to control NOX is generally highly cost-effective and should be considered in your determination of BART for these sources. Many such units can make significant reductions in NOX emissions which are highly cost-effective through the application of current combustion control technology.21*

21See Technical Support Document for BART NOX Limits for Electric Generating Units and Technical Support Document for BART NOX Limits for Electric Generating Units Excel Spreadsheet, Memorandum to Docket OAR 2002-0076, April 15, 2005.

This guidance states combustion controls for gas and oil are highly cost effective, directly above this statement in the guidance EPA states that SCR is not cost effective for an existing coal facility unless it is a cyclone unit so it would make sense that EPAs guidance that combustion controls for presumptive coal controls also applies to gas and oil units. See excerpt below, bold emphasis added.

5. Nitrogen oxide limits for utility boilers
You should establish specific numerical limits for NOX control for each BART determination. For power plants with a generating capacity in excess of 750 MW currently using selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) for part of the year, you should presume that use of those same controls year-round is BART. For other sources currently using SCR or SNCR to reduce NOX emissions during part of the year, you should carefully consider requiring the use of these controls year-round as the additional costs of operating the equipment throughout the year would be relatively modest.
For coal-fired EGUs greater than 200 MW located at greater than 750 MW power plants and operating without post-combustion controls (i.e. SCR or SNCR), we have provided presumptive NOX limits, differentiated by boiler design and type of coal burned. *You may determine that an alternative control level is appropriate based on a careful consideration of the statutory factors.* ***For coal-fired EGUs greater than 200 MW located at power plants 750 MW or less in size and operating without post-combustion controls, you should likewise presume that these same levels are cost-effective.*** *You should require such utility boilers to meet the following NOX emission limits, unless you determine that an alternative control level is justified based on consideration of the statutory factors. The following NOX emission rates were determined based on a number of assumptions, including that the EGU boiler has enough volume to allow for installation and effective operation of separated overfire air ports. For boilers where these assumptions are incorrect, these emission limits may not be cost-effective.* ***Most EGUs can meet these presumptive NOx limits through the use of current combustion control technology, i.e. the careful control of combustion air and low-NOx burners. For units that cannot meet these limits using such technologies, you should consider whether advanced combustion control technologies such as rotating opposed fire air should be used to meet these limits.*** *For units that cannot meet these limits using such technologies, you should consider whether advanced combustion control technologies such as rotating opposed fire air should be used to meet these limits.*

Note: Presumptive SCR is only mentioned for cyclone units

Because of the relatively high NOX emission rates of cyclone units, SCR is more cost-effective than the use of current combustion control technology for these units. The use of SCRs at cyclone units burning bituminous coal, sub-bituminous coal, and lignite should enable the units to cost-effectively meet NOX rates of 0.10 lbs/ mmbtu. As a result, we are establishing a presumptive NOX limit of 0.10 lbs/mmbtu based on the use of SCR for coal-fired cyclone units greater than 200 MW located at 750 MW power plants. As with the other presumptive limits established in this guideline, you may determine that an alternative level of control is appropriate based on your consideration of the relevant statutory factors. For other cyclone units, you should review the use of SCR and consider whether these post-combustion controls should be required as BART.

Entergy's BART Report also provided control pricing up to $10,000/ton removed in our determination report. At $10,000/ton we did not get to LNB. Therefore, SCR would definitely not be cost effective with the capacity factor projected for Lake Catherine Unit 4.

Table ES-2 Tabulation of Visibility Improvement and Annual Costs for BART NOx Control Option for Oil Firing

Control Scenario Options	Description	Annualized Cost ($/year)	Incremental Cost from Previous Control Scenario ($/Year)	Delta deciviews from natural conditions (98th percentile day)	Incremental Cost Effectiveness ($/deciview Relative to the Previous Control Scenario)	Annual tons NO_x removed	Incremental Cost Effectiveness ($/ton Relative to the Previous Control Scenario)
Baseline	Base case	--	--	3.44	--	--	--
1	Boiler tuning	$16,000	$16,000	3.31	$130,085	220.0	$73
2	Tuning, burner mods	$433,934	$417,933	3.14	$2,347,939	462.9	$1,720
3	Tuning, burner mods, BOOS	$583,386	$149,452	3.03	$1,450,989	523.5	$2,469
4	Tune, burner mods, BOOS, FFGR	$1,357,123	$773,737	2.90	$5,906,393	600.1	$10,101

4. ADEQ asked why the Lake Catherine Title V Permit does not state a limit of 1% sulfur fuel oil.

Entergy stated during discussions that limits in the permit are based on 1% oil and this will likely be included in the permit as a limit when BART is incorporated into the permit.

5. **ADEQ requested a Compliance plan and schedule for implementation starting from the Arkansas SIP approval date (unknown at this time ~ Dec 07).**

Compliance plan:
As stated in Section 5.0 of the BART Analysis for Lake Catherine Plant, projected control technology to meet BART limits will be a combination of tuning, BOOS and IFGR.
Schedule:
Entergy will implement a construction schedule that ensures that Lake Catherine Unit 4 will comply with the limits submitted in the Lake Catherine BART determination report within five years of EPA approval of the Arkansas Regional Haze SIP.

6. **ADEQ requested submission of requested limit, averaging time period, and associated language.**

The following excerpt below from Final BART Guidance, page 370 is provided below:

> *for EGUS, specify an averaging time of a 30-day rolling average, and contain a definition of "boiler operating day" that is consistent with the definition in the proposed revisions to the NSPS for utility boilers in 40 CFR Part 60, subpart Da. 22 You should consider a boiler operating day to be any 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time at the steam generating unit. This would allow 30-day rolling average emission rates to be calculated consistently across sources.*

The BART determination conducted by Entergy concluded the following limits are applicable to comply with BART.

SO2 limit – Limit sulfur content of the oil to 1% sulfur
PM limit - sulfur content of the oil to 1% sulfur
NOx limit – Limit will be based on a 30 day rolling average
Gas firing – 0.15 lb/mmBtu
Oil firing - 0.28 lb/mmBtu
Dual fuel firing – When combusting oil and gas the 30 day rolling average limit will be prorated based on fuel consumed.
Dual fuel 30 day rolling average limit (lb/mmBtu) =
(0.15 * 30 day mmBtu gas) + (0.28 * 30 day mmBtu Oil) / (30 day mmBtu gas +30 day mmBtu Oil)

Questions/Issues regarding White Bluff Plant and responses are as follows:

1. **ADEQ requested the modeling files.**

Modeling files were e-mailed by Bob Paine with ENSR on February 22, 2007. ADEQ confirmed receipt of these files on February 26,2007.

2. **ADEQ requested a Compliance plan and schedule for implementation starting from the Arkansas SIP approval date (unknown at this time ~ Dec 07).**

Compliance plan:
As stated in the BART Analysis for the White Bluff Steam Electric Station, projected control technology to meet BART limits will be scrubbing for SO2 and boiler tuning, OFA, and LNB for NOx.

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, March 07, 2006 3:20 PM
To: Pettyjohn, Mary
Subject: BART Info

Mary,
Can you send me the document, or where I can locate the document, with the, "24 hour average actual emission rate under normal operation ……" language. Our CEMS group indicates they can provide the info you requested by April 1, but they are asking me, "what is normal operation", and other stuff, so I thought the best thing would be to send the document to them.
Thanks,
Tracy Johnson
Entergy
501-425-9688

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, March 07, 2006 4:11 PM
To: Pettyjohn, Mary
Subject: RE: BART Info

Thanks Mary.
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, March 07, 2006 4:05 PM
To: JOHNSON, GEORGE
Subject: RE: BART Info

Tracy,

Tracy,

I tried sending you two zip files that contain the protocol but your server blocked access; therefore, I am sending you the chapter. The requirement for the "24-hour average actual emission rate with normal operations…" in located on page 6-4 under the heading 6.4.4 Emissions Input Development and sub-heading Emission Rates. The term normal operations do not include start-ups, shutdown or malfunctions (page 6-4). I will get CENRAP's ftp address where you can download the full documents and send it to you tomorrow.

Hope this helps.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, March 07, 2006 3:20 PM
To: Pettyjohn, Mary
Subject: BART Info

Mary,
Can you send me the document, or where I can locate the document, with the, "24 hour average actual emission rate under normal operation ……" language. Our CEMS group indicates they can provide the info you requested by April 1, but they are asking me, "what is normal operation", and other stuff, so I thought the best thing would be to send the document to them.
Thanks,
Tracy Johnson
Entergy
501-425-9688

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, March 28, 2006 2:28 PM
To: Pettyjohn, Mary
Subject: RE: BART Info

Mary,
I'm still working on the Emission rates and need to know if the PM10 and PM2.5 numbers you want are "filterable" or "filterable + condensable"
Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, March 07, 2006 4:23 PM
To: JOHNSON, GEORGE
Subject: RE: BART Info

You are very welcome, Tracy.

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, March 07, 2006 4:11 PM
To: Pettyjohn, Mary
Subject: RE: BART Info

Thanks Mary.
Tracy

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From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, March 07, 2006 4:05 PM
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501-425-9688

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, March 28, 2006 5:15 PM
To: Pettyjohn, Mary
Subject: RE: BART Info

Mary,
I think I have them completed, but I'm out of the office until Monday. I want to look them over one more time before I send them, so I should be able to get them to you Monday.
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, March 28, 2006 2:52 PM
To: JOHNSON, GEORGE
Subject: RE: BART Info

Hi Tracy,

I will need the emission rates for the filterable and condensable fractions.

Thank you for all of your hard work.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, March 28, 2006 2:28 PM
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> Thanks,
> Tracy Johnson
> Entergy
> 501-425-9688

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Monday, April 03, 2006 8:52 AM
To: Pettyjohn, Mary
Cc: BOWLES, MARK C; SCHOTT, MATTHEW J; HANTZ, JOSEPH; GREEN, EDWARD L
Subject: BART Emission Rates - Entergy
Importance: High

Marry,
Below are the highest ton/day emission rates for Entergy's facilities during the time period you requested. Please let me know if I can provide any additional information.
Thanks,
Tracy Johnson
501-377-4033

BART Emission Rates

Highest tons/day Jan 1, 2001 through Dec 31, 2003

UNIT	NOx (tons/day)	SO2 (tons/day)	PM10 total (tons/day)	PM2.5 total (tons/day)
WB1 SN-01	52.46 (CEMS)	93.16 (CEMS)	1.485 (AP-42)	1.124 (AP-42)
WB2 SN-02	56.77 (CEMS)	93.9 (CEMS)	1.586 (AP-42)	1.23 (AP-42)
WB Aux-boiler SN-05	0.363 (AP-42)	0.39 (AP-42)	0.0348 (AP-42)	0.0234 (AP-42)
Lake Cat 4 SN-03	29.48 (CEMS)	0.04 (CEMS)	0.442 (AP-42)	0.442 (AP-42)
Ritchie 2 SN-02	1.68 (CEMS)	0.01 (CEMS)	0.095 (AP-42)	0.095 (AP-42)

Note 1: For Natural Gas all PM is assumed to be <1 micrometer, therefore PM10 and PM2.5 are equal

Note 2: PM10 total and PM2.5 total consist of "filterable PM" + condensable PM

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, May 23, 2006 8:25 AM
To: Pettyjohn, Mary
Subject: BART Info
Importance: High

Mary,
Have you sent out the information / presentations from the BART Stakeholder meeting yet? If so, I did not receive it.
Have any of the issues been resolved –including VOC, using 2X actuals, how to get the MET data?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Thursday, June 08, 2006 8:20 AM
To: Pettyjohn, Mary
Subject: RE: BART Info

Mary,
I have not heard anything from Georgia Pacific. I talked to Joe Hantz and he thought CENRAP was going to provide met data.
At the last meeting I think you said condensables did not have to be included. The emission rates I provided you had condensables added. Do I need to send you emission rates with out condensables?

Are you planning another BART Stakeholder meeting?

Thanks,
Tracy

> -----Original Message-----
> **From:** Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
> **Sent:** Tuesday, May 23, 2006 8:58 AM
> **To:** JOHNSON, GEORGE
> **Subject:** RE: BART Info
>
> Good Morning Tracy,
>
> Sorry I missed your call. I tried calling back but there was no answer so I decided to email you the two presentations and the timeline.
>
> I talked with Region VI while I was in San Diego last week attending an EPA modeling conference about these issues. We do not need to model VOCs (CENRAP will do that) nor will we be required to model 2X the actual emission rates. I am still waiting to find out about the met data. Has Georgia Pacific contacted you about a meeting with the BART-eligible facilities to see if they would like to work together to hire a consultant to process the surface and upper air met data and develop the protocol? At the end of the BART seminar, Georgia Pacific mentioned they would work on this; however, I have not heard anything yet. I emailed Mark Aguilar yesterday about this and haven't heard back yet. Here is Mark's email mjaguila@gapac.com Mark is out of the Atlanta office.
>
> If you have any more questions, please feel free to contact me.
>
> Best Wishes,
> Mary
>
> > -----Original Message-----
> > **From:** JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
> > **Sent:** Tuesday, May 23, 2006 8:25 AM
> > **To:** Pettyjohn, Mary
> > **Subject:** BART Info
> > **Importance:** High
> >
> > Mary,
> > Have you sent out the information / presentations from the BART Stakeholder meeting yet? If so, I did not receive it.
> > Have any of the issues been resolved –including VOC, using 2X actuals, how to get the MET data?
> > Thanks,

Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, June 28, 2006 12:24 PM
To: Pettyjohn, Mary
Subject: BART

Mary,
Do you know when the results of the first screening run will be available? I think you said EPA had to approve the protocol first.
Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, June 13, 2006 3:20 PM
To: JOHNSON, GEORGE
Subject: BART

Hi Tracy,

Thank you for bringing to my attention about condensable vs. filterable $PM_{2.5}$. Condensable $PM_{2.5}$ mass is considered primary $PM_{2.5}$ therefore, I will be modeling condensable.

I re-read EPA's guidelines and it looks like I will need the actual 24-hr highest average emissions for each year (2001, 2002, and 2003) for PM10, $PM_{2.5}$, SO2, and NOx, but before you develop these values please wait until I get back with you.

Warmest regards,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, June 28, 2006 1:20 PM
To: Pettyjohn, Mary
Subject: RE: BART

Thanks Mary.
When you relay the results can we get the highest day and the 8th highest?
Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, June 28, 2006 1:18 PM
To: JOHNSON, GEORGE
Subject: RE: BART

Hi Tracy,

The results should be done no later than Friday. It will take me awhile to analyze them and then notify each facility. ADEQ's protocol has not been approved yet, but I am confident the protocol will be approved because ADEQ is following the CENRAP BART Modeling Guidelines which was approved by EPA and the FLMs.

For your information, we now have a much faster computer which allows us to run CALPUFF in 55 minutes, POSTUTIL in 30 minutes, and the 5 CALPOST files in about 5 seconds. We still are having trouble with the 2001 CALMET files and are in the process of determining the problem.

Hope this information is of help.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Wednesday, June 28, 2006 12:24 PM
To: Pettyjohn, Mary
Subject: BART

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Do you know when the results of the first screening run will be available? I think you said EPA had to approve the protocol first.
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Sent: Tuesday, June 13, 2006 3:20 PM
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Condensable $PM_{2.5}$ mass is considered primary $PM_{2.5}$ therefore, I will be modeling

condensable.

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Warmest regards,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, July 11, 2006 5:17 PM
To: Swafford, Bill; Pettyjohn, Mary
Cc: BOWLES, MARK C
Subject: RE:

Bill,
Mary had requested these from me a while back and I sent them to her in the e-mail below.
I submitted them in tons/day rather than lb/day. Let me know if you want me to resubmit them in lbs.
Thanks,
Tracy

---Original Message-----
From: JOHNSON, GEORGE
Sent: Monday, April 03, 2006 8:52 AM
To: 'Pettyjohn, Mary'
Cc: BOWLES, MARK C; SCHOTT, MATTHEW J; HANTZ, JOSEPH; GREEN, EDWARD L
Subject: BART Emission Rates - Entergy
Importance: High

Marry,
Below are the highest ton/day emission rates for Entergy's facilities during the time period you requested.
Please let me know if I can provide any additional information.
Thanks,
Tracy Johnson
501-377-4033

BART Emission Rates

Highest tons/day Jan 1, 2001 through Dec 31, 2003

UNIT	NOx (tons/day)	SO2 (tons/day)	PM10 total (tons/day)	PM2.5 total (tons/day)
WB1 SN-01	52.46 (CEMS)	93.16 (CEMS)	1.485 (AP-42)	1.124 (AP-42)
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Note 1: For Natural Gas all PM is assumed to be <1 micrometer, therefore PM10 and PM2.5 are equal

Note 2: PM10 total and PM2.5 total consist of "filterable PM" + condensable PM

-----Original Message-----
From: Swafford, Bill [mailto:SWAFFORD@adeq.state.ar.us]
Sent: Tuesday, July 11, 2006 3:55 PM
To: JOHNSON, GEORGE
Subject: RE:

Tracy,

Sorry, my first attempt at mail merge was a big failure. But I still need the information from your sources.

Lake Catherine	SN-03	Unit 4 Boiler
Ritchie Plant	SN-02	Unit 2
White Bluff	SN-01	Unit 1
White Bluff	SN-02	Unit 2
White Bluff	SN-05	Aux Boiler

Bill Swafford
501-682-0746

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, July 11, 2006 3:49 PM
To: Swafford, Bill
Subject: RE:

Bill,
I think you sent this to me in error.
Thanks,
Tracy Johnson
Entergy
501-377-4033

-----Original Message-----
From: Swafford, Bill [mailto:SWAFFORD@adeq.state.ar.us]
Sent: Tuesday, July 11, 2006 3:07 PM
To: JOHNSON, GEORGE
Subject:

The Arkansas Department of Environmental Quality (ADEQ) is in the process of modeling the maximum actual emissions rates from the BART sources in Arkansas. The model will determine the impact of the emissions on the visibility in the six Class 1 wilderness areas located in and adjacent to Arkansas.

The Department is requesting that you supply the highest 24 Hour Average Emissions Rate (lb/day) of SO2, NOx, PM10, and PM2.5 for the years 2001, 2002, and 2003.

Your BART eligible sources are:

Albermarle-South Plant	SR-01	Tail Gas Incinerator
	BH-01	Boiler 1
	BH-02	Boiler 2

Please email your data to Mary Pettyjohn, pettyjohn@adeq.state.ar.us .

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Friday, July 14, 2006 8:11 AM
To: Pettyjohn, Mary
Subject: RE:

Mary,
Thanks for the information.
You can send the letter and files to me at:

Tracy Johnson
Entergy Services, Inc.
425 West Capitol Ave
TCBY-22D
Little Rock, AR 72203

Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, July 13, 2006 11:28 AM
To: JOHNSON, GEORGE
Subject: RE:

Hi Tracy,

As of today Entergy's White Bluff facility is the only one that impacts a Class I area. The White Bluff facility contributes to visibility impairment at all five Class I areas I am assessing. That is why the actual emissions are important for my final analysis. We will be sending out letters of notification shortly along with a CD that contains all of the input files as well as the output files from CALPOST. Who should we send the letters to?

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Thursday, July 13, 2006 11:15 AM
To: Pettyjohn, Mary
Subject: RE:

No problem, do you have everything you need from me for now?
Any new information on the initial screening run for Entergy's facilities?
Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, July 13, 2006 11:10 AM
To: JOHNSON, GEORGE; Swafford, Bill
Cc: BOWLES, MARK C
Subject: RE:

Good morning Tracy,

I forgot to mention to Bill that I already had your emissions.

Thank you for replying to our request.

Mary

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Mary had requested these from me a while back and I sent them to her in the e-mail below.
I submitted them in tons/day rather than lb/day. Let me know if you want me to resubmit them in lbs.
Thanks,
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Lake Cat 4 SN-03	29.48 (CEMS)	0.04 (CEMS)	0.442 (AP-42)	0.442 (AP-42)
Ritchie	1.68	0.01	0.095	0.095

2	SN-02	(CEMS)	(CEMS)	(AP-42)	(AP-42)

Note 1: For Natural Gas all PM is assumed to be <1 micrometer, therefore PM10 and PM2.5 are equal

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Bill Swafford
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Your BART eligible sources are:

Albermarle-South Plant	SR-01 Tail Gas Incinerator
	BH-01 Boiler 1
	BH-02 Boiler 2

Please email your data to Mary Pettyjohn,
pettyjohn@adeq.state.ar.us .

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 10:23 AM
To: Pettyjohn, Mary
Subject: FW: BART

Mary,
Is the CALPOST output data part of the files that will accompany the letter you are sending out?
If I ask you something that doesn't make sense, please remember I don't know anything about modeling!
Thanks,
Tracy

-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Tuesday, August 08, 2006 9:42 AM
To: SCHOTT, MATTHEW J; HANTZ, JOSEPH
Cc: JOHNSON, GEORGE
Subject: RE: BART

Jim,

We are in the process of acquiring the CENRAP meteorological data to be used for modeling within Arkansas. In the meantime, it would be sufficient for us to look at the CALPOST output (if that could be provided by Arkansas), because the breakdown of constituents that contribute to the total regional haze impact are tabulated in that output.

Bob

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 11:00 AM
To: Pettyjohn, Mary
Subject: RE: BART

Thanks Mary.
TJ

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 08, 2006 10:43 AM
To: JOHNSON, GEORGE
Subject: RE: BART

Tracy,

You made sense. To expedite your modeling, I will email you all of the input files for each plant as well as the CALPOST output files sometime today.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 10:23 AM
To: Pettyjohn, Mary
Subject: FW: BART

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Sent: Tuesday, August 08, 2006 9:42 AM
To: SCHOTT, MATTHEW J; HANTZ, JOSEPH
Cc: JOHNSON, GEORGE
Subject: RE: BART

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Bob

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 4:31 PM
To: Pettyjohn, Mary
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: RE: Daily heat input numbers

Mary,
The information you requested is below.
Thanks,
Tracy

Max Daily Heat Input (mmBtu)				
	YEAR			
Unit	2001	2002	2003	Source
WB-1 (SN-01)	221,105.00	224,125.70	217,826.20	CEMS
WB-2 (SN-02)	243,027.00	245,311.80	230,885.00	CEMS
WB-AuxBoiler (SN-05)	4142.4	4142.4	4142.4	Assume Max HI * 24hr
LC-4 (SN-03)	87,672.60	81,556.60	122,153.10	CEMS

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 08, 2006 3:01 PM
To: JOHNSON, GEORGE
Subject: Daily heat input numbers

Hi Tracy,

Would you be so kind as to email me the maximum daily heat input for the following plants and units for the years 2001, 2002, and 2003:

Lake Catherine's unit number SN-03; White Bluff's unit numbers SN-01, SN-02, and SN-05.

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 5:21 PM
To: Pettyjohn, Mary
Subject: RE: BART

Mary,
If you sent the files, I did not receive them.
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 08, 2006 10:43 AM
To: JOHNSON, GEORGE
Subject: RE: BART

Tracy,

You made sense. To expedite your modeling, I will email you all of the input files for each plant as well as the CALPOST output files sometime today.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 10:23 AM
To: Pettyjohn, Mary
Subject: FW: BART

Mary,
Is the CALPOST output data part of the files that will accompany the letter you are sending out? If I ask you something that doesn't make sense, please remember I don't know anything about modeling!
Thanks,
Tracy

-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Tuesday, August 08, 2006 9:42 AM
To: SCHOTT, MATTHEW J; HANTZ, JOSEPH
Cc: JOHNSON, GEORGE
Subject: RE: BART

Jim,

We are in the process of acquiring the CENRAP meteorological data to be used for modeling within Arkansas. In the meantime, it would be sufficient for us to look at the CALPOST output (if that could be provided by Arkansas), because the breakdown of constituents that contribute to the total regional haze impact are tabulated in that output.

Bob

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 09, 2006 8:13 AM
To: Pettyjohn, Mary
Subject: RE: BART

Mary,
Still did not receive them. Did they have a .zip extension or were they larger than 5MB?
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, August 09, 2006 8:10 AM
To: JOHNSON, GEORGE
Subject: RE: BART

Tracy,

I sent the files to you yesterday at 12:41 PM.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, August 08, 2006 5:21 PM
To: Pettyjohn, Mary
Subject: RE: BART

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If you sent the files, I did not receive them.
Tracy

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Subject: RE: BART

Jim,

We are in the process of acquiring the CENRAP meteorological data to be used for modeling within Arkansas. In the meantime, it would be sufficient for us to look at the CALPOST output (if that could be provided by Arkansas), because the breakdown of constituents that contribute to the total regional haze impact are tabulated in that output.

Bob

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 09, 2006 9:46 AM
To: Pettyjohn, Mary
Subject: RE: CD is in building B

Thanks, I'll go get them.
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, August 09, 2006 9:42 AM
To: JOHNSON, GEORGE
Subject: CD is in building B

Hi Tracy,

The CD that contains all of the BART-determination modeling inputs, the three ozone.dat files, and the CALPOST output files along with a letter explaining the folders and the naming conventions are at the front desk in Bldg B.

Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 09, 2006 2:51 PM
To: Pettyjohn, Mary
Subject: RE: Daily heat input numbers

Mary,
I was just wondering what the HI values are needed for?

I just picked up the CD and letter, thanks.
Tracy

-----Original Message-----
From: JOHNSON, GEORGE
Sent: Tuesday, August 08, 2006 4:31 PM
To: 'Pettyjohn, Mary'
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: RE: Daily heat input numbers

Mary,
The information you requested is below.
Thanks,
Tracy

Max Daily Heat Input (mmBtu)				
	YEAR			
Unit	2001	2002	2003	Source
WB-1 (SN-01)	221,105.00	224,125.70	217,826.20	CEMS
WB-2 (SN-02)	243,027.00	245,311.80	230,885.00	CEMS
WB-AuxBoiler (SN-05)	4142.4	4142.4	4142.4	Assume Max HI * 24hr
LC-4 (SN-03)	87,672.60	81,556.60	122,153.10	CEMS

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 08, 2006 3:01 PM
To: JOHNSON, GEORGE
Subject: Daily heat input numbers

Hi Tracy,

Would you be so kind as to email me the maximum daily heat input for the following plants and units for the years 2001, 2002, and 2003:

Lake Catherine's unit number SN-03; White Bluff's unit numbers SN-01, SN-02, and SN-05.

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division

8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Thursday, August 10, 2006 11:15 AM
To: Pettyjohn, Mary
Subject: BART Modeling
Importance: High

Mary,
Earlier this year I attended a class on BART. During the discussion on modeling they mentioned the there were two "Natural Background" values; one for West of the Mississippi River and one for East of it. They also stated the EPA had indicated that states one state West of the Miss river (AR) could use the East back ground which could result in modeling results more favorable to the facility. Did your modeling use the East or West Background?
If you used the West back ground can we remodel using the East to see if there is any effect on Lake Catherine's results and if it modeled out using the East would ADEQ accept it?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Thursday, August 10, 2006 11:27 AM
To: Pettyjohn, Mary
Subject: RE: BART Modeling

So much for my bright idea!
Thanks,
TJ

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Thursday, August 10, 2006 11:18 AM
To: JOHNSON, GEORGE
Subject: RE: BART Modeling

Tracy,

I modeled using the Eastern natural background.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Thursday, August 10, 2006 11:15 AM
To: Pettyjohn, Mary
Subject: BART Modeling
Importance: High

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Earlier this year I attended a class on BART. During the discussion on modeling they mentioned the there were two "Natural Background" values; one for West of the Mississippi River and one for East of it. They also stated the EPA had indicated that states one state West of the Miss river (AR) could use the East back ground which could result in modeling results more favorable to the facility. Did your modeling use the East or West Background?
If you used the West back ground can we remodel using the East to see if there is any effect on Lake Catherine's results and if it modeled out using the East would ADEQ accept it?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Monday, August 14, 2006 5:11 PM
To: Pettyjohn, Mary
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: Meeting

Mary,
I just received your message requesting a meeting with Entergy concerning BART for the Lake Catherine and White Bluff Facilities.
You also mentioned this Thursday as a date. Joe Hantz was just in LR today for a CAIR meeting, I wish we could have combined the two meetings to save him a trip. I am not available this Thursday or Friday and it would be tough to get Joe back to LR this week.
I have training in Memphis next Thursday and Friday the 24th and 25th.
What is your availability on the 23rd or the week of the 28th?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Monday, August 14, 2006 5:36 PM
To: Pettyjohn, Mary
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: RE: Meeting

Mary,
Is this something that could be conducted by conference call?
Thanks,
Tracy

-----Original Message-----
From: JOHNSON, GEORGE
Sent: Monday, August 14, 2006 5:11 PM
To: 'Pettyjohn, Mary'
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: Meeting

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I have training in Memphis next Thursday and Friday the 24th and 25th.
What is your availability on the 23rd or the week of the 28th?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 11:51 AM
To: Pettyjohn, Mary
Subject: RE: Meeting

Mary,
How long do you think the call will take?
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 15, 2006 8:01 AM
To: JOHNSON, GEORGE
Subject: RE: Meeting

Tracy,

Yes. We can conduct this on a conference call. When is a good time for you? We have a meeting today at 1:00PM with AR Electric Coop. Tony will be out of the office tomorrow. About the CAIR meeting, I was not aware there was one until after it was over with. Also, I just got approval yesterday afternoon for the meetings. We can meet next week if you would like. I am just trying to get things moving along so all involved can meet the deadlines.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
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To: Pettyjohn, Mary
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Cc: HANTZ, JOSEPH; BOWLES, MARK C
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I have training in Memphis next Thursday and Friday the 24th and 25th.
What is your availability on the 23rd or the week of the 28th?
Thanks,

Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 1:25 PM
To: Pettyjohn, Mary
Subject: RE: Meeting

Thanks Mary,
How would 8:00 – 10:00 on Tuesday Aug. 22nd work for you?
TJ

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, August 16, 2006 12:34 PM
To: JOHNSON, GEORGE
Subject: RE: Meeting

Tracy,

The call shouldn't last no more than an hour to an hour and a half. Of course that would depend on how many questions and concerns you have.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 11:51 AM
To: Pettyjohn, Mary
Subject: RE: Meeting

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How long do you think the call will take?
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-----Original Message-----
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Mary

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Sent: Monday, August 14, 2006 5:36 PM
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Is this something that could be conducted by conference call?
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What is your availability on the 23rd or the week of the 28th?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 2:25 PM
To: Pettyjohn, Mary
Subject: RE: Meeting

Thanks

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, August 16, 2006 2:21 PM
To: JOHNSON, GEORGE
Subject: RE: Meeting

Tracy,

Here is the Federal Register.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 1:25 PM
To: Pettyjohn, Mary
Subject: RE: Meeting

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To: Pettyjohn, Mary
Subject: RE: Meeting

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From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
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Subject: RE: Meeting

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Cc: HANTZ, JOSEPH; BOWLES, MARK C
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I have training in Memphis next Thursday and Friday the 24th and 25th.
What is your availability on the 23rd or the week of the 28th?
Thanks,
Tracy

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 3:06 PM
To: Pettyjohn, Mary
Subject: RE: BART Conference call

That's ok, they will get one when Marilyn sends out the call in numbers. Please forward the call in information once you get it to the other ADEQ members since I only included you.
Thanks,
TJ

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, August 16, 2006 3:02 PM
To: JOHNSON, GEORGE
Subject: RE: BART Conference call

Tracy,

Would you like for me to send Mark, Joseph, Matthew, and Bob a meeting request? If you do, please send me their email address.

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 2:44 PM
To: RIDGE, MARILYN F
Cc: BOWLES, MARK C; HANTZ, JOSEPH; SCHOTT, MATTHEW J; Pettyjohn, Mary; Paine, Bob
Subject: BART Conference call
Importance: High

Marilyn,

Please set up a conference call for Tuesday 8/22 at 8:00 – 10:00 and send the call information to the individuals cc'ed above.
Mark will be the host.

This call is to discuss BART Issues for WB and LC such as:

1. Time table
2. Compliance Options
3. Presumptive Controls – see attached "Bart FinalRule.pdf" beginning on page 39131, second column, 4th paragraph
4. The Attached Spreadsheet – "Entergy BART Results.xls"
5. Concerns

Thanks,
TJ

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, August 16, 2006 2:44 PM
To: RIDGE, MARILYN F
Cc: BOWLES, MARK C; HANTZ, JOSEPH; SCHOTT, MATTHEW J; Pettyjohn, Mary; Paine, Bob
Subject: BART Conference call
Importance: High

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Mark will be the host.

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1. Time table
2. Compliance Options
3. Presumptive Controls – see attached "Bart FinalRule.pdf" beginning on page 39131, second column, 4th paragraph
4. The Attached Spreadsheet – "Entergy BART Results.xls"
5. Concerns

Thanks,
TJ

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 29, 2006 2:26 PM
To: Pettyjohn, Mary
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: RE: BART question

Mary,
Why don't you send it to:

Mark Bowles
Entergy Services, Inc.
425 West Capitol Ave.
P. O. Box 551
Little Rock, AR 72203

We will see that it gets distributed.

Thanks,
Tracy

> -----Original Message-----
> **From:** Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
> **Sent:** Tuesday, August 29, 2006 2:11 PM
> **To:** JOHNSON, GEORGE
> **Subject:** BART question
>
> Hi Tracy,
>
> We will be sending a letter out confirming our understanding of the conference call with you last week. Who should we send the letter to?
>
> Thank you,
> Mary
>
> Mary Pettyjohn
> ADEQ/Air Division
> 8001 National Drive
> P.O. Box 8913
> Little Rock, AR 72219-8913
> Office phone 501-682-0070
> Fax 501-682-0753
> pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Tuesday, August 29, 2006 2:47 PM
To: Pettyjohn, Mary
Subject: RE: BART question

Thanks I'll send it on.
TJ

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 29, 2006 2:45 PM
To: JOHNSON, GEORGE
Subject: RE: BART question

Tracy,

Thank you. By the way, we now have all of the CALPUFF, POSTUTIL, and CALPOST input files as well as the CALPOST out files on a web server for all subject-to-BART and BART exempt facilities. These files can be downloaded individually or in a zip file. The address is http://listserv.adeq.state.ar.us/bart Please have your consultants use these files.

Thank you,
Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, August 29, 2006 2:26 PM
To: Pettyjohn, Mary
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: RE: BART question

Mary,
Why don't you send it to:

Mark Bowles
Entergy Services, Inc.
425 West Capitol Ave.
P. O. Box 551
Little Rock, AR 72203

We will see that it gets distributed.

Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 29, 2006 2:11 PM
To: JOHNSON, GEORGE
Subject: BART question

Hi Tracy,

We will be sending a letter out confirming our understanding of the conference call with

you last week. Who should we send the letter to?

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, September 06, 2006 3:30 PM
To: Pettyjohn, Mary
Subject: FW: BART question

Mary,
ENSR already has the data, see the e-mail below.
Thanks for checking,
Tracy

-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Wednesday, September 06, 2006 3:20 PM
To: JOHNSON, GEORGE
Cc: HANTZ, JOSEPH
Subject: RE: BART question

Yes, you can tell ADEQ that we separately requested the data from Lee Warden of Oklahoma, and we successfully received the data a few days ago. Therefore, we will not need to have Arkansas provide us with the same data.

Sorry about the confusion.

Bob

From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Wednesday, September 06, 2006 4:17 PM
To: Paine, Bob
Cc: HANTZ, JOSEPH
Subject: FW: BART question

Bob,
ADEQ was concerned because they had not received a hard drive from you. I think you were going to verify that you had all the files you needed. Should I notify them that you will **not** be sending a drive?
Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, September 06, 2006 2:50 PM
To: JOHNSON, GEORGE
Subject: RE: BART question

Tracy,

Thank you. I do have another question. If I remember correctly, ENSR was going to send an external hard drive for us to download 6km no-obs central domain CENRAP CALMET data. As of today, I have not received this nor have I been contacted by ENSR. My concern is that the hard drive was lost during transit. I would appreciate you checking with ENSR to see if they sent the hard drive.

Regards,

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, September 05, 2006 10:26 AM
To: Pettyjohn, Mary
Subject: RE: BART question

Arkansas Environmental Support Manager

Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, September 05, 2006 10:11 AM
To: JOHNSON, GEORGE
Subject: RE: BART question

Tracy,

What is Mark's title?

Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Tuesday, August 29, 2006 2:26 PM
To: Pettyjohn, Mary
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: RE: BART question

Mary,
Why don't you send it to:

Mark Bowles
Entergy Services, Inc.
425 West Capitol Ave.
P. O. Box 551
Little Rock, AR 72203

We will see that it gets distributed.

Thanks,
Tracy

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Tuesday, August 29, 2006 2:11 PM
To: JOHNSON, GEORGE
Subject: BART question

Hi Tracy,

We will be sending a letter out confirming our understanding of the conference call with you last week. Who should we send the letter to?

Thank you,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
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pettyjohn@adeq.state.ar.us

Arkansas Environmental Support
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Little Rock, AR 72203
Tel 501-377-3958
Fax 281-297-6132
Mark C. Bowles, Manager

Entergy

VIA HAND DELIVERY
AR-06-080

October 17, 2006

Mike Bates, Chief
Arkansas Department of Environmental Quality
Air Division
Post Office Box 8913
Little Rock, Arkansas 72219-8913

RE: CALMET and CALPUFF Modeling Procedures for BART-Eligible Entergy Sources
Document No. 10785-006-001 and Meteorological Hard Drive

Dear Mr. Bates,

Per our September 26, 2006 transmittal to you regarding Entergy's compliance plans with applicable provisions of the federal "BART Rule", we agreed to provide procedures and technical options that will be used for the refined exemption modeling analysis. To meet this obligation, please find attached the document entitled, *CALMET and CALPUFF Technical Options and Modeling Procedures for BART Exemption and Determination Modeling for Arkansas Class I Areas*.

We have also applied the protocol procedures and the resulting meteorological database is provided in the enclosed hard drive.

Should you have any questions or need additional information, please call me or Tracy Johnson at 501-377-3958 or 501-377-4033, respectively.

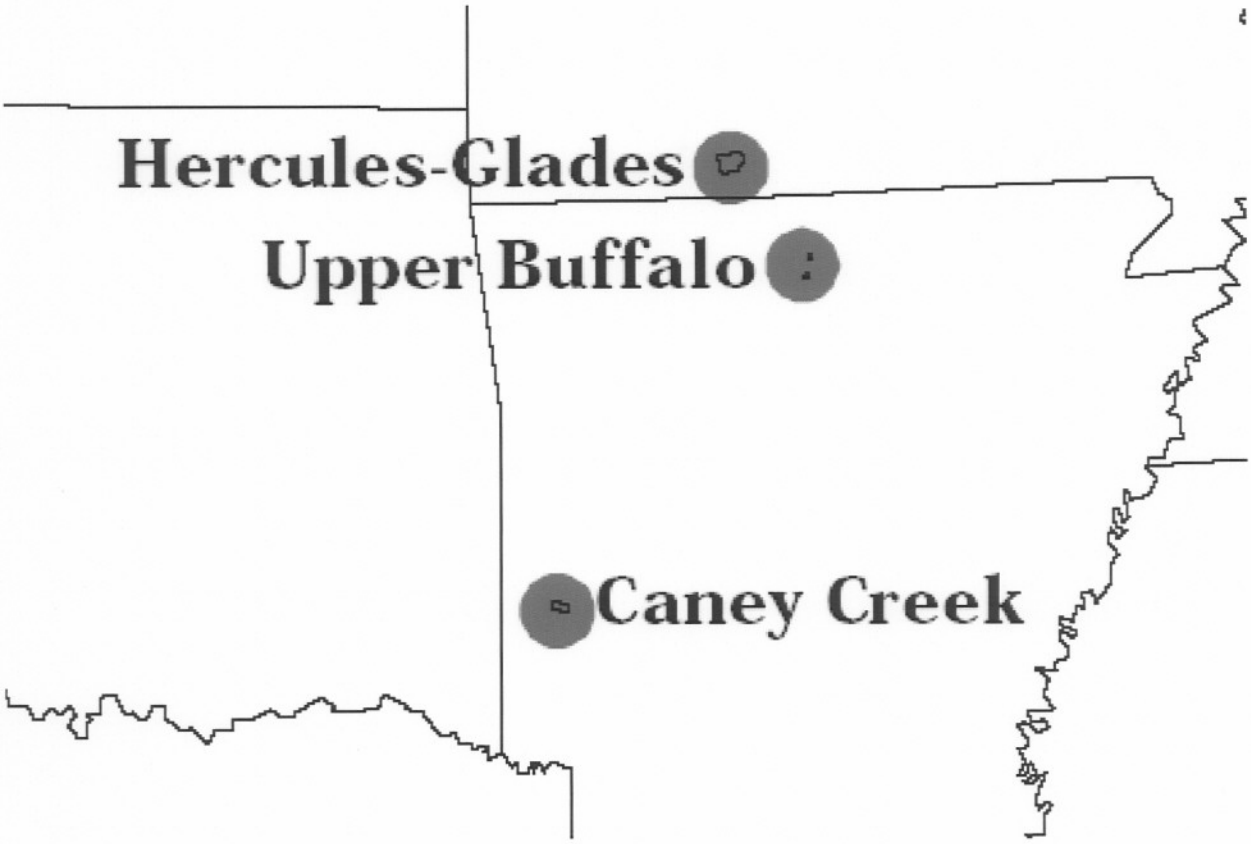
Sincerely,

Mark C. Bowles, Manager
Arkansas Environmental Support

Enclosures

Cc: Mary Pettyjohn, Senior Epidemiologist - ADEQ

Prepared for:
Entergy Services, Inc.



CALMET and CALPUFF Technical Options and Modeling Procedures for BART Exemption and Determination Modeling for Arkansas Class I Areas

ENSR Corporation
October 2006
Document No.: 10785-006-001

ENSR | AECOM

Prepared for:
Entergy Services, Inc.

CALMET Inputs and Technical Options for BART Exemption and Determination Modeling for Arkansas Class I Areas

Olga Kostrova

Prepared By: Olga Kostrova

Robert J. Paine

Reviewed By: Robert Paine

ENSR Corporation
October 2006
Document No.: 10785-006-001

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Contents

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1.0 Introduction

The purpose of this document is to describe CALMET and CALPUFF modeling procedures and technical options that will be used for the refined CALMET and CALPUFF BART exemption modeling analyses (and possibly for BART determination analyses) for BART-eligible Entergy sources that are within 300 km of the Class I areas in and near Arkansas. One of these sources is in Mississippi (a VISTAS state) and two are in Arkansas (a CENRAP state). Due to the availability of data files used in the VISTAS data preparation, the modeling procedures described here utilize meteorological data based upon work funded by the VISTAS Regional Planning Organization, and are consistent with the procedures outlined in the updated final VISTAS common BART modeling (updated August 31, 2006), available at:

http://www.vistas-sesarm.org/documents/BARTModelingProtocol_rev3.2_31Aug06.pdf.

For convenience, this protocol references relevant portions of the common VISTAS protocol.

2.0 Input Data to the CALPUFF Model

2.1 General Modeling Procedures:

VISTAS has developed five sub-regional 4-km CALMET meteorological databases for three years (2001-2003), as well as a 12-km screening meteorological database for the same years. The sub-regional modeling domains are strategically designed to cover all potential BART eligible sources within VISTAS states and most PSD Class I areas within 300 km of those sources. The extents of the 4-km sub-regional domains are shown in Figure 4-4 of the VISTAS common BART modeling protocol. However, the Class I areas in and near Arkansas (Caney Creek, Upper Buffalo, and Hercules Glades Wilderness Areas) lie outside the 4-km database, although they are still within the 12-km VISTAS screening database. An alternative database would be the CENRAP screening subdomain 6-km database, but CENRAP has not provided the supplemental meteorological data that VISTAS does provide. Therefore, we elected to use the VISTAS meteorological data as a starting point.

2.2 Model Selection and Features

As noted in the VISTAS protocol, VISTAS has adopted BART-specific versions of CALMET and CALPUFF that have been posted at http://www.src.com/verio/download/download.htm#VISTAS_VERSION. These versions contain enhancements funded by the Minerals Management Service (MMS) and VISTAS. They are maintained on TRC's Atmospheric Studies Group CALPUFF website for public access. This release includes CALMET, CALPUFF, CALPOST, CALSUM, and POSTUTIL as well as CALVIEW.

The major features of the CALPUFF modeling system, including those of CALMET and the post processors (CALPOST and POSTUTIL) are referenced in Section 3 of the VISTAS protocol. This version of CALPUFF is proposed for BART exemption and determination modeling with the meteorological databases described in this report.

2.3 Modeling Domain and Receptors

The modeling domain was designed to encompass Class I areas within 300 km of the specific Entergy plants, plus a 50-km buffer. The resultant modeling domain extends 396 km East-West and 555 km North-South with a 3-km grid resolution. The domain is shown in Figure 2-1.

The receptors used for each of the Class I areas are based on the National Park Service database of Class I receptors, as recommended by VISTAS (found at: http://www2.nature.nps.gov/air/maps/Receptors/index.htm).

2.4 CALMET Processing

In accordance with the IWAQM Phase II guidance, CALMET (Version 5.724, level 060414), the CALPUFF meteorological pre-processor, will be used to simulate three years (2001, 2002, and 2003) of meteorological conditions. For the hourly wind field initialization, CALMET uses gridded prognostic mesoscale meteorological (MM5) data for all years. The following three years of MM5 data have been assembled by VISTAS for use in the regional CALPUFF modeling:

- 2001 and 2002 MM5 data set with 12-km resolution
- 2003 MM5 dataset with 36-km resolution.

These prognostic meteorological data sets will be combined with 3-km grid resolution terrain and land use data to more accurately characterize the wind flow throughout the modeling domain. The 3-km gridded terrain data has been derived from United States Geological Survey (USGS) 1:250,000 (3 arc second or 90-meter grid

spacing) Digital Elevation Model (DEM) files and the TERREL pre-processor program. The gridded land use data was derived from USGS 1:250,000 Composite Theme Grid (CTG) land use files.

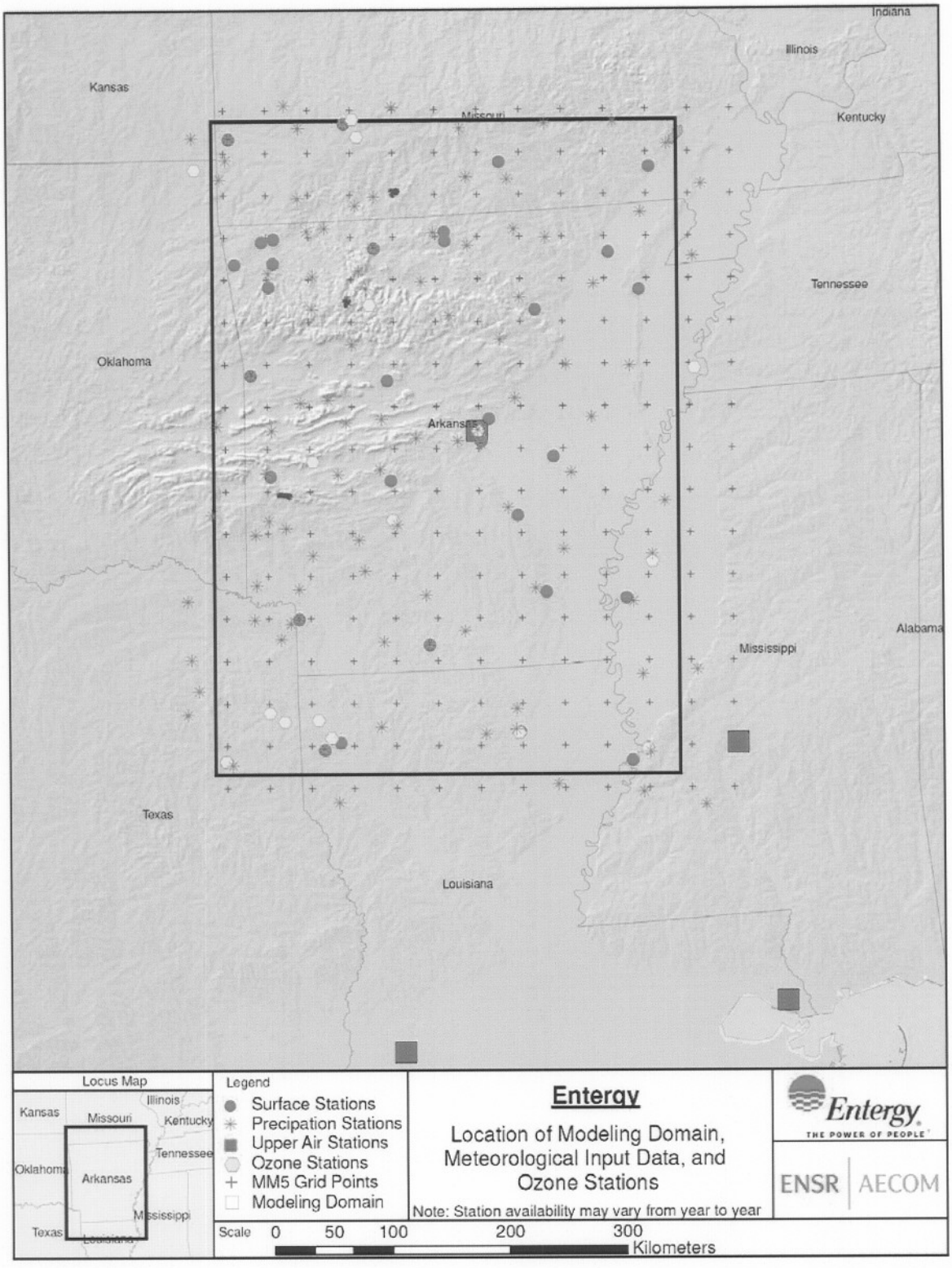
The Step 2 wind field will be produced with the input of hourly surface and twice daily upper air balloon sounding data. Hourly precipitation data will also included in the CALMET simulations. Surface, upper air and precipitation files have been prepared by TRC for use in the VISTAS regional CALPUFF modeling effort. The files are available to be downloaded from the TRC website at http://www.src.com/verio/download/sample_files.htm#STANDARD_SURF.

The following files are available from the TRC website:

- Standard surface files (2001-2003)
- Standard precipitation files (2001-2003)
- VISTAS Regional Domain 1 upper air data files (2001-2003). Only three upper air stations were selected from the dataset due to their proximity to this proposed modeling domain.

CALPUFF PROfessional System software, SUBDOMN tool will be used to extract a smaller subset of the surface and precipitation datasets. (The software is created and distributed by TRC). The extracted stations and MM5 nodes are plotted and shown in Figure 2-1

Figure 2-1 Location of Modeling Domain, Meteorological Input data, and Ozone Stations



2.5 Technical Options Used in the Modeling

Setting and technical options used in CALMET will be the same as in VISTAS regional sub-domain 1 CALMET simulations.

For CALPUFF (Version 5.754, Level 060202) model options, Entergy plant will follow the VISTAS common BART modeling protocol, which states that we should use IWAQM (EPA, 1998) guidance. The VISTAS protocol also notes that building downwash effects are not required to be included unless the state directs the source to include these effects.

2.6 Background Ozone and Ammonia

Hourly measurements of ozone from all non-urban monitors, as generated by VISTAS and available on the VISTAS CALPUFF page on the TRC web site (http://www.src.com/verio/download/sample_files.htm), will be used as input to CALPUFF. As for ammonia, we propose to follow the approach recommended by VISTAS. Currently, VISTAS advises sources to use a background ammonia concentration of 0.5 ppb, and not to use the ammonia limiting method except that for multiple units, the total nitrate-related concentration due to all sources will be provided as input to POSTUTIL so that the CALPUFF assumption that all available ammonia is available to each puff is adjusted appropriately.

ENSR

U.S. Locations

AK, Anchorage
(907) 561-5700

AL, Birmingham
(205) 980-0054

AL, Florence
(256) 767-1210

CA, Alameda
(510) 748-6700

CA, Camarillo
(805) 388-3775

CA, Orange
(714) 973-9740

CA, Sacramento
(916) 362-7100

CO, Ft. Collins
(970) 493-8878

CO, Ft. Collins Tox Lab.
(970) 416-0916

CT, Stamford
(203) 323-6620

CT, Willington
(860) 429-5323

FL, St. Petersburg
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FL, Tallahassee
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MA, Westford
(978) 589-3000

MA, Woods Hole
(508) 457-7900

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ME, Portland
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(269) 385-4245

MN, Minneapolis
(952) 924-0117

NC, Charlotte
(704) 529-1755

NC, Raleigh
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NH, Belmont
(603) 524-8866

NJ, Piscataway
(732) 981-0200

NY, Albany
(518) 453-6444

NY, Rochester
(585) 381-2210

NY, Syracuse
(315) 432-0506

NY, Syracuse Air Lab.
(315) 432-0506

OH, Cincinnati
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PA, Langhorne
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PA, Pittsburgh
(412) 261-2910

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SC, Columbia
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TX, Dallas
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TX, Houston
(713) 520-9900

TX, San Antonio
(210) 296-2125

VA, Chesapeake
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VA, Glen Allen
(804) 290-7920

WA, Redmond
(425) 881-7700

WI, Milwaukee
(262) 523-2040

Headquarters
MA, Westford
(978) 589-3000

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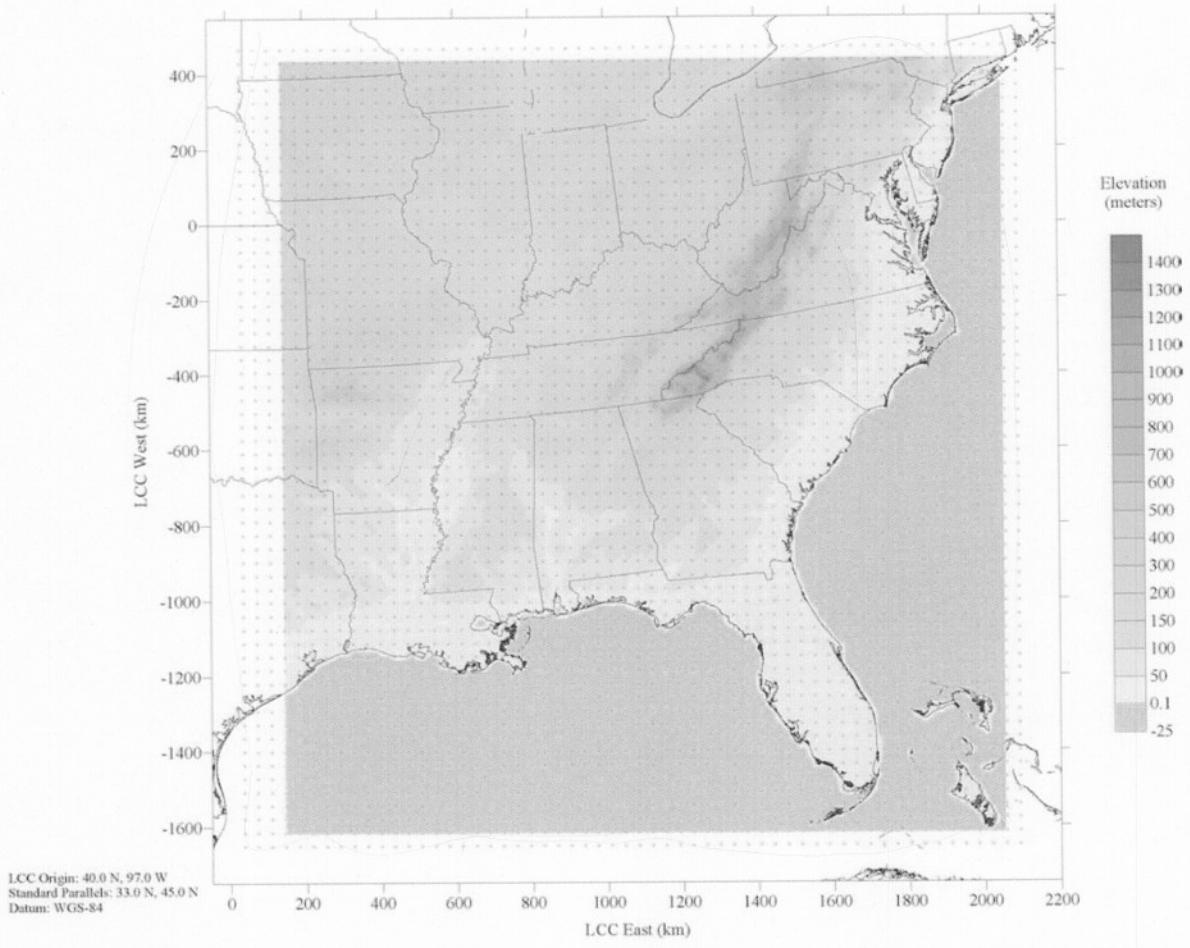

Figure 4-2. VISTAS Regional 12-km Resolution CALMET Modeling Domain (color area with terrain contours). The locations of the 36-km resolution MM5 grid points are shown on the plot.

For 2003, the 36-km MM5 data will be used as CALMET's initial guess field and then the CALMET diagnostic terrain adjustments (see Section 3.1.1) will be applied to reflect terrain on the scale of the CALMET grid (i.e., 12-km). When the 12-km MM5 (2001 and 2002) data are used, the diagnostic CALMET terrain adjustments will be turned off since the grid resolution of the MM5 data is the same as the CALMET grid and the terrain adjustments on the 12-km grid scale will already be reflected in the MM5 dataset. In this case, the MM5 winds will be interpolated by CALMET to the CALMET layers and CALMET's boundary layer modules will compute mixing heights, turbulence parameters and other meteorological parameters that are required by CALPUFF.

Entergy - White Bluff

	Base Case		BART Case [2]	
	Unit 1	Unit 2	Unit 1	Unit 2
X (km) [1]	444.569	444.569	444.569	444.569
Y (km) [1]	-605.243	-605.243	-605.243	-605.243
Stack Height (m)	304.8	304.8	304.8	304.8
Base Elevation (m)	94.2	94.2	94.2	94.2
Stack Diameter (m)	7.8	7.8	7.8	7.8
Exit Velocity (m/sec)	27.4	27.4	26.9	26.9
Exit Temp (K)	434.0	434.0	331.5	331.5
SO2 (g/sec)	816.070	812.990	165.484	164.861
SO4 (g/sec)	7.994	7.964	16.211	16.150
NOx (g/sec)	345.232	327.466	165.485	164.875
HNO3 (g/sec)	0.000	0.000	0.000	0.000
NO3 (g/sec)	0.000	0.000	0.000	0.000
SOA (g/sec)	2.232	2.398	2.232	2.398
PMF (g/sec)	1.845	1.981	1.845	1.981
PMC (g/sec)	2.403	2.581	2.403	2.581
EC (g/sec)	0.078	0.083	0.078	0.083

(1) Lambert Conformal projection:
Projection origin 40N/97W
Matching paralles 33N/45N
Datum NWS-84
(2) BART is determined to be a combination of tuning, OFA, and LNB for NOx and wet scrubbing for SO2.

Post-Control Emissions					
BART-Eligible Facilities Locations (BART File Name)	Unit ID ID No.	Post-Control Emissions (g/sec) SO_2	NO_x	PM_{10}	$PM_{2.5}$*
Entergy - Lake Catherine / Jones Mill (ENJM)	SN-03	0.420	85.633	0.365	0.246
Entergy - White Bluff / Redfield (ENRE)	SN-01	176.496	235.328	15.592	11.802
Entergy - White Bluff / Redfield (ENRE)	SN-02	193.180	257.572	16.653	12.915

These are the emissions that need to be changed.

Pre-Control Emissions					
BART-Eligible Facilities Locations (BART File Name)	Unit ID ID No.	Actual Emissions (g/sec) SO_2	NO_x	PM_{10}	$PM_{2.5}$*
Entergy - Lake Catherine / Jones Mill (ENJM)	SN-03	0.420	309.535	0.365	0.246
Entergy - White Bluff / Redfield (ENRE)	SN-01	978.164	550.821	15.592	11.802
Entergy - White Bluff / Redfield (ENRE)	SN-02	985.933	596.075	16.653	12.915

Entergy Arkansas, Inc.
Lake Catherine Plant
Semi-Annual Monitoring Report
AFIN: 30-00011 Permit # 1717-AOP-R2

SC-7. The permittee shall install, operate, and maintain O_2 monitors on the boilers. The permittee shall show a positive O_2 reading when the boilers are in operation. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SC-8. The permittee shall update, twice per day, records which demonstrate compliance with Specific Condition 7. These records shall be kept on site, and shall be made available to Department personnel upon request. Each individual month's readings shall be submitted in accordance with General Condition 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Lake Catherine Plant
Boiler Oxygen Monitors
Specific Condition 7 & 8

	Unit 1 SN-01		Unit 2 SN-01		Unit 3 SN-02		Unit 4 SN-03	
Month	Min %	Max %	Min %	Max %	Min %	Max %	Min %	Max %
Jul-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	6.6	9.4
Aug-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	4.2	9.3
Sep-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	2.1	9.4
Oct-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	2.6	9.3
Nov-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	3.5	9.3
Dec-05	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	9	9
Jan-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line
Feb-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line
Mar-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	2.2	9.4
Apr-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line
May-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	9.3	9.3
Jun-06	unit off line	unit off line	unit off line	unit off line	unit off line	unit off line	9.4	9.4

Entergy Arkansas, Inc.
Lake Catherine Plant
Semi-Annual Monitoring Report
AFIN: 30-00011 Permit # 1717-AOP-R2

SC-12. The permittee shall determine SO_2 emissions using the optional SO_2 emissions data protocol procedures in 40 CFR Part 75, Appendix D, section 2.3. The records may be used by the Department for enforcement purposes. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Lake Catherine Plant
SO_2 Emissions
Specific Condition 12

	Unit 1 SN-01		Unit 2 SN-01		Unit 3 SN-02		Unit 4 SN-03	
Month	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)
Jul-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.001	0.284
Aug-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.002	0.286
Sep-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.004	0.290
Oct-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.005	0.295
Nov-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.070	0.365
Dec-05	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.010	0.375
Jan-06	unit off line	0.010	unit off line	0.020	unit off line	1.890	unit off line	0.375
Feb-06	unit off line	0.010	unit off line	0.020	unit off line	1.890	unit off line	0.375
Mar-06	unit off line	0.010	unit off line	0.020	unit off line	1.890	0.0	0.275
Apr-06	unit off line	0.010	unit off line	0.020	unit off line	1.890	unit off line	0.235
May-06	unit off line	0.010	unit off line	0.010	unit off line	0.000	0.100	0.302
Jun-06	unit off line	0.000	unit off line	0.000	unit off line	0.000	0.000	0.192
Limit		2.2 tpy		2.2 tpy		4.4 tpy		15.5 tpy

Entergy Arkansas, Inc.
Lake Catherine Plant
Semi-Annual Monitoring Report
AFIN: 30-00011 Permit # 1717-AOP-R2

SC-9. Fuel oil usage shall not exceed 22,230,000 gallons during any consecutive twelve month period. The permittee is accepting these limits for fee purposes only. These limits are not being established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, Subpart I or 40 CFR 51.166. [Regulation 19, §19.705, A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, and 40 CFR 70.6]

SC-10. The permittee shall maintain records which demonstrate compliance with the limit set in Specific Condition 9. These records may be used by the Department for enforcement purposes. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.705 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Lake Catherine Plant
No. 6 Fuel Oil Usage
Specific Condition 9 & 10

	Unit 1 SN-01		Unit 2 SN-01		Unit 3 SN-02		Unit 4 SN-03	
Month	Monthly Total (gal)	12 month Total (gal)	Monthly Total (gal)	12 month Total (gal)	Monthly Total (gal)	12 month Total (gal)	Monthly Total (gal)	12 month Total (gal)
Jul-05	0	0	0	0	0	0	0	0
Aug-05	0	0	0	0	0	0	0	0
Sep-05	0	0	0	0	0	0	0	0
Oct-05	0	0	0	0	0	0	0	0
Nov-05	0	0	0	0	0	0	0	0
Dec-05	0	0	0	0	0	0	0	0
Jan-06	0	0	0	0	0	0	0	0
Feb-06	0	0	0	0	0	0	0	0
Mar-06	0	0	0	0	0	0	0	0
Apr-06	0	0	0	0	0	0	0	0
May-06	0	0	0	0	0	0	0	0
Jun-06	0	0	0	0	0	0	0	0
Jul-06	0	0	0	0	0	0	0	0

Fuel oil usage shall not exceed 22,230,000 gallons during any consecutive twelve month period.

Note: The Fuel Oil supply is disconnected.

*** Permit #1717-AOP-R2 was issued January 5, 2005.**

Entergy Arkansas, Inc.
Lake Catherine Plant
Semi-Annual Monitoring Report
AFIN: 30-00011 Permit #1717-AOP-R2

SC-12. The permittee shall determine SO_2 emissions using the optional SO_2 emissions data protocol procedures in 40 CFR Part 75, Appendix D, section 2.3. The records may be used by the Department for enforcement purposes. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SC-13. The permittee shall maintain records, using CEMS for NO_X for Unit 4 (SN-03), which demonstrate compliance with the limit set forth in this permit. The records may be used by the Department for enforcement purposes. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SC-14. The permittee shall determine NO_X emissions for units 1, 2, and 3 (SN-01 and SN-02) using the optional NO_X emissions data protocol procedure in 40 CFR Part 75, Appendix E, section 2.4. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Lake Catherine Plant

Nox and SO2 Emissions (lb/hr)

Specific Condition 12, 13, & 14

Unit 1	Date	NOx lb/hr (max)	SO2 lb/hr (max)
	Jul-05	unit off line	unit off line
	Aug-05	unit off line	unit off line
	Sep-05	unit off line	unit off line
	Oct-05	unit off line	unit off line
	Nov-05	unit off line	unit off line
	Dec-05	unit off line	unit off line
	Jan-06	unit off line	unit off line
	Feb-06	unit off line	unit off line
	Mar-06	unit off line	unit off line
	Apr-06	unit off line	unit off line
	May-06	unit off line	unit off line
	Jun-06	unit off line	unit off line
	LIMITS	381.0 lb/hr	0.5 lb/hr

Unit 2	Date	NOx lb/hr (max)	SO2 lb/hr (max)
	Jul-05	unit off line	unit off line
	Aug-05	unit off line	unit off line
	Sep-05	unit off line	unit off line
	Oct-05	unit off line	unit off line
	Nov-05	unit off line	unit off line
	Dec-05	unit off line	unit off line
	Jan-06	unit off line	unit off line
	Feb-06	unit off line	unit off line
	Mar-06	unit off line	unit off line
	Apr-06	unit off line	unit off line
	May-06	unit off line	unit off line
	Jun-06	unit off line	unit off line
	LIMITS	381.0 lb/hr	0.5 lb/hr

Unit 3	Date	NOx lb/hr (max)	SO2 lb/hr (max)
	Jul-05	unit off line	unit off line
	Aug-05	unit off line	unit off line
	Sep-05	unit off line	unit off line
	Oct-05	unit off line	unit off line
	Nov-05	unit off line	unit off line
	Dec-05	unit off line	unit off line
	Jan-06	unit off line	unit off line
	Feb-06	unit off line	unit off line
	Mar-06	unit off line	unit off line
	Apr-06	unit off line	unit off line
	May-06	unit off line	unit off line
	Jun-06	unit off line	unit off line
	LIMITS	631.0 lb/hr	1.0 lb/hr

Unit 4	Date	NOx lb/hr (max)	SO2 lb/hr (max)
	Jul-05	280.5	1.1
	Aug-05	378.5	1.2
	Sep-05	563.7	1.4
	Oct-05	624.4	1.6
	Nov-05	352.4	1.2
	Dec-05	114.1	0.5
	Jan-06	unit off line	unit off line
	Feb-06	unit off line	unit off line
	Mar-06	89.3	0.6
	Apr-06	unit off line	unit off line
	May-06	622.8	1.4
	Jun-06	89.1	0.5
	LIMITS	3393.0 lb/hr	3.5 lb/hr

Entergy Arkansas, Inc.
Lake Catherine Plant
Semi-Annual Monitoring Report
AFIN: 30-00011 Permit # 1717-AOP-R2

SC-13. The permittee shall maintain records, using CEMS for NO_X for Unit 4 (SN-03), which demonstrate compliance with the limit set forth in this permit. The records may be used by the Department for enforcement purposes. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

SC-14. The permittee shall determine NO_X emissions for units 1, 2, and 3 (SN-01 and SN-02) using the optional NO_X emissions data protocol procedure in 40 CFR Part 75, Appendix E, section 2.4. The records shall be updated on a monthly basis, shall be kept on site, and shall be provided to Department personnel upon request. An annual total and each individual month's data shall be submitted in accordance with General Provision 7. [Regulation 19, §19.703, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311]

Lake Catherine Plant

NO_x Emissions

Specific Condition 13 & 14

	Unit 1 SN-01		Unit 2 SN-01		Unit 3 SN-02		Unit 4 SN-03	
Month	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)	Monthly Total (tons)	12 month Total (tons)
Jul-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	9.00	70.9
Aug-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	17.40	88.3
Sep-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	44.30	132.6
Oct-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	40.10	172.7
Nov-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	21.20	193.9
Dec-05	unit off line	4.40	unit off line	2.20	unit off line	0.005	2.10	196.0
Jan-06	unit off line	4.40	unit off line	2.20	unit off line	0.005	unit off line	196.0
Feb-06	unit off line	4.40	unit off line	2.20	unit off line	0.005	unit off line	196.0
Mar-06	unit off line	4.40	unit off line	2.20	unit off line	0.005	0.9	174.3
Apr-06	unit off line	4.40	unit off line	2.20	unit off line	0.005	unit off line	166.5
May-06	unit off line	4.40	unit off line	1.40	unit off line	0.00	16.50	175.6
Jun-06	unit off line	0.00	unit off line	0.00	unit off line	0.00	3.00	154.5
Limit		1669 tpy		1669 tpy		2764 tpy		14861 tpy

Post-Control Emissions					
BART-Eligible Facilities Locations (BART File Name)	Unit ID ID No.	Post-Control Emissions (g/sec) SO_2	NO_x	PM_{10}	$PM_{2.5}$*
Entergy - Lake Catherine / Jones Mill (ENJM)	SN-03	0.420	85.633	0.365	0.246
Entergy - White Bluff / Redfield (ENRE)	SN-01	176.496	235.328	15.592	11.802
Entergy - White Bluff / Redfield (ENRE)	SN-02	193.180	257.572	16.653	12.915

These are the emissions that need to be changed.

Pre-Control Emissions					
BART-Eligible Facilities Locations (BART File Name)	Unit ID ID No.	Actual Emissions (g/sec) SO_2	NO_x	PM_{10}	$PM_{2.5}$*
Entergy - Lake Catherine / Jones Mill (ENJM)	SN-03	0.420	309.535	0.365	0.246
Entergy - White Bluff / Redfield (ENRE)	SN-01	978.164	550.821	15.592	11.802
Entergy - White Bluff / Redfield (ENRE)	SN-02	985.933	596.075	16.653	12.915

Entergy, Ritchie Plant, Helena, AR (ENHE)									
	2001			2002			2003		
Class I Area	Number of	Number of	Maximum Ch	Number of	Number of	Maximum C	Number of days	Number of days	Maximum Change
Caney Creek, AR	0	0	0.033	0	0	0.037	0	0	0.053
Hercules-Glade, MO	0	0	0.067	0	0	0.021	0	0	0.050
Mingo, MO	0	0	0.052	0	0	0.068	0	0	0.069
Sipsey, AL	0	0	0.049	0	0	0.038	0	0	0.096
Upper Buffalo, AR	0	0	0.035	0	0	0.026	0	0	0.027

Entergy, Lake Catherine Plant, Jones Mills, AR (ENJM)									
	2001			2002			2003		
Class I Area	Number of days = > 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv	Number of days => 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv	Number of days => 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv
Caney Creek, AR	25	12	2.793	25	11	3.066	39	17	3.209
Hercules-Glade, MO	9	0	0.655	8	1	1.663	9	0	0.903
Mingo, MO	1	0	0.749	7	0	0.807	4	0	0.636
Sipsey, AL	0	0	0.361	0	0	0.200	1	0	0.731
Upper Buffalo, AR	21	2	1.034	15	4	1.506	20	7	2.186

Entergy, White Bluff Plant, Redfield, AR (ENRE)									
	2001			2002			2003		
Class I Area	Number of days = > 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv	Number of days => 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv	Number of days => 0.50 dv	Number of days => 1.00 dv	Maximum Change in dv
Caney Creek, AR	79	53	8.111	94	64	7.278	102	67	8.816
Hercules-Glade, MO	86	57	6.314	74	42	4.249	87	47	5.308
Mingo, MO	102	48	5.950	102	67	4.522	102	66	5.617
Sipsey, AL	74	37	4.087	74	45	5.843	78	45	5.734
Upper Buffalo, AR	84	55	7.750	80	52	6.434	100	68	5.390

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Tuesday, October 31, 2006 9:56 AM
To: 'JOHNSON, GEORGE'; Davis, Anthony; McCorkle, Mark
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: RE: BART Submittal

Good morning Tracy,

I apologize for not getting back to you earlier. Before I replied to your question, I had to research the steps required to "ensure the confidentiality" of Entergy's process. According to Phil Murphy, Entergy's BART submittal is to be treated similar to a permit application. Reg. 19.413 (B) (page 4-11) of the "Arkansas Pollution Control and Ecology Commission Regulation No. 19" states ". . . 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 …" Therefore, Entergy needs to submit two BART reports. One that contains the confidential information along with the sworn affidavit in a package marked "Confidential Material Enclosed". This report will not go into the public record. The second report will exclude the confidential information and will be part of the public record. However, the process needs to be described in this report and written in the manner required in the affidavit. Please mark the package containing the second report "No Confidential Information Included".

Please feel free to contact me, if you have additional questions.

Best wishes,
Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Monday, October 30, 2006 5:22 PM
To: Pettyjohn, Mary; Davis, Anthony
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: BART Submittal
Importance: High

Tony and Mary,
The BART submittals we are preparing contain some confidential information, such as projected capacity and heat rates. Can you describe what we need to do to ensure the confidentiality of this data?
Thanks,
Tracy Johnson
Entergy
501-377-4033

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Monday, October 30, 2006 5:22 PM
To: Pettyjohn, Mary; Davis, Anthony
Cc: BOWLES, MARK C; HANTZ, JOSEPH
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Importance: High

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Thanks,
Tracy Johnson
Entergy
501-377-4033

Swafford, Bill

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Wednesday, February 21, 2007 9:00 AM
To: Pettyjohn, Mary; Crouch, Wesley; Swafford, Bill; McCorkle, Mark; Porta, Mike
Cc: HANTZ, JOSEPH; BOWLES, MARK C
Subject: FW: ADEQ Conference Call - minutes- 2/15/07
Importance: High

Mike, Mark, Mary, Bill, and Wesley,
Below are minutes from our conference call from 2/15. Please comment if I have omitted or misinterpreted anything.
Thanks,
Tracy

Mark, Joe, Bob, and I had a conference call with ADEQ Thursday 2/15 concerning the BART Reports for WB and LC4.

We discussed LC4 first and the questions/issues were:

1. ADEQ requested the modeling files.
2. ADEQ requested the control cost in $/ton rather than $/deciview. We commented that costs were submitted both ways. ADEQ is going to re-review the report and will let us know if they need anything else.
3. ADEQ wanted to know why LC4 was exempt from installing post combustion controls. Our answer was EPA guidance stating it was not required. ADEQ requested the citation.
4. There was some concern from ADEQ that the LC permit does not state a limit of 1% sulfur fuel oil. We replied that the limits in the permit are based on 1% oil. This will likely be included in the permit as a limit when BART is incorporated into the permit. Should not be an issue.
5. ADEQ requested a Compliance plan and schedule for implementation starting from the AR SIP approval date (unknown at this time ~ Dec 07).
6. ADEQ requested we submit our requested limit, averaging time period, and associated language.

Next WB:

1. ADEQ requested the modeling files.
2. ADEQ requested a Compliance plan and schedule for implementation starting from the AR SIP approval date (unknown at this time ~ Dec 07).
3. ADEQ had concerns about the Aux-boiler and our reasoning that it was exempt from BART. They suggested we take a ~1000 hours of operation limit. We stated that there was guidance from EPA to support that BART does not apply to this source. Start-up boilers are exempt and there seems to be confusion on the aux-boiler because it is not called "Start-up boiler". We relayed that the only use for the aux-boiler is start-up of Units 1 and/or 2 when both units are down and that there is no generator associated with the aux-boiler. ADEQ requested a copy of the EPA guidance and they are going to discuss some more among themselves. They seemed to better understand the situation after our discussion.
4. ADEQ had questions about our considering the ESPs as BART for PM. After discussion they agreed.
5. ADEQ requested we submit our requested limit, averaging time period, and associated language.

We agreed to submit the requested information by March 1.
List to submit:

1. Modeling files (2) WB and LC4
2. Citation stating post combustion controls are not required for LC4
3. Citation stating the aux-boiler at WB is exempt from BART
4. Compliance plan and schedule beginning at the AR SIP approval date (2) WB and LC4.

5. Our requested emission limits, averaging time period, and associated language (2) WB and LC4

Generally, the discussion was positive and there did not seem to be any major issues on either side.

If I missed anything or miss-interpreted anything please comment.

Thanks,
Tracy

Pettyjohn, Mary

From: Jeremy Jewell [jjewell@trinityconsultants.com]
Sent: Monday, February 26, 2007 11:12 AM
To: Pettyjohn, Mary
Cc: KELLEY.CROUCH@domtar.com
Subject: Fw: BART Update

REVISED BART
Emission Data.xls...

Mary,

As Kelley stated below, I anticipate that we will have to re-run all pre- and post-control modeling. As such, I wanted to confirm with you what version of the model should be used. I recall some correspondence about a month ago about updating the models from the VISTAS version to the most current version. What ever happened with this? If we need to change from the VISTAS version, then I have one additional complicating factor we need to consider. Trinity (one of our CALPUFF gurus in Dallas) has discovered an error in the current EPA-approved version of CALMET. See his description below:

In the process of debugging a runtime error with the EPA-approved version of CALMET, I found a bug associated with the calculation of the daytime mixing heights. This bug will cause the use of an incorrect air density value in the calculation of the daytime convective and mechanical mixing heights. The problematic subroutine is called "mixht". The rho(mxss) variable in the subroutine should be defined as 2-dimension (refer to the grid point index) rather than 1-dimension (refer to the index of surface station). I notice that this bug has been fixed in the VISTA version. I did not check other places inside the code for similar problem. If the problem is only limited to the mixht subroutine, it would be an easy fix. However, whatever datasets (e.g., 2001-2003 CENRAP CALMET data for BART) generated by this EPA-approved version of CALMET will be subject to the code error.

Have you heard of this issue yet? (EPA has only recently been notified).

Regards,

Jeremy Jewell
Managing Consultant

Trinity Consultants
10809 Executive Center Drive
Suite 120, The Searcy Building
Little Rock, Arkansas 72211
Phone: (501) 225-6400
Fax: (501) 225-8802

----- Forwarded by Jeremy Jewell/Trinity Consultants on 02/26/2007 11:04 AM -----

"Crouch, Kelley R."
<KELLEY.CROUCH@domtar.com
>
To
"Mary Pettyjohn (E-mail)"
02/26/2007 10:45 AM <PETTYJOHN@adeq.state.ar.us>

cc "Jeremy Jewell (E-mail)" <jjewell@trinityconsultants.com>, "Simmons, R. Scott" <SCOTT.SIMMONS@domtar.com>, "Martin, Guy" <Guy.Martin@domtar.com>

Subject BART Update

Mary,
In the process of trying to answer some of the questions from our call on 2/14, I've unfortunately discovered some errors in the data used for the modeling. First, I was trying to look into Bill Swafford's question about our emissions inventory from 2001, and what I found was that we had reported 128.5 tpy (he had mentioned 1285 lb/hr, but that is our current permit limit, not what I could find was reported as emissions.) When I performed my calculations for the data you had requested for BART, I used the current AP-42 factor of .025 lb SO2/MMBTU, and did not include additional SO2 tons from the burning of fuel oil. 2001 was the only year of the 3 years that we burned fuel oil in No. 1 Power Boiler, so that was the only year affected by this.

Second, upon discovering this, and realizing from the conference call just how critical the values were going to be (since they will likely become our new permit limits), I took a closer look into the rest of the data and I have come up with more accurate estimates that should be considered. It appears I originally used 24 hour averages for each year, but not one-day MAXIMUM 24 hour averages. It looks like I just backed out from total tons per year reported to a 24 hour ton rate and that is the value that I sent to you and was used in the modeling.

I revised the BART emission data to the actual 24 hour MAXIMUM emissions. The only thing that didn't change was NOx on No. 1 PB (because it was a stack test). Everything else did change though. This data is in the attached file. The boxes in red include the revised data as compared to the original data used.

I've asked Jeremy to go ahead and work on re-running the modeling. If we re-run the pre- and post-control modeling, I was informed that it will take at least a couple weeks to get a full update prepared.

Let me know how you see that we need to proceed with this new information.

I apologize for this inconvenience.

<<REVISED BART Emission Data.xls>>

Kelley R. Crouch
Domtar Industries Inc.
Ashdown Mill
870-898-2711 ext. 6168

(See attached file: REVISED BART Emission Data.xls)

Pettyjohn, Mary

From: HANTZ, JOSEPH [JHANTZ@entergy.com]
Sent: Thursday, March 01, 2007 3:17 PM
To: Pettyjohn, Mary
Subject: FW: SWEPCO Flint Creek - CenRAP modeling data and White Bluff and Independence
Importance: High

Mary,

The projected emissions at White Bluff in 2018 using presumptive BART controls of 0.15 lb/mmBtu for NOx and SO2 will be

Unit 1 Annual NOx – 4298 tons and annual SO2 of 4298 tons
Unit 2 Annual NOx – 4093 tons and annual SO2 of 4093 tons

The projected emission from Independence in 2018 are

Unit 1 Annual SO2 – 11189 tons Annual NOx – 7068 tons
Unit 2 Annual SO2 – 11742 tons Annual NOx - 7277 tons

Joe

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373
(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

----- Forwarded by N N Dharmarajan/AEPIN on 03/01/2007 10:57 AM -----

N N Dharmarajan/AEPIN

03/01/2007 10:56 AM

To "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
cc "Stephen Cain" <scain@aecc.com>, tbbond@aep.com, mac@adeq.state.ar.us
Subject Re: SWEPCO Flint Creek - CenRAP modeling data Link

Mary - I am following up on my telecon of earlier this afternoon. **I am really getting concerned with the 2018 Base case emissions data for SO2 and NOx in the attached spreadsheet for our SWEPCO Flint Creek unit (Benton County),** as used by CenRAP's consultant. These emissions number **do not reflect the BART level reductions** that will be in place well before 2018, ala, late 2013 or 2014, as indicated in our letter to the ADEQ of October 26, 2006 and subsequent confirmation of those numbers with the control technologies in a letter that Brian Bond sent the ADEQ earlier this month. **Please recognize that the 2018 numbers are intended to determine incremental emissions reductions to help make the reasonable progress goal determinations at the affected Class 1 areas and the incremental cost information (based on the technology developed by**

the contractor) for ranking and developing control strategies. Using these erroneous (HIGHER) numbers in the spreadsheet in the modeling and control strategy development will give the wrong answer.

The correct numbers for SO2 and NOx, based on the presumptive limits we have agreed to, will result in **Annual SO2 of 2860 TPY and NOX of 4370 TPY**. The spreadsheet shows the **2018 annual tons for SO2 as 11,437 and NOx 5162.** Moreover, **the SO2 control is indicated as wet FGD at 90% removal and in our letter, we have indicated we will be meeting the BART presumptive limit of 0.15 Lbs/MMBTu using DRY FGD.** In the interest of the correctness of the reasonable progress goal determination and force ranking sources to control, it would seem important to work to the correct data. (Furthermore, I noticed that the information for the Entergy units at White Bluff may also be high). **Since reasonable progress goal is a cumulative impact assessment of sources, it is doubly important to have Entergy's correct information reflected in the spreadsheet.** Please let me know if you need further clarifications.

Please share this information with Lee Warden at the ODEQ who is the modeling co-chair for CenRAP. If you are not chasing down this informational the ADEQ, kindly reach it to the responsible person for transmittal to Lee Warden. I am copying Mark McCorkle on this memo. Thanks.

N. N. Dharmarajan
American Electric Power
1201 Elm Street, Suite 800
Dallas, Texas 75270
(T):214-777-1373
(F): 214-777-1380
(C): 214-536-7793
e-mail: nndharmarajan@aep.com

Hi Bob,

I apologize for not replying sooner. I want to thank you for sending me the information quickly. However, according to my notes, Entergy was to send me a letter with the below statements included in the letter. Has this letter been sent or is it in the process of being developed?

Additionally, the addendum to the engineering analysis did not include a new permit limit for hours of operation for SN-05. Please let me know what would be the new hours of operation for SN-05. During our conference call with Mike Porta, Bill Swafford, Wesley Crouch and myself, I mentioned 1000 hours, but Tracy voiced a concern. If I do not hear from Entergy by Friday on this matter, I will work with EPA to determine the hours of operation for SN-05.

Thank you,
Mary

-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Friday, March 23, 2007 3:53 PM
To: Pettyjohn, Mary
Cc: JOHNSON, GEORGE; HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C
Subject: additional information about PM speciation for Entergy BART modeling

Dear Mary,

As you recently noted, ENSR's BART modeling for Entergy's White Bluff and Lake Catherine plants included a rigorous analysis of the speciation of particulate matter as input to the CALPUFF model. This amount of detail for representing the PM emissions is mentioned in the CENRAP BART modeling protocol, available online at http://www.tceq.state.tx.us/implementation/air/sip/bart/haze.html.

The CENRAP protocol has the following text in Chapter 6 that refers to the modeling of PM species:

"Species to be modeled in the screening assessment include SO_2, SO_4, NO_x, HNO_3, NO_3 and particulate matter. Absent detailed speciation and size distribution data from the source, PM should be modeled in two (2) size categories, fine (0.0-2.5 µm) and coarse (2.5-10.0 µm), consistent with the IMPROVE reconstructed mass equation. Particulate matter emissions by size category should be combined wherever possible into the appropriate species for the visibility analysis. These species include (a) elemental carbon (EC), (b) fine PM or "soil" (< 2.5 µm in diameter), (c) coarse PM (between 2.5-10 µm in diameter) and (d) organics, referred to as secondary organic aerosols in the CALPOST postprocessor. If source-specific emissions factors are not available, AP-42 factors can be used to estimate the PM speciation for those source sectors for which AP-42 emissions factors have been developed."

Since we have Federal Land Manager (FLM) guidance for the detailed PM speciation for electrical generation unit sources, we used this guidance in the CALPUFF modeling. We were also aware of FLM scrutiny on this issue, and that the FLMs would likely ask for this level of detail eventually. Since the modeling results were expected to be slightly more conservative with this added detail for the PM_{10} species emissions, we felt that the analysis would be defensible.

Here are references for the PM speciation.

fax: 978.589.3374
e-mail: bpaine@ensr.aecom.com

Table 9.1 Facilities with BART-eligible Units in the State of Arkansas

BART Source Category Number and Name	Facility Name/Location	SIC	Facility ID	AFIN	Unit ID	Unit Description
1. Fossil fuel-fired Electric Plants > 250 MMbtu/hour – Electric Generating Units (EGUs)	American Electric Power/Gentry	49	05-007-00107	04-0017	SN-01	Boiler
	AR Electric Cooperative/Augusta	49	05-147-00024	74-00024	SN-01	Boiler 1350mm
	AR Electric Cooperative/Camden	49	05-103-00055	52-00055	SN-01	Boiler
	Entergy – Lake Catherine/Jones Mill	49	05-059-00011	30-00011	SN-03	Unit 4 Boiler
	Entergy – Ritchie Plant/Helena	49	05-107-00017	54-00017	SN-02	Unit 2
	Entergy – White Bluff/ Redfield	49	05-069-00110	35-00110	SN-01	Unit 1
	Entergy – White Bluff/Redfield	49	05-069-00110	35-00110	SN-02	Unit 2
	Entergy – White Bluff/Redfield	49	05-069-00110	35-00110	SN-05	Auxiliary Boiler
3. Kraft Pulp Mills	Domtar, Inc./Ashdown	26	05-081-00002	41-00002	SN-03	#1 Power Boiler
	Domtar, Inc./Ashdown	26	05-081-00002	41-00002	SN-05	#2 Power Boiler
	Delta Natural Kraft/Pine Bluff	26	05-069-00017	35-00017	SN-02	Recovery Boiler
	Georgia – Pacific Paper/Crossett	26	05-003-00013	02-00013	SN-22	9A Boiler
	Green Bay Packing/ Morrilton	26	05-029-00001	15-00001	SN-05A	Recover Boiler
	Potlatch/McGehee	26	05-041-00036	21-00036	SN-04	Power Boiler
11. Petroleum Refineries	Lion Oil/El Dorado	29	05-139-00016	70-00016	SN-809	#7 Catalyst Regenerator
15. Sulfur Recovery Plant	Albermarle– South Plant/Magnolia	28	05-027-00028	14-00028	SR-01	Tail Gas Incinerator
19. Sintering Plants	Big River Industries /West Memphis	32	05-035-00082	198-00082	SN-01	Kiln A
21. Chemical Processing Plants	Albermarle– South Plant/Magnolia	28	05-027-00028	14-00028	BH-01	Boiler #1
	Albermarle– South Plant/Magnolia	28	05-027-00028	14-00028	BH-02	Boiler #2
	Eastman Chemical/Batesville	28	05-063-00036	32-00036	6M01-01	3 Coal Boilers
	El Dorado Chemical/El Dorado	28	05-139-00040	70-00040	SN-08	West Nitric Acid Plant
	El Dorado Chemical/El Dorado	28	05-139-00040	70-00040	SN-09	East Nitric Acid Plant
	El Dorado Chemical/El Dorado	28	05-139-00040	70-00040	SN-10	Nitric Acid Concentrator

-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Friday, March 23, 2007 3:53 PM
To: Pettyjohn, Mary
Cc: JOHNSON, GEORGE; HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C
Subject: additional information about PM speciation for Entergy BART modeling

Dear Mary,

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Since we have Federal Land Manager (FLM) guidance for the detailed PM speciation for electrical generation unit sources, we used this guidance in the CALPUFF modeling. We were also aware of FLM scrutiny on this issue, and that the FLMs would likely ask for this level of detail eventually. Since the modeling results were expected to be slightly more conservative with this added detail for the PM_{10} species emissions, we felt that the analysis would be defensible.

Here are references for the PM speciation.

Lake Catherine gas firing

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Regards,

Bob Paine, CCM, QEP
Technical Director
Direct line 978.589.3164

ENSR Corporation
2 Technology Park Drive
Westford, MA 01886

fax: 978.589.3374
e-mail: bpaine@ensr.aecom.com

Pettyjohn, Mary

From: JOHNSON, GEORGE [GJOHNS6@entergy.com]
Sent: Monday, April 02, 2007 5:03 PM
To: Pettyjohn, Mary
Cc: HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C; Paine, Bob
Subject: RE: additional information about PM speciation for Entergy BART modeling
Importance: High

Mary,

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Thank you,
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Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, April 04, 2007 1:58 PM
To: 'JOHNSON, GEORGE'
Cc: HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C; Paine, Bob
Subject: RE: additional information about PM speciation for Entergy BART modeling

Hi Tracy,

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Please feel free to contact me if there are still some concerns.

Thank you,
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Subject: FW: additional information about PM speciation for Entergy BART modeling
Importance: High

Mary,
There is no way the Aux-boiler can be used as a peaking unit because, as stated during the call, there is no generator associated with the boiler. It only provides steam to units 1 & 2 and only for start-up / shut-down of those two units. It can not generate electricity.

The concern with taking a limit on operating hours is;

1. A limit will result in additional recordkeeping requirements. Additional requirements mean additional opportunity for non-compliance.
2. Limiting the operating hour of the aux-boiler will have no impact on visibility, or protection of the environment.
3. Conditions change; 1000 operating hours has been more than enough in the past, but who knows what we will need 10 years from now. It's easer to resolve the issue now than it will be to get the limitation changed later.
4. I understand the issue over "shall" vs. "may", but in this case I think it is a grammatical difference and not a legal difference. It seems clear that if the boilers are only used for start up they are exempt. At the very least ADEQ has the ability to exempt it.

If you still have concerns about the aux-boiler we need to have a call to discuss.

Thanks,
Tracy

19. An EGU has three boilers: a) coal boiler (5500 mmbtu/hr); and b) two auxilliary boilers (181.6 mmBtu/hr each). The State has determined the coal boiler to meet the first test for BART-eligibility. Since the two auxilliary boilers do not appear to fall under any of the 26 BART categories, would they pass the first test for BART-eligibility because they contribute to the "steam electric plant"?

As a general matter, all the emission units, including any auxiliary boilers, at a fossil-fuel fired steam electric plant of more than 250 million BTU/hour heat input would be considered part of the same stationary source. Under the RH regulations, BART applies to certain existing stationary sources; stationary sources, in turn, are defined to include "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." 50 CFR 51.301. The regulations further provide that "[p]ollutant-emitting activities must be considered part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit [SIC] code)." For most plants on the BART list, there will be only one 2-digit SIC code that applies to the entire plant. As you have described the source in your question, the auxilliary boilers would fall within the same 2-digit SIC code as the coal boiler; these units accordingly are part of the same stationary source as the coal boiler.

Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted.

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Tracy,

I am required to do the modeling based on your permit conditions and the permit shows this source operating 8760 hours per year. Therefore, the 1000 hour operating limit is the control measure for SN-05 hence; this is what will be put in the SIP and the revised Reg 19.

Thank you,
Mary

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Importance: High

Mary,
There is no way the Aux-boiler can be used as a peaking unit because, as stated during the call, there is no generator associated with the boiler. It only provides steam to units 1 & 2 and only for start-up / shut-down of those two units. It can not generate electricity.

The concern with taking a limit on operating hours is;

1. A limit will result in additional recordkeeping requirements. Additional requirements mean additional opportunity for non-compliance.
2. Limiting the operating hour of the aux-boiler will have no impact on visibility, or protection of the environment.
3. Conditions change; 1000 operating hours has been more than enough in the past, but who knows what we will need 10 years from now. It's easer to resolve the issue now than it will be to get the limitation changed later.
4. I understand the issue over "shall" vs. "may", but in this case I think it is a grammatical difference and not a legal difference. It seems clear that if the boilers are only used for start up they are exempt. At the very least ADEQ has the ability to exempt it.

If you still have concerns about the aux-boiler we need to have a call to discuss.

Thanks,
Tracy

19. An EGU has three boilers: a) coal boiler (5500 mmbtu/hr); and b) two auxilliary boilers (181.6 mmBtu/hr each). The State has determined the coal boiler to meet the first test for BART-eligibility. Since the two auxilliary boilers do not appear to fall under any of the 26 BART categories, would they pass the first test for BART-eligibility because they contribute to the "steam electric plant"?

As a general matter, all the emission units, including any auxiliary boilers, at a fossil-fuel fired steam electric plant of more than 250 million BTU/hour heat input would be considered part of the same stationary source. Under the RH regulations, BART applies to certain existing stationary sources; stationary sources, in turn, are defined to include "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." 50 CFR 51.301. The regulations further provide that "[p]ollutant-emitting activities must be considered part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit [SIC] code)." For most plants on the BART list, there will be only one 2-digit SIC code that applies to the entire plant. As you have described the source in your question, the auxilliary boilers would fall within the same 2-digit SIC code as the coal boiler; these units accordingly are part of the same stationary source as the coal boiler.

Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted.

-----Original Message-----
From: Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
Sent: Wednesday, April 04, 2007 1:58 PM
To: JOHNSON, GEORGE
Cc: HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C; Paine, Bob
Subject: RE: additional information about PM speciation for Entergy BART modeling

Hi Tracy,

Unfortunately there appears to be a misunderstanding on the status of the White Bluff auxiliary boiler (SN-05). As stated during the conference call, the concern was due to the number of hours SN-05 is permitted to operate. Additionally, it has been determined through consultation with EPA, Region 6, Entergy's, White Bluff, auxiliary boiler, SN-05, was classified correctly as BART-eligible and thus should be modeled along with units one and two, SN-01 and SN-02. ADEQ's BART determination modeling indicated all three sources are subject-to-BART. Normally, startup emissions would not be included in BART exemption modeling. However, because SN-05 is permitted for continuous operation, we have a concern it could be brought into use as a peaking unit in the future. Also, the documentation Entergy provided for the exemption of SN-05 from BART-eligibility does not state "shall be exempt" rather the document states "may be exempt". Deborah Pitts, JD, ADEQ, Legal Division concurs with EPA region 6 and the legal difference between "may and "shall". Therefore, SN-05 is subject-to-BART and the control measure can be a limit on the annual hours of operation. What is the objection to taking lower hours of operation limit (1000 hours) which is 12 times Entergy's average reported annual usage?

Again there seems to be some misunderstanding about the letter that was requested on the last conference call. I remember requesting a letter be sent to me as well as an electronic copy. The electronic copy will be available for review by FLMs, EPA, other states and stakeholders.

Please feel free to contact me if there are still some concerns.

Thank you,
Mary

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Monday, April 02, 2007 5:03 PM
To: Pettyjohn, Mary
Cc: HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C; Paine, Bob
Subject: RE: additional information about PM speciation for Entergy BART modeling
Importance: High

Mary,

Entergy approved the response from Bob Paine prior to it being sent. Since you requested the response be submitted in electronic format, we were under the impression we had fulfilled our commitment. Do you want a hard copy mailed to you?

My notes from the conference call on 2/15/2007 (e-mailed to ADEQ participants on 2/21,2007), note that ADEQ had concerns about the Aux-boiler, but after we explained that there is guidance from EPA indicating it is exempt from BART and that the aux-boiler was only used exclusively for Start-up / Shut-down of the main units, ADEQ seemed in agreement that it is exempt and the confusion was mainly because the aux-boiler was not titled "Start-up boiler". ADEQ requested that we submit the EPA guidance, which we did, and you guys were going to discuss among yourselves. ADEQ left us with the impression on the call that we were in agreement on the aux-boiler and just wanted the documentation for reference. Entergy provided the requested guidance, we do not think BART applies to the aux-boiler, and therefore we do not want a restriction placed on the operating hours. Your e-mail below is the first indication since the conference call that ADEQ still has any concerns about SN-05.
Please advise if the information above does not resolve your concern about SN-05.

Thanks,
Tracy

> -----Original Message-----
> **From:** Pettyjohn, Mary [mailto:PETTYJOHN@adeq.state.ar.us]
> **Sent:** Monday, April 02, 2007 4:12 PM
> **To:** Paine, Bob
> **Cc:** JOHNSON, GEORGE; HANTZ, JOSEPH; CHENET, THEODORE D; SCHOTT, MATTHEW J; BOWLES, MARK C
> **Subject:** RE: additional information about PM speciation for Entergy BART modeling
>
> Hi Bob,
>
> I apologize for not replying sooner. I want to thank you for sending me the information quickly. However, according to my notes, Entergy was to send me a letter with the below statements included in the letter. Has this letter been sent or is it in the process of being developed?
>
> Additionally, the addendum to the engineering analysis did not include a new permit limit for hours of operation for SN-05. Please let me know what would be the new hours of operation for SN-05. During our conference call with Mike Porta, Bill Swafford, Wesley Crouch and myself, I mentioned 1000 hours, but Tracy voiced a concern. If I do not hear from Entergy by Friday on this matter, the new permit limit of hours of operation for SN-05 will be 1000 hours.
>
> Thank you,
> Mary

Tony,

I don't mean to beat a dead horse, but am I reading this correctly? It seems to me Entergy still does not understand there is no language that can be written in the permit to ensure they will not operate SN-05 more than 1000 hours a year or even 8760 hours a year. Also, Bill and I checked with permitting to see if there would be any reason Entergy would need 8760 hours a year for SN-05 or even 1000 hours and according to permitting there is no reason at all. If Entergy does use 1000 hours or more a year then there is something extremely wrong at the plant. Entergy, also, will need to renew their permit every 5 years. My question is "Why does Entergy need those 8760 hours per year?" Is Entergy not recording every time SN-05 is operating?

Also, I still have not received a letter from Entergy like I requested them to. Entergy had Bob Paine send me an email and when I requested a letter I was told that I did not. Please let me know how to handle this.

Mary

-----Original Message-----
From: Davis, Anthony
Sent: Friday, April 13, 2007 12:17 PM
To: McCorkle, Mark; Pettyjohn, Mary
Subject: FW: SN-05

FYI

-----Original Message-----
From: JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
Sent: Thursday, April 12, 2007 4:53 PM
To: Davis, Anthony
Cc: BOWLES, MARK C; HANTZ, JOSEPH
Subject: RE: SN-05

Tony,
Thank you for following up on this. We are reviewing and will likely provide you some permit language to consider that we think will accomplish what the Department is after with out imposing a 1000 hr per year limitation.
Hope to get it to you soon,
Tracy

-----Original Message-----
From: Davis, Anthony [mailto:DavisA@adeq.state.ar.us]
Sent: Thursday, April 12, 2007 2:29 PM
To: JOHNSON, GEORGE
Subject: SN-05
Importance: High

Tracy,
After examining all of the discussion and points of view on the issue of the SN-05, including EPA Region 6 staff, we have concluded that emissions from SN-05 need to be considered as part of the modeling analysis. This is not requiring that a control device be put on the equipment, but does suggest that the manner of operation should be defined in a permit as a means of assuring that the boiler is

only used for its stated purpose and in the manner that was used to define the emissions rate and other related input parameters for the model run.

An assessment of the model runs has determined that 1,000 hours per year might be a suitable permit limit, and Entergy has indicated that the equipment runs far less time. As the permit under Specific Condition 36 already requires record-keeping related to use of this boiler, it seems appropriate to revise Specific Condition 36 accordingly. My staff has indicated that we did not agree that this sort of permit limit would not be necessary, but that we would model operations both with and without a limit on this source, and did not require a resolution of this issue to proceed. While we do seem to have some discretion in this matter, it seems that this issue could be resolved through the permit modification process.

Thank you for your attention to this matter. Let me know if you have any questions or additional comments.

Tony

Pettyjohn, Mary

From: HANTZ, JOSEPH [JHANTZ@entergy.com]
Sent: Tuesday, November 07, 2006 1:09 PM
To: Pettyjohn, Mary; Davis, Anthony
Cc: JOHNSON, GEORGE; bpaine@ensr.aecom.com
Subject: FW: modeling answer
Importance: High

Tony,

Bob and I would like to set up a call with Eric to discuss. I want to be sure you were OK with us calling him and if so invite you and Mary to participate.

Joe Hantz
-----Original Message-----
From: Paine, Bob [mailto:BPaine@ensr.aecom.com]
Sent: Tuesday, November 07, 2006 12:33 PM
To: HANTZ, JOSEPH
Cc: Kostrova, Olga
Subject: RE: modeling answer

Joe,

I think that this issue is worth further discussion, for the following reasons:

1) VISTAS and CENRAP use the same databases for terrain and meteorological data. CENRAP did not enhance their meteorological data with surface and upper air observations. ADEQ invited us to enhance the data to include these observations

2) We did do this, taking the data from the VISTAS web site. However, CENRAP would have used the same data for this, so I don't understand their issue so far. The 4-km resolution we used vs. the CENRAP 6-km resolution should not be an issue.

3) Regarding the new vs. old IMPROVE equation, we can easily go back to the old IMPROVE equation for CENRAP states.

I still think that we can come to agreement on this.

Bob

From: HANTZ, JOSEPH [mailto:JHANTZ@entergy.com]
Sent: Tuesday, November 07, 2006 12:30 PM
To: Paine, Bob
Subject: FW: modeling answer

Bob,

Looks like we have to use CENRAP protocol, I will call to discuss

Joe Hantz
-----Original Message-----
From: Davis, Anthony [mailto:DavisA@adeq.state.ar.us]
Sent: Tuesday, November 07, 2006 11:20 AM
To: JOHNSON, GEORGE
Cc: Pettyjohn, Mary; BOWLES, MARK C; HANTZ, JOSEPH; Bates, Mike; McCorkle, Mark
Subject: RE: modeling answer

Tracy,
In reference to our conference call of October 30, 2006, EPA Region 6 has replied to Mary's request for their "take" on Entergy's use of VISTAS modeling for BART purposes. Eric Snyder, Region 6 modeler, had concerns about the following issues with the VISTAS modeling, some of which was discussed in our phone call of last week: terrain and meteorology, resolution, and VISTAS using a new algorithm versus CenRAP's use of the current algorithm. Eric also stated he wasn't convinced that the VISTAS modeling regime was better that CenRAP's. In addition, all other BART facilities in the state have used the CenRAP protocol. For purposes of consistency and for the reasons outlined above, our request is that Entergy use the CenRAP BART modeling protocol.

Please feel free to contact us if additional information is needed. Thank you for your efforts to work through this important issue.
Tony

> -----Original Message-----
> **From:** JOHNSON, GEORGE [mailto:GJOHNS6@entergy.com]
> **Sent:** Friday, November 03, 2006 1:11 PM
> **To:** Davis, Anthony
> **Cc:** Pettyjohn, Mary; BOWLES, MARK C; HANTZ, JOSEPH
> **Subject:** modeling answer
> **Importance:** High
>
> Tony,
> Were you able to get your question answered by EPA? I did not hear back from you, but I have been out of the office too, so I wanted to check back with you.
> Thanks,
> Tracy Johnson
> Entergy

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Wednesday, October 18, 2006 3:32 PM
To: Joe Kordzi (kordzi.joe@epa.gov)
Subject: Entergy a subject-to-BART facility

Hi Joe,

On October 5th I had a call with Entergy concerning their response to the letter we sent confirming the agreements that were made during our conference call. Entergy was adamant they did not agree during the conference call we had with them on August 15, 2006. About them being exempt I mentioned they can request from the Regional Administrator to be exempt from BART, but that wasn't an option for them. I tried explaining why they will still be considered subject-to-BART. All that Entergy kept mentioning is they will be modeling the Lake Catharine facility to see how much of a reduction in their permit limit will be required for them to not have any impact on Caney Creek. I did mention to them that they may opt to use the 98th percentile, but they will need to incorporate observational meteorological data with the CENRAP MM5 data. If they choose to go this route, Entergy will be required to develop an EPA and FLM approvable modeling protocol (esp. for the met part) and send along with the protocol the statistical model evaluation. Also, during this conversation Entergy did not mention their intention of using VISTAS's BART modeling protocol nor VISTAS's processed CALMET data.

I am attaching the original letter that was sent to Entergy.

Thank you for you help. It is greatly appreciated.

Blessings to you and yours,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Tuesday, April 03, 2007 3:19 PM
To: 'Kordzi.Joe@epamail.epa.gov'
Subject: RE: Entergy Letter Re: auxiliary boiler + other concerns

Hi Joe,

I located Entergy's reasoning for SN-05 to be exempt from BART. Entergy is using the answer to Number 19 from the following EPA documents: Additional Regional Haze Questions, September 27, 2006 Revision which I inserted below. I do not agree with the following statement: "Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted." My reasoning is as follows: There is nothing in the Rule that refers to a boiler being used to start-up another boiler. The term "start-up" is used on pages FR 39108, 39110, 39129, 29157, 39158, 39159, and 329162 and none of the aforementioned referenced pages mention boilers used to start-up another boiler nor do they mention start-up emissions.

"19. An EGU has three boilers: a) coal boiler (5500 mmbtu/hr); and b) two auxilliary boilers (181.6 mmBtu/hr each). The State has determined the coal boiler to meet the first test for BART-eligibility. Since the two auxilliary boilers do not appear to fall under any of the 26 BART categories, would they pass the first test for BART-eligibility because they contribute to the "steam electric plant"?

As a general matter, all the emission units, including any auxiliary boilers, at a fossil-fuel fired steam electric plant of more than 250 million BTU/hour heat input would be considered part of the same stationary source. Under the RH regulations, BART applies to certain existing stationary sources; stationary sources, in turn, are defined to include "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." 50 CFR 51.301. The regulations further provide that "[p]ollutant-emitting activities must be considered part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit [SIC] code)." For most plants on the BART list, there will be only one 2-digit SIC code that applies to the entire plant. As you have described the source in your question, the auxilliary boilers would fall within the same 2-digit SIC code as the coal boiler; these units accordingly are part of the same stationary source as the coal boiler.

Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted."

not shall

Additionally, I interpret the following highlighted passage from page 48 of the Final BART Modeling Guidelines to mean the emissions from the source which is in the process of being started-up.

The emissions estimates used in the models are intended to reflect steady-state operating conditions during periods of high capacity utilization. We do not generally recommend that emissions reflecting periods of start-up, shutdown, and

malfunction be used, as such emission rates could produce higher than normal effects than would be typical of most facilities.

Thank you for your help.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Tuesday, April 03, 2007 10:01 AM
To: Pettyjohn, Mary
Subject: Fw: Entergy Letter Re: auxiliary boiler + other concerns

Hi Mary,

Pls send me an email about you followup conversation w/ Entergy about this.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

----- Forwarded by Joe Kordzi/R6/USEPA/US on 04/03/07 10:00 AM -----

Joe Kordzi/R6/USEPA/US

01/05/07 02:47 PM

To "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
cc Erik Snyder, Thomas Diggs/R6/USEPA/US@EPA
Subject Re: Entergy Letter Re: auxiliary boiler + other concerns Link

Hi Mary,

I've talked this over w/ Erik and we feel we can work w/ you and Entergy on a more realistic emission rate for SN-05 if they're willing to modify the permit. Here's a suggested edit to the next to the last paragraph of the letter. This assumes this unit doesn't have some physical configuration that would otherwise (1) prevent it from operating more that it does, or (2) prevent it from contributing its steam to electrical generation:

Additionally, it has been determined through consultation with EPA, Region 6, Entergy's, White Bluff, auxiliary boiler, SN-05, was classified correctly as BART-eligible and thus should be modeled along with units one and two, SN-01 and SN-02. ADEQ's BART determination modeling indicated all three sources are subject-to-BART. Normally, startup emissions would not be included in BART exemption modeling. However, because SN-05 is permitted for continuous operation, we have a concern it could be brought into use as a peaking unit in the future. Therefore, in order to avoid using a max-24 emission rate for this unit, you may wish to pursue a permit modification to lower the number of operating hours for SN-05. If this alternative is attractive to you, please let me know and we, in coordination with EPA Region 6, will be happy to discuss this option in more detail.

BTW, we're happy to provide continued support in any capacity, but if you'd feel better deleting the

reference to us in the above paragraph, our feelers won't get hurt :).

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/05/2007 11:08 AM

To Joe Kordzi/R6/USEPA/US@EPA

cc

Subject Entergy Letter Re: auxilliary boiler + other concerns

Hi Joe,

Here is the draft letter we will be sending Entergy. Your review and comments are appreciated.

Thank you for your help,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Friday, April 06, 2007 8:54 AM
To: Pettyjohn, Mary
Cc: Snyder.Erik@epamail.epa.gov
Subject: RE: Entergy Letter Re: auxiliary boiler + other concerns

Hi Mary,

It is true we normally do not include startup boilers in the modeling. The key piece of info here is that SN-05 is permitted for 8760 hrs/yr. Although they have historically employed this unit far less that, the potential for greater use exits due to the permit limit. I have discussed this again with Erik and we both feel that my initial response to you on 1/5/07 remains correct - if Entergy desires that SN-05 be modeled at a lower rate then they should take a permit limit.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

04/03/07 03:18 PM

To Joe Kordzi/R6/USEPA/US@EPA
cc
Subject RE: Entergy Letter Re: auxiliary boiler + other concerns

Hi Joe,

I located Entergy's reasoning for SN-05 to be exempt from BART. Entergy is using the answer to Number 19 from the following EPA documents: Additional Regional Haze Questions, September 27, 2006 Revision which I inserted below. I do not agree with the following statement: "Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted." My reasoning is as follows: There is nothing in the Rule that refers to a boiler being used to start-up another boiler. The term "start-up" is used on pages FR 39108, 39110, 39129, 29157, 39158, 39159, and 329162 and none of the aforementioned referenced pages mention boilers used to start-up another boiler nor do they mention start-up emissions.

"19. An EGU has three boilers: a) coal boiler (5500 mmbtu/hr); and b) two auxilliary boilers (181.6 mmBtu/hr each). The State has determined the coal boiler to meet the first test for BART-eligibility. Since the two auxilliary boilers do not appear to fall under any of the 26 BART categories, would they

pass the first test for BART-eligibility because they contribute to the "steam electric plant"?

As a general matter, all the emission units, including any auxiliary boilers, at a fossil-fuel fired steam electric plant of more than 250 million BTU/hour heat input would be considered part of the same stationary source. Under the RH regulations, BART applies to certain existing stationary sources; stationary sources, in turn, are defined to include "all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control)." 50 CFR 51.301. The regulations further provide that "[p]ollutant-emitting activities must be considered part of the same industrial grouping if they belong to the same Major Group (i.e. which have the same two-digit [SIC] code)." For most plants on the BART list, there will be only one 2-digit SIC code that applies to the entire plant. As you have described the source in your question, the auxilliary boilers would fall within the same 2-digit SIC code as the coal boiler; these units accordingly are part of the same stationary source as the coal boiler.

Note, however, that if the auxiliary boilers are only used during startup, then since we do not model startup conditions, those boilers would not contribute any emissions to the modeled visibility impact from the source; therefore those particular boilers may be exempted."

Additionally, I interpret the following highlighted passage from page 48 of the Final BART Modeling Guidelines to mean the emissions from the source which is in the process of being started-up.

The emissions estimates used in the models are intended to reflect steady-state operating conditions during periods of high capacity utilization. We do not generally recommend that emissions reflecting periods of start-up, shutdown, and malfunction be used, as such emission rates could produce higher than normal effects than would be typical of most facilities.

Thank you for your help.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Tuesday, April 03, 2007 10:01 AM
To: Pettyjohn, Mary
Subject: Fw: Entergy Letter Re: auxiliary boiler + other concerns

Hi Mary,

Pls send me an email about you followup conversation w/ Entergy about this.

Regards,

Joe

" ... and miles to go before I sleep."

-- Robert Frost

----- Forwarded by Joe Kordzi/R6/USEPA/US on 04/03/07 10:00 AM -----

Joe Kordzi/R6/USEPA/US

01/05/07 02:47 PM

To "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
cc Erik Snyder, Thomas Diggs/R6/USEPA/US@EPA
Subject Re: Entergy Letter Re: auxiliary boiler + other concerns Link

Hi Mary,

I've talked this over w/ Erik and we feel we can work w/ you and Entergy on a more realistic emission rate for SN-05 if they're willing to modify the permit. Here's a suggested edit to the next to the last paragraph of the letter. This assumes this unit doesn't have some physical configuration that would otherwise (1) prevent it from operating more that it does, or (2) prevent it from contributing its steam to electrical generation:

Additionally, it has been determined through consultation with EPA, Region 6, Entergy's, White Bluff, auxiliary boiler, SN-05, was classified correctly as BART-eligible and thus should be modeled along with units one and two, SN-01 and SN-02. ADEQ's BART determination modeling indicated all three sources are subject-to-BART. Normally, startup emissions would not be included in BART exemption modeling. However, because SN-05 is permitted for continuous operation, we have a concern it could be brought into use as a peaking unit in the future. Therefore, in order to avoid using a max-24 emission rate for this unit, you may wish to pursue a permit modification to lower the number of operating hours for SN-05. If this alternative is attractive to you, please let me know and we, in coordination with EPA Region 6, will be happy to discuss this option in more detail.

BTW, we're happy to provide continued support in any capacity, but if you'd feel better deleting the reference to us in the above paragraph, our feelers won't get hurt :).

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

01/05/2007 11:08 AM

To Joe Kordzi/R6/USEPA/US@EPA
cc
Subject Entergy Letter Re: auxilliary boiler + other concerns

Hi Joe,

Here is the draft letter we will be sending Entergy. Your review and comments are appreciated.

Thank you for your help,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Monday, February 12, 2007 11:23 AM
To: Pettyjohn, Mary
Subject: RE: your BART analyses

Hi Mary,

I was looking over the SWEPCO BART engineering analyses and permit and can't discover what kind of SO2 and NOx control they are using. Can you help?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> — To: Joe Kordzi/R6/USEPA/US@EPA; cc:; 02/09/2007 09:19 AM; Subject: RE: your BART analyses

Good morning Joe,

You can download the permits from our home page (www.adeq.state.ar.us). Here are the AFIN to help you get the permits. AEP/SWEPCO 04-00107 AR Electric Coop/Bailey Plant 74-00024 AR Electric Coop/McClellan Plant 52-00055 Domtar 41-00002 Entergy/Lake Catherine 30-00011 Entergy/White Bluff 35-00110

Cheers!!!
Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Friday, February 09, 2007 8:33 AM
To: Pettyjohn, Mary
Subject: your BART analyses

Hi Mary,

I''m reviewing the BART analyses you've posted on your site. Can you also post the permits?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Monday, February 12, 2007 12:20 PM
To: 'Kordzi.Joe@epamail.epa.gov'
Subject: RE: your BART analyses

Hi Joe,

We are having conference call with them today at 1:30 and that is one of the things we will be talking about. I will update you after the call.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Monday, February 12, 2007 11:23 AM
To: Pettyjohn, Mary
Subject: RE: your BART analyses

Hi Mary,

I was looking over the SWEPCO BART engineering analyses and permit and can't discover what kind of SO2 and NOx control they are using. Can you help?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> 02/09/2007 09:19 AM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: RE: your BART analyses

Good morning Joe,

You can download the permits from our home page (www.adeq.state.ar.us). Here are the AFIN to help you get the permits. AEP/SWEPCO 04-00107 AR Electric Coop/Bailey Plant 74-00024 AR Electric Coop/McClellan Plant 52-00055 Domtar 41-00002 Entergy/Lake Catherine 30-00011 Entergy/White Bluff 35-00110

Cheers!!!
Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Friday, February 09, 2007 8:33 AM
To: Pettyjohn, Mary
Subject: your BART analyses

Hi Mary,

I''m reviewing the BART analyses you've posted on your site. Can you also post the permits?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Monday, February 12, 2007 1:10 PM
To: Pettyjohn, Mary
Subject: RE: your BART analyses

Importance: High

Mary - I'd be interested in knowing what control technology will allow them to satisfy the presumptive limits they discuss in their letter. The permit I've seen doesn't have those limits. Bear in mind BART limits should appear in a facility's Title V permit.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> To: Joe Kordzi/R6/USEPA/US@EPA cc: 02/12/2007 12:19 PM Subject: RE: your BART analyses

Hi Joe,

We are having conference call with them today at 1:30 and that is one of the things we will be talking about. I will update you after the call.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Monday, February 12, 2007 11:23 AM
To: Pettyjohn, Mary
Subject: RE: your BART analyses

Hi Mary,

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Regards,

Joe

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-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
02/09/2007 09:19 AM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: RE: your BART analyses

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You can download the permits from our home page (www.adeq.state.ar.us). Here are the AFIN to help you get the permits. AEP/SWEPCO 04-00107 AR Electric Coop/Bailey Plant 74-00024 AR Electric Coop/McClellan Plant 52-00055 Domtar 41-00002 Entergy/Lake Catherine 30-00011 Entergy/White Bluff 35-00110

Cheers!!!
Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Friday, February 09, 2007 8:33 AM
To: Pettyjohn, Mary
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Hi Mary,

I''m reviewing the BART analyses you've posted on your site. Can you also post the permits?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Monday, February 12, 2007 2:03 PM
To: 'Kordzi.Joe@epamail.epa.gov'
Subject: RE: your BART analyses

Hi Joe,

SWEPCO will be sending us a letter that contains their control technologies which are low NOx burner for NOx control and FGD for SO2 control. I will fax the letter to you once I receive it.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Monday, February 12, 2007 1:10 PM
To: Pettyjohn, Mary
Subject: RE: your BART analyses
Importance: High

Mary - I'd be interested in knowing what control technology will allow them to satisfy the presumptive limits they discuss in their letter. The permit I've seen doesn't have those limits. Bear in mind BART limits should appear in a facility's Title V permit.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> 02/12/2007 12:19 PM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: RE: your BART analyses

Hi Joe,

We are having conference call with them today at 1:30 and that is one of the things we will be talking about. I will update you after the call.

Mary

-----Original Message-----

From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Monday, February 12, 2007 11:23 AM
To: Pettyjohn, Mary
Subject: RE: your BART analyses

Hi Mary,

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Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>	Joe Kordzi/R6/USEPA/US@EPA	To
		cc
02/09/2007 09:19 AM		Subject
	RE: your BART analyses	

Good morning Joe,

You can download the permits from our home page (www.adeq.state.ar.us). Here are the AFIN to help you get the permits. AEP/SWEPCO 04-00107 AR Electric Coop/Bailey Plant 74-00024 AR Electric Coop/McClellan Plant 52-00055 Domtar 41-00002 Entergy/Lake Catherine 30-00011 Entergy/White Bluff 35-00110

Cheers!!!
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-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Friday, February 09, 2007 8:33 AM
To: Pettyjohn, Mary
Subject: your BART analyses

Hi Mary,

I''m reviewing the BART analyses you've posted on your site. Can you also post the permits?

Regards,

Joe

" ... and miles to go before I sleep."

-- Robert Frost

Pettyjohn, Mary

From: Pettyjohn, Mary
Sent: Tuesday, January 23, 2007 8:33 AM
To: 'Joe Kordzi (kordzi.joe@epa.gov)'
Subject: FW: Regional Haze/Bart Program

Joe,

Here is the email I referred to yesterday that mentioned you as the possible project officer.

Mary

-----Original Message-----
From: Patton, Frieda
Sent: Tuesday, January 23, 2007 8:20 AM
To: Pettyjohn, Mary
Subject: FW: Regional Haze/Bart Program

-----Original Message-----
From: Cleland.Donna@epamail.epa.gov [mailto:Cleland.Donna@epamail.epa.gov]
Sent: Thursday, January 04, 2007 10:26 AM
To: Patton, Frieda
Subject: Re: Regional Haze/Bart Program

Hi Frieda,

Joe Kordzi will probably review it, but send it to me. I'll log it in Q-trak, go thru a checklist, then give it to him.

Donna Cleland
Project Officer
U.S. Environmental Protection Agency
1445 Ross Avenue, 6PD-S
Dallas, TX 75202
(214) 665-2285

"Patton, Frieda" <PATTON@adeq.state.ar.us> 01/03/2007 04:08 PM

To: Donna Cleland/R6/USEPA/US@EPA
cc:
Subject: Regional Haze/Bart Program

Donna, we are preparing a QAPP for the data that will be obtained through a contractor for development of the regional haze/BART program SIP. Who would be the EPA program person to review/sign off on the QAPP?

Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Thursday, January 04, 2007 2:38 PM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT6775033.txt (630 B)


ATT6775034.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB045@dpex02.adpce.ad>
Date: Thu, 04 Jan 2007 14:36:17 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: Kordzi.Joe@epamail.epa.gov
Subject: RE: Question on auxiliary boilers

Your message has been successfully relayed to the recipients

Recipient address: kordzi.joe@mseive.epa.gov
Original address: Kordzi.Joe@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive02.rtp.epa.gov (TCP|134.67.208.33|1717|134.67.221.150|25) (mseive02.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive02.rtp.epa.gov (TCP|134.67.208.33|1717|134.67.221.150|25) (mseive02.rtp.epa.gov ESMTP Postfix)

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Thursday, January 04, 2007 12:40 PM
To: Pettyjohn, Mary
Subject: Re: Question on auxiliary boilers

Mary - Erik and I think it would be helpful to know how often the aux boiler starts up, and how long it remains online. Can you pass on historical data? Thanks.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> 01/03/2007 02:32 PM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: Question on auxiliary boilers

Hi Joe,

Entergy, White Bluff, has three BART-eligible sources and one of them is an auxiliary boiler. I included the emissions from the auxiliary boiler with the emissions from units 1 and 2. My question is should I have included the emissions from the auxiliary boiler in my CALPUFF modeling. By the way, Entergy, White Bluff has been determined to be subject-to-BART.

Thank you for your help,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Thursday, January 04, 2007 3:11 PM
To: Pettyjohn, Mary
Cc: Snyder.Erik@epamail.epa.gov
Subject: RE: Question on auxiliary boilers

So the actual emissions are from only about 19 hrs per year of operations and you're modeling it based on its potentially operating 24/7?

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> — To: Joe Kordzi/R6/USEPA/US@EPA — cc: — 01/04/2007 02:36 PM — Subject: RE: Question on auxiliary boilers

Joe,

According to Entergy's, White Bluff, permit, SN-05, auxiliary boiler, is permitted to be in operation 8760 hours/year. However, the inspection report for last year shows SN-05 was in operation 18 hours & 53 minutes from 9/9/2005 to 9/9/2006. The inspector noted, "The number of startup and shutdown occurrences that occur at this facility have historically ranged from 12 to 24 per year." I will be calling my contact at Entergy to get the records for the last five years. I will keep you updated.

Mary

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Thursday, January 04, 2007 12:40 PM
To: Pettyjohn, Mary
Subject: Re: Question on auxiliary boilers

Mary - Erik and I think it would be helpful to know how often the aux boiler starts up, and how long it remains online. Can you pass on historical data? Thanks.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

To: Joe Kordzi/R6/USEPA/US@EPA

cc:

01/03/2007 02:32 PM

Subject: Question on auxiliary boilers

Hi Joe,

Entergy, White Bluff, has three BART-eligible sources and one of them is an auxiliary boiler. I included the emissions from the auxiliary boiler with the emissions from units 1 and 2. My question is should I have included the emissions from the auxiliary boiler in my CALPUFF modeling. By the way, Entergy, White Bluff has been determined to be subject-to-BART.

Thank you for your help,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Friday, January 05, 2007 2:48 PM
To: Pettyjohn, Mary
Cc: Snyder.Erik@epamail.epa.gov; Diggs.Thomas@epamail.epa.gov
Subject: Re: Entergy Letter Re: auxiliary boiler + other concerns

ENTERGY
WHITE BLUFF
SN-05

ENTERGY.doc (177 KB)

Hi Mary,

I've talked this over w/ Erik and we feel we can work w/ you and Entergy on a more realistic emission rate for SN-05 if they're willing to modify the permit. Here's a suggested edit to the next to the last paragraph of the letter. This assumes this unit doesn't have some physical configuration that would otherwise (1) prevent it from operating more that it does, or (2) prevent it from contributing its steam to electrical generation:

Additionally, it has been determined through consultation with EPA, Region 6, Entergy's, White Bluff, auxiliary boiler, SN-05, was classified correctly as BART-eligible and thus should be modeled along with units one and two, SN-01 and SN-02. ADEQ's BART determination modeling indicated all three sources are subject-to-BART. Normally, startup emissions would not be included in BART exemption modeling. However, because SN-05 is permitted for continuous operation, we have a concern it could be brought into use as a peaking unit in the future. Therefore, in order to avoid using a max-24 emission rate for this unit, you may wish to pursue a permit modification to lower the number of operating hours for SN-05. If this alternative is attractive to you, please let me know and we, in coordination with EPA Region 6, will be happy to discuss this option in more detail.

BTW, we're happy to provide continued support in any capacity, but if you'd feel better deleting the reference to us in the above paragraph, our feelers won't get hurt :).

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us> 01/05/2007 11:08 AM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: Entergy Letter Re: auxilliary boiler + other concerns

Hi Joe,

Here is the draft letter we will be sending Entergy. Your review and comments are appreciated.

Thank you for your help,
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us
(See attached file: ENTERGY.doc)

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Monday, January 08, 2007 9:57 AM
To: Fielder, Phillip
Cc: Pettyjohn, Mary; Darlene Dosher-Collard; Margaret Earnest; Trujillo, Rita, NMENV
Subject: RE: BART

Philip,

Yes - that is possible. Here are some considerations:

The emission rate used in the BART exemption modeling should be backed by a permit modification that is a part of the SIP.

A description of the State's action should be included in the SIP narrative.

One of the following three approaches should be taken when assigning an emission rate for the BART exemption modeling:

1) The permit should include an emission rate that is equivalent in effect to a "max 24" emission rate. This new rate will take the place of the historical max 24 when performing BART exemption modeling.

2) The State should develop a reliable and technically defensible estimate of the source's highest future 24-hour actual emission rate based on its newly permitted emission rate.

3) The State should use the new potential to emit limit for the BART exemption modeling.

To prevent circumvention of the BART requirements, it may be necessary to include a permit term or SIP provision that provides that changes at the BART-eligible source or in its permit that allows for increases in emissions would subject the source to BART review.

Since this question has come up from several States, I'm cc'ing my other R6 BART folks.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Fielder, Phillip" <Phillip.Fielder@deq.state.ok.us> 01/05/2007 01:21 PM

To: Joe Kordzi/R6/USEPA/US@EPA
cc:
Subject: RE: BART

Joe,

I have an additional question related to the one we addressed some time ago (that correspondence is seen below).

In the previous discussion, it was agreed that a source can take emission limits which results in BART-eligible units no longer being subject to BART.

We have a twist on this. In a similar fashion, can a source take emission limits (enforceable in a permit), such that, when modeling is conducted, using these new limits, it can be shown the BART-eligible units do not cause or contribute to visibility impairment in a Class I area?

We also have an additional request from a source that is too convoluted to e-mail. I will be contacting you be phone to discuss this.

Thanks

Phillip Fielder

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Wednesday, May 03, 2006 9:52 AM
To: Fielder, Phillip
Subject: RE: BART

If an otherwise BART-eligible facility reduces its emissions such that it is no longer subject to BART then that's OK. You just have to ensure those controls are operational as expeditiously as possible but not more than 5 yrs after the SIP is approved. I think the consent order controls should be specified in a permit to ensure it occurs, and that permit should be a part of the SIP and should be a part of the SIP public hearing documents. If for some reason the consent ordered controls aren't operational by the 5 yr deadline, then BART would be required to be operational, and that should be a part of the permit. The situation is similar to a facility taking a synthetic minor to avoid BART.

Regarding the "Waiver" - we don't use that terminology but I understand what you're referring to - a BART eligible facility is found to not be subject to BART because of modeling that shows no impact at any Class area.

Regards,

Joe

"Fielder, Phillip" <Phillip.Fielder @deq.state.ok.us >	Joe Kordzi/R6/USEPA/US@EPA	To cc
05/03/2006 09:02 AM	RE: BART	Subject

Yes, if we can consider the reductions that are going to happen because of the CO there is a possibility that the source would be under 250 TPY for BART-eligible units or they might be able to show no impact if they do remain BART applicable. They just wanted to know how to deal with this situation.

The waiver process is part of the federal rule. A facility can get an exemption from BART based on modeling showing a facility does not impact a Class I area. There is also an option for a waiver. The rule does not define under what circumstances a source can quality for a waiver. I was guessing this might be an example.

Let me know if it would be better to talk about this issue.

Thanks

-----Original Message-----
From: Kordzi.Joe@epamail.epa.gov [mailto:Kordzi.Joe@epamail.epa.gov]
Sent: Wednesday, May 03, 2006 8:01 AM
To: Fielder, Phillip
Subject: Re: BART

Philip - I'm not seeing the question here. I do have a few questions on what you've sent:

Why do you feel they may no longer be a BART eligible source? Is it the reduction in emissions below the 250 tpy threshold for any visibility causing pollutant? When you refer to the "waiver process" is that a reference to your BART rule, or ours?

Regards,

Joe

"Fielder, Phillip" <Phillip.Fielder @deq.state.ok.us >	Joe Kordzi/R6/USEPA/US@EPA	To cc
05/02/2006 04:17 PM	BART	Subject

Joe,

I have another question for you.

A facility has asked us to comment on the following:

They have a federal consent order that will require them to do certain things (including

installing lower emitting equipment and installing controls) over the next two years (through 2008). If they were to consider the required changes that will be required by the consent order two things may occur:

1. They may no longer be defined as a BART-eligible source, or
2. They may still be consider BART-eligible but modeling results using the controlled numbers will demonstrate they have no impact

My best guess is that this is a good example of a scenario in which a facility may want to use the waiver process.

Thanks for any help

Phillip Fielder

Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Thursday, January 11, 2007 10:45 AM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT11853458.txt (636 B)


ATT11853459.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB07C@dpex02.adpce.ad>
Date: Thu, 11 Jan 2007 10:44:03 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: Cleland.Donna@epamail.epa.gov
Subject: RE: Draft QAPP for AR's Air Quality Modeling as a part of BART

Your message has been successfully relayed to the recipients

Recipient address: cleland.donna@mseive.epa.gov
Original address: Cleland.Donna@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|1988|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|1988|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix)

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Wednesday, January 10, 2007 12:43 PM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT11111080.txt (632 B)


ATT11111081.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB067@dpex02.adpce.ad>
Date: Wed, 10 Jan 2007 12:42:13 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: Snyder.Erik@epamail.epa.gov
Subject: RE: Calpuff version

Your message has been successfully relayed to the recipients

Recipient address: snyder.erik@mseive.epa.gov
Original address: Snyder.Erik@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive02.rtp.epa.gov (TCP|134.67.208.99|2405|134.67.221.150|25) (mseive02.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive02.rtp.epa.gov (TCP|134.67.208.99|2405|134.67.221.150|25) (mseive02.rtp.epa.gov ESMTP Postfix)

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Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Wednesday, January 10, 2007 10:10 AM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT11110905.txt
(632 B)


ATT11110906.txt
(1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB065@dpex02.adpce.ad>
Date: Wed, 10 Jan 2007 10:09:28 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: Snyder.Erik@epamail.epa.gov
Subject: RE: Calpuff version

Your message has been successfully relayed to the recipients

Recipient address: snyder.erik@mseive.epa.gov
Original address: Snyder.Erik@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|4605|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|4605|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix)

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Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Wednesday, January 10, 2007 9:25 AM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT11110893.txt (632 B)


ATT11110894.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB063@dpex02.adpce.ad>
Date: Wed, 10 Jan 2007 09:23:43 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: Snyder.Erik@epamail.epa.gov
Subject: RE: Calpuff version

Your message has been successfully relayed to the recipients

Recipient address: snyder.erik@mseive.epa.gov
Original address: Snyder.Erik@epamail.epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive02.rtp.epa.gov (TCP|134.67.208.33|3420|134.67.221.150|25) (mseive02.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
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Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Monday, January 22, 2007 3:54 PM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded


ATT19960738.txt (622 B)


ATT19960739.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB09B@dpex02.adpce.ad>
Date: Mon, 22 Jan 2007 15:52:42 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: kordzi.joe@epamail.epa.gov
Subject: FW: CAIR and BART compliance strategy-Flint Creek Power Plant

Your message has been successfully relayed to the recipients

Recipient address: kordzi.joe@mseive.epa.gov
Original address: kordzi.joe@epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive01.rtp.epa.gov (TCP|134.67.208.33|1418|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive01.rtp.epa.gov (TCP|134.67.208.33|1418|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix)

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Pettyjohn, Mary

From: EPA Postmaster automated message [postmaster@epamail.epa.gov]
Sent: Friday, January 05, 2007 11:11 AM
To: Pettyjohn, Mary
Subject: Delivery Notification: Message successfully forwarded

ATT8177271.txt (622 B) ATT8177272.txt (1 KB)

This report relates to a message you sent with the following header fields:

Message-id: <6F6E732380864947BFA28E290610DE1C0B3CB051@dpex02.adpce.ad>
Date: Fri, 05 Jan 2007 11:08:04 -0600
From: "Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>
To: kordzi.joe@epamail.epa.gov
Subject: Entergy Letter Re: auxilliary boiler + other concerns

Your message has been successfully relayed to the recipients

Recipient address: kordzi.joe@mseive.epa.gov
Original address: kordzi.joe@epa.gov
Reason: Message successfully relayed to a system that does not support receipts
Diagnostic code: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|4886|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix) smtp;250 Ok
Remote system: dns;mseive01.rtp.epa.gov (TCP|134.67.208.99|4886|134.67.221.149|25) (mseive01.rtp.epa.gov ESMTP Postfix)

on a remote system that does not support the generation of successful delivery receipts. This does NOT mean that your message has actually been placed in the recipients' mailboxes; merely that it has passed through a part of the message transport infrastructure. In the event of a nondelivery you should expect to receive a nondelivery notification; in the event of successful delivery, however, you are unlikely to receive a positive confirmation of delivery.

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Tuesday, January 23, 2007 2:43 PM
To: Pettyjohn, Mary
Subject: Re: FW: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary,

Here is my suggested reply. I'm assuming the Flint Creek facility he mentions has been determined to be subject to BART and would otherwise have to have BART level controls installed. I'm also going on my understanding the AR has determined that its participation in the CAIR trading program for NOx just during the O3 season does not satisfy BART. Lastly, I've also assumed more than one unit is involved at the Flint Creek Power Plant, so adjust as necessary.

Dear Brian,

Thanks for sharing your CAIR/BART strategy with us. I think the facility stands on firm ground regarding its ability to use allowances generated from BART controls that will be installed in order to comply with the regional haze, rule to help satisfy its CAIR obligation. However, you should not confuse that ability with your obligation under the regional haze to satisfy the BART requirements of 40 CFR 51.308 for units _____ (Mary - insert some reference to the exact units affected
here) at the Flint Creek Power Plant. As we have discussed in our (insert document reference), Arkansas has determined that participation in the CAIR trading program for NOx just during the O3 season does not satisfy BART for NOx. Since these units were determined to be subject to BART, the facility is therefore obligated to install BART controls on them, regardless of the facility's future plans to trade emissions via the CAIR.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>	Joe Kordzi/R6/USEPA/US@EPA	To
01/22/2007 03:52 PM	FW: CAIR and BART compliance strategy-Flint Creek Power Plant	Subject

Joe,

Thank you for looking at this and for helping me to develop a reply.

Cheers!

Mary

-----Original Message-----
From: tbbond@aep.com [mailto:tbbond@aep.com]
Sent: Thursday, January 18, 2007 2:37 PM
To: Pettyjohn, Mary
Cc: nndharmarajan@aep.com
Subject: CAIR and BART compliance strategy-Flint Creek Power Plant

Mary:

I want to share with you our current thinking with respect to compliance with CAIR in Arkansas. Please share with Mike P. As you know, we are planning to install low NOx burners/overfire air to comply with the BART requirements. The controls will be in place in time to comply with BART which currently is projected to be required in 2013.

SWEPCO will not need to install the low NOx burners/overfire air at Flint Creek for CAIR's Phase I NOx ozone season compliance (2009-2014), as we will generate enough allowances through our existing retrofits at AEP power plants to cover any incremental emissions above our allocations. In other words, we will go to the market to purchase adequate allowances to cover our incremental emissions during the period 2009-2012. However, reductions derived from the installation of low NOx burners/overfire air at Flint Creek by 2013 necessary for BART compliance will contribute to our meeting the Phase I NOx ozone season compliance requirements (years 2013 and 2014) and our Phase II CAIR compliance requirements (2015-beyond).

Please feel free to call me at (318) 673-3595. I will be glad to answer any further questions you may have. Thanks, BB

Thank you,

Brian Bond
American Electric Power
Phone: 318-673-3595
Fax: 318-673-3011

Pettyjohn, Mary

From: Kordzi.Joe@epamail.epa.gov
Sent: Tuesday, January 23, 2007 3:19 PM
To: Pettyjohn, Mary
Subject: Re: American Electric Power letter

AEP ADEQBART.pdf
(158 KB)

Hi Mary,

Regarding AEP's point No.2, the determination of whether EPA's stated presumptive limits are indeed BART rests with AR. As stated on page 39131 of the 7/5/05 final BART rule, "These EGUs should achieve either 95 percent SO2 removal, or an emission rate of 0.15 lb SO2/mmBtu, unless a State determines that an alternative control level is justified based on a careful consideration of the statutory factors." Therefore, if AR does make that determination, then the presumptive limit can be BART. Also, be mindful of this language on page 39165: "

"If you find that a BART source has controls already in place which are the most stringent controls available (note that this means that all possible improvements to any control devices have been made), then it is not necessary to comprehensively complete each following step of the BART analysis in this section. As long these most stringent controls available are made federally enforceable for the purpose of implementing BART for that source, you may skip the remaining analyses in this section, including the visibility analysis in step 5. Likewise, if a source commits to a BART determination that consists of the most stringent controls available, then there is no need to complete the remaining analyses in this section."

Therefore, if you determine that AEP's level of control is BART, you can elect to allow them to skip the reminder of the BART analysis, which includes the "five factors" listed in 51.308(e)(1)(ii)(A). If you're not convinced that level of control is BART, then you probably should make them go thru the five factor analysis as that will make it clear whether that level of control is BART.

Regarding their point No. 3, if you find via an application of the statutory reasonable progress factors under 51.308(d)(1) that additional cost effective controls, that result in further visibility improvements at Class I areas, can be installed that result in emissions limits below the presumptive limits discussed above, then you should require those controls under reasonable progress, regardless of your BART position.

Regards,

Joe

" ... and miles to go before I sleep."
-- Robert Frost

"Pettyjohn, Mary" <PETTYJOHN@adeq.state.ar.us>

To: Joe Kordzi/R6/USEPA/US@EPA

cc:

01/23/2007 02:20 PM

Subject: American Electric Power letter

Hi Joe,

Here is the letter we were talking about.

Cheers!!!
Mary

Mary Pettyjohn
ADEQ/Air Division
8001 National Drive
P.O. Box 8913
Little Rock, AR 72219-8913
Office phone 501-682-0070
Fax 501-682-0753
pettyjohn@adeq.state.ar.us
(See attached file: AEP ADEQBART.pdf)

Appendix 10.1

Analysis of Control Strategies and Determination of Reasonable Progress Goals

The federal Regional Haze Rule requires States to evaluate, select and apply control strategies that will result in emission reductions sufficient to accomplish the goal of re-attaining natural background conditions for visibility in Class 1 Areas by 2064. The determination of appropriate control strategies is left to the discretion of the States. Arkansas has two Class 1 Areas, Caney Creek Wilderness Area and Upper Buffalo Wilderness Area.

Chapter 10 describes the Uniform Rate of Progress for both of these Class 1 Areas and includes a Table showing the Reasonable Progress Goals that the State of Arkansas has determined are appropriate for these areas.. This appendix describes how these Reasonable Progress Goals were determined.

The Regional Haze Rule requires States to consider four factors when developing RPGs. "In establishing a reasonable progress goal for any mandatory Class 1 federal area within the State, the State must: (A) Consider the costs of compliance, the time necessary for compliance, the energy and non-air quality environmental impacts of compliance and the remaining useful life of any potentially affected sources, and include a demonstration showing how these factors were taken into consideration in selecting the goal."[1] It is important to note that, in this grammatical construct, the clause "of any potentially affected sources" modifies all of the listed factors. For this reason, this "four factor analysis" is only required for "potentially affected sources." A source is "potentially affected" only in the instance where the State determines that control of that source might be considered necessary "--- in order to provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."[2] The following discussion demonstrates how, in the case where it can be demonstrated that the anticipated rate of progress toward a return to natural background conditions results in achieving that goal prior to the statutorily-mandated timeframe, the four factor analysis becomes an unnecessary exercise.

Using the results of visibility modeling conducted by the Central Regional Air Planning Association (CENRAP) and other analyses conducted by the Air Division of the Arkansas Department of Environmental Quality (ADEQ), ADEQ has established RPGs in the manner described herein.

The Regional Haze Rule requires State Implementation Plans to contain emissions limitations representing Best Available Retrofit Technology (BART) for certain major sources that have been determined to have a significant potential for contributing to visibility degradation in any Class 1 Area. The process of "BART determination", a list of sources that will be required to install BART and the resulting emissions limits for each "BART source" are contained in Chapter 9.

[1] 40 CFR 51.308(d)(1)(i)
[2] 40 CFR 51.308(d)(1)

The modeling conducted by CENRAP contains projections of the visibility conditions that are anticipated to be realized at each Class 1 Area in CY 2064. These projections are, among other things, based on an assessment of the visibility improvements associated with federal, State and local control programs that are either currently in effect or with mandated future-year emission reductions schedules that predate the target year and with BART emissions limitations established to date. A review of these projections indicates that the rate of progress that is anticipated for each of Arkansas's Class I Areas is faster than that representing a URP and would thus result in a return to natural background conditions prior to 2064. The relationship between URP and these modeled visibility projections is depicted in Figs. 10-5 through 10-8. ADEQ considers these to represent RFP for each of its Class I Areas.

As demonstrated herein, it is apparent that the combination of already mandated controls, including BART emission limitations, will provide for a rate of progress that improves visibility conditions on the worst days, prevents degradation on the best days and surpasses a URP. With this understanding, it is not currently necessary to consider additional control measures on otherwise unregulated entities or source categories. In the event that future-year progress reviews indicate the need for additional control measures, it might become necessary to develop and implement new control strategies. Until such time, ADEQ asserts that the requirement to demonstrate RFP is presumed to have been met. This assertion is supported by EPA guidance on setting reasonable progress goals.

> Given the significant emissions reductions that we anticipate to result from BART, the CAIR, and the implementation of other CAA programs, including the ozone and $PM_{2.5}$ NAAQS, for many States this will be an important step in determining your RPG, and it may be all that is necessary to achieve reasonable progress in the first planning period for some States.[3]

[3] Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program (rev.) – EPA (06/01/07)

Appendix 10.2

Interagency Consultation Process in Establishing Reasonable Progress Goals

UNITED STATES
Central Class I Areas Consultation Plan

Scope

This consultation plan establishes the objectives, activities, and timelines to facilitate stakeholder input for meeting visibility requirements in the federal Regional Haze Rule for the following federal Class I areas:

- Hercules Glades Wilderness Area (Missouri)
- Mingo Wilderness Area (Missouri)
- Caney Creek Wilderness Area (Arkansas)
- Upper Buffalo Wilderness Area (Arkansas)

Background

The U.S. Environmental Protection Agency (EPA) promulgated the federal Regional Haze Rule on July 1, 1999. The federal Regional Haze Rule and the Clean Air Act require consultation between the states, tribes, and the Federal Land Managers (FLM) for managing Class I areas. Since regional haze often results from pollution emitted across broad regions, this multi-state planning effort will help in developing the most cost-effective controls for regional haze. This consultation process will provide a coordinated effort to achieve the federal visibility requirements and aid in developing regional strategies for meeting progress goals.

Plan Objectives

This consultation plan provides state air quality agencies with technical information including emission sources, modeling analysis, and source apportionment for Missouri and Arkansas' Class I areas. These state agencies are being given the opportunity to review this analysis and to participate in consultation to develop plans for meeting regional haze reduction requirements for these Class I areas. Regional Planning Organizations (RPOs), FLMs, and the EPA will also be contacted with the opportunity to participate in the development of actions and control strategies for meeting the federal Regional Haze Rule requirements. This plan includes:

1. Consultation Process
2. Technical Analyses
3. Agency Roles/Responsibilities

1. Consultation Process

Consultation discussion will focus on the primary reasonable progress issues including:

- Source area identifications
- State contribution apportionment
- Emission management strategies

The consultation process will be initiated in early 2007. Draft and final documents will be circulated via email to participating consulting agencies. After the initial kick-off, most consultation discussions will occur through conference calls. However, there will be some instances where a meeting may be desirable (e.g. unresolved issues, complex technical discussions, etc.).

The Missouri Department of Natural Resources' Air Pollution Control Program will work with the Arkansas Department of Environmental Quality and the Central States Regional Air Partnership (CENRAP) to set up conference calls/meetings for the consultation process. Technical documents will be provided for discussion before conference calls or meetings.

Draft and final documents will include supporting materials that describe analytical methods, assumptions, and conclusions that were relied upon in developing the documents. Comments on any draft documents will be requested from the consultation group members.

All consultation activities will be documented, including who participated in consultation discussions and on what dates, outcomes of consultation discussions (issues agreed, disagreed, resolutions) and justification for long term strategy. Each contributing state will be requested to share documentation confirming implementation of emission controls being relied on to meet regional haze Uniform Reasonable Progress (URP) goals.

Documents and consultation logs will be posted on the Missouri Department of Natural Resources' Air Pollution Control Program website for public viewing. All conference call/meeting minutes will also be posted on the agency website. When new documents are posted on the website, the Missouri Department of Natural Resources' Air Pollution Control Program will email all consultation participants to inform them that new information has been posted.

MDNR/ADEQ will work with the FLMs and EPA for consultation through conference calls/meeting. This will include an opportunity for consultation with FLMs in person and at least 60 days prior to holding any public hearing on a state implementation plan as required by federal rule.

Action Items

Participate in kick-off
Comment on the draft consultation plan

Confirm emissions inventory and planned control activities
Develop/share individual state timelines for control implementation
Develop/share control progress
Other actions as needed

Reconciliation of Unresolved Issues

If a contributing state/tribe cannot agree with the lead agency establishing the reasonable progress goal, then certain actions will be taken to resolve the disagreement. These actions are as follows:

- Discuss position and supporting documentation
- If still unresolved, elevate to necessary decision makers
- If still unresolved, document disagreement by describing issue(s) in a letter to the EPA, including regional offices and the Office of Air Quality Planning and Standards

All issues must be addressed and incorporated into the long-term strategy. These outreach efforts will also be documented in the state implementation plan.

Contact Information

Contact information is provided in Attachment A.

Continued Consultation

Consultation between the States and the FLMs will continue as the federal Regional Haze program progresses. The consultation will continue in a similar manner via participation in an RPO. This effort will include development and review of SIP revisions and 5-year progress reports. It will also provide for consideration of any other programs that are implemented and have the potential to contribute to impairment of visibility in Class I areas.

Consultation Timeline

Below, in Table 1, is the consultation process timeline that will be used to achieve milestones for consultation on the federal Regional Haze program.

2. Technical Analyses

In assisting the states/tribes in developing regional haze control strategies for Class I areas within CENRAP states and tribes, CENRAP has contracted Environ/Alpine to conduct the modeling and other technical analyses. Alpine assembled available information that was useful in quantifying the reduction in individual fine particulate aerosol species concentrations needed to

satisfy the URP goals. Pertinent "attribution of haze" documents were evaluated. These documents include CENRAP Comprehensive Air Quality Model with extensions (CAMx)/Community Multiscale Air Quality (CMAQ) modeling system visibility modeling results, fine particulate modeling results for the central US, and other technical reports, papers, and analyses bearing directly on the quantification of emissions-source/visibility-receptor impacts at the ten CENRAP Class I and twelve adjoining areas.

Current Regional Haze modeling continues to indicate visibility shortfalls to reaching the necessary URP goals for deciview increments for some of the Central Class I areas in CENRAP. A deciview is a haze index used to quantify incremental changes in visibility perception, where higher deciview values indicate greater levels of visibility impairment. In some of the areas,

Table 1: Consultation Process Timeline

2006 Fall	2006 Winter	2007 Early Spring	2007 Spring	2007 Late Spring	2007 Summer
Develop Baseline and URP Goals →	Develop a Consultation Plan →	Initiate Collaboration with States →	Develop Long Term Strategy (LTS) →	Negotiate Changes to LTS →	Document Consultation
Back trajectory & Factor analysis	Identify issues for discussion	Consultation log	Follow consultation plan	Emission reduction requirements/ strategies	Who met and when (FLM, RPO, EPA) and discussion
Identify probable area of influence	Review baseline, URP goals, and emissions reduction targets	Discuss URP Goals & contributions assessment	Discuss emissions reduction strategies	Emission budget discrepancies	Consultation outcome Issues agreed, disagreed, resolutions
Apportion state contributions	Develop Action items	Follow consultation plan	Consult with FLM & EPA	Tribal Impacts	Justification of LTS
Develop initial emission cuts to meet 2018 URP Goals	Issues for FLM & EPA input	Consult with FLM & EPA (thru RPO?)	Note areas of irreconcilable disagreement	Additional control strategies	
	Timetable for resolution	Evaluate and identify sources upwind (BART, non-BART, CAMR, other)			

URP goals are expected to be met based on modeling results, but consultation may be necessary to ensure that the emission reductions used in the modeling are actually planned to occur.

Individual Class I Area Characteristics

The Central Class I areas each have individual characteristics. Individual examination of each area elicits a greater understanding of how the Regional Haze problem affects each, and what aspects are of greatest significance.

Hercules Glades

Situated in extreme southwest Missouri, Taney County, Hercules Glades is managed by the United States Department of Agriculture (USDA) Forest Service. The area is 12,315 acres and in some of the most rugged hills of the Missouri Ozarks. The closest urban area is the Springfield/Branson metropolitan statistical area, 40 miles to the west/northwest.

Mingo National Wildlife Refuge

The Mingo National Wildlife Refuge is managed by the federal Fish and Wildlife Service. The Refuge is situated in the Mississippi Flyway. Only part of it is a Class I area (7,730 acres). Memphis to the south and St. Louis to the north are some of the largest urban areas nearby, although there are a few smaller population centers mostly to the east. Proximity to sources in the Ohio River Valley is a consideration.

Upper Buffalo National Area

The Upper Buffalo Class I area (2,200 acres) is managed by the National Park Service in conjunction with overseeing the Buffalo National River. This area in north central Arkansas is south of Springfield, Missouri and east of Fayetteville and Fort Smith. It is an area of low mountains and largely forested, with bisecting streams.

Caney Creek Class I Area

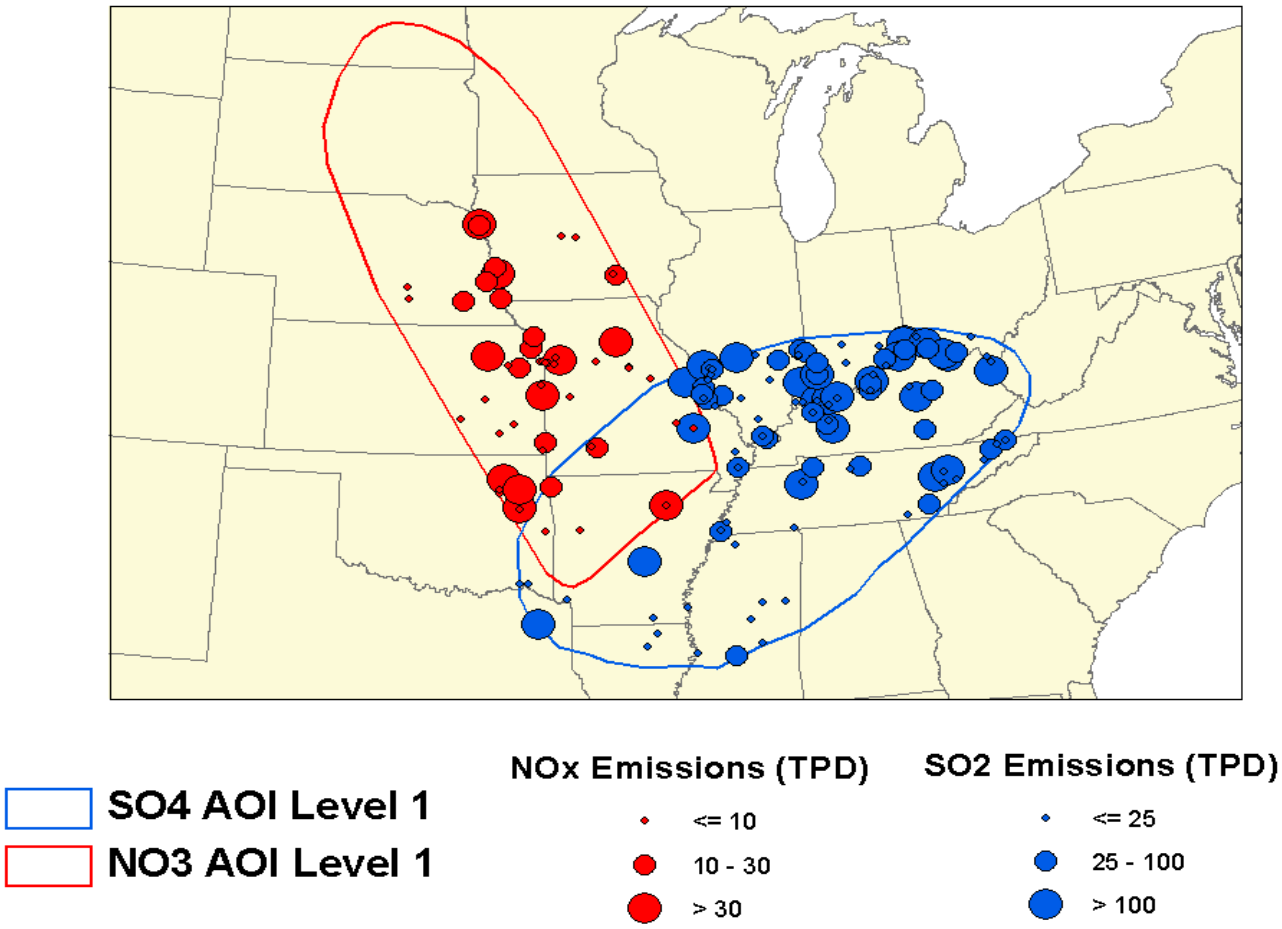
Caney Creek is a 14,460 acre area in the Oachita Mountains of west-southwest Arkansas, the tallest mountain range between the Appalachians and the Rockies. It is south of Fort Smith and west of Little Rock. The area is managed by the USDA Forest Service.

Identification of Source Areas (Areas of Influence)

Source areas must be determined in order to focus the consultation process. That is, locations of significant sources that are likely to affect each Class I area must be identified, and sources within those areas considered for control. Alpine, under its contract to CENRAP, identified Areas of Influence (AOIs), using a variety of data and analyses. In combining the AOI information with emission inventories for the areas, we are able to identify a number of large sources which are of interest.

Figure 1 indicates two Level I AOI's for the Central Class I Areas, one for nitrate (NO_3), and a second grouped collectively for sulfate (SO_4), elemental carbon (EC), organic carbon (OC), coarse mass, and fine soil, along with indicators for sources contained in those areas.

Figure 1 – Alpine AOI's for Central Class I Areas



Attachment B identifies total emissions reductions necessary for level 1 AOI's based on control of sulfate and nitrate species across all four Class I areas. Attachment B also includes inventory tables developed listing possible sources where emissions can be reduced in each state to meet the goals. These emissions provide an overall frame of reference for any reductions in those species.

Contributing States

Source apportionments have recently been conducted on modeling (using Particulate Matter Source Apportionment Technology; PSAT, a source apportionment tool implemented in CAMx) and monitoring data (using positive matrix factorization; PMF/Trajectories) for all four Class I Areas. Attachment C provides both model and monitoring data source apportionment results. Attachment D provides a list of results for Q/D (emissions/distance) used as a third analysis measure. All these, along with Alpine sulfate AOI's described above have been analyzed in tables in attachment E to determine a list of contributing states for each Class I area.

Methodology

Table 2 and 3 (for illustration) below indicate the overall (average) significant contributing states to decreased visibility due to sulfate and nitrate precursor emissions at the Mingo Site. A decision on whether a given state was a contributor was based on the combined analysis results of the four approaches, i.e., PMF/Trajectories, AOI, PSAT, and Q/D. If a state is found to be a major contributor in at least 3 of the 4 approaches, it is believed that inclusion of this state is appropriate. All states in red/bold in the Average row are determined to have sources that are significant contributors to decreased visibility.

Specific to each analysis type, inclusion of a state under the PMF/Trajectories approach depended on the level of probability that an air mass originated from the state during the days of high contribution by sulfate or nitrate sources where the emission impact potential was significant. A state with a high potential of emission impact would be considered a significant contributor.

States were included in the AOI listing if they were part of the level 1 group as determined by Alpine Geophysics. This AOI was based primarily on residence time of air masses, along with evaluation of source emissions of, in this case, nitrate and sulfate.

PSAT analysis was determined based on the 2018 Modeled sulfate and nitrate contribution to average extinction for the 20% worst days. Any state with the contribution of 2.0 deciview or higher was identified as a candidate.

Lastly, Q/D was determined by dividing total SO_2 and NO2 precursor emissions for the state by distance from a state geographic centroid. If totals were less than 200, the state was not indicated as a significant contributor under Q/D.

Table 2 – Contributing States for the Mingo Wildlife Refuge Area
Sulfate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	**WI**	WI
IA	IA	IA	IA	IA
NE	NE	NE	NE	NE
KS	KS	KS	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	**IL**	**IL**	**IL**
IN	**IN**	**IN**	**IN**	**IN**
OH	**OH**	**OH**	**OH**	**OH**
MI	MI	MI	**MI**	MI
KY	**KY**	**KY**	**KY**	**KY**
TN	**TN**	**TN**	**TN**	**TN**
AR	AR	**AR**	AR	AR
OK	OK	**OK**	OK	OK
TX	**TX**	**TX**	TX	**TX**
LA	LA	LA	LA	LA
MS	MS	**MS**	MS	MS
AL	AL	AL	AL	AL

*Informational

State in Red/Bold = Major Contributing States

Table 3 – Contributing States for the Mingo Wildlife Refuge Area
Nitrate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	**IA**	IA	IA
NE	NE	**NE**	NE	NE
KS	KS	**KS**	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	IL	**IL**	**IL**
IN	**IN**	IN	IN	IN
OH	OH	OH	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	KY	KY	KY
TN	**TN**	TN	TN	TN
AR	**AR**	**AR**	AR	**AR**
OK	OK	**OK**	OK	OK
TX	TX	TX	TX	TX
LA	**LA**	LA	LA	LA
MS	**MS**	MS	MS	MS
AL	**AL**	AL	AL	AL

*Informational

State in Red/Bold = Major Contributing States

State list

Following are lists of the contributing states for Central Class 1 Areas in Missouri and Arkansas based on the analysis described above;

Hercules Glades

Missouri, Illinois, Indiana, Kentucky, Tennessee, Arkansas, and Texas

Mingo National Wildlife Refuge

Missouri, Illinois, Indiana, Ohio, Kentucky, Tennessee, Arkansas, and Texas

Upper Buffalo National Area

Missouri, Illinois, Indiana, Ohio, Kentucky, Tennessee, Arkansas, Oklahoma, and Texas

Caney Creek Class I Area

Missouri, Illinois, Indiana, Kentucky, Tennessee, Arkansas, Oklahoma, and Texas

3. Agency Roles/Responsibilities

The agencies listed in this section are being requested to participate in the consultation process for the federal Regional Haze Rule. Part of this process is the opportunity for States to review the foregoing analysis and the attachments to this plan and provide feedback, and to consider necessary controls available that will assist in meeting the goals prescribed by the regional haze requirements. Federally enforceable measures to control emissions and thereby achieve the URP will be our ultimate measure of success.

Proposed Roles and/or responsibilities are as follows:

- Missouri Department of Natural Resources' Air Pollution Control Program
  - Co-lead consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. schedule conference calls/meetings, etc. and lead discussions)
  - Evaluate regional haze modeling for reasonable progress
  - Evaluate emissions data
  - Identify air pollutants for Missouri Class I areas
  - Evaluate back trajectory analysis
  - Evaluate probable source area identifications
  - Evaluate state contribution apportionment
  - Share upwind source information (including Best Achievable Retrofit Technology (BART), non-BART, Clean Air Mercury Rule (CAMR), etc.)

  - Determine emission management strategies necessary to meet federal Regional Haze Rule requirements
  - Provide detailed description of methods used in the SIP to calculate baseline, natural condition, and uniform rate (including supporting documentation for any methods that are not previously established, documented, or supported)
  - Document consultation process

- Arkansas Department of Environmental Quality
  - Co-lead consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. schedule conference calls/meetings, etc. and lead discussions)
  - Evaluate regional haze modeling for reasonable progress
  - Evaluate emissions data
  - Identify air pollutants for Arkansas Class I areas
  - Evaluate back trajectory analysis
  - Evaluate probable source area identifications
  - Evaluate state contribution apportionment
  - Share upwind source information (including BART, non-BART, CAMR, etc.)
  - Determine emission management strategies necessary to meet federal Regional Haze Rule requirements
  - Document consultation process
- Illinois Environmental Protection Agency, Ohio Environmental Protection Agency, Indiana Department of Environmental Management, Kentucky Department of Environmental Protection, Tennessee Department of Environment and Conservation, Oklahoma Division of Environmental Quality, Iowa Department of Natural Resources, Kansas Department of Health and Environment, Texas Commission on Environmental Quality, and Louisiana Department of Environmental Quality
- United Keetoowah Band of Cherokee Indians in Oklahoma, Eastern Shawnee Tribe of Oklahoma, Alabama Coushatta Tribe of Texas, Sac and Fox Nation of Missouri, Kickapoo Tribe in Kansas, Potawatomi Nation
  - Participate in consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. conference calls/meetings, discussions, etc.)
  - Provide feedback on reasonable progress analysis (modeling, emissions data, back trajectory, source area identifications, state contribution apportionment)
  - Share upwind source information (including BART, non-BART, CAMR, etc.)
  - Determine emission management strategies necessary to meet federal Regional Haze Rule requirements
- EPA
  - Participate in consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. conference calls/meetings, discussions, etc.)
  - Provide comments on approvability of consultation plan
  - Provide reconciliation on unresolved issues

- FLMs (US Fish and Wildlife Service, National Park Service and the US DA Forest Service)
  - Participate in consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. conference calls/meetings, discussions, etc.)
  - Provide feedback on reasonable progress analysis (modeling, emissions data, back trajectory, source area identifications, state contribution apportionment)
  - Provide feedback on controls necessary to meet federal Regional Haze Rule requirements
- Regional Planning Organization
  - Participate in consultation effort for Central Class I areas (Missouri and Arkansas) (i.e. conference calls/meetings, discussions, etc.)
  - Provide updates and summaries of any work in process (e.g. development of baselines and natural conditions, inventories, modeling efforts and contribution assessments)

Attachment A

Contact Information

States

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Attachment B

Table 1. EMISSION REDUCTIONS NEEDED TO MEET THE 2018 RPG IN CENTRAL CLASS I AREAS

			Level 1 AOI		Emissions Reductions Needed (Tons)			
			sulfate/SO2	nitrate/NOx	One pollutant control		Proportionate Controls	
Class I Area	ST	Name	DV	DV	Sulfate	Nitrate	Sulfate	Nitrate
Big Bend Nat'l	TX	BIBE	-0.004	-0.002	133,000	265,000	82,000	10,000
Boundary Wate	MN	BWCA	-0.006	-0.004	91,000	136,000	39,000	51,000
Breton Island	LA	BRET	-0.002	-0.002	96,000	96,000	70,000	9,000
Caney Creek	AR	CACR	-0.002	-0.002	18,000	12,000	11,000	2,000
Guadalupe Mou	TX	GUMO	-0.004	-0.01	147,000	59,000	58,000	7,000
Hercules-Glade	MO	HEGL	-0.002	-0.002	200,000	127,000	113,000	23,000
Mingo	MO	MING	-0.002	-0.002	235,000	149,000	118,000	33,000
Upper Buffalo	AR	UPBU	-0.002	-0.002	112,000	71,000	65,000	11,000
Voyageurs	MN	VOYA2	-0.006	-0.004	43,000	65,000	11,000	24,000
Wichita Mounta	OK	WIMO	-0.001	-0.005	368,000	74,000	158,000	22,000

Table 2. SO4 Inventory Tables For Level I AOI Contributing States

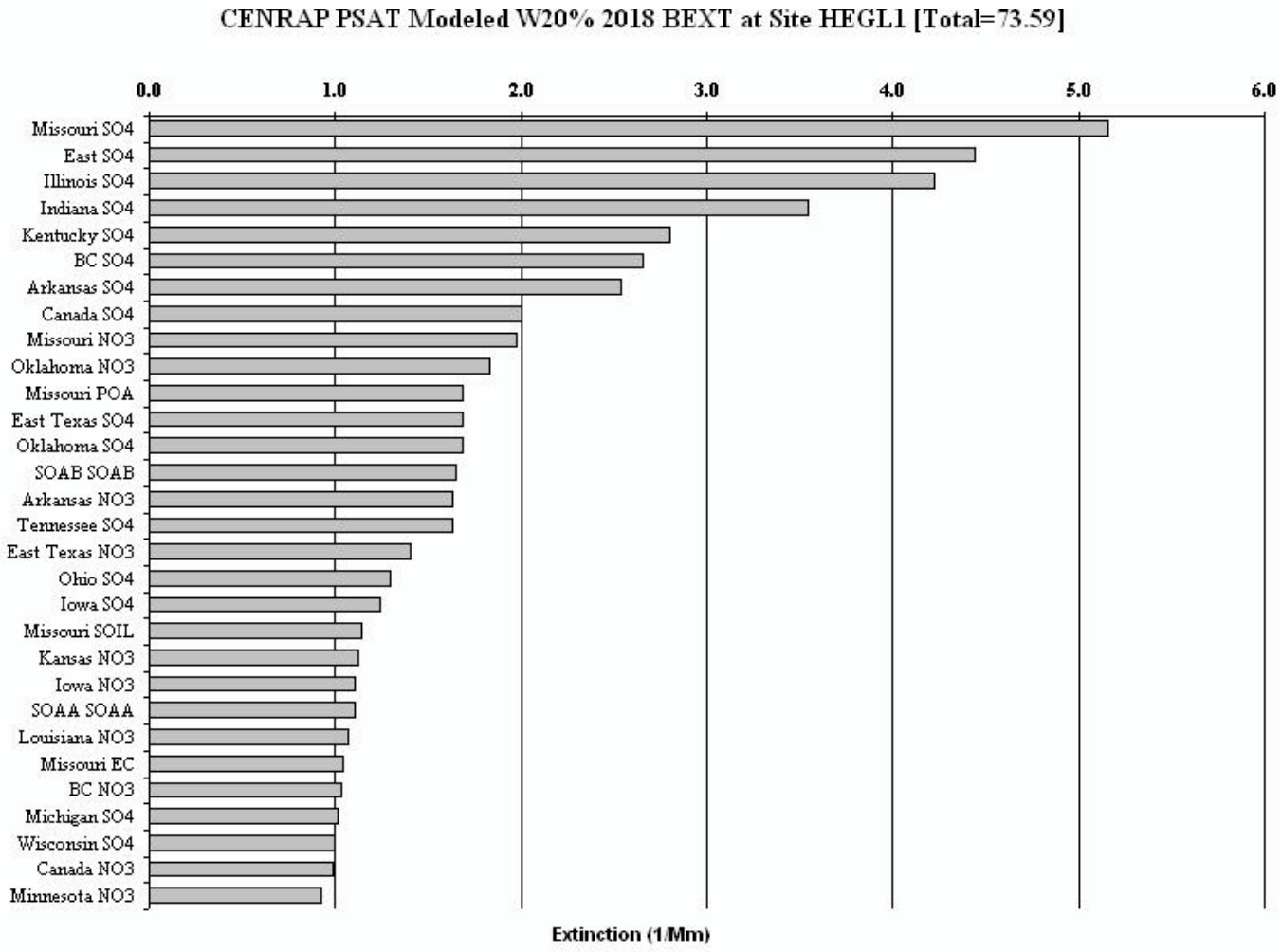
(tons/summer day)

PLANT ID	STATE	PLANT NAME	SIC	SIC DESCRIPTION	SO2_TPD	NOX_TPD
4800310	Texas	FULLERTON GAS PLANT	1321	NATURAL GAS LIQUIDS	6.50599	0.00000
484691	Texas	EI DU PONT DE NEMOURS	2869	INDUSTRIAL ORGANIC CHEMICALS,NEC	0.00000	10.33888
470850011	Tennessee	TVA JOHNSONVILLE FOSSIL PLANT	4911	ELECTRIC SERVICES	300.62585	68.40613
470730007	Tennessee	TVA JOHN SEVIER FOSSIL PLANT	4911	ELECTRIC SERVICES	98.99900	28.54810
471650025	Tennessee	TVA GALLATIN FOSSIL PLANT	4911	ELECTRIC SERVICES	94.72930	33.50815
471630003	Tennessee	EASTMAN CHEMICAL COMPANY	2869	INDUSTRIAL ORGANIC CHEMICALS,NEC	66.36360	35.39940
4715700528	Tennessee	ALLEN FOSSIL PLANT	4911	ELECTRIC SERVICES	52.32034	40.03523
471610011	Tennessee	TVA CUMBERLAND FOSSIL PLANT	4911	ELECTRIC SERVICES	45.79200	137.25500
471070012	Tennessee	BOWATER NEWSPRINT & DIRECTORY - CALHOUN	2611	PULP MILLS	25.40730	17.57016
470374703700002	Tennessee	E I DUPONT DE NEMOURS & CO INC	2869	INDUSTRIAL ORGANIC CHEMICALS,NEC	18.74385	0.00000
470630197	Tennessee	LIBERTY FIBERS CORPORATION	2823	CELLULOSIC MAN-MADE FIBERS	14.73094	5.63459
470090008	Tennessee	ALUMINUM COMPANY OF AMERICA - SOUTH PLAN	3334	PRIMARY ALUMINUM	11.24313	0.00000
471050081	Tennessee	A.E. STALEY MANUFACTURING COMPANY	2046	WET CORN MILLING	9.40970	5.27573
4715700475	Tennessee	LUCITE INTERNATIONAL INC.	2819	INDUSTRIAL INORGANIC CHEMICALS	9.39796	0.00000
470710002	Tennessee	PACKAGING CORPORATION OF AMERICA	2631	PAPERBOARD MILLS	8.02611	7.42406
4715700045	Tennessee	CARGILL CORN MILLING	2046	WET CORN MILLING	7.53864	0.00000
470653070	Tennessee	SIGNAL MOUNTAIN CEMENT CO.	3241	CEMENT, HYDRAULIC	7.45430	14.19100
470010020	Tennessee	U.S. DEPARTMENT OF ENERGY Y-12 PLANT	3499	FABRICATED METAL PRODUCTS, NEC	6.45058	0.00000
470850010	Tennessee	INLAND PAPERBOARD & PACKAGING INC.	2679	CONVERTED PAPER PRODUCTS, NEC	6.05144	0.00000
471390004	Tennessee	INTERTRADE HOLDINGS INC.	2819	INDUSTRIAL INORGANIC CHEMICALS	5.12497	0.00000
470730026	Tennessee	AFG INDUSTRIES - GREENLAND PLANT	3211	FLAT GLASS	0.00000	5.53680
471630007	Tennessee	SEAMAN CORPORATION	2295	COATED FABRICS, NOT RUBBERIZED	0.00000	13.59050
40097799	Oklahoma	GRAND RIVER DAM AUTH	4911	ELECTRIC SERVICES	43.79260	38.29550
400891733	Oklahoma	WEYERHAEUSER - VALLIANT	2631	PAPERBOARD MILLS	6.85920	8.73920
40031211	Oklahoma	PUBLIC SVC CO OF OK	4911	ELECTRIC SERVICES	0.00000	8.07136
390310616000000	Ohio	CONESVILLE POWER PLANT	4911	ELECTRIC SERVICES	415.59965	80.90937
390251413100008	Ohio	CINERGY CG&E WC BECKJORD STATION	4931	ELEC & OTHER SERVICES COMBINED	189.03354	48.73621
390010701000060	Ohio	DP&L KILLEN GENERATING STATION	4911	ELECTRIC SERVICES	62.09508	24.70857
391390370020002	Ohio	SHELBY MUNICIPAL LIGHT PLANT	4911	ELECTRIC SERVICES	10.97583	0.00000
390690335010105	Ohio	CAMPBELL SOUP COMPANY	2032	CANNED SPECIALTIES	9.19665	0.00000
390030302020012	Ohio	PREMCOR REFINING GROUP	2911	PETROLEUM REFINING	8.63332	5.82966
390611431390903	Ohio	THE PROCTER AND GAMBLE CO.	2841	SOAP AND OTHER DETERGENTS	5.06495	0.00000
3100100042	Nebraska	Whelan Energy Center	4911	ELECTRIC SERVICES	6.04710	0.00000
290990016	Missouri	AMERENUE-RUSH ISLAND PLANT	4911	ELECTRIC SERVICES	61.58000	10.63480
291890010	Missouri	AMERENUE-MERAMEC PLANT	4911	ELECTRIC SERVICES	42.16141	22.98658
291430004	Missouri	ASSOCIATED ELECTRIC COOPERATIVE INC-NEW	4911	ELECTRIC SERVICES	38.72200	98.94600
290990003	Missouri	DOE RUN COMPANY-HERCULANEUM SMELTER	3339	PRIMARY NONFERROUS METALS, NEC	38.52199	0.00000
290830001	Missouri	KANSAS CITY POWER & LIGHT CO-MONTROSE GE	4911	ELECTRIC SERVICES	24.74788	8.80744
290950021	Missouri	TRIGEN ENERGY CORPORATION-GRAND AVENUE S	4911	ELECTRIC SERVICES	23.22464	0.00000
290770005	Missouri	CITY UTILITIES OF SPRINGFIELD MISSOURI-J	4911	ELECTRIC SERVICES	18.58675	19.25697
295100003	Missouri	ANHEUSER-BUSCH INC-ST. LOUIS	2082	MALT BEVERAGES	17.82469	0.00000
291860001	Missouri	MISSISSIPPI LIME COMPANY-MISSISSIPPI LIM	3274	LIME	16.44205	7.57345
290770039	Missouri	CITY UTILITIES OF SPRINGFIELD MISSOURI-S	4911	ELECTRIC SERVICES	11.91107	7.09601
290930009	Missouri	DOE RUN COMPANY-BUICK SMELTER	3339	PRIMARY NONFERROUS METALS, NEC	11.47904	0.00000
291430008	Missouri	NORANDA ALUMINUM INC-NORANDA ALUMINUM IN	3334	PRIMARY ALUMINUM	11.21103	0.00000
291510002	Missouri	CENTRAL ELECTRIC POWER COOPERATIVE-CHAMO	4911	ELECTRIC SERVICES	10.40103	7.95615
291950010	Missouri	MARSHALL MUNICIPAL UTILITIES-MARSHALL MU	4911	ELECTRIC SERVICES	8.36287	0.00000
290190002	Missouri	COLUMBIA MUNICIPAL POWER PLANT-COLUMBIA	4911	ELECTRIC SERVICES	5.23420	0.00000
281212812100036	Mississippi	PURSUE ENERGY CORPORATION THOMASVILLE G	2819	INDUSTRIAL INORGANIC CHEMICALS	33.21600	0.00000
280592805900058	Mississippi	CHEVRON PRODUCTS COMPANY PASCAGOULA REF	2911	PETROLEUM REFINING	15.54386	11.21247
280192801900011	Mississippi	CHOCTAW GENERATION LLP RED HILLS GENERA	4911	ELECTRIC SERVICES	12.12464	0.00000
280232802300031	Mississippi	MAGNOLIA RESOURCES INC PACHUTA HARMONY	1321	NATURAL GAS LIQUIDS	6.16490	0.00000
281372813700025	Mississippi	TRUNKLINE GAS COMPANY INDEPENDENCE COMP	4922	NATURAL GAS TRANSMISSION	0.00000	5.90938
281492814900027	Mississippi	ENTERGY MISSISSIPPI INCBAXTER WILSON PL	4911	ELECTRIC SERVICES	0.00000	21.38220
281512815100048	Mississippi	ENTERGY MISSISSIPPI INC GERALD ANDRUS P	4911	ELECTRIC SERVICES	0.00000	16.13000
220750015	Louisiana	CONOCOPHILLIPS COALLIANCE REFINERY	2911	PETROLEUM REFINING	9.05244	6.99716
220050004	Louisiana	CF INDUSTRIES INC.DONALDSONVILLE NITRO	2873	NITROGENOUS FERTILIZERS	0.00000	9.40132
220710014	Louisiana	ENTERGY NOMICHOUD	4911	ELECTRIC SERVICES	0.00000	12.34510
211772117700006	Kentucky	TVA PARADISE STEAM PLANT	4911	ELECTRIC SERVICES	231.14800	129.45000
210912109100003	Kentucky	WESTERN KY ENERGY CORP COLEMAN STATION	4911	ELECTRIC SERVICES	136.73500	18.52110
210412104100010	Kentucky	KENTUCKY UTILITIES CO GHENT GENERATING S	4911	ELECTRIC SERVICES	128.63700	53.32750
211672116700001	Kentucky	KENTUCKY UTILITIES CO BROWN FACILITY	4911	ELECTRIC SERVICES	126.12264	22.49524
211272112700003	Kentucky	KENTUCKY POWER CO BIG SANDY PLANT	4911	ELECTRIC SERVICES	116.35500	40.56600
211612116100009	Kentucky	EAST KY POWER COOP SPURLOCK ST. MAYSVILL	4911	ELECTRIC SERVICES	114.74800	22.85900
211452114500006	Kentucky	TVA-ENVIRONMENTAL AFFAIRS SHAWNEE PLANT	4911	ELECTRIC SERVICES	93.72150	52.22210
211110127	Kentucky	LOU GAS & ELEC MILL CREEK	4911	ELECTRIC SERVICES	62.90400	40.62600
211992119900005	Kentucky	EAST KY POWER COOP JOHN SHERMAN COOPER P	4911	ELECTRIC SERVICES	60.98100	12.39360
211110126	Kentucky	LOU GAS & ELEC CANE RUN	4911	ELECTRIC SERVICES	41.51100	17.38838
211772117700001	Kentucky	KENTUCKY UTILITIES CO GREEN RIVER STATIO	4911	ELECTRIC SERVICES	36.53400	0.00000
212332123300001-B	Kentucky	WESTERN KY ENERGY CORP REID	4911	ELECTRIC SERVICES	26.99800	0.00000
210492104900003	Kentucky	EAST KY POWER COOP WILLIAM C DALE PLANT	4911	ELECTRIC SERVICES	25.84360	6.17140
211832118300069	Kentucky	WESTERN KY ENERGY CORP WILSON STATION	4911	ELECTRIC SERVICES	24.39500	22.78500
212232122300002	Kentucky	LOUISVILLE GAS & ELECTRIC TRIMBLE CO GEN	4911	ELECTRIC SERVICES	23.13700	14.14800
210592105900027	Kentucky	OWENSBORO MUNICIPAL UTIL ELMER SMITH STA	4911	ELECTRIC SERVICES	19.66360	25.20099

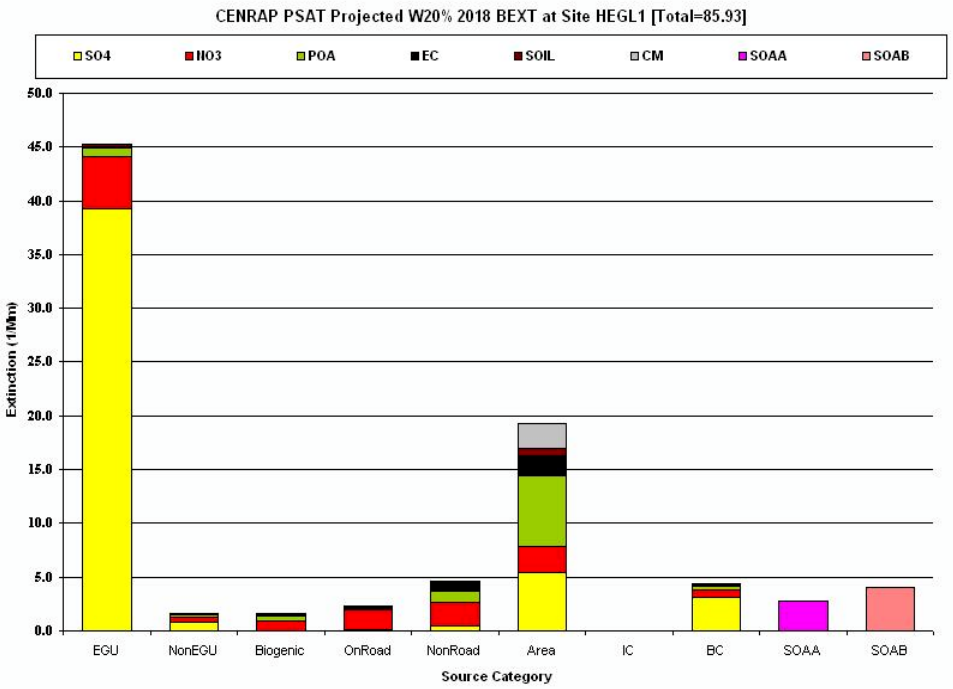
Attachment C – Source Apportionment Analysis

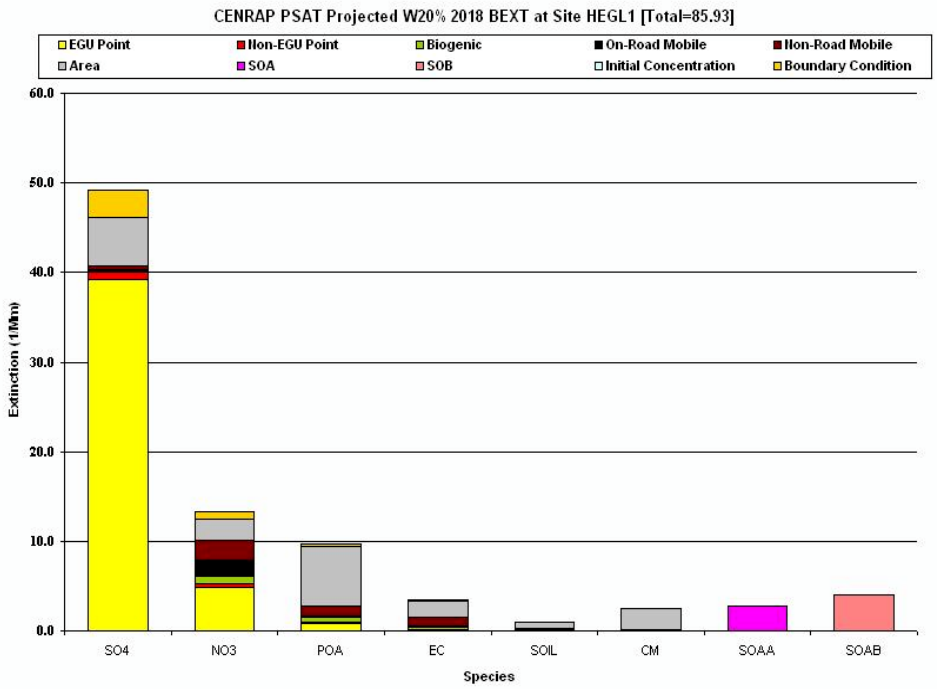
Source Apportionment for the Hercules Glades Class I Area

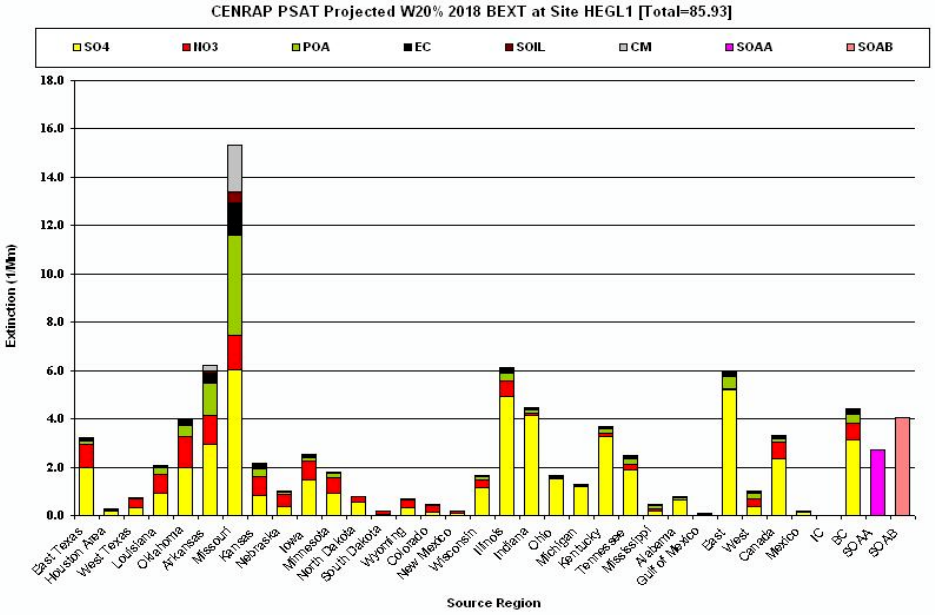
PSAT Model Source Apportionment

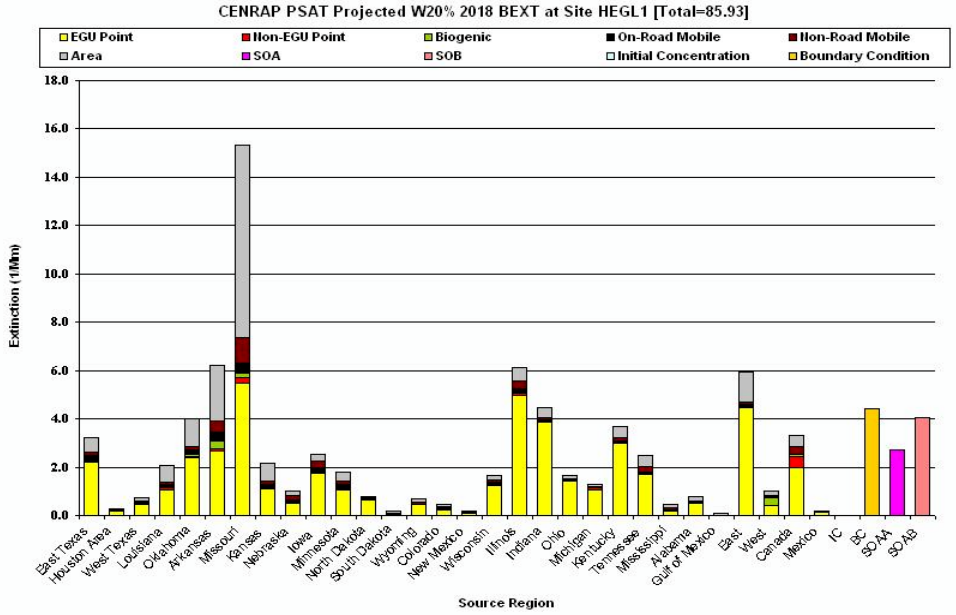


Hercules Glades Projected 2018 – Worst 20%



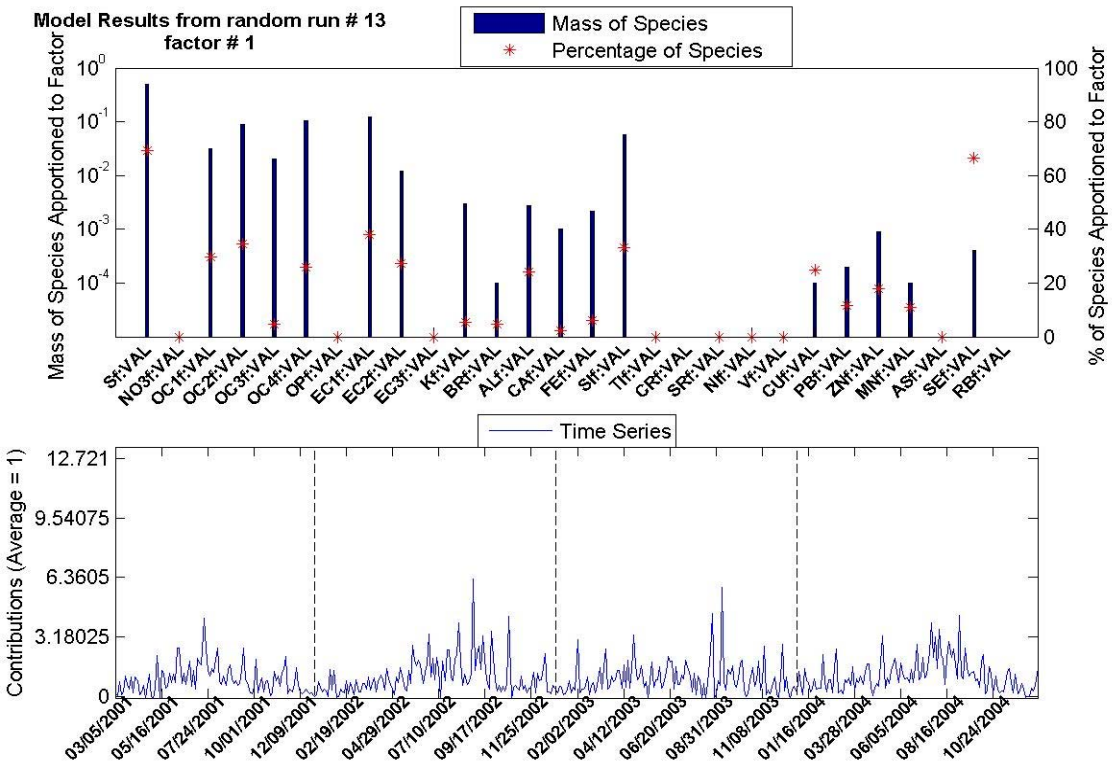




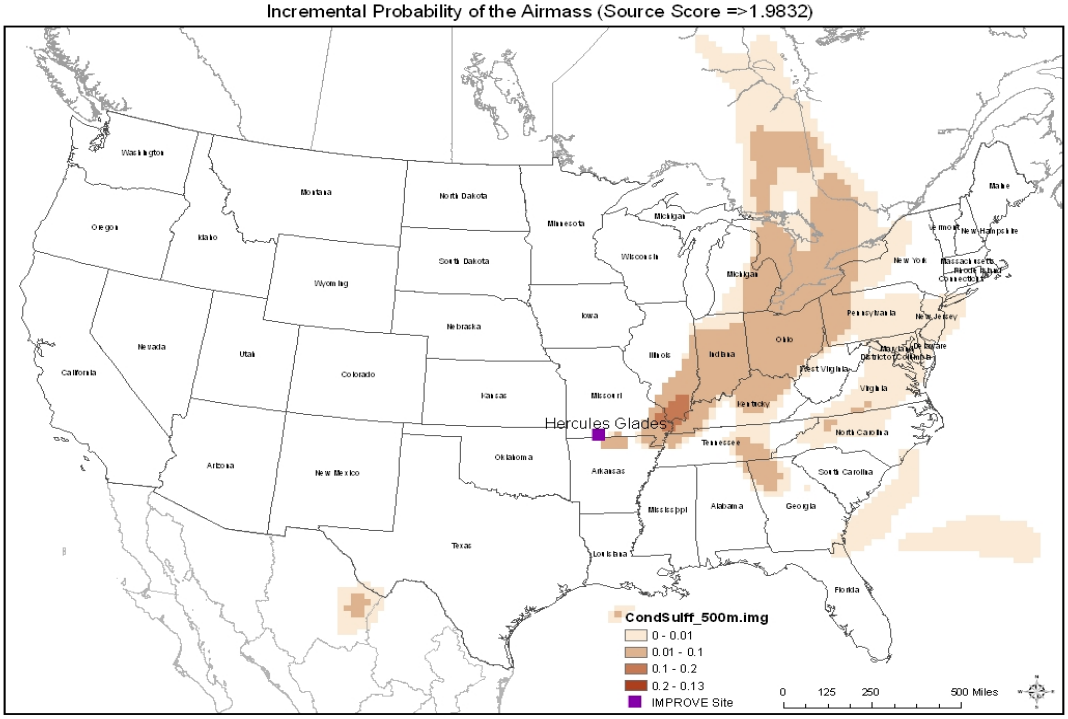


Monitoring Data Source Apportionment

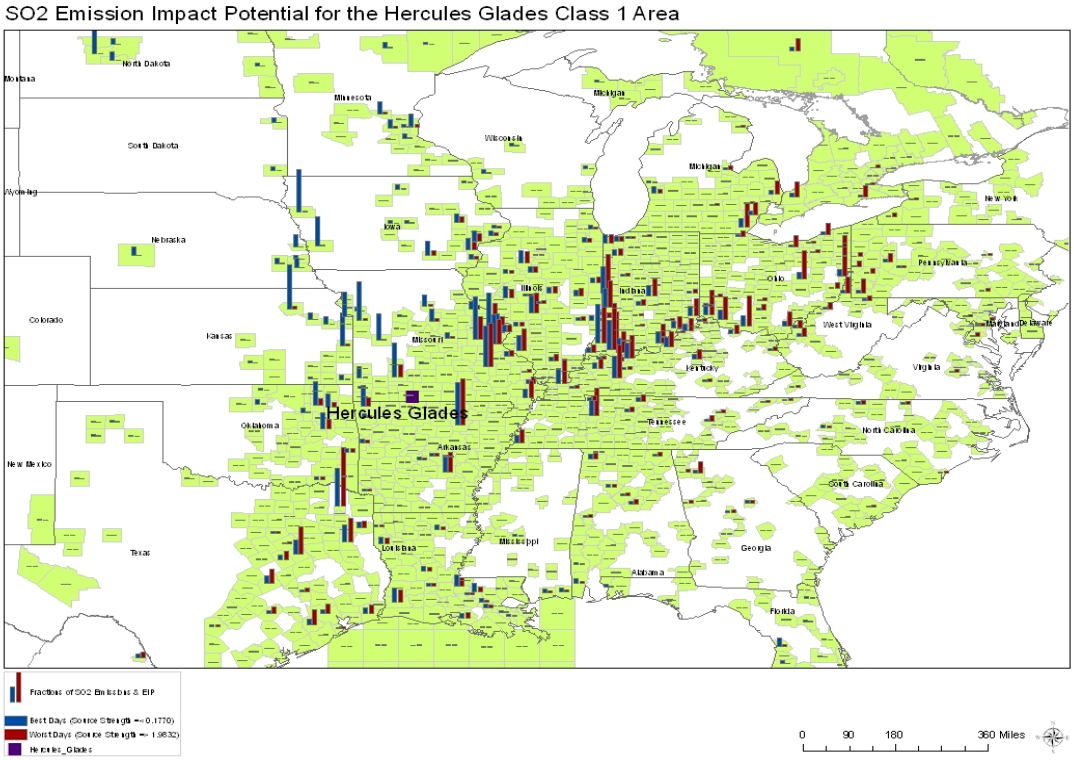
The Coal Combustion Factor at the Hercules Glades Class I Area

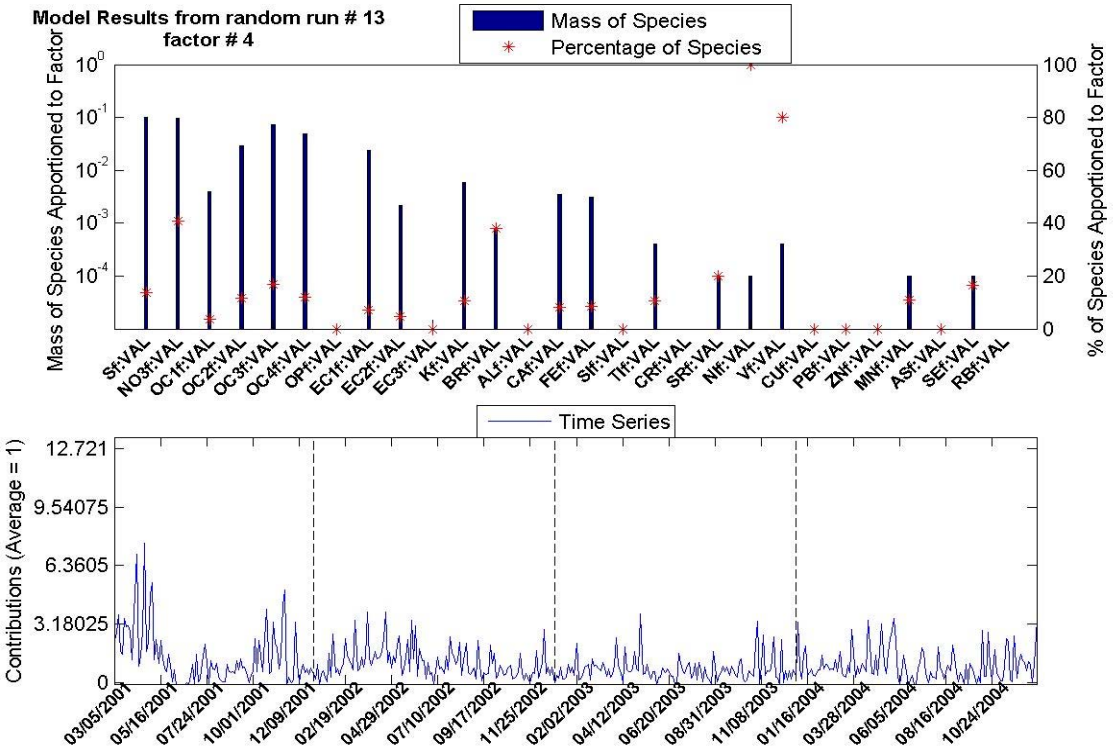


Possible Source Area of the Identified Coal Combustion Factor at the Hercules Glades Class I Area
Incremental Probability of the Airmass (Source Score =>1.9832)

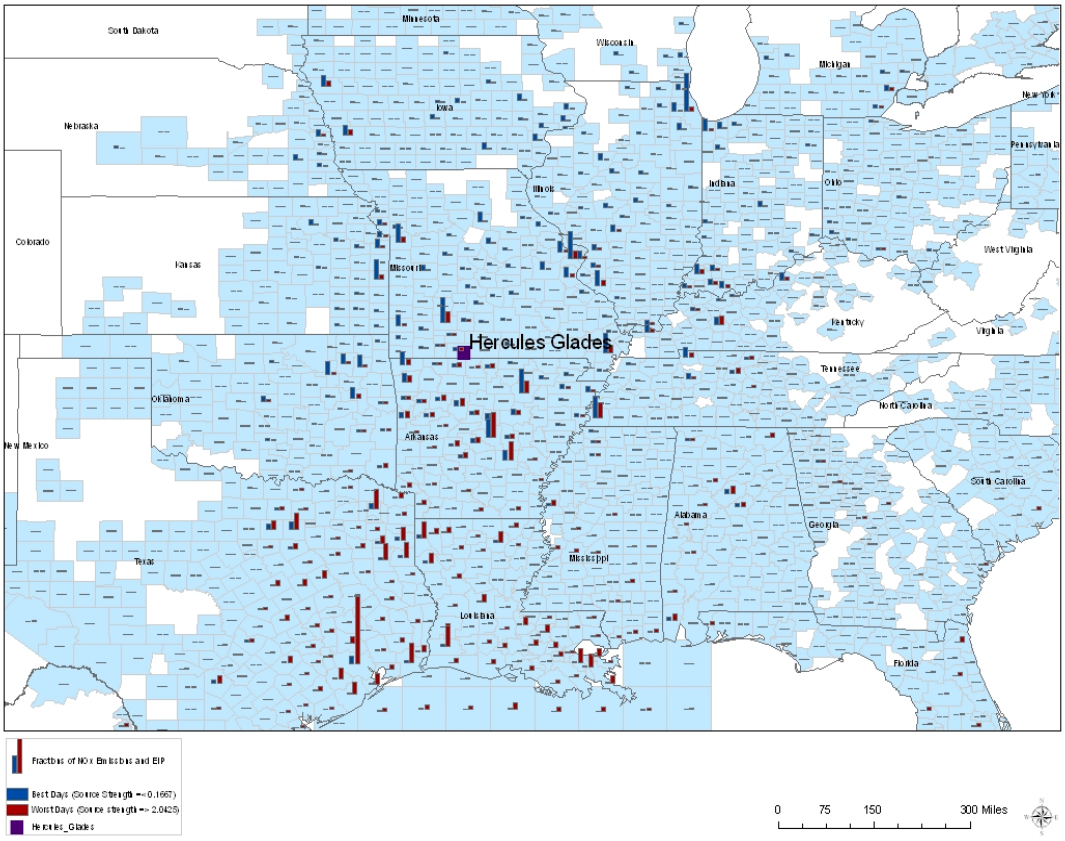


The Secondary Nitrate plus Oil Combustion Factor at the Hercules Glades Class I Area

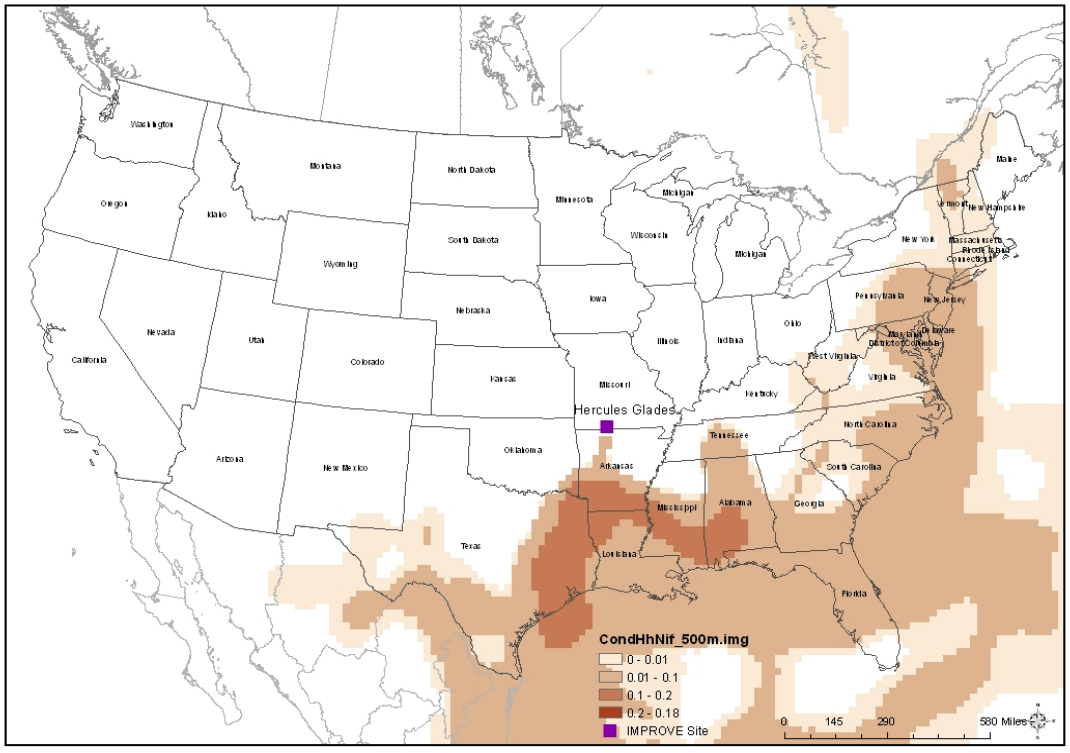




NOx Emission Impact Potential for the Hercules Glades Class I Area

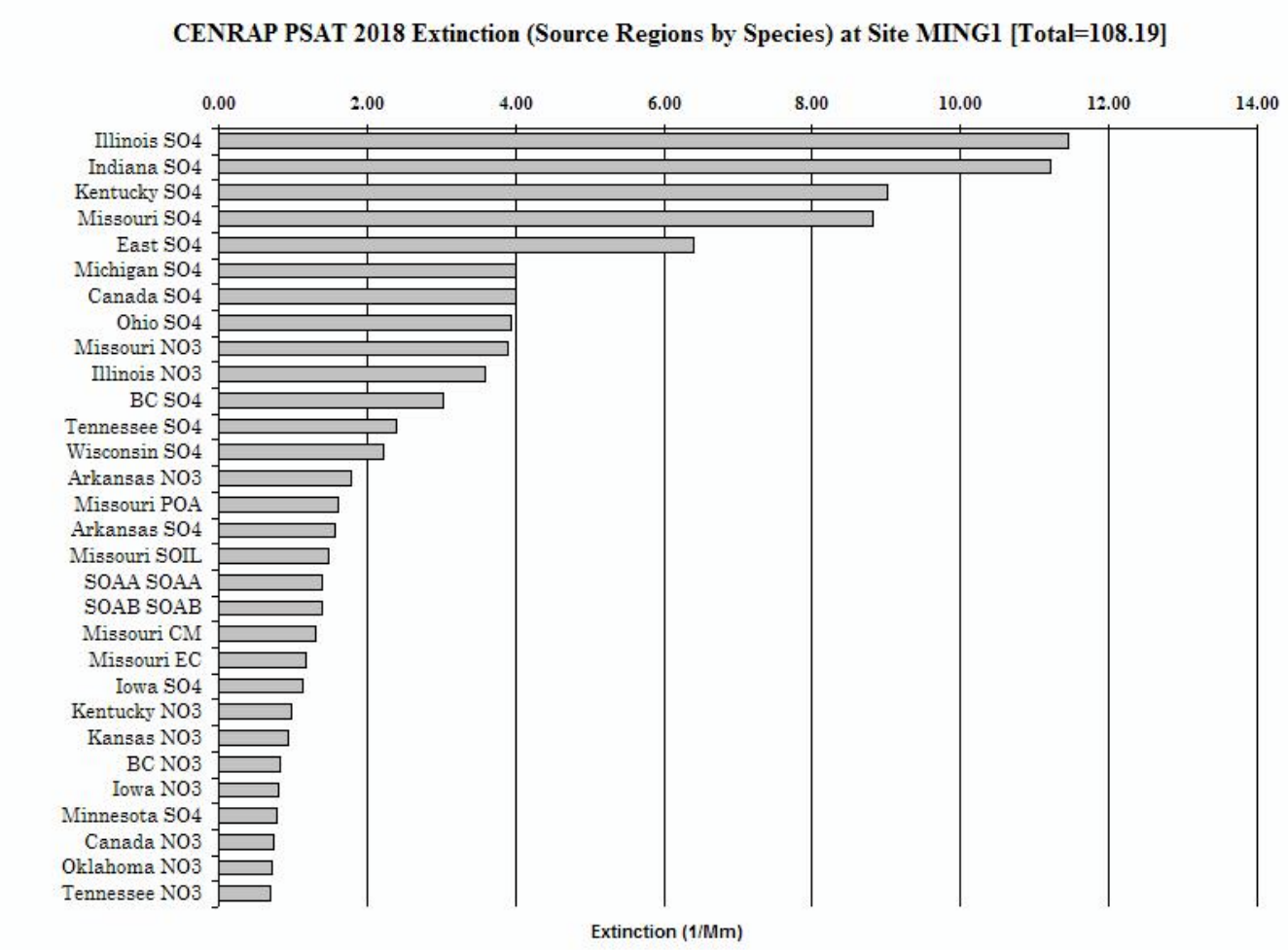


Possible Source Area of the Identified Nitrate Plus Oil Combustion Factor at the Hercules Glades Class I Area
Incremental Probability of the Airmass (Source Score =>2.0435)

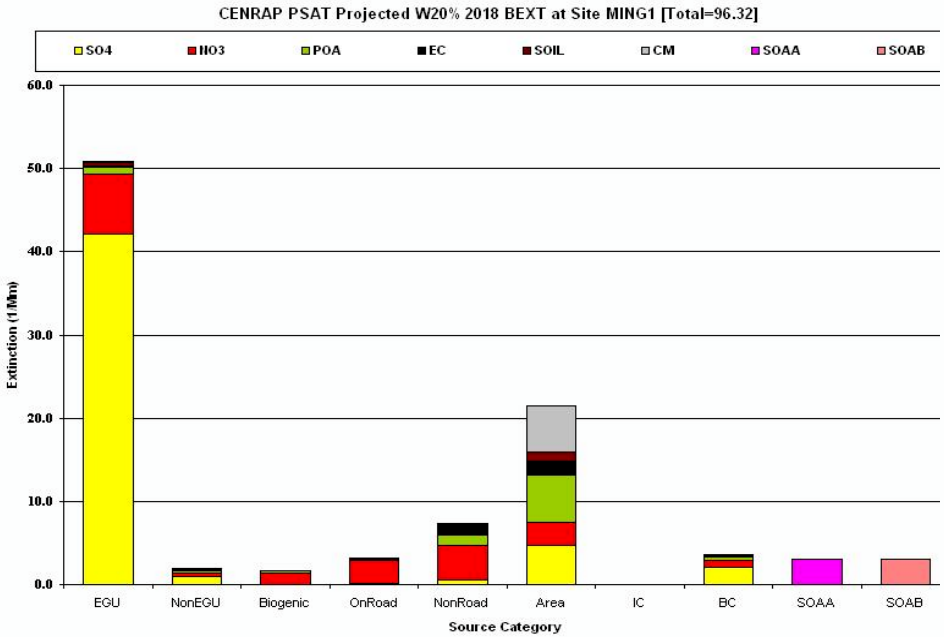


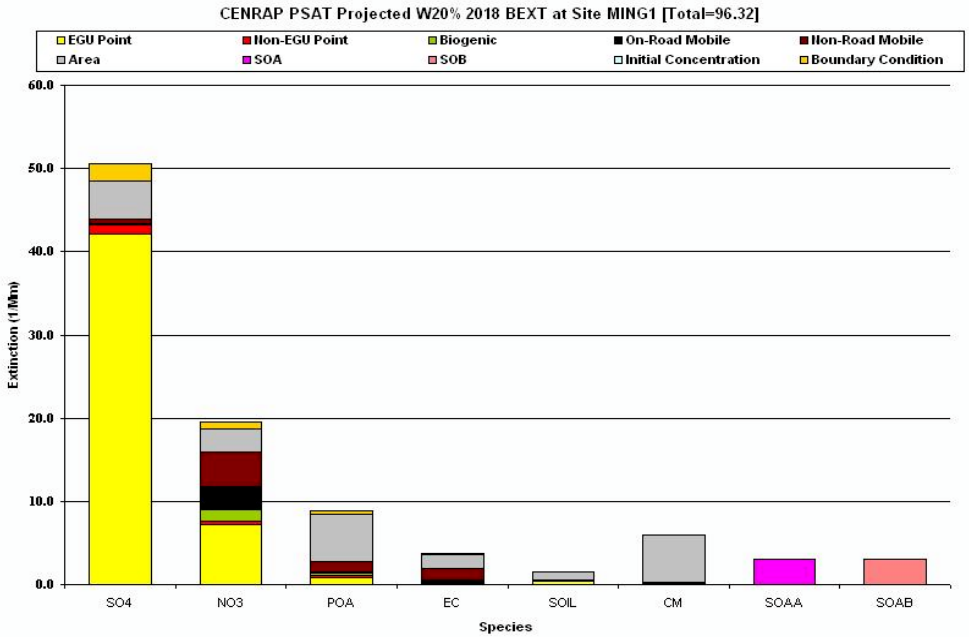
Source Apportionment for the Mingo Class I Area

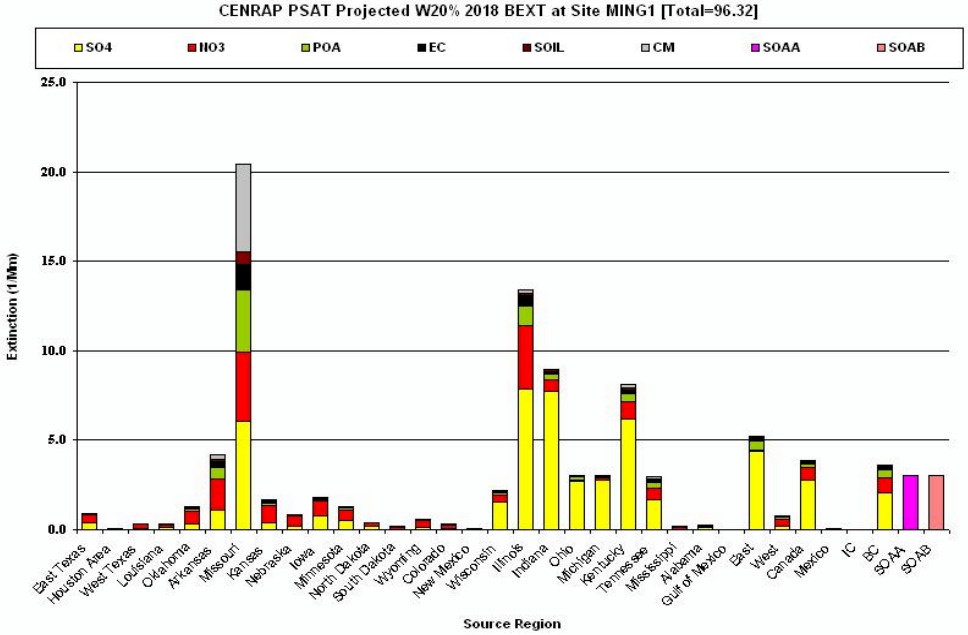
PSAT Model Source Apportionment

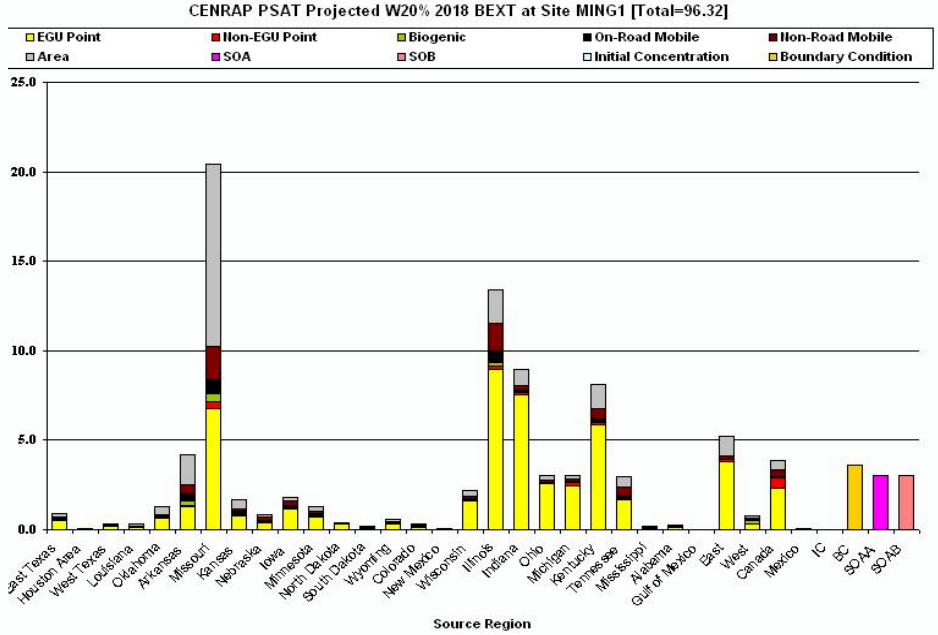


Mingo Projected 2018 – Worst 20%



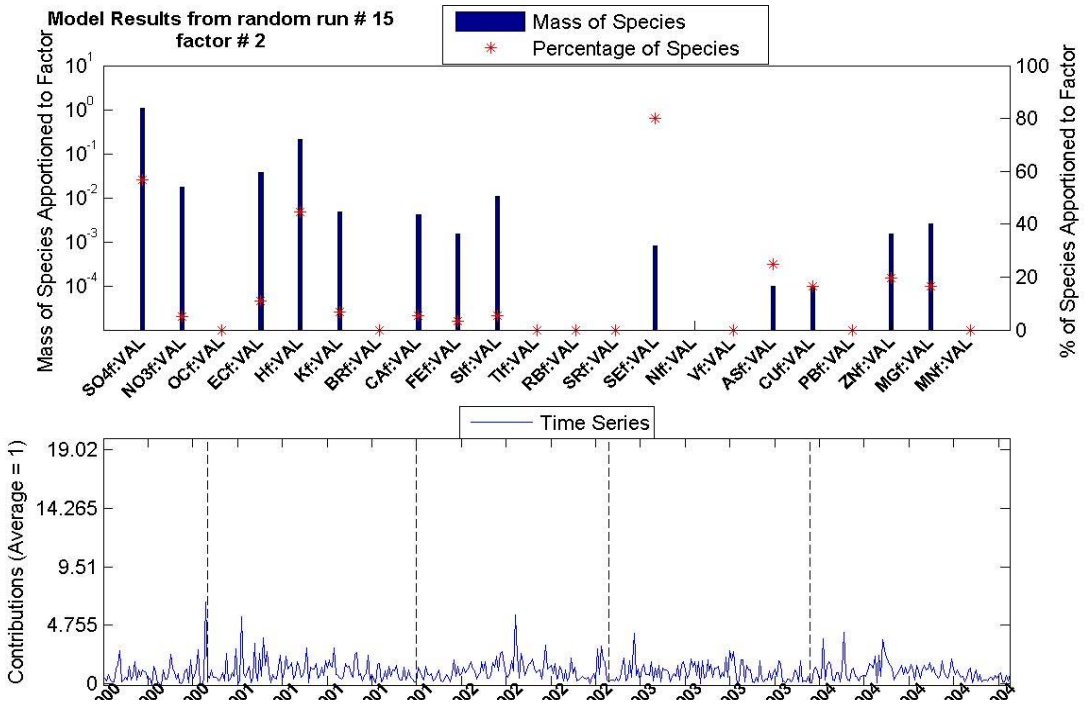




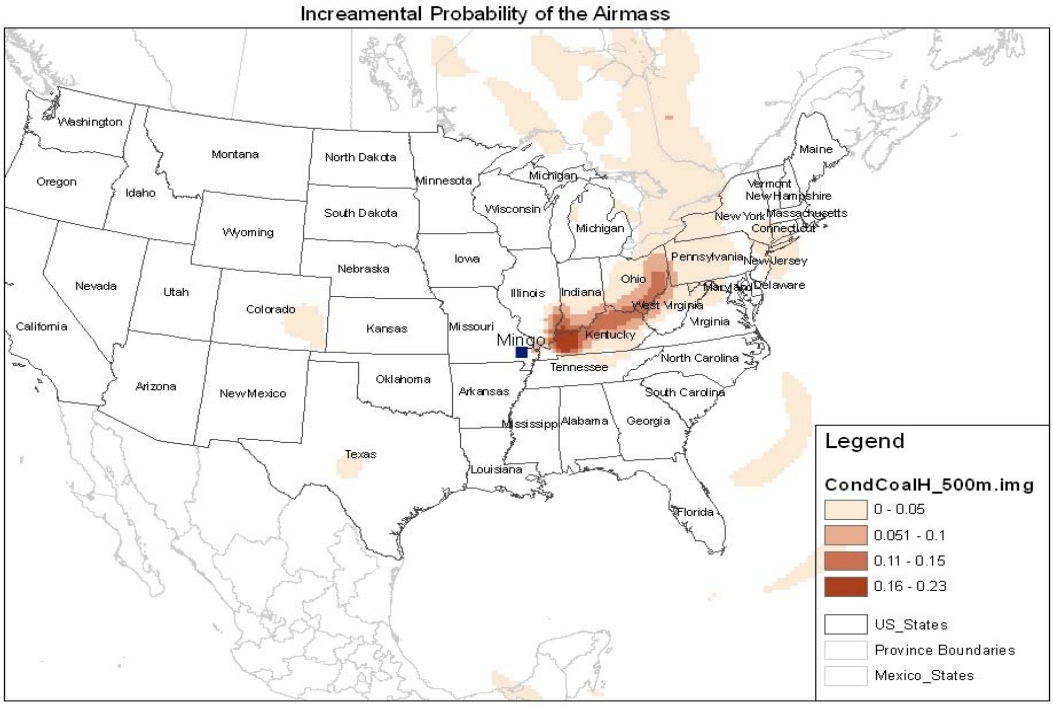


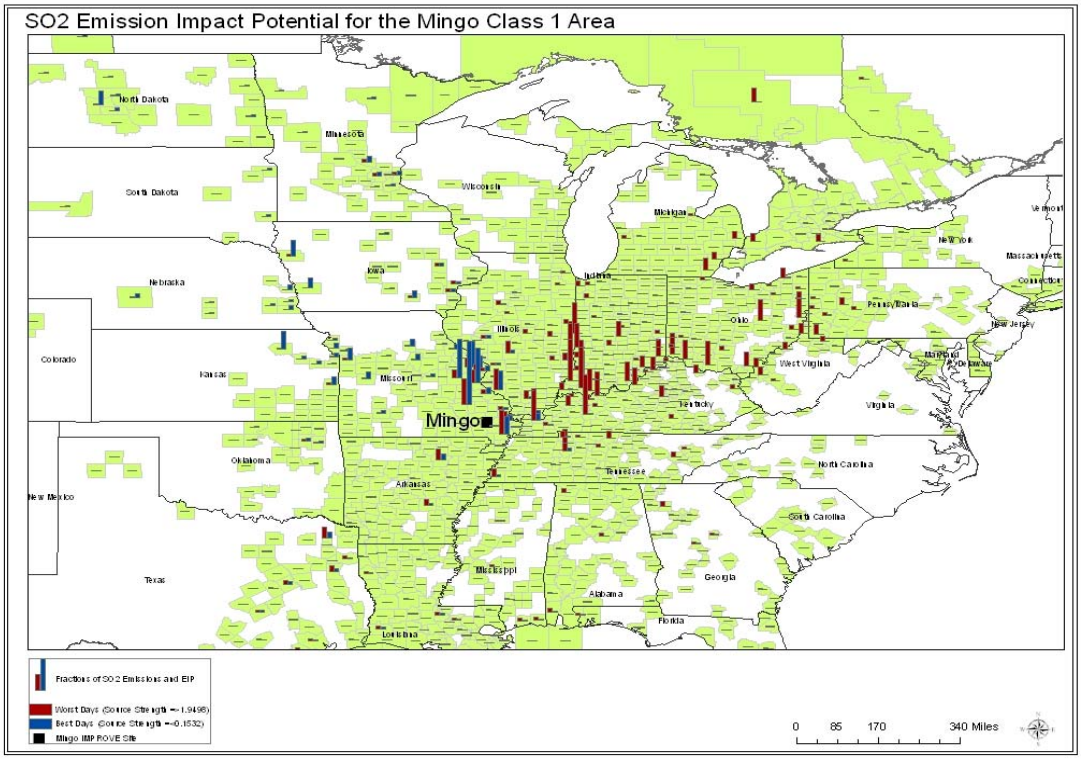
Monitoring Data Source Apportionment

The Coal Combustion Factor at the Mingo Class I Area

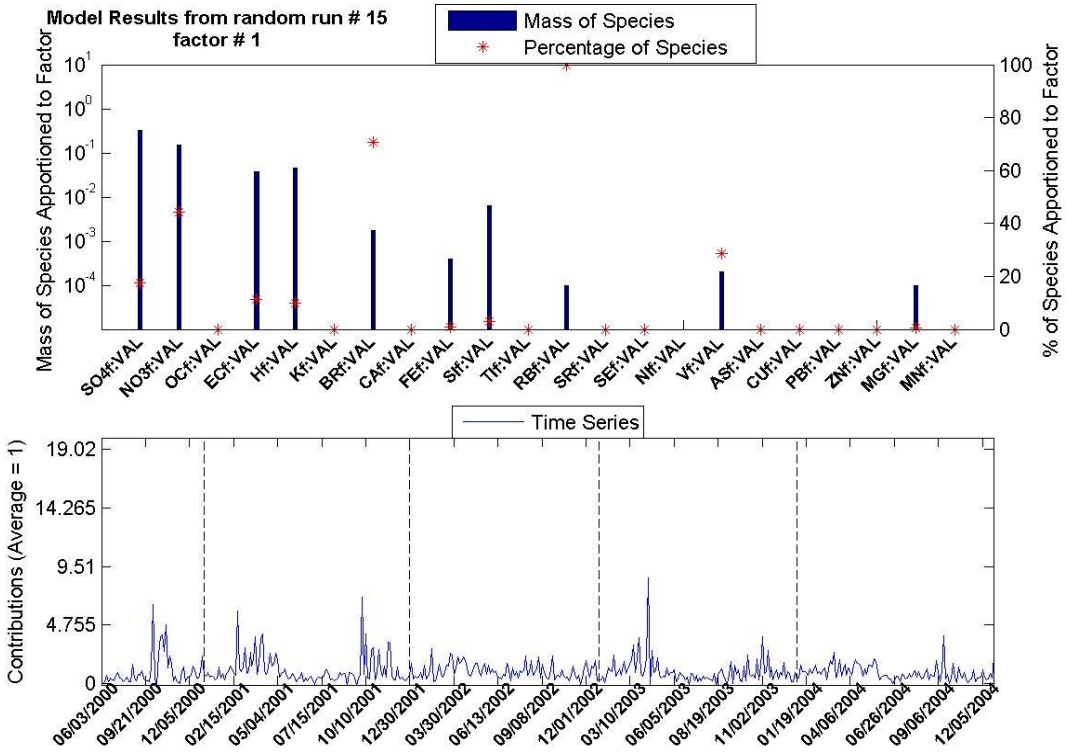


Possible Source Areas of the Identified Sulfate/Coal Combustion Factor at Mingo



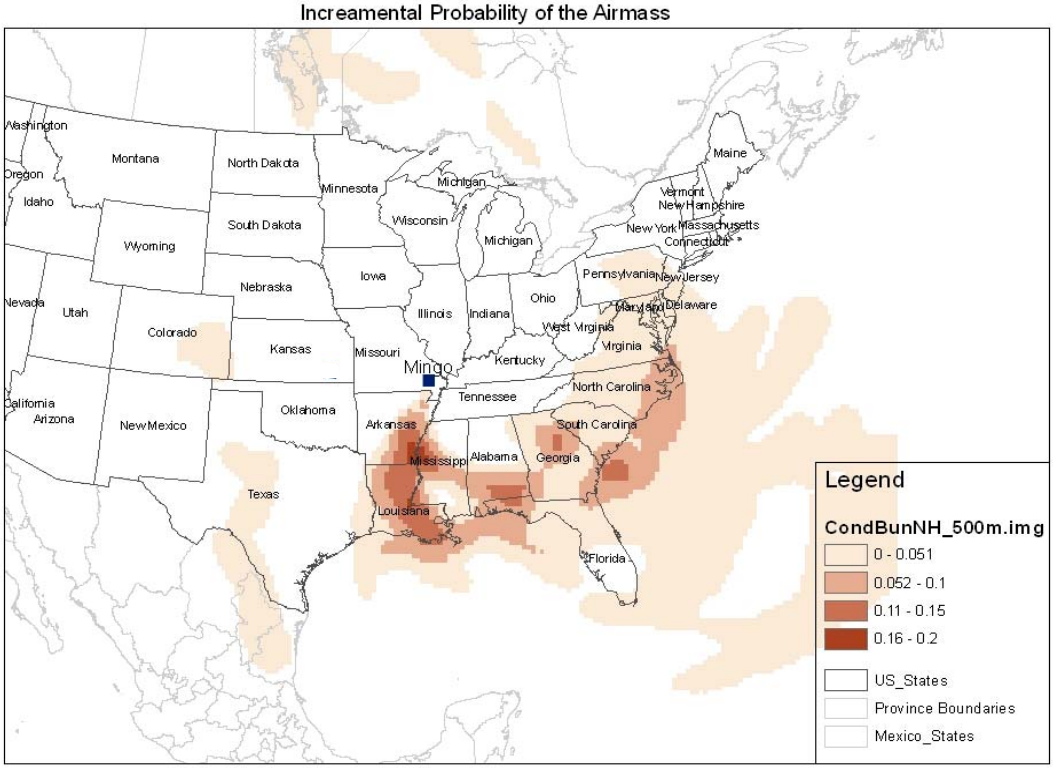


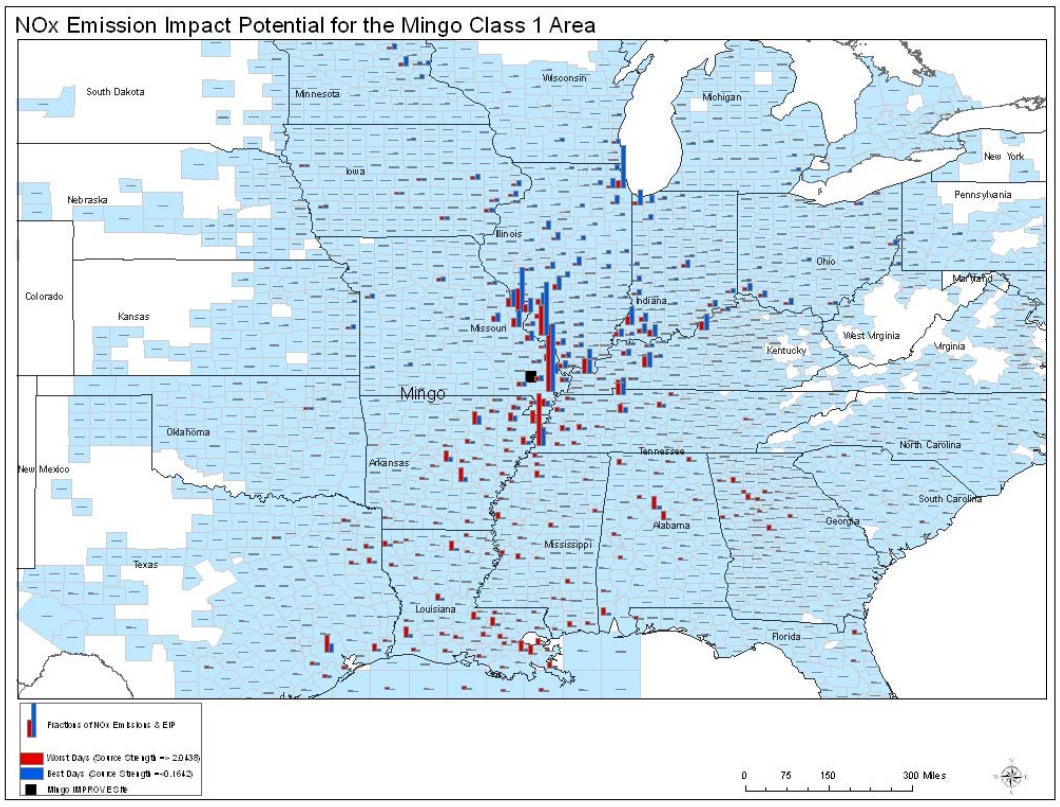
The Nitrate plus Spring Burning Factor at the Mingo Class I Area



Possible Source Areas of the Identified Burning and Nitrate Factor at Mingo

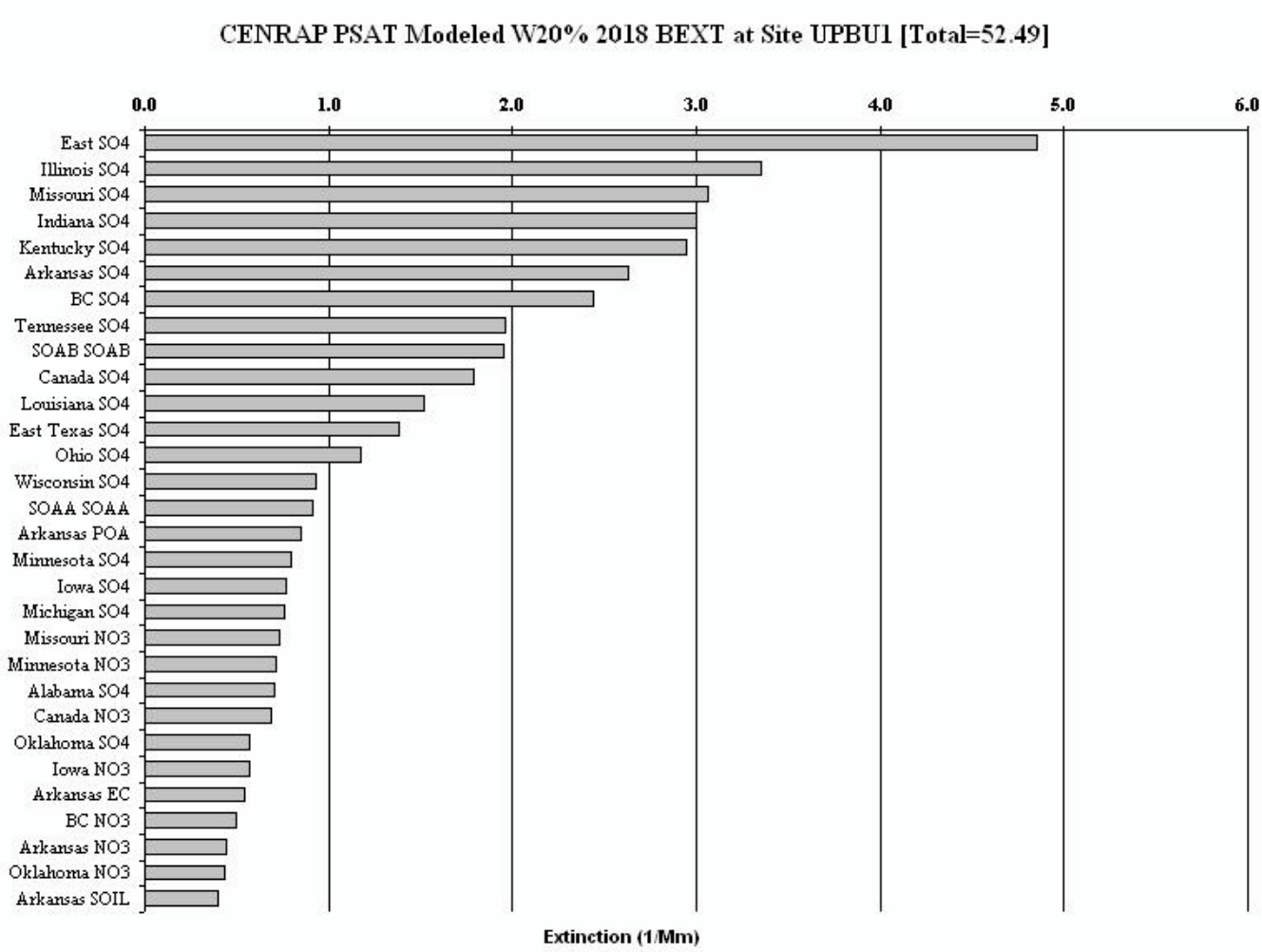
Increamental Probability of the Airmass



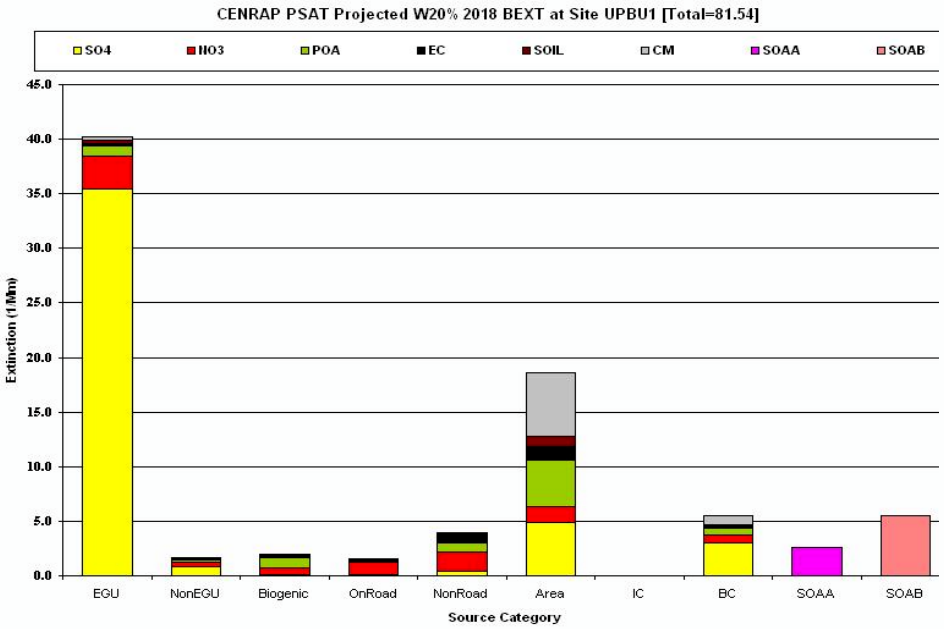


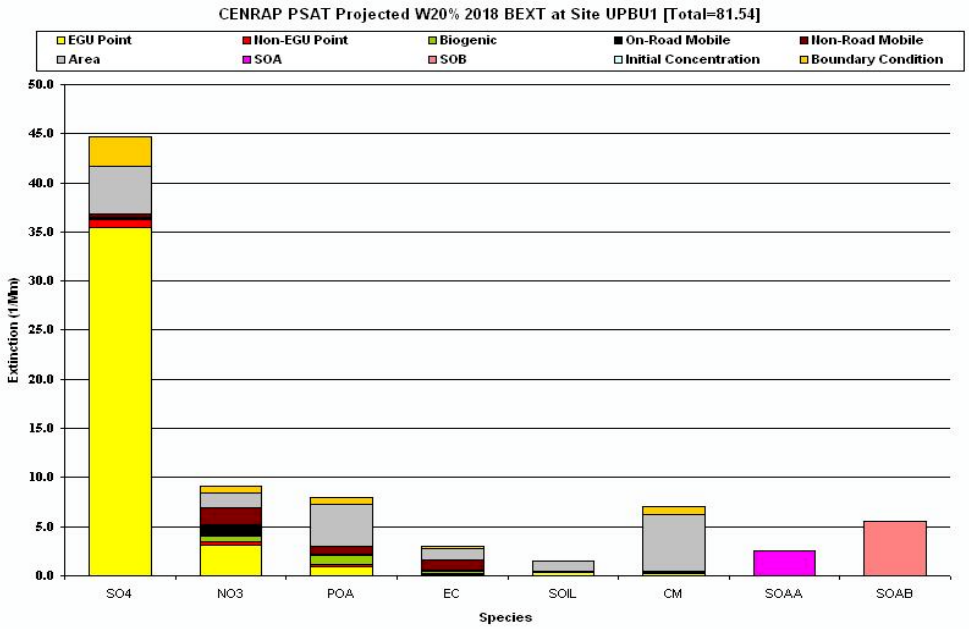
Source Apportionment for the Upper Buffalo Class I Area

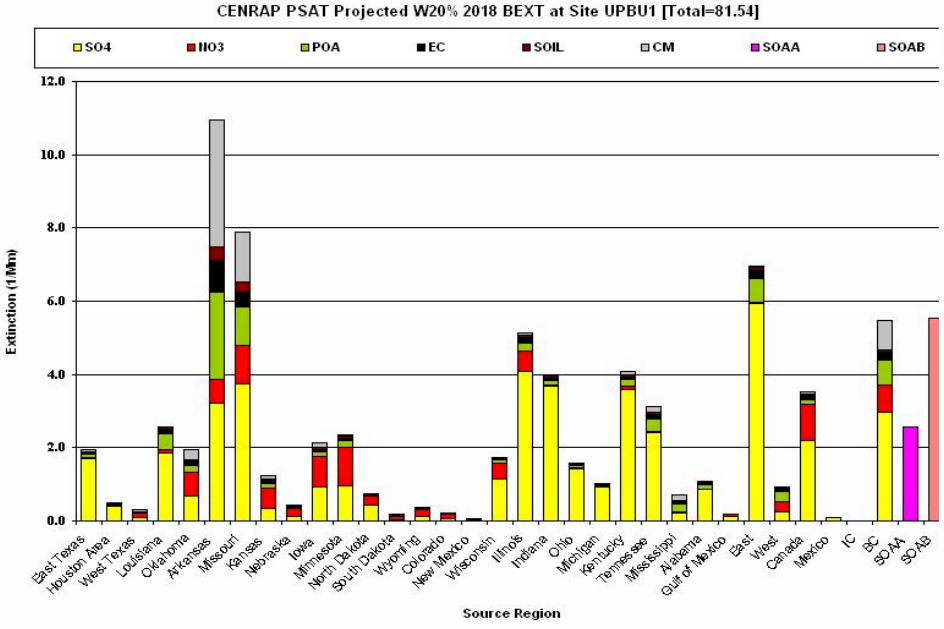
PSAT Model Source Apportionment

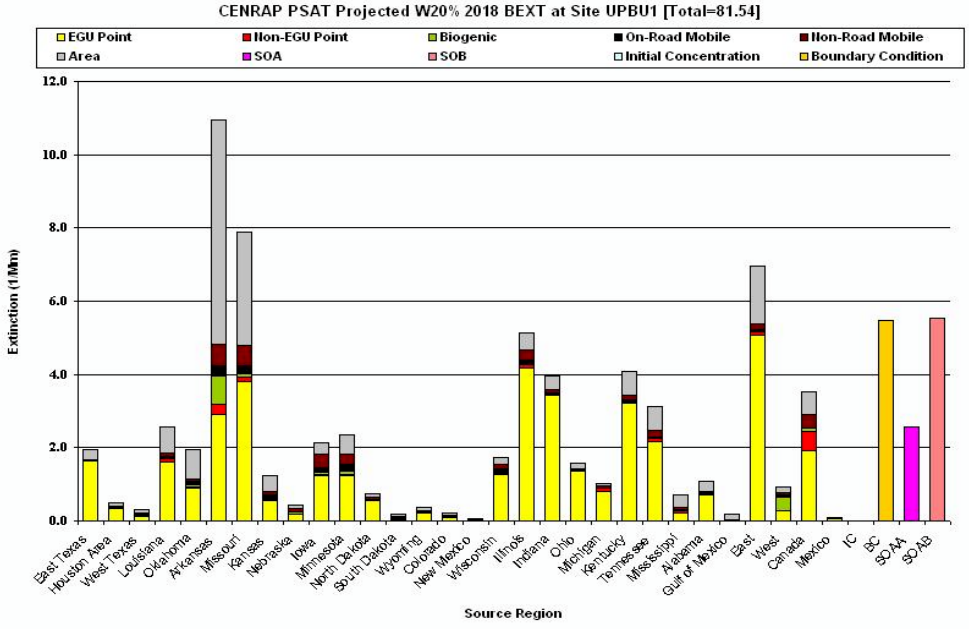


Upper Buffalo Projected 2018 – Worst 20%



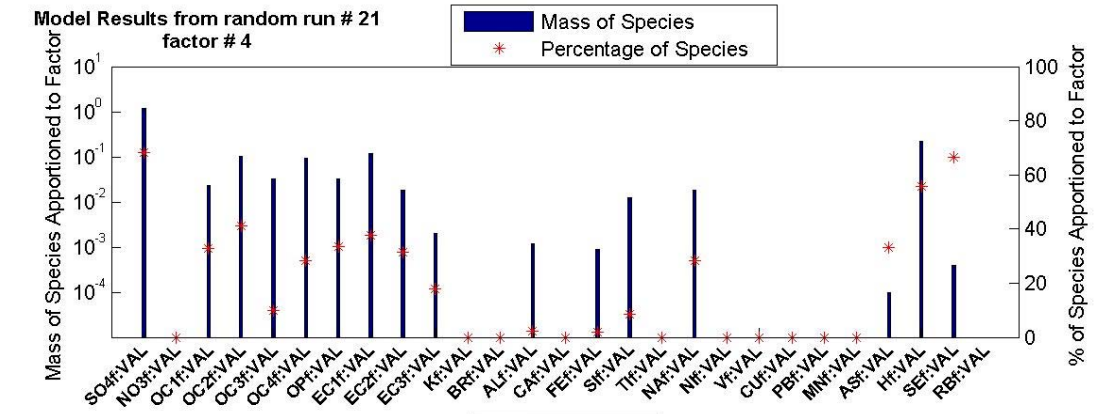


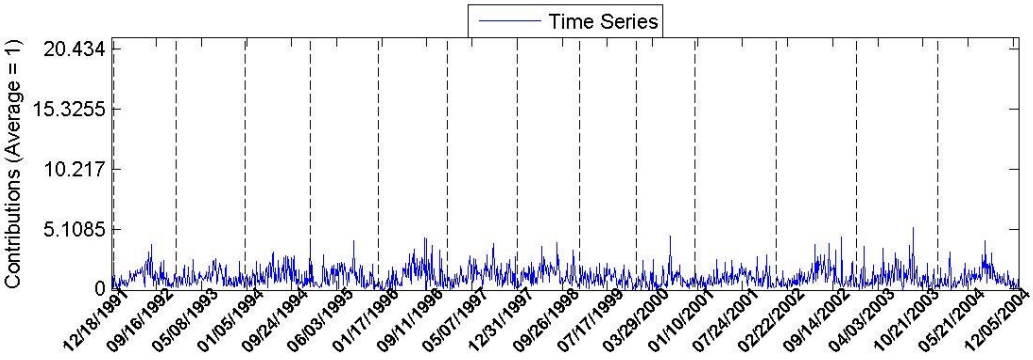




Monitoring Data Source Apportionment

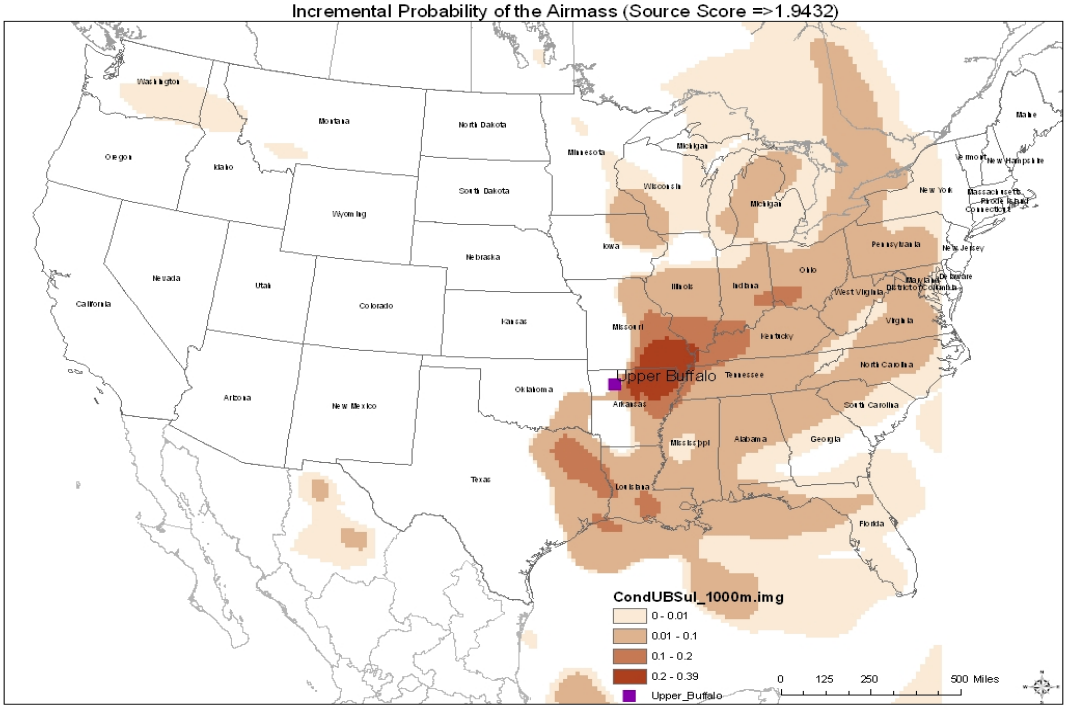
The Coal Combustion Factor at the Upper Buffalo Class I Area

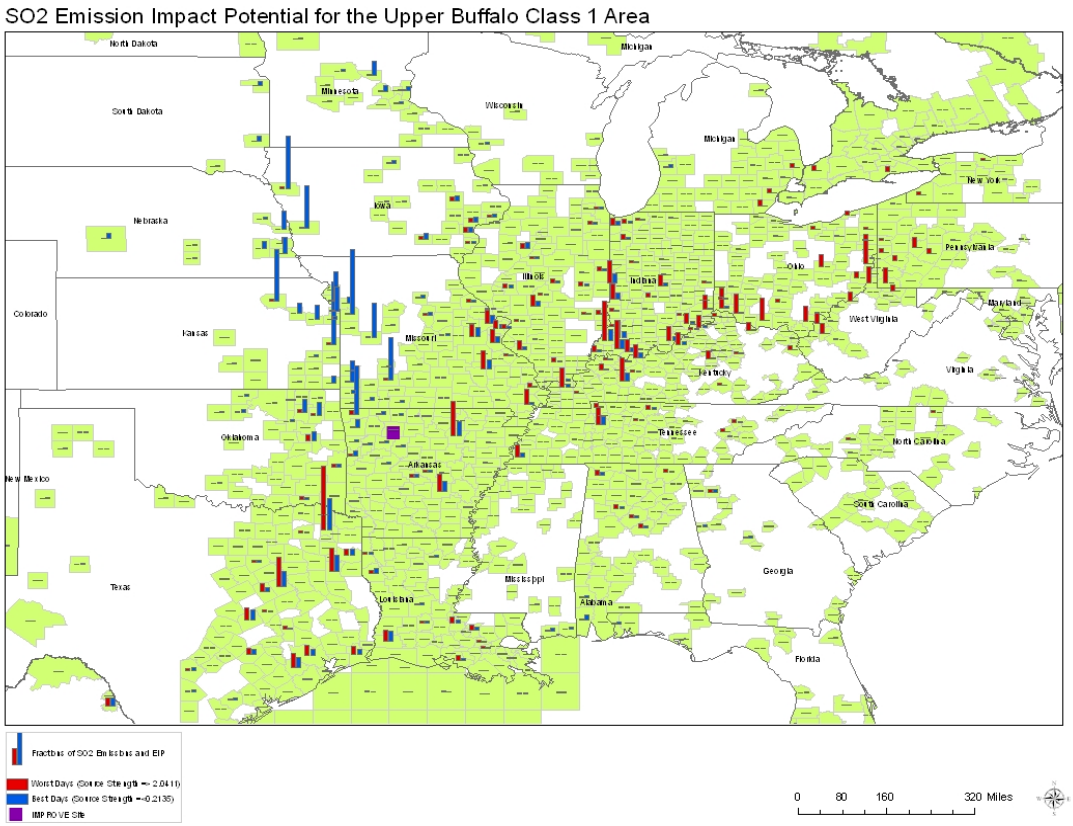




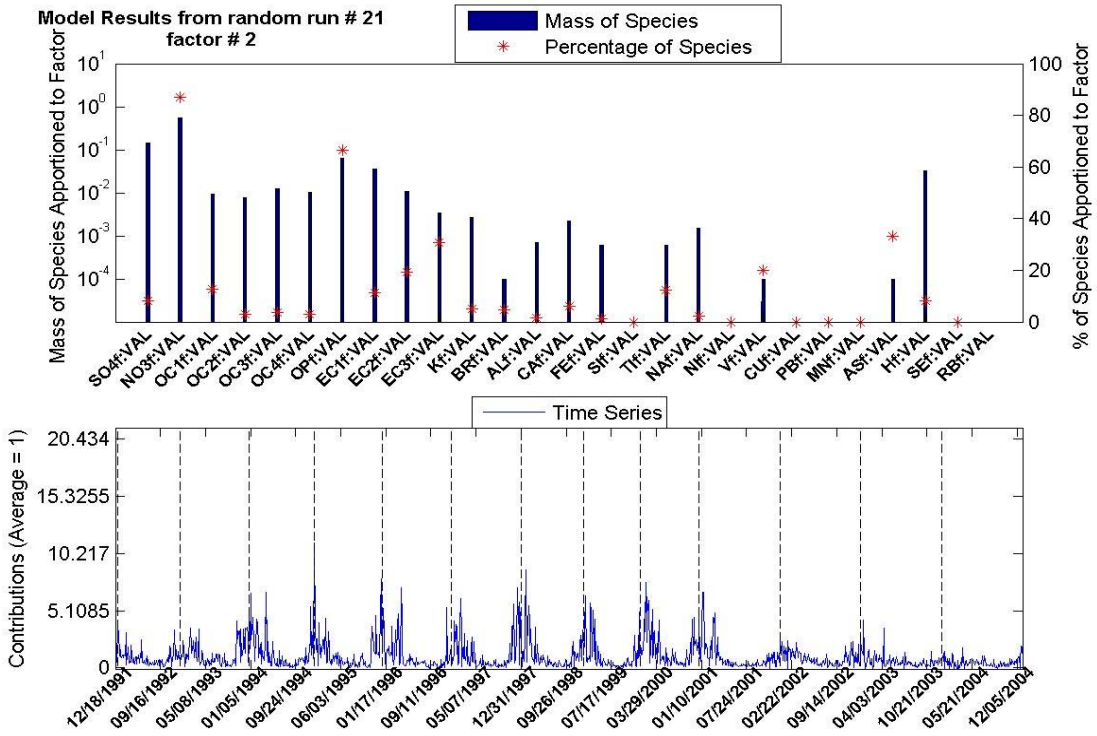
Possible Source Areas of the Identified Coal Combustion Factor at the Upper Buffalo Class I Area

Incremental Probability of the Airmass (Source Score =>1.9432)



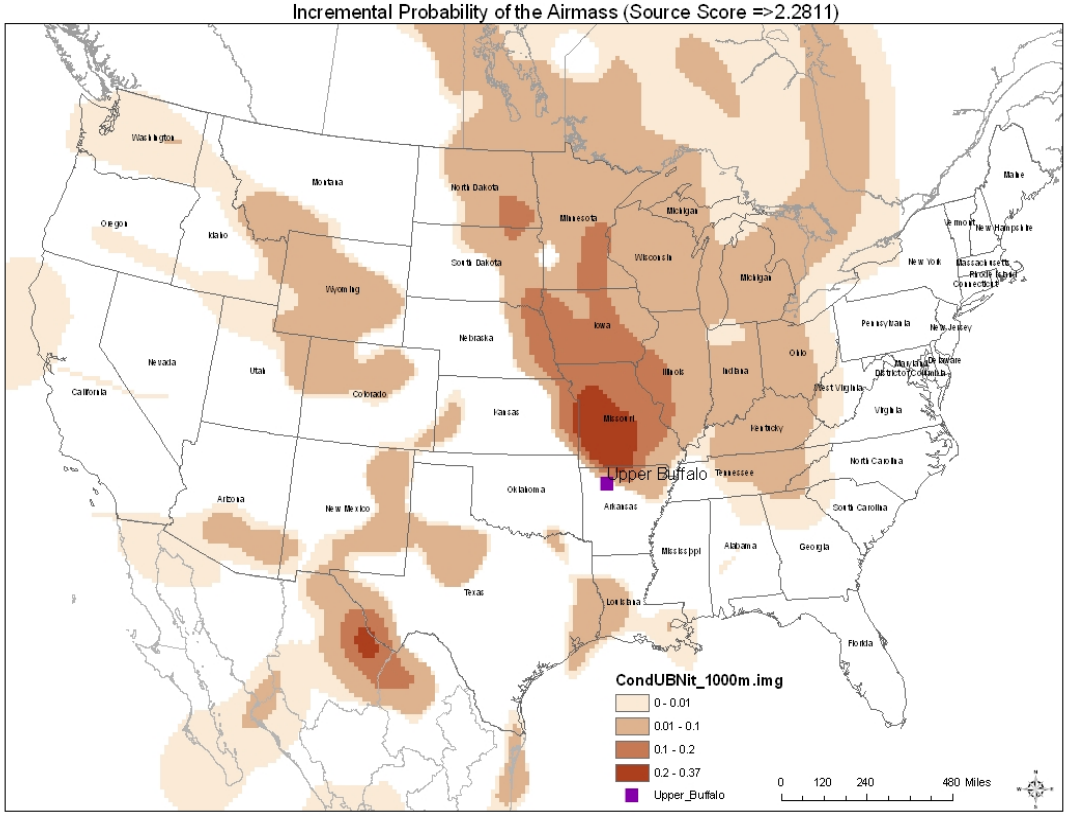


The Secondary Nitrate Factor at the Upper Buffalo Class I Area

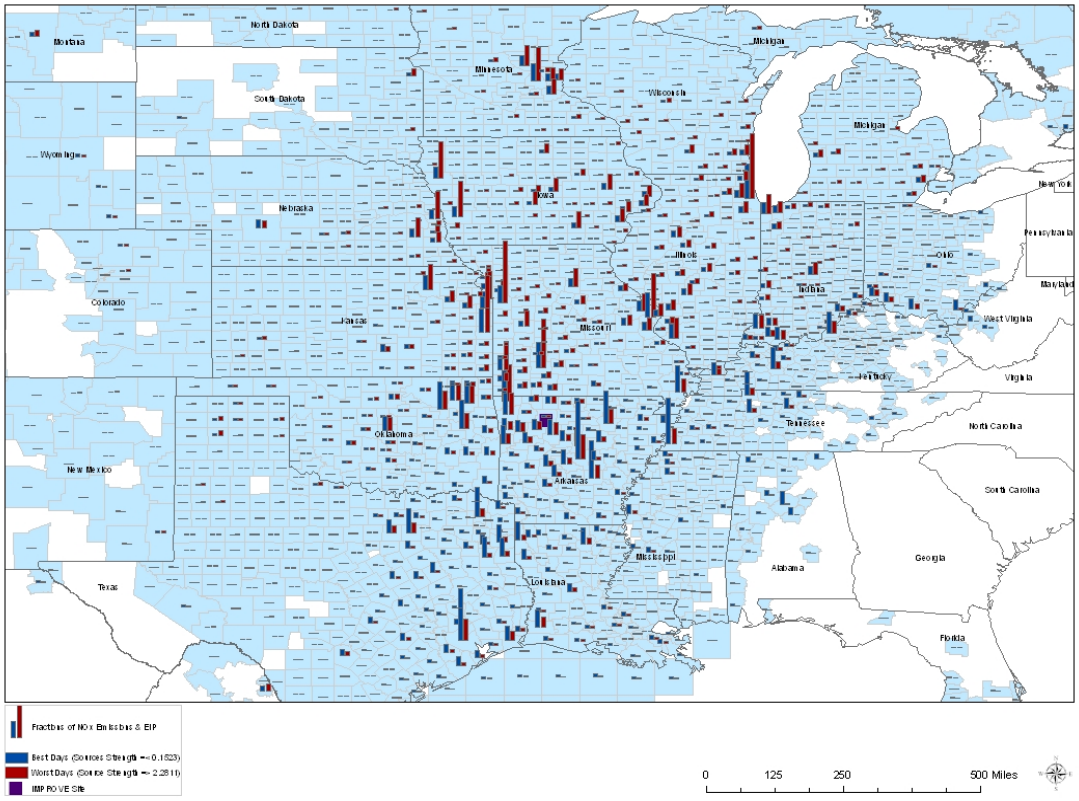


Possible Source Areas of the Identified Secondary Nitrate Factor at the Upper Buffalo Class I Area

Incremental Probability of the Airmass (Source Score =>2.2811)

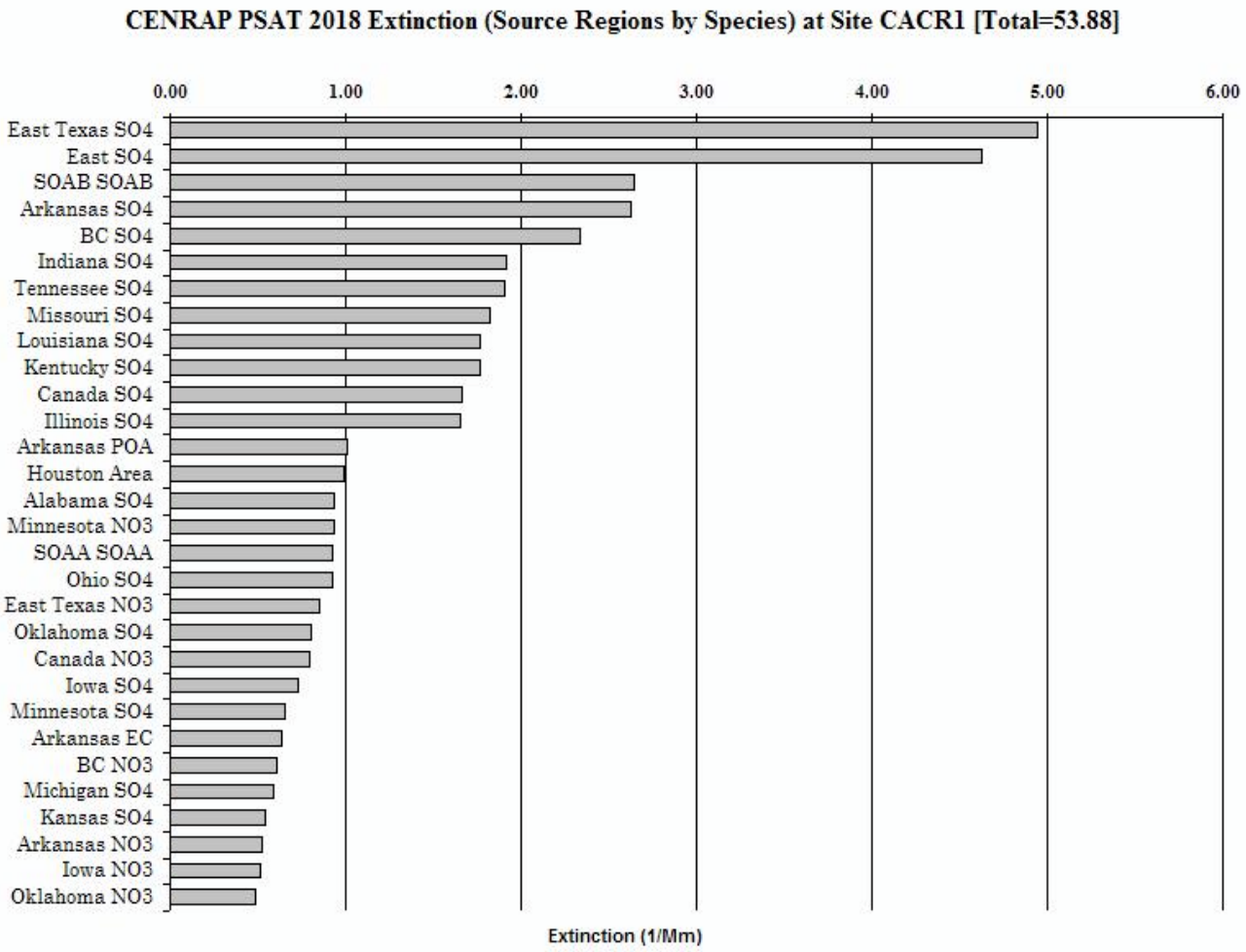


NOx Emission Impact Potential for the Upper Buffalo Class I Area

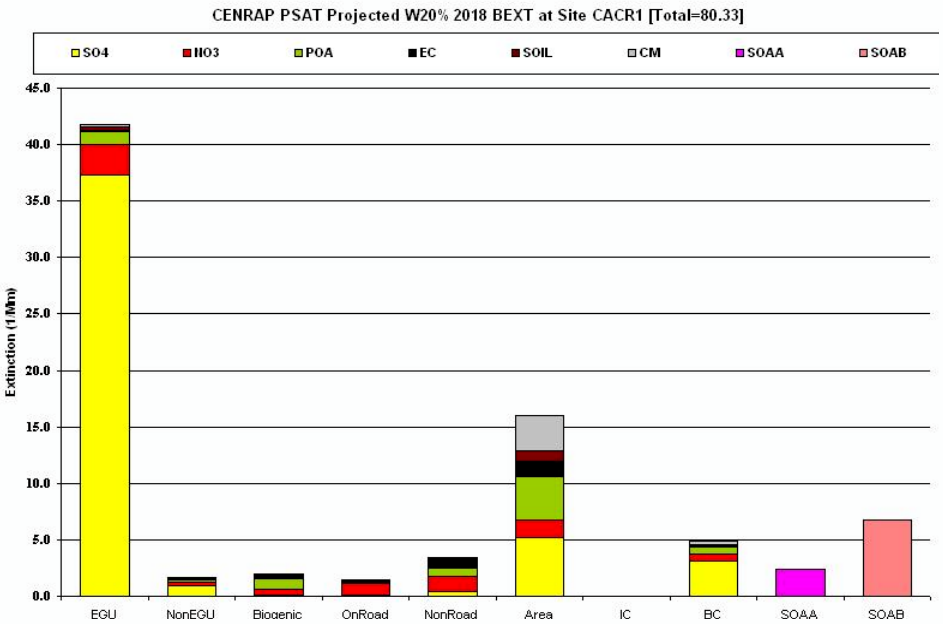


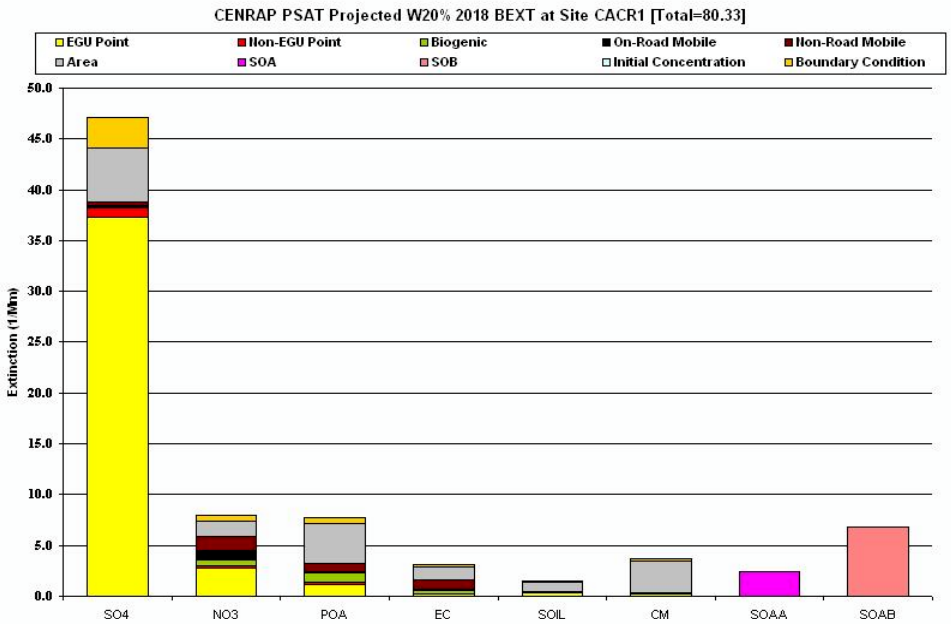
Source Apportionment for the Caney Creek Class I Area

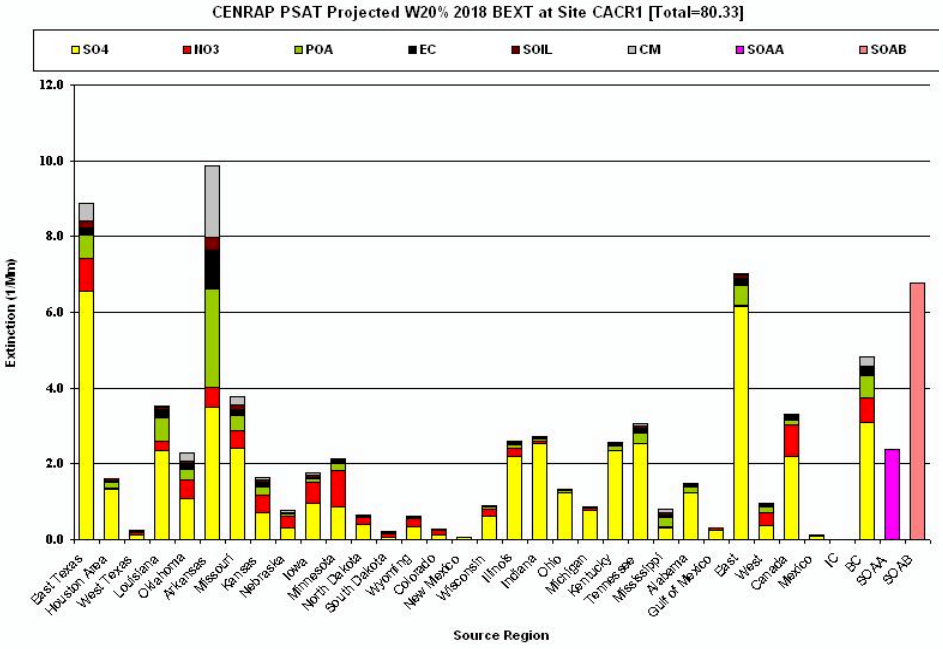
PSAT Model Source Apportionment

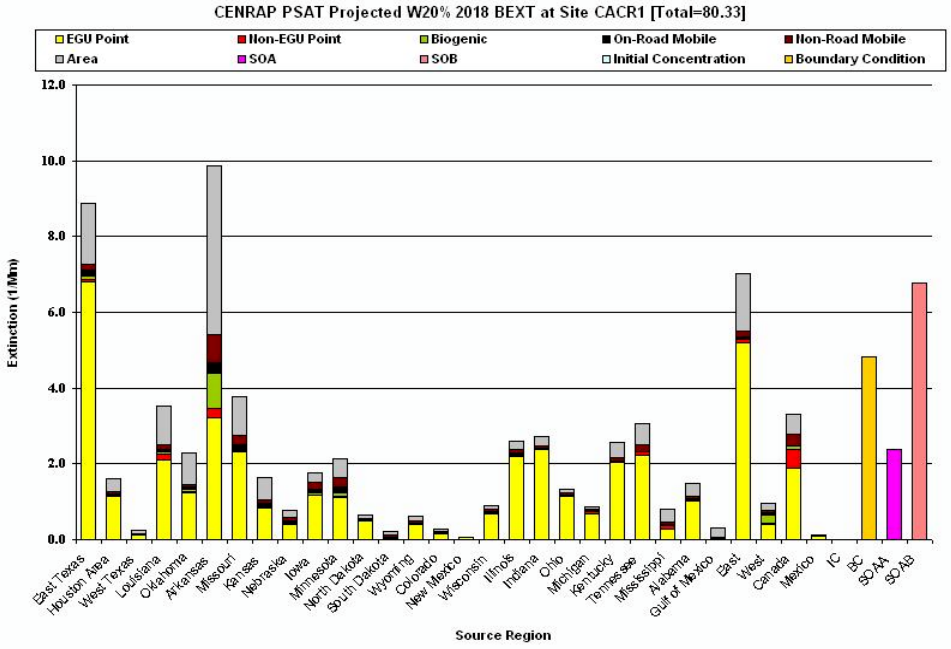


Caney Creek Projected 2018 – Worst 20%



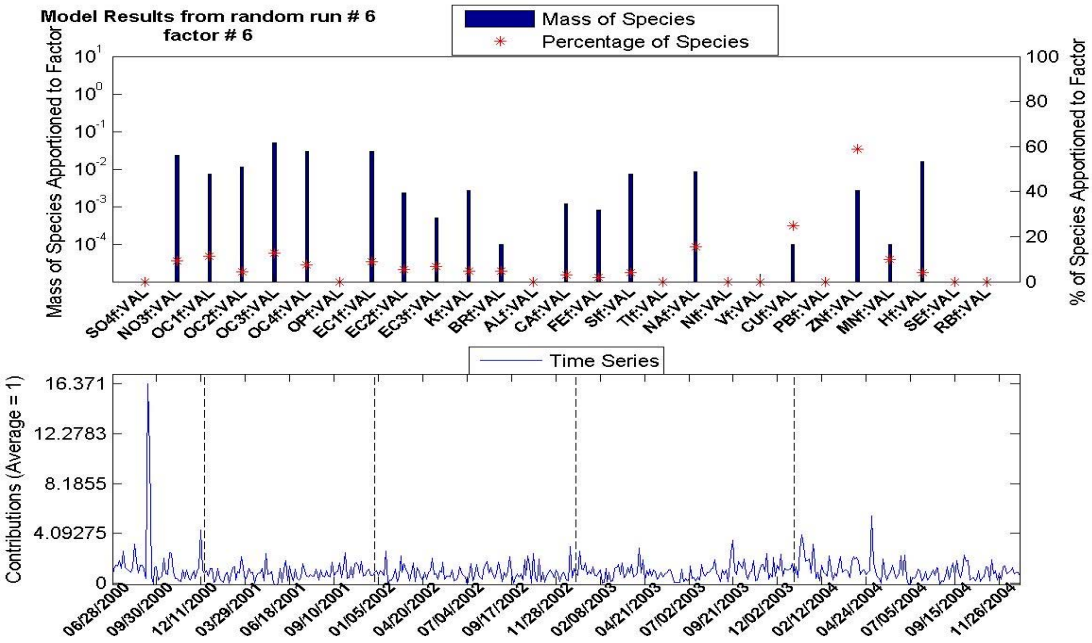




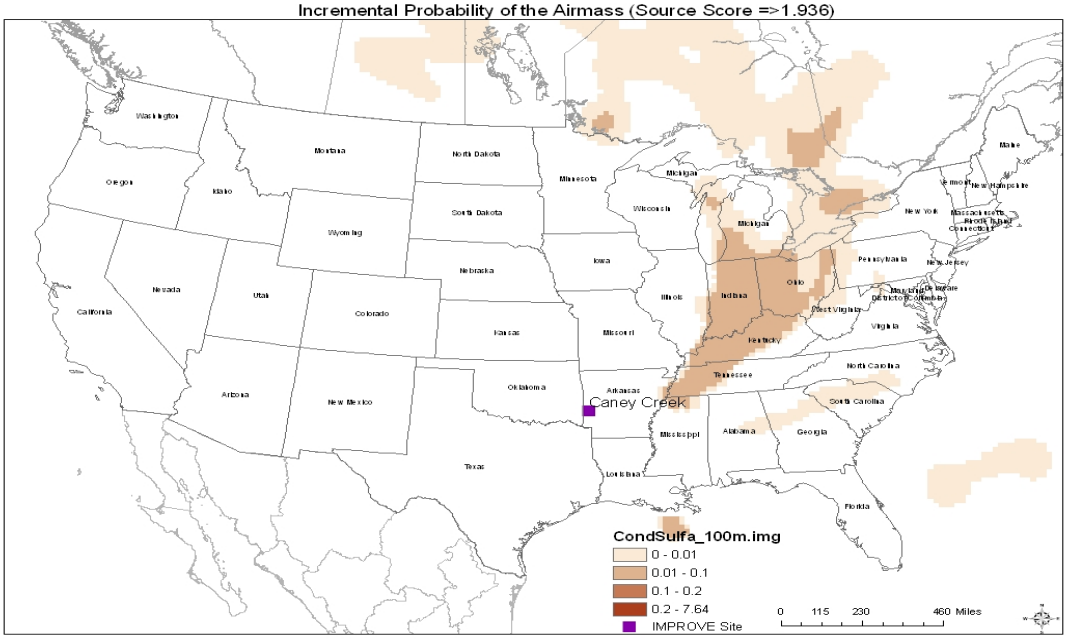


Monitoring Data Source Apportionment

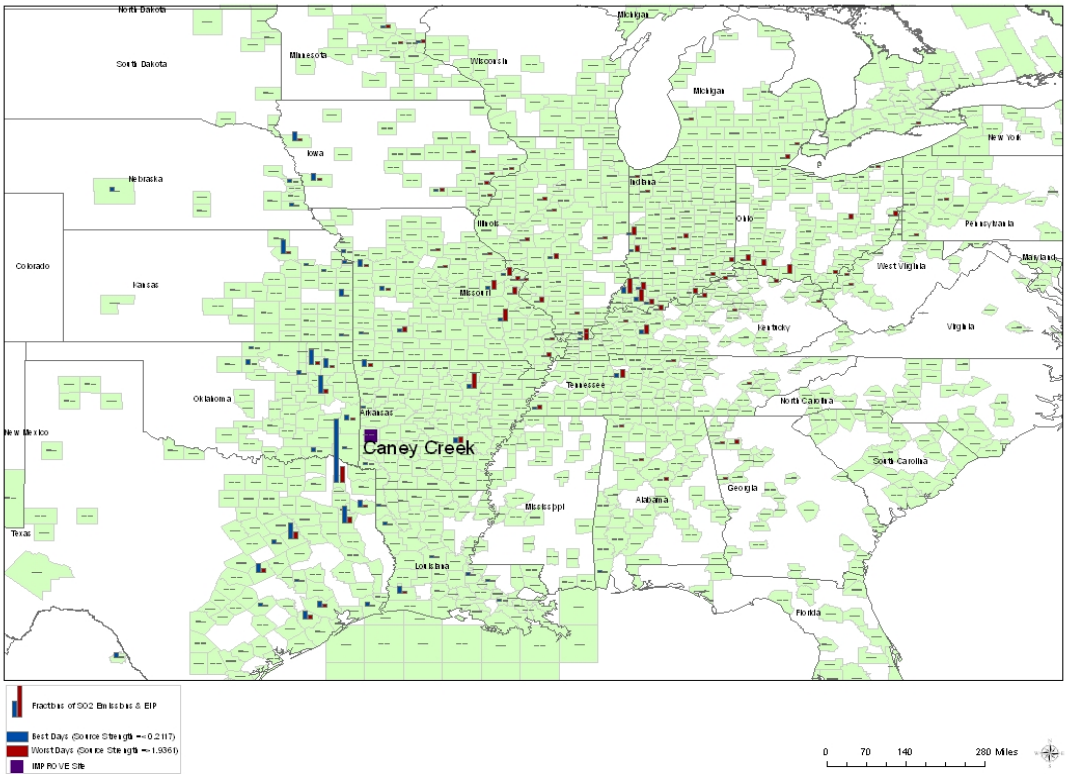
The Coal Combustion Factor at the Caney Creek Class I Area



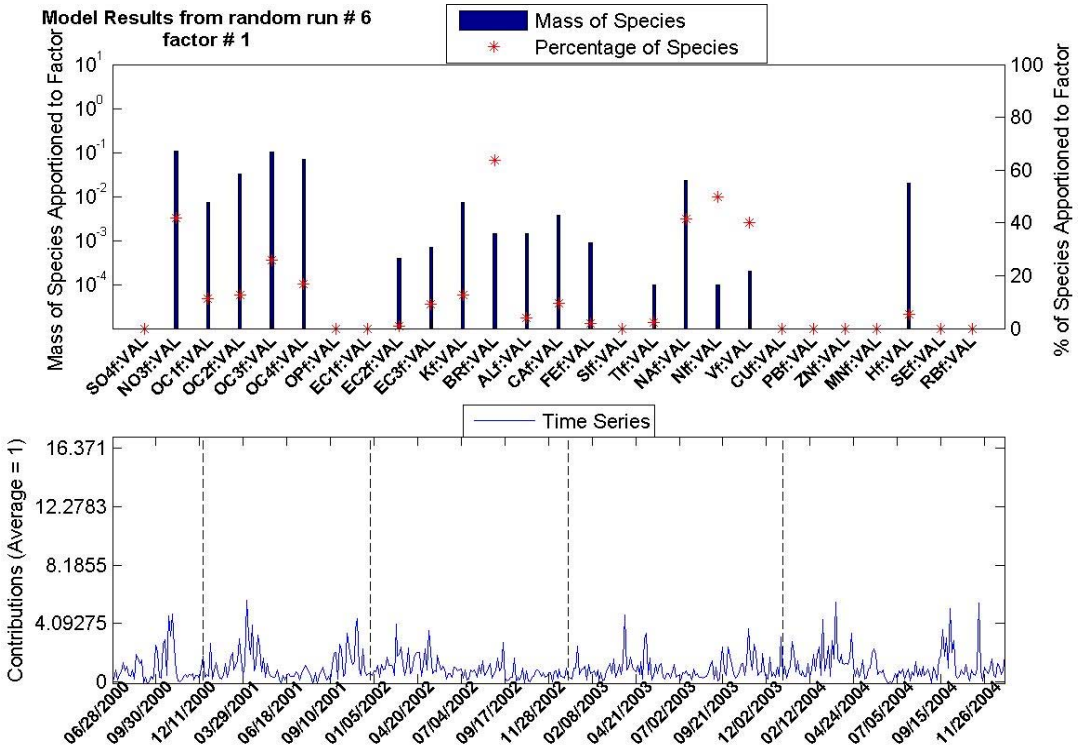
Possible Source Areas of the Identified Coal Combustion Factor at the Caney Creek Class I Area
Incremental Probability of the Airmass (Source Score =>1.936)



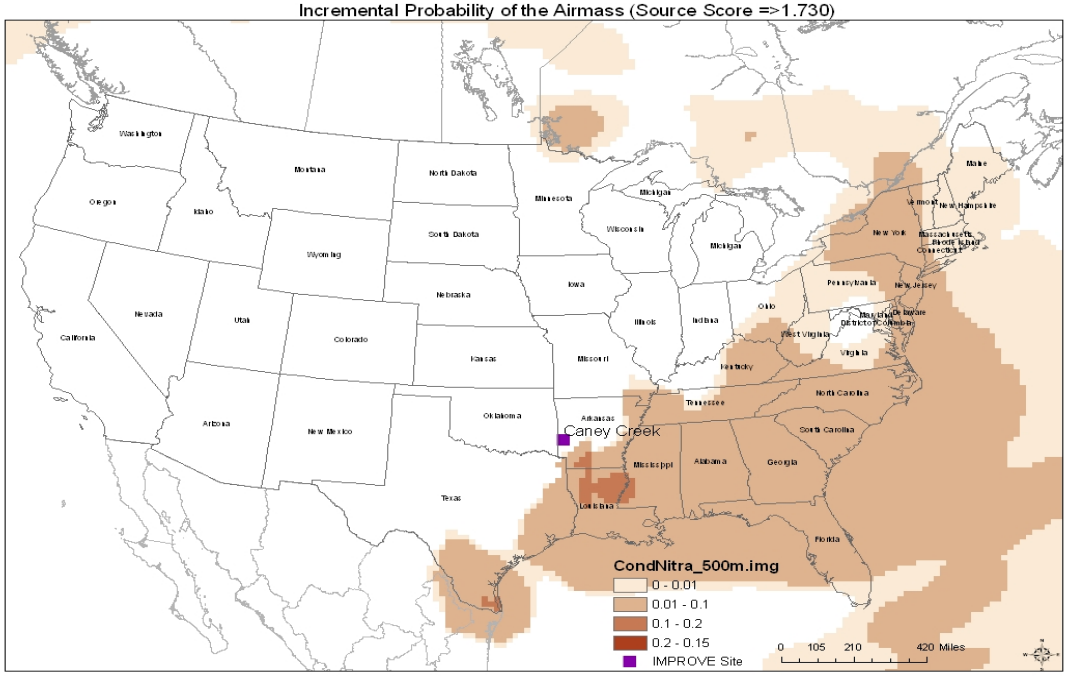
SO2 Emission Impact Potential for the Caney Creek Class 1 Area



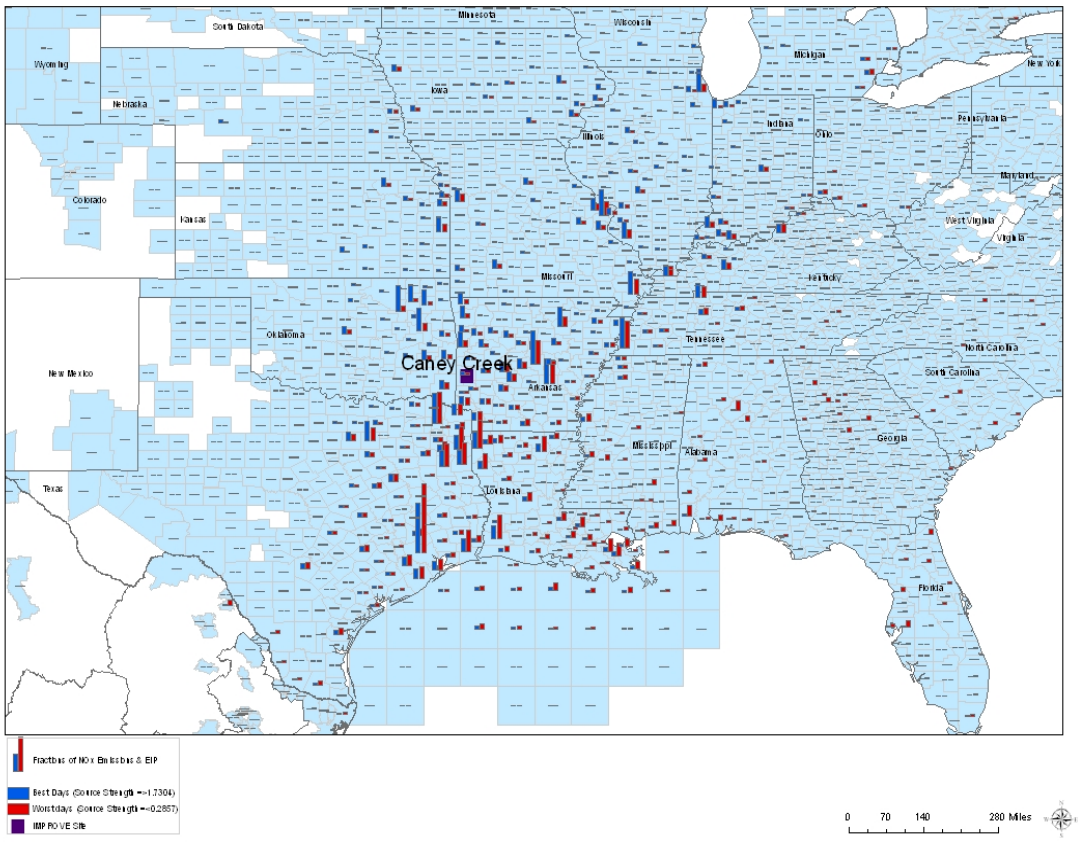
The Secondary Nitrate plus Oil Combustion Factor at the Caney Creek Class I Area



Possible Source Areas of the Identified Nitrate Plus Oil Combustion Factor at the Caney Creek Class I Area
Incremental Probability of the Airmass (Source Score =>1.730)



NOx Emission Impact Potential for the Caney Creek Class 1 Area



Attachment D

StateCo	UPBU/so2Total	UPBU/no2Total	UPBU/so2Max	UPBU/no2Max	StateCo	UPBUso2/no2Total	StateCo	UPBUso2/no2Max
AR	606.3	307.9	247.1	106.8	MO	1,264.1	AR	353.9
IL	518.6	150.6	50.6	14.4	TX	1,254.7	MO	211.9
IN	601.5	172.8	109.2	33.3	AR	914.2	TX	191.5
IA	234.1	72.4	31.7	19.5	OK	777.8	OK	182.7
KS	182.4	200.7	33.9	36.3	IN	774.3	IN	142.5
KY	409.5	96.1	81.8	46.3	LA	746.1	KY	128.1
LA	540.2	205.9	87.9	23.4	IL	669.2	TN	126.0
MS	78.4	48.2	31.4	15.1	KY	505.6	LA	111.3
MO	945.9	318.2	177.3	34.6	TN	435.0	KS	70.2
OH	225.0	56.5	21.7	10.0	KS	383.1	IL	65.0
OK	453.8	324.0	106.0	76.7	IA	306.5	IA	51.2
TN	341.9	93.1	107.2	18.8	OH	281.5	MS	46.5
TX	902.9	351.8	146.1	45.4	MS	126.6	OH	31.7

StateCode	Ming/so2Total	MING/no2Total	MING/so2Max	MING/no2Max	StateCo	MINGso2/no2Total	StateCo	MINGso2/no2Max
AR	365.7	213.0	141.8	87.5	MO	2,450.5	KY	439.9
IL	1,020.0	326.5	198.0	50.8	IN	1,368.2	MO	425.0
IN	1,063.8	304.4	221.2	67.5	IL	1,346.5	IN	288.7
IA	268.5	77.3	35.1	18.4	KY	1,158.6	TN	263.4
KS	136.3	143.7	26.9	28.8	TX	837.9	IL	248.8
KY	906.8	251.8	280.9	159.0	TN	776.4	AR	229.3
LA	442.6	164.1	74.0	19.7	LA	606.7	TX	110.4
MS	77.8	51.3	29.7	15.3	AR	578.7	LA	93.7
MO	1,820.1	630.4	349.8	75.2	OH	401.6	OK	75.0
OH	320.3	81.3	32.9	13.3	OK	347.3	KS	55.7
OK	205.4	141.9	43.5	31.5	IA	345.8	IA	53.5
TN	613.8	162.6	229.7	33.7	KS	280.0	OH	46.2
TX	604.4	233.5	81.9	28.5	MS	129.1	MS	45.0

StateCo	Carc/so2Total	CACR/Total	CACR/so2Max	CACR/Max	StateCo	CACRso2/no2Total	StateCo	CACRso2/no2Max
AR	499.6	269.4	244.8	58.4	TX	1,921.0	TX	371.8
IL	399.4	115.0	37.6	11.1	LA	940.8	AR	303.2
IN	488.6	140.3	87.4	26.7	OK	928.4	OK	181.7
IA	191.3	59.9	26.8	16.3	MO	853.1	MO	139.7
KS	139.8	157.5	27.7	29.7	AR	769.0	LA	134.7
KY	328.9	75.6	60.7	34.4	IN	628.9	IN	114.1
LA	676.3	264.5	106.4	28.3	IL	514.4	TN	101.9
MS	83.5	48.7	34.2	15.9	KY	404.5	KY	95.1
MO	640.9	212.2	120.5	19.2	TN	354.2	KS	57.4
OH	195.8	49.0	18.6	8.9	KS	297.3	MS	50.1
OK	553.5	374.9	114.5	67.2	IA	251.2	IL	48.7
TN	277.3	76.9	86.1	15.8	OH	244.8	IA	43.1
TX	1,381.8	539.2	294.0	77.8	MS	132.2	OH	27.5

Attachment D (cont')

StateCo	Hegl/so2Total	HEGL1/Total	Hegl/so2Max	HEGL1/Max	StateCo	HEGL1so2/no2Total	StateCo	HEGL1so2/no2Max
AR	498.5	254.6	178.5	101.9	MO	1,706.0	MO	309.5
IL	603.4	175.5	57.2	17.8	TX	1,080.6	AR	280.4
IN	666.2	191.5	120.3	36.7	IN	857.7	OK	161.7
IA	267.4	82.0	35.7	22.0	IL	778.9	IN	157.0
KS	214.2	231.3	38.4	41.1	AR	753.1	TX	153.6
KY	448.3	106.2	92.5	52.3	OK	664.6	KY	144.8
LA	475.4	179.2	77.7	20.7	LA	654.6	TN	132.5
MS	71.4	44.2	28.1	13.8	KY	554.5	LA	98.4
MO	1,261.9	444.1	230.6	78.9	KS	445.5	KS	79.5
OH	239.6	60.2	23.2	10.6	TN	445.2	IL	75.0
OK	388.0	276.6	93.8	67.9	IA	349.4	IA	57.7
TN	349.5	95.7	112.8	19.7	OH	299.8	MS	41.9
TX	778.4	302.2	116.3	37.3	MS	115.6	OH	33.8

Attachment E

Table 1 – Contributing States for Hercules Glades Sulfate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	IA	IA	IA
NE	NE	NE	NE	NE
KS	KS	KS	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	**IL**	**IL**	**IL**
IN	**IN**	**IN**	**IN**	**IN**
OH	**OH**	**OH**	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	**KY**	**KY**	**KY**
TN	**TN**	**TN**	TN	**TN**
AR	**AR**	**AR**	**AR**	**AR**
OK	OK	**OK**	OK	OK
TX	**TX**	**TX**	TX	**TX**
LA	LA	LA	LA	LA
MS	MS	**MS**	MS	MS
AL	AL	AL	AL	AL

*state total > 200 tons/km

State in Red/Bold = Major Contributing States

Table 2 – Contributing States for Hercules Glades Nitrate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	**IA**	IA	IA
NE	NE	**NE**	NE	NE
KS	KS	**KS**	KS	KS
MO	**MO**	**MO**	MO	**MO**
IL	IL	IL	IL	IL
IN	**IN**	IN	IN	IN
OH	OH	OH	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	KY	KY	KY
TN	**TN**	TN	TN	TN
AR	**AR**	**AR**	AR	**AR**
OK	OK	**OK**	OK	OK
TX	**TX**	**TX**	TX	**TX**
LA	**LA**	LA	LA	LA
MS	MS	MS	MS	MS
AL	AL	AL	AL	AL

* state total > 200 tons/km

State in Red/Bold = Major Contributing States

Table 3 – Contributing States for the Mingo Wildlife Refuge Area
Sulfate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	**WI**	WI
IA	IA	IA	IA	IA
NE	NE	NE	NE	NE
KS	KS	KS	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	**IL**	**IL**	**IL**
IN	**IN**	**IN**	**IN**	**IN**
OH	**OH**	**OH**	**OH**	**OH**
MI	MI	MI	**MI**	MI
KY	**KY**	**KY**	**KY**	**KY**
TN	**TN**	**TN**	**TN**	**TN**
AR	AR	**AR**	AR	AR
OK	OK	**OK**	OK	OK
TX	**TX**	**TX**	TX	**TX**
LA	LA	LA	LA	LA
MS	MS	**MS**	MS	MS
AL	AL	AL	AL	AL

*state total > 200 tons/km

State in Red/Bold = Major Contributing States

Table 4 – Contributing States for the Mingo Wildlife Refuge Area
Nitrate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	**IA**	IA	IA
NE	NE	**NE**	NE	NE
KS	KS	**KS**	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	IL	**IL**	**IL**
IN	**IN**	IN	IN	IN
OH	OH	OH	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	KY	KY	KY
TN	**TN**	TN	TN	TN
AR	**AR**	**AR**	AR	**AR**
OK	OK	**OK**	OK	OK
TX	TX	TX	TX	TX
LA	**LA**	LA	LA	LA
MS	**MS**	MS	MS	MS
AL	**AL**	AL	AL	AL

* state total > 200 tons/km l

State in Red/Bold = Major Contributing States

Table 5 – Contributing States for the Upper Buffalo National Area Sulfate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	IA	IA	IA
NE	NE	NE	NE	NE
KS	KS	KS	KS	KS
MO	**MO**	**MO**	**MO**	**MO**
IL	**IL**	**IL**	**IL**	**IL**
IN	**IN**	**IN**	**IN**	**IN**
OH	**OH**	**OH**	OH	**OH**
MI	MI	MI	MI	MI
KY	**KY**	**KY**	**KY**	**KY**
TN	**TN**	**TN**	TN	**TN**
AR	**AR**	**AR**	**AR**	**AR**
OK	OK	**OK**	OK	OK
TX	**TX**	**TX**	TX	**TX**
LA	LA	LA	LA	LA
MS	MS	**MS**	MS	MS
AL	AL	AL	AL	AL

* state total > 200 tons/km l

State in Red/Bold = Major Contributing States

Table 6 – Contributing States for the Upper Buffalo National Area Nitrate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	**MN**	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	**IA**	**IA**	IA	IA
NE	NE	**NE**	NE	NE
KS	**KS**	**KS**	KS	KS
MO	**MO**	**MO**	MO	**MO**
IL	**IL**	IL	IL	IL
IN	**IN**	IN	IN	IN
OH	OH	OH	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	KY	KY	KY
TN	**TN**	TN	TN	TN
AR	**AR**	**AR**	AR	**AR**
OK	**OK**	**OK**	OK	**OK**
TX	TX	TX	TX	TX
LA	LA	LA	LA	LA
MS	MS	MS	MS	MS
AL	AL	AL	AL	AL

* state total > 200 tons/km

State in Red/Bold = Major Contributing States

Table 7 – Contributing States for the Caney Creek Area Sulfate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	IA	IA	IA
NE	NE	NE	NE	NE
KS	KS	KS	KS	KS
MO	**MO**	**MO**	MO	**MO**
IL	**IL**	**IL**	IL	**IL**
IN	**IN**	**IN**	IN	**IN**
OH	**OH**	**OH**	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	**KY**	KY	**KY**
TN	**TN**	**TN**	TN	**TN**
AR	**AR**	**AR**	**AR**	**AR**
OK	OK	**OK**	OK	OK
TX	TX	**TX**	**TX**	**TX**
LA	LA	LA	LA	LA
MS	MS	**MS**	MS	MS
AL	AL	AL	AL	AL

* state total > 200 tons/km

State in Red/Bold = Major Contributing States

Table 8 – Contributing States for the Caney Creek Area Nitrate

Q/D*	PMF/ Trajectories	AOI	PSAT	Average
MN	MN	MN	MN	MN
SD	SD	SD	SD	SD
WI	WI	WI	WI	WI
IA	IA	**IA**	IA	IA
NE	NE	**NE**	NE	NE
KS	KS	**KS**	KS	KS
MO	**MO**	**MO**	MO	**MO**
IL	**IL**	IL	IL	IL
IN	**IN**	IN	IN	IN
OH	OH	OH	OH	OH
MI	MI	MI	MI	MI
KY	**KY**	KY	KY	KY
TN	**TN**	TN	TN	TN
AR	AR	**AR**	AR	AR
OK	**OK**	**OK**	OK	**OK**
TX	**TX**	TX	TX	TX
LA	**LA**	LA	LA	LA
MS	**MS**	MS	MS	MS
AL	**AL**	AL	AL	AL

* state total > 200 tons/km

State in Red/Bold = Major Contributing States

Appendix 10.3
Arkansas Consultation Letters

ADEQ
ARKANSAS
Department of Environmental Quality

July 23, 2007

To: Participants in the Central Class I Areas Consultation Process

Re: Central Class I Areas Consultation Conclusion

On Feb. 26, 2007, an invitation letter was sent to 12 states and tribes from the states of Missouri and Arkansas. The invitation included a consultation plan, which detailed the procedures and timelines for identifying possible contributors to regional haze in Arkansas and Missouri Class I Areas (Caney Creek, Upper Buffalo, Hercules Glade and Mingo). This process was initiated because the federal Regional Haze Rule requires states to consult with other states and tribes that may be causing or contributing to visibility impairments in federal Class I areas.

These consultations have been accomplished through a series of conference calls. The calls were held on April 3, May 11 and June 7, 2007. Participants included states and tribes, Environmental Protection Agency personnel, regional office staff, Federal Land Managers, and other Regional Planning Organizations. A summary of these conference calls can be found on the CENRAP Web site.

A Uniform Rate of Progress was developed for each of the Class I Areas in Arkansas and Missouri. Regional modeling and other findings indicate that these Class I Areas will meet the established Rate of Progress goals by 2018 based on the existing and proposed controls through both state and federal requirements. Therefore, it is the intent of Arkansas and Missouri to proceed with the development and submittal of a Regional Haze Plan.

Both Missouri and Arkansas believe that the consultations conducted to date have satisfied the consultation process requirements described in the rule. These consultations were completed so that the each state's plan can be submitted for separate review with the Federal Land Managers and Environmental Protection Agency. If necessary, future consultations will be conducted to address any issues that are identified in the review of those draft plans or if changes occur in the contributions associated with regional haze transport.

Arkansas and Missouri are committed to continue on-going assessments of progress in meeting visibility improvement goals. However, the ability to conduct

any substantive future planning activities of this nature are made difficult by the lack of federal funding for these efforts. The next review is scheduled for completion in 2013, as dictated by Long Term Strategy Planning on a five-year cycle.

Furthermore, to document that these initial consultations have been made, we are asking that recipients of this letter respond to provide a record that these consultations have taken place to the satisfaction of your state or tribe. Since federal recipients of this letter have a separate administrative process for review, we are not asking for your reply at this time.

Thank you for your participation and contributions in this consultation process. Your time and efforts are appreciated. If you require additional information regarding this matter, please contact Mr. Calvin Ku, Missouri Department of Natural Resources at (573) 751-8406 or, Mr. Mark McCorkle, Arkansas Department of Environmental Quality at (501) 682-0736.

Sincerely,

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Mike Bates, Chief
Air Division
Arkansas Department of Environmental Quality

MISSOURI DEPARTMENT OF NATURAL RESOURCES

James L. Kavanaugh, Director
Air Pollution Control Program
Missouri Department of Natural Resources

United States Department of the Interior

FISH AND WILDLIFE SERVICE
National Wildlife Refuge System
Branch of Air Quality
7333 W. Jefferson Ave., Suite 375
Lakewood, CO 80235-2017

IN REPLY REFER TO:

FWS/ANWS-AR-AQ

August 1, 2006

8-7-06
cc T Davis
N McCorkle
M Pettyjohn

Mr. Mike Bates
Chief, Air Division
Arkansas Department of Environmental Quality
P.O. Box 8913
Little Rock, Arkansas 72219-8913

Subject: Regional Haze Rule Consultation with Federal Land Management Agencies

Dear Mr. Bates:

Over the past several years, the U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and Forest Service have participated in regional planning efforts addressing ways for States, and Tribes if they so choose, to protect and improve visibility in Class I national parks and wildernesses through implementation of the Regional Haze Rule (RHR). Along with other stakeholders, we have had many opportunities to contribute to ongoing Regional Planning Organization (RPO) development of policy guidance and technical information. As States begin to develop their regional haze State implementation plans (SIPs) based on RPO work, we are interested in working directly with your staff to offer our perspective as managers of affected Class I areas and to maintain our support for an effective national regional haze program.

The primary purpose of this letter is to provide you general insights about FWS and NPS interests with respect to upcoming SIP development and consultation activities. It is not intended to dictate policy or guidance. Rather, in the enclosure to this letter we include discussion on a list of topics to enhance your understanding of our views on key SIP components. We also provide lead contacts for FWS and NPS staff that will be available to work with your staff during early phases of SIP development as well as coordinate the required formal 60-day review/consultation with the official Federal Land Manager (FLM) for the Department of the Interior.

The RHR requires States to inform the FLMs of the appropriate State contact for exchange of information regarding SIP development. Many States provided us with a contact person shortly after the RHR was published. It would be helpful if you could confirm your contact or provide a current single point of contact for your State to the individuals noted in the enclosure. Additional information regarding your SIP timelines would also be very helpful.

Regional Haze State Implementation Plan Coordination
Fish & Wildlife Service and National Park Service
August 1, 2006

This document is designed to provide you general insights about U.S. Fish and Wildlife Service (FWS) and National Park Service (NPS) interests with respect to upcoming Regional Haze Rule (RHR) State Implementation Plan (SIP) development and consultation activities. It is not intended to dictate policy or guidance.

Baseline, Natural Condition, and Uniform Rate

These factors apply mainly to States that have Class I areas. Other States that contribute to visibility impairment in Class I areas should consider including discussion and conclusions on these factors in their individual plans.

As you know, the basic calculation of baseline, natural condition, and uniform rate builds the foundation for the entire RHR SIP process. Considerable discussion and debate at the science and policy level has occurred regarding appropriate methods to be used. As a consequence, several equations that include varying parameters or multipliers are available. Because these calculations can have a significant effect on the resulting progress goal, it is critical that the State provide a detailed description of the methods used in its SIP. If calculations include only portions of established methods or utilize previously undocumented or unsupported approaches, more justification should be included in the SIP or its supporting documentation. We encourage States to consider calculations that are based on equations recommended by the IMPROVE steering committee and that are consistent with recommended approaches from the appropriate RPO and Environmental Protection Agency (EPA) region.

one or another
old vs. new ?

Emission Inventories

Given the complexities associated with modern, comprehensive emission inventories, considerable effort should be placed on describing how these inventories were developed and used. We would like to see emission descriptions demonstrate an evolution that includes: an actual, base-year inventory used to evaluate model performance; a typical, base-year inventory that represents the five year, average condition which establishes modeled visibility impacts; and various future year, control scenarios (e.g., for required air pollution control programs or long term strategy measures) that demonstrate future visibility conditions. It would assist our review if future year inventories were clearly partitioned to delineate source types (by text, charts, or graphics) that are included in each model simulation. Improved future visibility conditions claimed in the SIP that are not also clearly identified in a future inventory or are not clearly included in future model analysis, will likely need additional and possibly considerable, attention and justification.

CENRAP modeling

One part of your emission inventory includes the implementation of "Best Available Retrofit Technology" (BART) on a subset of pre-Prevention of Significant Deterioration sources. BART source identification, elimination, and control determinations will be of particular interest for review. We would prefer to see a clear progression through the

three basic BART phases and a thorough description of the RHR prescribed factor analysis (if applicable). Discussions should clearly identify whether BART control levels apply to individual or grouped source categories.

Area of Influence

As you are aware, the area of influence of significant, visibility-impairing sources is an important SIP element. This area should clearly be identified or apportioned by State, or other geographic means, to encompass emission sources that contribute significant levels of pollutants to each Class I area as identified in your regional haze SIP. As such, these areas should be developed in conjunction with neighboring States and Tribes. Discussions of source areas of influence at both the base- and future-year levels can help establish a strong showing for SIP progress. States should consider the benefits of presenting this information in the form of transported mass by pollutant or through individually calculated visibility impairment indices. Using a percentage or "Top 10" ranking for current contributions by geographic area may not clearly describe progress over time.

Reasonable Progress Goals and Long Term Strategy

As you also know, establishing reasonable progress goals for Class I areas in your State and/or acknowledging reasonable progress goals for Class I areas in other States that are affected by emissions from your State, as well as defining associated emissions strategies to meet these goals, form the basis of the SIP process under the RHR.

In developing the Long Term Strategy (LTS) required by the RHR, your State has broad flexibility when determining reasonable progress goals and associated emissions. As noted earlier, the RHR includes a requirement for States to assess a uniform rate of progress and compare that rate to the reasonable progress goals set by those States with Class I areas. We believe that this uniform rate of progress assessment is useful in determining the geographic and economic extent a State should consider when developing the LTS associated with the reasonable progress goals.

In general, we are looking at the degree to which the LTS is supported by RPO technical work and at the level of consistency among the contributing States. For Class I areas where the State is setting a 2018 reasonable progress goal of equal or less impairment compared to the uniform rate of progress, it would assist our review to present information on how local, regional, and national emission strategies were considered and applied to address visibility impairment broken down by source category.

For Class I areas where the reasonable progress goal is more impaired than the uniform rate of progress, States should consider presenting additional information on a component basis. Components could consist of emission source categories as before, but also include contributions from individual pollutants or by geographic source area. Our intent is to better understand where and why a strategy falls short of the uniform progress rate goal. Because each region has focused their emission control strategy on different conditions, presenting results in a component format may assist in showing what level of progress was made in the focus area, versus other less controllable factors.

Fire

Your State has considerable flexibility as it addresses all anthropogenic sources of visibility impairment, including fire. The RHR requires consideration of smoke management techniques for agricultural and forestry management practices in the development of the LTS part of the SIP. On a short-term basis, fire, both natural and anthropogenic, has the potential to cause significant visibility reduction in Class I areas. If anthropogenic fire contributes to the index used to track long-term, reasonable progress in a Class I area, the visibility SIP should identify how it will be addressed. Your State may already have a smoke management program (SMP) that adequately describes how visibility impairment from fire will be addressed. If fire has been determined to contribute to visibility impairment, the SIP should contain a comprehensive emissions inventory for all fire emissions and a statement relating to its accuracy. It should also identify whether or not fire emissions are projected to increase, decrease, or stay the same, and how these projections were determined. For those States with a SMP, the SIP should identify its type, i.e., a basic smoke management program or an enhanced smoke management plan, and if the plan has been certified consistent with EPA's *Interim Air Quality Policy on Wildland and Prescribed Fire*. It would also be useful to know specific SMP requirements for minimizing visibility impairment in Class I areas and classification of the various types of wildland fire (wildfire, prescribed fire, and wildland fire use fire) as either natural or anthropogenic. Any differences regarding the regulation of agricultural burning versus prescribed burning by private, State or Federal land managers should also be identified with discussion of the basis for any differences provided.

Regional Consistency

The Regional Planning Organizations (RPOs) have been working toward regionally-consistent approaches to address visibility impairment throughout the SIP development process. There may be circumstances when different methods were used or impairment assessments reached different conclusions. We understand that each State knows what emission control methods or air quality management strategies work best for its areas. Each State may wish to develop strategies that are independent from their RPO or neighboring areas.

In this context, our review of "regional consistency" will have less to do with individual discretion each State has in making decisions, and more on how well a group of States identifies and addresses similar goals for each Class I area within a common area of influence.

Regional consistency can also be difficult to evaluate if neighboring SIPs (or portions of SIPs) are released for review at different times. It is our hope that thorough inter-State consultation processes will lead to consistent descriptions of apportionment and emission control goals, thus resulting in development of similar progress goals, regardless of release dates.

Verification and Contingencies
Little emphasis has been placed in the RHR on verification and even less on contingency planning. Each SIP must identify monitoring data as part of the original baseline and should include continued monitoring data collection and assessment as part of an ongoing progress review at five year intervals. Given the uncertain future of any individual monitoring site, the SIP should address the representativeness of both primary and alternative data sites.

We encourage States to not only consider the need for these data to measure progress, but also how the plan accounts for and reconciles both unexpected and reasonably foreseeable emissions growth, changes to the geographic distribution of emissions, and substantive errors that may be found in emission inventories or other technical bases of the SIPs. These factors, as well as other unanticipated circumstances, may adversely affect your State's ability to achieve the emissions reductions projected by the SIP. Considering these factors through adaptive management or routine review processes may assist in mitigating these circumstances.

Coordination and Consultation
The 1999 RHR requires States to consult with the Federal Land Management agencies at least 60 days prior to holding any public hearing on a RHR SIP or SIP revision (40 CFR 51.308(i)). Specifically, the Federal Land Manager (FLM) for the Department of the Interior (DOI) is the Assistant Secretary for Fish and Wildlife and Parks. However, assistance in the development and technical review of Regional Haze SIPs will be conducted by the FWS Branch of Air Quality and NPS Air Resources Division.

To help facilitate consultation with the FLMs, each Bureau has developed a review strategy that includes a single point of contact for all interaction with us. For your State, primary DOI contact names are:

Tim Allen
U.S. Fish & Wildlife Service

Mailing Address:
7333 W. Jefferson, Suite 375
Lakewood, CO 80235
Phone: 303-914-3802 Fax: 303-969-5444
Email: Tim_Allen@fws.gov

Bruce Polkowsky
National Park Service

Mailing Address:	Overnight Packages:
NPS-ARD	NPS-ARD
P.O. Box 25287	12795 W. Alameda Parkway
Denver, CO 80225	Lakewood, CO 80228
Phone: 303-987-6944	Fax: 303-969-2822
Email: Bruce_Polkowsky@nps.gov	

All questions and inquires regarding formal or informal consultation can be directed to these contacts. We would appreciate communications in electronic form as much as possible. This will allow us to quickly share appropriate documents among staff and between agencies. The contacts listed above will also be able to inform you of additional resources and information we can provide. Resource and information examples include progress reports, discipline experts, or implementation advice. Although the RHR places a strong emphasis on individual discretion in developing these plans, the NPS and FWS would be happy to provide more specific suggestions or information, in a form most useful to you, upon request.

Our highest priority in working with you over the course of the next year and a half will be to help you develop a successful SIP. We understand the complexities of developing a plan reliant on non-linear relationships between emissions and subsequent visibility improvements. Our emphasis is to work with you and, as your partners, to ensure each plan utilizes all reasonable means to obtain realistic goals. We share the common goal of improving visibility in all Class I areas throughout the United States, and we would like to use this planning process to maximize goal achievement. Our hope is that through this communication we can complete the RHR requirement of formal consultation with ease and productivity.

We are looking forward to continuing our work with you and your staff as the regional haze SIPs are developed. Please don't hesitate to contact us with questions.

Sincerely,

Sandra V. Silva
Chief, Air Quality Branch
U.S. Fish and Wildlife Service

Christine L. Shaver
Chief, Air Resources Division
National Park Service

Enclosure

cc:
Forest Service: Rich Fisher, Donna Lamb
EPA Regional Air Division Directors
Regional Planning Organization Directors

DEPARTMENT OF ENVIRONMENTAL QUALITY

KATHLEEN BABINEAUX BLANCO
GOVERNOR

MIKE D. McDANIEL, Ph.D.
SECRETARY

April 24, 2007

Mr. James L. Kavanaugh
Missouri Department of Natural Resources
Air Pollution Control Program
P O Box 176,
Jefferson City, MO 65102

Mr. Mike Bates
Arkansas Department of Environmental Quality
Chief – Air Division
8001 National Drive,
Little Rock, AR 72219

RE: Central States Consultation Process

Dear Messrs. Kavanaugh and Bates:

On April 3, 2007, members of the Louisiana Department of Environmental Quality staff participated in your initial conference call for the Regional Haze consultation process. We found the call interesting and we applaud the efforts of your respective staffs in organizing and presenting the data in a simplified manner.

We are in agreement with your analysis findings that facilities located in Louisiana are not major contributors to visibility impairment at any of the Arkansas or Missouri Class I Areas, i.e. Caney Creek, Upper Buffalo, Hercules Glades, or Mingo. As such, Louisiana does not need to remain as an active participant in this consultation process. In the future, should the data suggest that Louisiana plays a larger role in impacting these Class I Areas, we will become a more involved in the process.

Sincerely,

N. Chris Roberie
Administrator
Air Quality Assessment Division

cc: Mr. Mark McCorkle/ ADEQ, 8001 National Drive, Little Rock, AR 72219
Mr. Calvin Ku/ P O Box 176, Jefferson City, MO 65102
Mr. Jeff Peltola/ 10005 S. Pennsylvania, Suite. C, Oklahoma City, OK 7315

ENVIRONMENTAL **ASSESSMENT**
: PO BOX 4314, BATON ROUGE, LA 70821-4314
P:225-219-3236 F:225-219-3239
WWW.DEQ.LOUISIANA.GOV

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 25, 2008

Mr. Mike Bates
Chief, Air Quality Division
Arkansas Department of Environment
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Dear Mr. Bates:

The purpose of this letter is to share with Arkansas the information that the Texas Commission on Environmental Quality (TCEQ) has developed for Texas on emissions that modeling and analysis indicate affect the Class I areas in your state. The TCEQ also requests confirmation from you that Texas' projected emissions reductions will be adequate to meet Texas' apportioned part of the reductions necessary for your state to meet its reasonable progress goal for its Class I area.

As you know, under the Regional Haze Rule, 40 Code of Federal Regulations §51.308, a state must consult with neighboring states on emission strategies and reasonable progress goals for emissions that may be reasonably anticipated to contribute to visibility impairment in Class I areas in those states. This letter is intended to be the culmination of our consultation process for this initial Regional Haze state implementation plan (SIP) submittal.

The information in this letter regarding emissions and probable impacts was developed as part of the Central Regional Air Planning Association (CENRAP) planning process. The TCEQ has been involved in the CENRAP since its inception in 1999. The CENRAP's evaluation of regional haze sources in the central states and beyond has been invaluable in the member states' combined effort to determine the impacts of regional haze on Class I areas in the region and to assess the effectiveness of future control efforts. As contemplated in the Regional Haze Rule, regional planning organizations like the CENRAP are the vehicle through which states agree on regional haze impacts and emissions reduction apportionment obligations. We have also appreciated Arkansas' input on the development of our SIP revision during our past consultation conferences with the CENRAP states and federal land managers.

As described in our proposed Regional Haze SIP revision, the TCEQ provided the CENRAP emissions inventory information for all source categories in Texas. The CENRAP conducted Particulate Matter Source Apportionment Technology (PSAT) modeling to determine the

contribution from each source area to visibility impairment at Class I areas in the region. These results are enclosed for Arkansas' Class I areas, the Caney Creek and Upper Buffalo Wilderness Areas. The TCEQ participated fully in the analysis of this data, base period visibility impairment, natural visibility condition estimates, and 2018 projections based on current and anticipated future state and federal controls. The PSAT modeling indicates that the probable impact of Texas sources will be reduced by 2018 in the Caney Creek and Upper Buffalo Wilderness Areas due to the expected emissions reductions from current and planned controls.

The CENRAP developed areas of influence for each Class I area in the CENRAP states. For reference purposes, the enclosed maps show the portions of Texas that are in the first and second order sulfate and nitrate areas of influence for the Caney Creek and Upper Buffalo Wilderness Areas. The sulfur dioxide and nitrogen oxide sources shown on the map are Texas sources we have identified as high priority due to the fact that they have an emissions over distance equal to or greater than five (q/d $\geq$5) for one or more Class I areas. We have also included a table of sources of particular interest to Caney Creek and Upper Buffalo due to their emissions and their positions within the area of influence.

As required under the Regional Haze Rule, a review of Texas sources and the impact of emissions on regional haze will be conducted for all of the five-year progress reports and 10-year SIP revisions in order to determine the efficacy of current controls.

The TCEQ is requesting Arkansas' concurrence on this assessment and a verification that your state is not depending on any additional reductions from Texas sources in order to meet your reasonable progress goal(s). So that we may prepare and submit our Regional Haze SIP revision to the United States Environmental Protection Agency by this summer, we would appreciate a response within 30 days. If you have any questions or comments on this letter or wish to set up a time to consult further, please contact Margaret Earnest at mearnest@tceq.state.tx.us or 512-239-4581.

Sincerely,

Susana M. Hildebrand, P.E., Director
Air Quality Division

SMH/ME/sy

Enclosures

cc: Mark McCorkle, Arkansas Department of Environment

Measured 2002 and Projected 2018 Visibility Impacts on the Caney Creek and Upper Buffalo Wilderness Areas in Arkansas Including the Impact of Texas' Emissions

The following tables show the 2002 measured visibility impacts and the 2018 projected visibility impacts from all source areas on the two Class I areas in Arkansas and the impacts apportioned to be from Texas. The associated figures show the apportioned impacts from all source areas that the modeling separated, including three areas of Texas.

CENRAP produced these results using particulate matter source apportionment technology (PSAT) modeling and relative response factors according to EPA regional haze modeling guidance. The data are from the August 27, 2007, version of the PSAT tool that Environ produced for CENRAP. The database file is available from the CENRAP web site at http://cenrap.org/projects.asp under the listing "27 Aug 2007 Updated CENRAP PSAT Visualization Tool - 36 MB zip."

Table 1: Texas' apportioned contribution to the measured 2002 and projected 2018 total visibility extinction at Caney Creek Wilderness Area

Particulate Matter Constituent	2002 Impacts at Caney Creek (inverse megameters)		2018 Impacts at Caney Creek (inverse megameters)	
	Texas Total	Total, All Source Areas	Texas Total	Total, All Source Areas
Sulfate	11.55	87.05	7.24	48.95
Nitrate	1.49	13.78	0.83	7.57
Primary Organic Aerosol	0.83	10.50	0.83	9.93
Elemental Carbon	0.36	4.80	0.20	3.17
Fine Soil	0.15	1.12	0.17	1.29
Coarse Mass	0.50	3.73	0.47	3.58
Secondary Organic Aerosol, Anthropogenic	not available[1]	3.94	not available[1]	3.21
Secondary Organic Aerosol, Biogenic	not available[1]	9.00	not available[1]	8.14
Total	14.89	133.93	9.74	85.84

[1] The CENRAP PSAT modeling did not apportion either the anthropogenic or the biogenic secondary organic aerosol (SOA). The reasons are (1) that sulfate and nitrate are generally the main causes of visibility impairment resulting from human activity and (2) that tracking the multiple volatile organic compound constituents and reaction products necessary to apportion SOA would have extended the modeling run times far beyond the time that was available for the modeling.

Figure 1: Measured 2002 extinction on the worst 20 percent of days at Caney Creek Wilderness Area apportioned using PSAT modeling

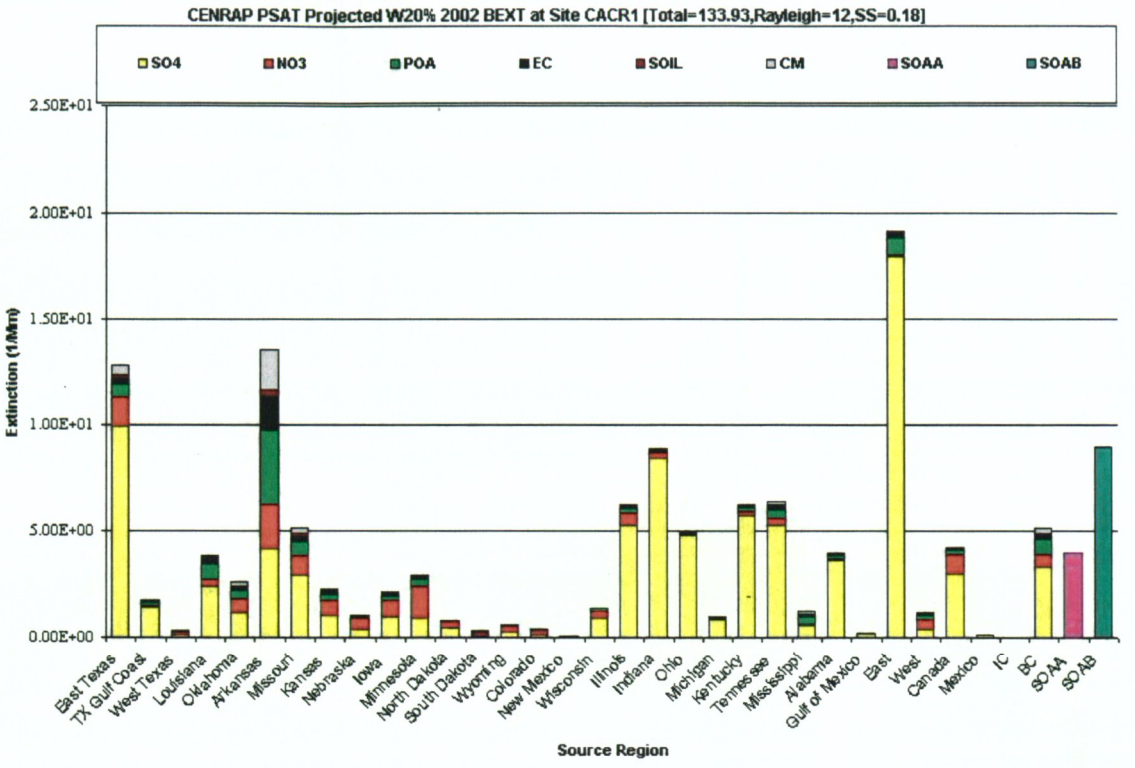


Figure 2: Projected 2018 extinction on the worst 20 percent of days at Caney Creek Wilderness Area apportioned using PSAT modeling

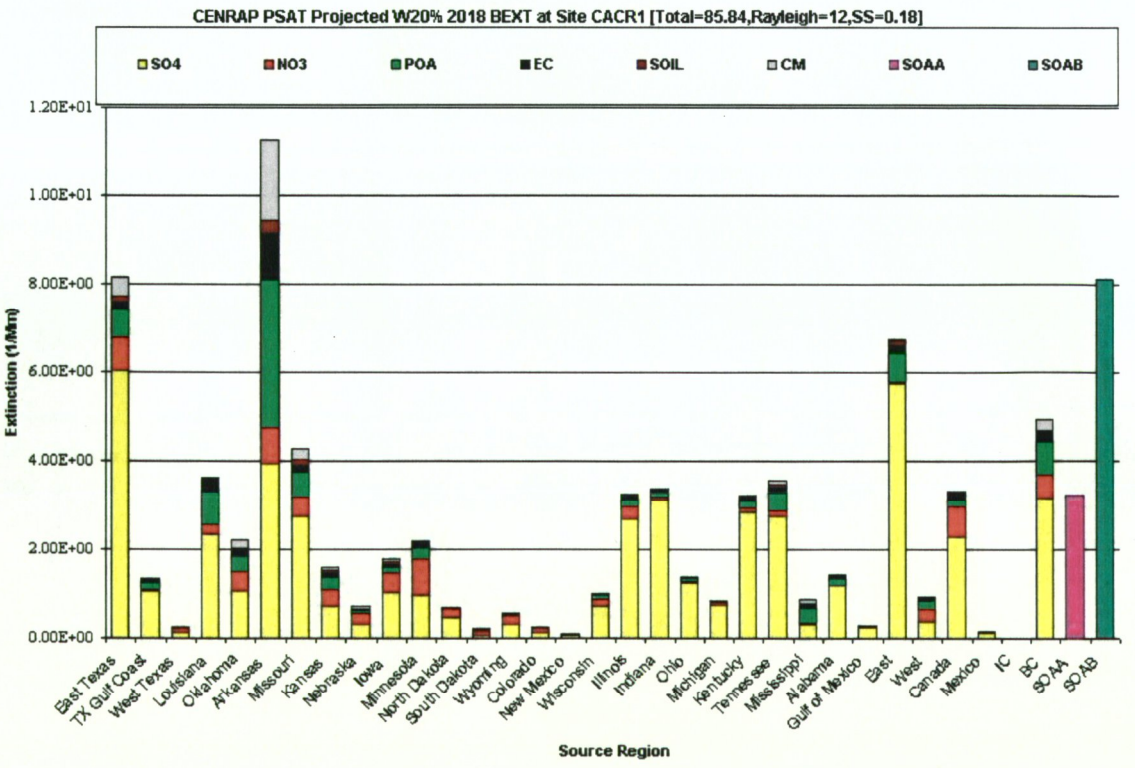


Table 2: Texas' apportioned contribution to the measured 2002 and projected 2018 total visibility extinction at Upper Buffalo Wilderness Area

Particulate Matter Constituent	2002 Impacts at Upper Buffalo (inverse megameters)		2018 Impacts at Upper Buffalo (inverse megameters)	
	Texas Total	Total, All Source Areas	Texas Total	Total, All Source Areas
Sulfate	4.41	83.18	2.74	45.38
Nitrate	0.27	13.30	0.18	9.22
Primary Organic Aerosol	0.24	10.85	0.24	10.17
Elemental Carbon	0.10	4.72	0.05	3.07
Fine Soil	0.04	1.21	0.05	1.40
Coarse Mass	0.12	6.85	0.11	6.53
Secondary Organic Aerosol, Anthropogenic	not available[1]	4.14	not available[1]	3.36
Secondary Organic Aerosol, Biogenic	not available[1]	7.55	not available[1]	7.02
Total	5.19	131.79	3.38	86.16

Figure 3: Measured 2002 extinction on the worst 20 percent of days at Upper Buffalo Wilderness area apportioned using PSAT modeling

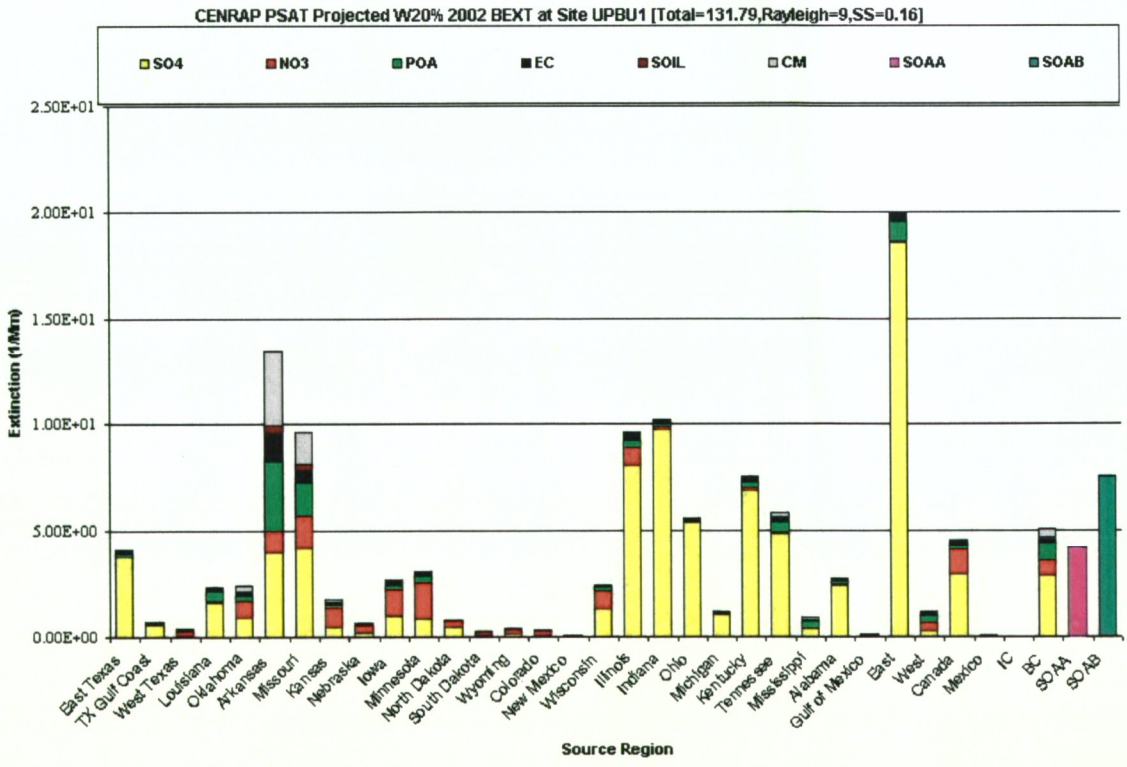
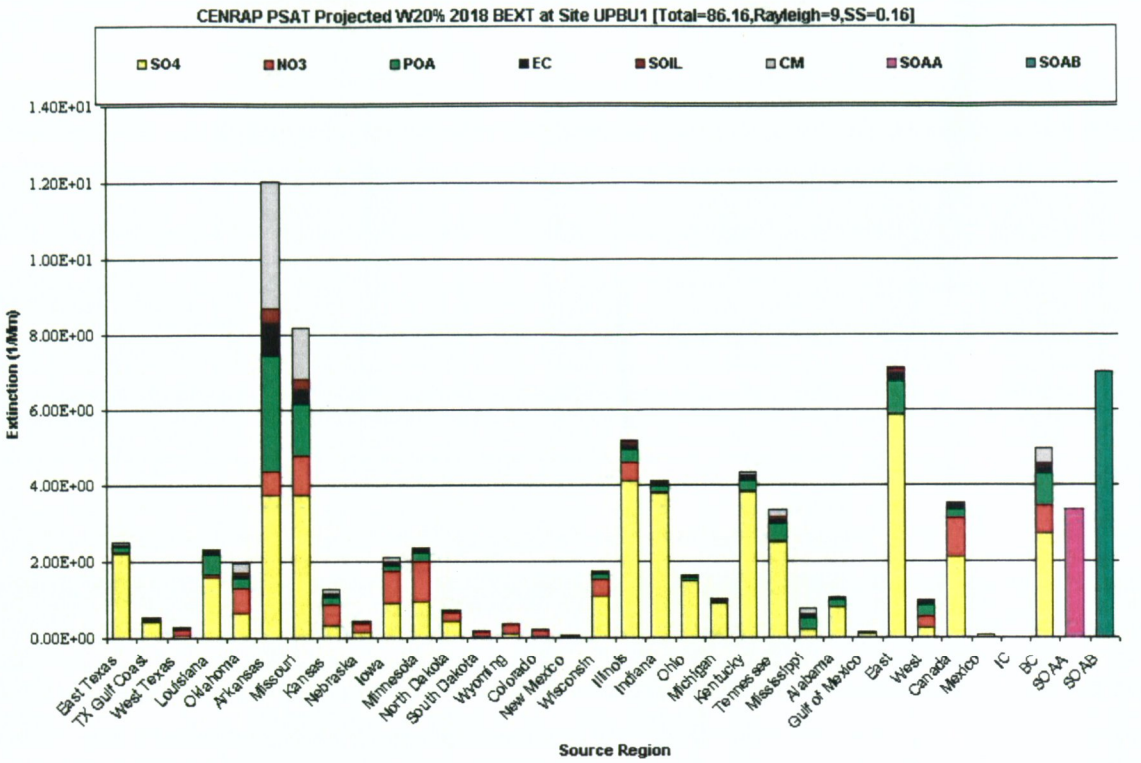


Figure 4: Projected 2018 extinction on the worst 20 percent of days at Upper Buffalo Wilderness Area apportioned using PSAT modeling

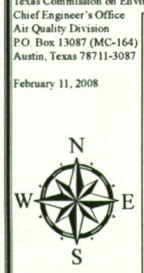


Class I Areas Relevant to CENRAP
Caney Creek

Protecting Texas by Reducing and Preventing Pollution
TCEQ
Texas Commission on Environmental Quality
Chief Engineer's Office
Air Quality Division
P.O. Box 13087 (MC-164)
Austin, Texas 78711-3087

February 11, 2008

Adam D. Bullock
CEO/AQD/EAS
512/239-5155



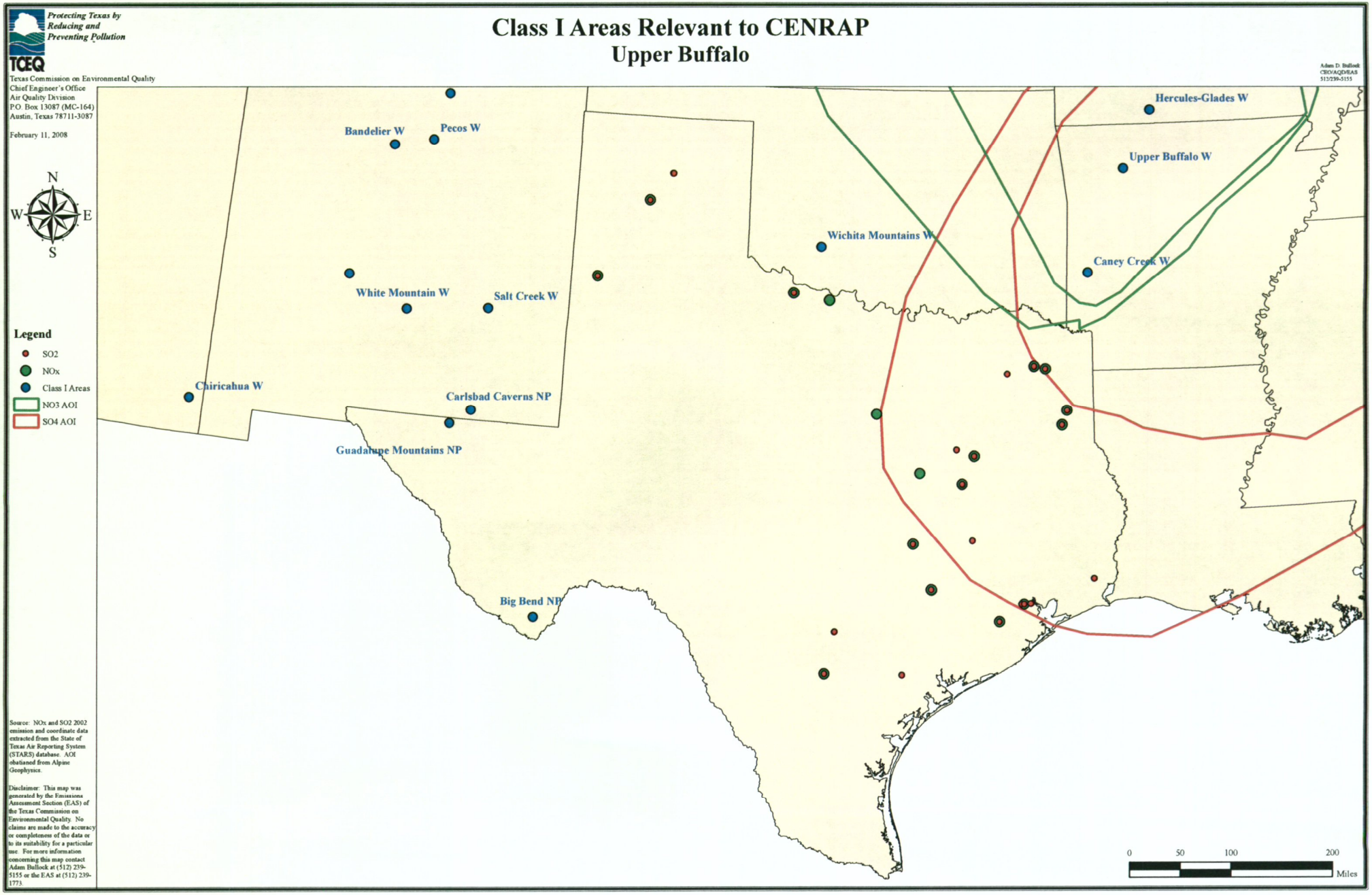
Legend
- SO2
- NOX
- Class I Areas
- NO3 AOI
- SO4 AOI

Bandelier W
Pecos W
White Mountain W
Salt Creek W
Chiricahua W
Carlsbad Caverns NP
Guadalupe Mountains NP
Big Bend NP
Wichita Mountains W
Hercules-Glades W
Upper Buffalo W
Caney Creek W

0 50 100 200 Miles

Source: NOx and SO2 2002 emission and coordinate data extracted from the State of Texas Air Reporting System (STARS) database. AOI obatianed from Alpine Geophysics.

Disclaimer: This map was generated by the Emissions Assessment Section (EAS) of the Texas Commission on Environmental Quality. No claims are made to the accuracy or completeness of the data or to its suitability for a particular use. For more information concerning this map contact Adam Bullock at (512) 239-5155 or the EAS at (512) 239-1773.


Protecting Texas by Reducing and Preventing Pollution
TCEQ
Texas Commission on Environmental Quality
Chief Engineer's Office
Air Quality Division
P.O. Box 13087 (MC-164)
Austin, Texas 78711-3087
February 11, 2008
Class I Areas Relevant to CENRAP
Upper Buffalo
Adam D. Bullock
CEO/AQD/MEAS
512/239-5155
N
W
E
S
Legend
SO2
NOx
Class I Areas
NO3 AOI
SO4 AOI
Bandelier W
Pecos W
White Mountain W
Salt Creek W
Chiricahua W
Carlsbad Caverns NP
Guadalupe Mountains NP
Big Bend NP
Wichita Mountains W
Hercules-Glades W
Upper Buffalo W
Caney Creek W
0
50
100
200
Miles
Source: NOx and SO2 2002 emission and coordinate data extracted from the State of Texas Air Reporting System (STARS) database. AOI obatianed from Alpine Geophysics.
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Units Inside the Caney Creek Area of Influence

Site	SIC	Federal ID			Emissions (tpy)			Distance to Caney Creek (km)	Notes
		cty	plt	pt	NOx 2002	NOx 2018 base	Change from 2002		
San Miguel Electric	4911	13	7	1	6,702	4,179	-2,523	757	
Sommers Deely Spruce	4911	29	63	17	4,146	2,431	-1,715	693	
IP	2621	67	5	1	561	824	263	127	
IP	2621	67	5	1	315	822	507	127	
TXI - Midlothian	3241	139	9	215	1,823	2,601	778	347	
Holcim	3241	139	22	46	2,265	2,725	460	340	
Holcim	3241	139	22	7	1,910	2,265	355	340	
TXU - Valley Stream	4911	147	1	2	1,694	493	-1,201	227	
LCRA - Fayette	4911	149	5	8	6,911	2,674	-4,237	557	
LCRA - Fayette	4911	149	5	7	6,130	2,290	-3,840	557	
LCRA - Fayette	4911	149	5	16	6,077	2,764	-3,313	558	
NRG - Parish	4911	157	5	6	4,230	775	-3,455	566	
NRG - Parish	4911	157	5	7	3,832	812	-3,020	566	
NRG - Parish	4911	157	5	14	3,782	974	-2,808	566	
NRG - Parish	4911	157	5	8	3,112	1,120	-1,992	566	
TXU - Big Brown	4911	161	2	10	3,809	3,725	-84	340	
TXU - Big Brown	4911	161	2	11	3,394	3,574	180	340	
Coleto Creek	4911	175	2	1	3,563	4,261	698	698	
AES Deepwater	4911	201	405	1	3,575	1,578	-1,997	532	
SWEPCO - Pirky	4911	203	22	1	4,953	4,893	-60	219	
TXU - Decordova	4911	221	1	5	5,631	1,190	-4,441	402	
SWEPCO - Tolk	4911	279	18	2	6,129	2,698	-3,431	779	
SWEPCO - Tolk	4911	279	18	1	5,986	2,510	-3,476	779	
NRG - Limestone	4911	293	10	2	7,987	5,703	-2,284	388	
NRG - Limestone	4911	293	10	3	5,474	5,117	-357	388	
TXU - Tradinghouse	4911	309	4	6	3,640	1,057	-2,583	413	
TXU - Sandow	4911	331	5	15	7,670	5,509	-2,161	509	
Guardian	3211	349	14	1	1,664	2,796	1,132	338	
SWEPCO - Harrington	4911	375	22	4	4,647	1,779	-2,868	705	
SWEPCO - Harrington	4911	375	22	5	4,330	1,962	-2,368	705	
SWEPCO - Harrington	4911	375	22	7	4,162	1,845	-2,317	705	
TXU - Martin Lake	4911	401	11	6	9,480	8,516	-964	242	
TXU - Martin Lake	4911	401	11	7	4,503	5,251	748	242	
TXU - Martin Lake	4911	401	11	8	4,481	5,105	624	242	
SWEPCO - Welsh	4911	449	5	11	6,716	1,526	-5,190	165	
SWEPCO - Welsh	4911	449	5	12	3,355	3,673	318	165	
SWEPCO - Welsh	4911	449	5	10	3,245	923	-2,322	165	
TXU - Monticello	4911	449	3	9	6,224	4,553	-1,671	170	
TXU - Monticello	4911	449	3	10	5,593	5,834	241	170	
TXU - Monticello	4911	449	3	7	4,102	3,041	-1,061	170	
PPG	4733	485	15	19	2,695	4,733	2,038	413	
PPG	4733	485	15	20	2,495	4,192	1,697	413	
Oklaunion	4911	487	10	2	8,711	6,253	-2,458	469	
Total					191,702	131,546	-60,156		

Units Inside the Caney Creek Area of Influence

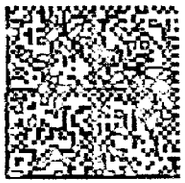
Site	SIC	Federal ID			Emissions (tpy)			Distance to Caney Creek (km)	Notes
		cty	plt	pt	SO2 2002	SO2 2018 base	Change from 2002		
SAN MIGUEL POWER	4911	13	7	1	13,167	6,550	-6,617	757	
SOMMERS DEELY SRUCE	4911	29	63	4	9,983	10,836	853	693	
SOMMERS DEELY SRUCE	4911	29	63	2	11,531	10,836	-695	693	
SOMMERS DEELY SRUCE	4911	29	63	17	4,782	4,350	-432	693	
ENBRIDGE	1321	67	2	1	1,108	1,328	220	135	
HOLCIM	3241	139	22	46	1,725	2,461	736	340	
DCP GIDDINGS	4911	149	5	7	13,617	10,450	-3,167	557	
DCP GIDDINGS	4911	149	5	8	16,401	10,375	-6,026	557	
NRG - PARISH	4911	157	5	6	20,523	3,733	-16,790	566	
NRG - PARISH	4911	157	5	7	17,863	3,809	-14,054	566	
NRG - PARISH	4911	157	5	8	17,900	3,297	-14,603	566	
NRG - PARISH	4911	157	5	14	3,948	4,512	564	566	
TXU BIG BROWN	4911	161	2	10	43,413	23,641	-19,772	340	
TXU BIG BROWN	4911	161	2	11	34,448	23,142	-11,306	340	
BP TEXAS CITY	2911	167	1	274	3,599	47	-3,552	564	Refinery Consent Decree
COLETO CREEK	4911	175	2	1	14,289	16,096	1,808	698	
GIBBONS CREEK	4911	185	2	2	10,816	2,652	-8,164	460	
SHELL	2911	201	39	208	4,697	549	-4,148	529	Refinery Consent Decree
RHODIA	2819	201	37	8	2,985	4,101	1,116	532	
RHODIA	2819	201	37	11	5,097	7,005	1,908	532	
AEP DEEPWATER	4911	201	405	1	4,370	0	-4,370	532	error in IPM file
SWEPCO PIRKY	4911	203	22	1	19,476	19,478	2	219	
REGENCY COMO	1321	223	2	4	2,739	3,590	851	204	
DEGUSSA BORGER	2895	233	1	12	3,595	4,314	719	683	
PHILLIPS BORGER	2911	233	15	291	4,629	59	-4,570	677	Refinery Consent Decree
PHILLIPS BORGER	2911	233	15	290	3,785	48	-3,737	677	Refinery Consent Decree
GREAT LAKES CARBON	2999	245	23	4	2,648	3,483	835	508	
GREAT LAKES CARBON	2999	245	23	6	3,123	4,107	984	508	
VALERO PORT ARTHUR	2911	245	4	133	3,221	3,765	544	504	In Refinery CD, but didn't get reductions in model
EXXONMOBIL BEAUMONT	2911	245	18	321	9,387	119	-9,267	482	Refinery Consent Decree
SWEPCO TOLK	4911	279	18	1	12,703	10,465	-2,238	779	
SWEPCO TOLK	4911	279	18	2	12,171	11,492	-679	779	
NRG LIMESTONE	4911	293	10	2	16,293	12,715	-3,578	388	
NRG LIMESTONE	4911	293	10	3	12,974	4,983	-7,991	388	
ALCOA	3334	331	1	10	16,120		-16,120	509	Shutdown, Not in 2018 file
ALCOA	3334	331	1	11	16,121		-16,121	509	Shutdown, Not in 2018 file
ALCOA	3334	331	1	12	15,938		-15,938	509	Shutdown, Not in 2018 file
TXU SANDOW	3334	331	5	15	23,305	8,409	-14,896	509	
TXI STREETMAN	3295	349	11	15	3,468	4,886	1,418	348	
ECHO CARBON BLACK	2895	361	8	19	1,859	3,354	1,495	473	
HARRINGTON	4911	375	22	4	9,197	7,891	-1,306	705	
HARRINGTON	4911	375	22	5	8,927	7,714	-1,213	705	
HARRINGTON	4911	375	22	7	8,844	7,104	-1,740	705	
TWIN LAKES	4911	395	13	21	2,508	840	-1,668	441	
TWIN LAKES	4911	395	13	17	2,580	834	-1,746	441	
MARTIN LAKE	4911	401	11	6	24,832	11,351	-13,481	242	
MARTIN LAKE	4911	401	11	7	22,538	11,984	-10,554	242	
MARTIN LAKE	4911	401	11	8	19,024	12,396	-6,628	242	
SWEPCO WELSH	4911	449	5	12	12,259	11,721	-538	165	
SWEPCO WELSH	4911	449	5	11	11,995	1,223	-10,772	165	
SWEPCO WELSH	4911	449	5	10	11,584	1,227	-10,357	165	
TXU MONTICELLO	4911	449	3	7	28,643	19,144	-9,499	170	
TXU MONTICELLO	4911	449	3	9	34,700	19,695	-15,005	170	
TXU MONTICELLO	4911	449	3	10	22,889	11,882	-11,007	170	
OKLAUNION	4911	487	10	2	3,751	7,101	3,350	469	
Total					650,918	370,595	-280,323		

Units Inside the Upper Buffalo Area of Influence

Site	SIC	Federal ID			Emissions (tpy)			Distance to Upper Buffalo (km)	Notes
		cty	plt	pt	NOx 2002	NOx 2018 base	Change from 2002		
San Miguel Electric	4911	13	7	1	6,702	4,179	-2,523	925	
LCRA - Fayette	4911	149	5	8	6,911	2,674	-4,237	729	
LCRA - Fayette	4911	149	5	7	6,130	2,290	-3,840	729	
LCRA - Fayette	4911	149	5	16	6,077	2,764	-3,313	730	
NRG - Parish	4911	157	5	6	4,230	775	-3,455	739	
NRG - Parish	4911	157	5	7	3,832	812	-3,020	739	
NRG - Parish	4911	157	5	14	3,782	974	-2,808	739	
TXU - Big Brown	4911	161	2	10	3,809	3,725	-84	511	
TXU - Big Brown	4911	161	2	11	3,394	3,574	180	511	
AES Deepwater	4911	201	405	1	3,575	1,578	-1,997	703	
SWEPCO - Pirky	4911	203	22	1	4,953	4,893	-60	390	
TXU - Decordova	4911	221	1	5	5,631	1,190	-4,441	550	
SWEPCO - Tolk	4911	279	18	2	6,129	2,698	-3,431	853	
SWEPCO - Tolk	4911	279	18	1	5,986	2,510	-3,476	853	
NRG - Limestone	4911	293	10	2	7,987	5,703	-2,284	558	
NRG - Limestone	4911	293	10	3	5,474	5,117	-357	558	
TXU - Tradinghouse	4911	309	4	6	3,640	1,057	-2,583	578	
TXU - Sandow	4911	331	5	15	7,670	5,509	-2,161	679	
SWEPCO - Harrington	4911	375	22	4	4,647	1,779	-2,868	754	
SWEPCO - Harrington	4911	375	22	5	4,330	1,962	-2,368	754	
SWEPCO - Harrington	4911	375	22	7	4,162	1,845	-2,317	754	
TXU - Martin Lake	4911	401	11	6	9,480	8,516	-964	414	
TXU - Martin Lake	4911	401	11	7	4,503	5,251	748	414	
TXU - Martin Lake	4911	401	11	8	4,481	5,105	624	414	
SWEPCO - Welsh	4911	449	5	11	6,716	1,526	-5,190	338	
SWEPCO - Welsh	4911	449	5	10	3,245	923	-2,322	338	
TXU - Monticello	4911	449	3	9	6,224	4,553	-1,671	342	
TXU - Monticello	4911	449	3	10	5,593	5,834	241	342	
TXU - Monticello	4911	449	3	7	4,102	3,041	-1,061	342	
PPG	4733	485	15	19	2,695	4,733	2,038	511	
Oklaunion	4911	487	10	2	8,711	6,253	-2,458	560	
Total					164,800	103,343	-61,457		

Units Inside the Upper Buffalo Area of Influence

Site	SIC	Federal ID			Emissions (tpy)			Distance to Upper Buffalo (km)	Notes
		cty	plt	pt	SO2 2002	SO2 2018 base	Change from 2002		
SAN MIGUEL POWER	4911	13	7	1	13,167	6,550	-6,617	925	
SOMMERS DEELY SRUCE	4911	29	63	4	9,983	10,836	853	861	
SOMMERS DEELY SRUCE	4911	29	63	2	11,531	10,836	-695	861	
SOMMERS DEELY SRUCE	4911	29	63	17	4,782	4,350	-432	860	
DCP GIDDINGS	4911	149	5	7	13,617	10,450	-3,167	729	
DCP GIDDINGS	4911	149	5	8	16,401	10,375	-6,026	729	
NRG - PARISH	4911	157	5	6	20,523	3,733	-16,790	739	
NRG - PARISH	4911	157	5	7	17,863	3,809	-14,054	739	
NRG - PARISH	4911	157	5	8	17,900	3,297	-14,603	739	
NRG - PARISH	4911	157	5	14	3,948	4,512	564	739	
TXU BIG BROWN	4911	161	2	10	43,413	23,641	-19,772	511	
TXU BIG BROWN	4911	161	2	11	34,448	23,142	-11,306	511	
COLETO CREEK	4911	175	2	1	14,289	16,096	1,808	871	
GIBBONS CREEK	4911	185	2	2	10,816	2,652	-8,164	633	
SHELL	2911	201	39	208	4,697	549	-4,148	700	Refinery Consent Decree
RHODIA	2819	201	37	11	5,097	7,005	1,908	704	
AEP DEEPWATER	4911	201	405	1	4,370	0	-4,370	703	error in IPM file
SWEPCO PIRKY	4911	203	22	1	19,476	19,478	2	390	
REGENCY COMO	1321	223	2	4	2,739	3,590	851	372	
PHILLIPS BORGER	2911	233	15	291	4,629	59	-4,570	716	Refinery Consent Decree
PHILLIPS BORGER	2911	233	15	290	3,785	48	-3,737	716	Refinery Consent Decree
EXXONMOBIL BEAUMONT	2911	245	18	321	9,387	119	-9,267	647	Refinery Consent Decree
SWEPCO TOLK	4911	279	18	1	12,703	10,465	-2,238	853	
SWEPCO TOLK	4911	279	18	2	12,171	11,492	-679	853	
NRG LIMESTONE	4911	293	10	2	16,293	12,715	-3,578	558	
NRG LIMESTONE	4911	293	10	3	12,974	4,983	-7,991	558	
ALCOA	3334	331	1	10	16,120		-16,120	679	Shutdown, Not in 2018 file
ALCOA	3334	331	1	11	16,121		-16,121	679	Shutdown, Not in 2018 file
ALCOA	3334	331	1	12	15,938		-15,938	679	Shutdown, Not in 2018 file
TXU SANDOW	3334	331	5	15	23,305	8,409	-14,896	679	
TXI STREETMAN	3295	349	11	15	3,468	4,886	1,418	515	
HARRINGTON	4911	375	22	4	9,197	7,891	-1,306	754	
HARRINGTON	4911	375	22	5	8,927	7,714	-1,213	754	
HARRINGTON	4911	375	22	7	8,844	7,104	-1,740	754	
MARTIN LAKE	4911	401	11	6	24,832	11,351	-13,481	414	
MARTIN LAKE	4911	401	11	7	22,538	11,984	-10,554	414	
MARTIN LAKE	4911	401	11	8	19,024	12,396	-6,628	414	
SWEPCO WELSH	4911	449	5	12	12,259	11,721	-538	338	
SWEPCO WELSH	4911	449	5	11	11,995	1,223	-10,772	338	
SWEPCO WELSH	4911	449	5	10	11,584	1,227	-10,357	338	
TXU MONTICELLO	4911	449	3	7	28,643	19,144	-9,499	342	
TXU MONTICELLO	4911	449	3	9	34,700	19,695	-15,005	342	
TXU MONTICELLO	4911	449	3	10	22,889	11,882	-11,007	342	
OKLAUNION	4911	487	10	2	3,751	7,101	3,350	560	
Total					635,134	348,511	-286,623		



TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087

RETURN SERVICE REQUESTED

MC-206

Mr. Mike Bates
Chief, Air Quality Division
Arkansas Department of Environment
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

FYI

-----Original Message-----
From: John Hornback [mailto:hornback@metro4-sesarm.org]
Sent: Friday, August 03, 2007 8:49 AM
To: McCorkle, Mark; calvin.ku@dnr.mo.gov
Cc: Pat.Brewer@ncmail.net; 'Julie Aslinger'; 'Brewer, Lona (EPPC DEP DAQ)'
Subject: Central Class I Areas Consultation Letter of July 23

I am in receipt of the July 23, 2007 letter from Mike Bates and Jim Kavanaugh reporting on the status of the regional haze consultation process between Arkansas and Missouri and the VISTAS states of Kentucky and Tennessee. The letter requests that recipients respond to provide a record that the consultations have taken place to our satisfaction.

I suspect that the letter I received was a courtesy letter and that Kentucky and Tennessee received letters as well. Since VISTAS is not a policy-setting group and since none of the VISTAS states have delegated authority to VISTAS (nor could they), it is not possible for me to provide a definitive statement about the acceptability of the consultation process. However, I can advise that VISTAS itself has no ongoing concerns and appreciates the efforts of your states to coordinate the consultations that have taken place. I have heard of no concerns about inadequate consultation from the agencies participating in VISTAS, but suggest that you look to the responses of Kentucky and Tennessee for the most official information.

If my e-mail message is not adequate for your files and a formal letter via regular mail is required, please let me know. Again, thanks for your work. John.

John E. Hornback, Executive Director
Metro 4/SESARM
526 Forest Pkwy Ste F, Forest Park GA 30297-6140
Ph 404-361-4000 . Fax 404-361-2411 . Cell 770-605-3059
E-mail Address: hornback@metro4-sesarm.org
Web Site: http://www.metro4-sesarm.org

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Ernie Fletcher
Governor

Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601-1403

Teresa J. Hill
Secretary

August 16, 2007

Mr. Mike Bates, Chief
Air Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Dear Mr. Bates:

Pursuant to a February 26, 2007, invitation letter that was sent to Kentucky and eleven (11) other states and tribes from Missouri and Arkansas, Kentucky has participated in consultations regarding regional haze for Arkansas and Missouri Class I Areas (Caney Creek, Upper Buffalo, Hercules Glade, and Mingo). Kentucky participated in Central Class I Area consultations that were accomplished through a series of conference calls conducted on April 3, May 11, and June 7, 2007. Participants included states and tribes, U.S. Environmental Protection Agency personnel, regional office staff, Federal Land Managers, and other Regional Planning Organizations. A summary of these conference calls can be found on the CENRAP web site.

Kentucky believes that the consultations conducted to date have satisfied the consultation process requirements described in the Regional Haze Rule. Thank you for the opportunity to participate in the regional haze consultations regarding the Central Class I areas. If you have any questions or require additional information regarding this matter, please contact Ms. Lona Brewer, of my staff, at 502-573-3382 or at lona.brewer@ky.gov.

Sincerely,

John S. Lyons
Director

JSL:mrl

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL
9TH FLOOR, L & C ANNEX
401 CHURCH STREET
NASHVILLE, TN 37243-1531

August 6, 2007

Mr. Mike Bates, Chief
Air Division
Arkansas Department of Environmental Quality
P.O. Box 8913
Little Rock, AR 72219-8913

Mr. James L. Kavanaugh, Director
Air Pollution Control Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Re: Central Class I Areas Consultation Conclusion

Dear Mr. Bates and Mr. Kavanaugh,

On March 1, 2007, the Tennessee Division of Air Pollution Control (TDAPC) received a letter from the states of Missouri and Arkansas requesting Tennessee's participation in the Central Class I Areas consultation process. This process was initiated to satisfy the consultation requirements of section 308(d) of the Regional Haze Rule. Tennessee was identified as a possible contributor to regional haze in Class I Areas located in Arkansas and Missouri (Caney Creek, Upper Buffalo, Hercules Glade, and Mingo). TDAPC staff members participated in the consultation process, which included a series of conference calls held in April, May, and June of this year.

Per your request, this letter serves as response to your letter dated July 23, 2007. The TDAPC concurs with your belief that the consultations conducted to date satisfy the consultation requirements of the Regional Haze Rule. Thank you for the opportunity to participate in the Central Class I Areas consultation process. If you have any questions regarding this correspondence, please contact Julie Aslinger at (615) 532-0587.

Sincerely,

Barry R. Stephens, P.E.
Director
Tennessee Division of Air Pollution Control

BRS/JA

Oklahoma's Wichita Mountains Wilderness Area Regional Haze Planning

"The prevention of any future, and the remedying of any existing, impairment to visibility."

Consultation 2 Agenda

August 30, 2007
10:00 a.m.
Conference Phone: 800-504-4496
Pass Code: 3937085#

Roll Call Introductions	Cheryl Bradley Environmental Programs Manager
Natural Background for WIMO	Jacob Petre Environmental Programs Specialist
Summary of Comments Received	Cheryl Bradley
Additional Comments	
Date of Next Call	

Contact: Cheryl Bradley cheryl.bradley@deq.state.ok.us

The Air Quality Division of the Department of Environmental Quality
707 N Robinson (PO Box 1677) Oklahoma City, Oklahoma 73101
405 702 4100 FAX: 405 702 4101

ADEQ

ARKANSAS
Department of Environmental Quality

August 17, 2007

Mr. Eddie Terrill, Director
Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101-1677

Re: Oklahoma's Wichita Mountains Wilderness Area Regional Haze Consultation

Dear Mr. Terrill:

Thank you for inviting the Arkansas Department of Environmental Quality (ADEQ), Air Division to participate in the above-referenced planning process. As you are aware, it is beneficial for both agencies to preserve an open line of communication.

My staff has reviewed the document that the Air Division of the Oklahoma Department of Environmental Quality (ODEQ) prepared entitled Oklahoma's Wichita Mountains Wilderness Area Regional Haze Planning. While I appreciate your situation of not being able to demonstrate that progress in visibility improvements for the Wichita Mountains Wilderness Area will not meet the glidepath representing a return to natural conditions by 2064, ADEQ cannot concur with the ODEQ assertion that sources in Arkansas contribute significantly to an inability to achieve reasonable progress. According to my staff, the 1.5 inverse megameters (Mm^{-1}) that was used to determine the extent of other-state contributions to visibility impairment at Wichita Mountains Wilderness Area (WIMO) equates to a 0.2 deciview (dv) contribution to the projected 2018 20% worst days at WIMO. Since dv is expressed in increments of one and 1 dv is defined as the minimum degree of light extinction that is discernible to the human eye, an impact of a fraction of a dv is indiscernible and cannot be measured.

Assuming that the contribution of the entire State of Arkansas is approximately 0.2 dv, it is apparent that a single source's potential contribution would be much lower. ADEQ cannot reasonably mandate control of a source or source category that your Department asserts has potential contributions to visibility impairment at WIMO when it is not physically possible to measure the benefit that might be realized therefrom.

In your consultation kick-off presentations, you asked about our intentions regarding future control of four specific sources. Of these, three are subject to BART and appropriate limits have been established in our draft SIP revision. ADEQ has previously provided your staff with an estimate of the individual source emission reductions expected to be achieved by implementation of BART at these, and all other, affected facilities. The fourth facility, Future Fuel Chemical Company in Batesville Arkansas (formerly Arkansas Eastman) is not subject to BART. It is located approximately 665 kilometers (km) from WIMO.

ADEQ determined that, given the limitations of the CALPUFF model used to assess facility contributions, the single-source impact that Future Fuels might have on WIMO could not be reliably determined or demonstrated. These findings are based on the unproven performance of the CALPUFF modeling system at a range exceeding two times the recommended maximum reliable range (300 km) specified in EPA modeling guidance documents and reports.

I hope your regulatory development process is proceeding well. ADEQ intends to submit a final SIP revision to EPA shortly. ADEQ will participate in consultations with Oklahoma and other States on an on-going basis. Let me know if you require additional information at this time.

Sincerely,

Mike Bates

Mike Bates
Air Division Chief

cc: Tony Davis, Technical Assistance Manager
Mark McCorkle, Environmental Program Manager
Mary Pettyjohn, Senior Epidemiologist
Jeremy Spann, Air Compliance Monitor

ADEQ

ARKANSAS
Department of Environmental Quality

June 10, 2008

Ms Susana M. Hildebrand, P.E., Director
Texas Commission on Environmental Quality
Air Quality Division
P.O. Box 13087
Austin, Texas 78711-3087

Dear Ms Hildebrand:

This is in reply to your letter dated March 25, 2008. Your letter requested that the Arkansas Department of Environmental Quality (ADEQ) concur on the Particulate Matter Source Apportionment Technology (PSAT) modeling assessment conducted by Central Regional Air Planning Association (CENRAP), confirm that the 2018 projected emission reductions from Texas will be sufficient for Arkansas to meet its reasonable progress goals (RPGs) for its two Class I areas, and verify that Arkansas is not depending on additional reductions from Texas to meet its RPGs.

ADEQ concurs with the results from the CENRAP PSAT modeling assessment. The results from this modeling assessment were used to develop the long-term strategy to reach Arkansas' RPGs for its two Class I areas. As stated in the Arkansas Regional Haze Rule State Implementation Plan, "CENRAP-modeled visibility projections indicate that the emission reductions planned for these states [which include Texas] are sufficient to achieve the RPGs for all Class I areas located in Arkansas . . ." Therefore, ADEQ confirms that the 2018 projected Texas emission reductions will be beneficial to Arkansas in meeting its RPGs for its two Class I areas. Additionally, ADEQ verifies Arkansas will not be depending on additional reductions from Texas to meet its RPGs at this time.

If you have any questions or comments, please contact Mark McCorkle at mac@adeq.state.ar.us or 501-682-0736.

Sincerely,

Mike Bates

Mike Bates, Chief, Air Division

MB/mp

Cc: Mark McCorkle, Environmental Program Manager

Supporting justification for April 24, 2007 letter to Missouri and Arkansas
RE:Consultation for Regional Haze

In March 2007, DEQ received a letter and package of information relative to the first regional haze consultation call to address the Caney Creek, Mingo, Hercules Glades, and Upper Buffalo Class 1 areas. This information was reviewed by Jim Orgeron and Vivian Aucoin, and discussed with Michael Vince.

The analysis included the use of three different approaches, PMF trajectories, AOI, and PSAT, for determining potential individual state impacts on the four Class I areas of concern to those two states. The criterion to be a major contributor is to impact at least one of the Class I areas in two of the three approaches. In the worst case, Louisiana was shown by only one approach to potentially have a minimal impact on an area.

The first consultation phone conference was held on April 3, 2007 and was attended by Jim Orgeron, Vivian Aucoin and Michael Vince.

It is important for states to address regional haze concerns thru the Consultation process. Documentation of discussion on all actions proposed in the Regional Haze SIPs must exist. Missouri and Arkansas were doing everything that they could to ensure that any state that might impact these areas were aware that the consultation process had begun, this is why they invited us to the table.

Appendix 11.1
Agricultural and Forestry Smoke Management

Arkansas Smoke Management Program

INTRODUCTION

Fire in Arkansas' forests, has been an important process in the ecology of the state since the beginning of time. Prescribed fire (controlled burning) is an indispensable tool used by the natural resource manager to accomplish natural resource management objectives.

In Arkansas, natural resource managers burn approximately 300,000 acres a year. This amount is likely to increase.

REASONS FOR HAVING A SMOKE MANAGEMENT PROGRAM

The purposes of the Arkansas Smoke Management Program (SMP) are to assure adherence to air quality regulations and to manage smoke from prescribed fire so that the smoke's impact on people and the environment will be acceptable. In 1997, the U.S. Environmental Protection Agency (EPA) reported that fine particles (2.5 micrometers or smaller in size) have the potential to significantly impair human health when people are exposed to high levels. The fine particles that can impair human health can also reduce visibility in federally mandated Class I areas such as Caney Creek Wilderness Area and Upper Buffalo Wilderness Area. In these areas, EPA has established a goal to make reasonable progress at removing any human-caused impairment to visibility.

An estimated 70 % of the particulate matter emissions in smoke are fine particles. Therefore, prescribed fire should be planned to: limit public safety hazards posed by smoke intrusion into populated areas; prevent deterioration of air quality; prevent National Ambient Air Quality Standards (NAAQS) violations; and limit visibility impairment at Class I areas or other smoke sensitive areas.

This SMP guides the prescribed fire manager to minimize the impact of particulate matter released into the atmosphere by estimating how many tons of fuel may be burned in an area. The amount of fuels that can be burned in an air shed (36 square miles) is based upon the ability of the atmosphere to disperse the particulate matter and the distance downwind to a smoke-sensitive area.

These guidelines address when to burn, not how to burn.

ADMINISTRATION

The Air Division of the Arkansas Department of Environmental Quality (ADEQ) regulates open burning. Regulation 18 of the Arkansas Pollution Control and Ecology Commission (the Arkansas Air Pollution Control Code) contains a General Prohibition on "open burning of refuse,

garbage, trade waste, or other waste material" but exempts controlled fires used for forest and wildlife management and certain agricultural activities (ADEQ Reg. 18.602 – 18.603).

Controlled burns should avoid areas known to contain open dumps, discarded tires or other similar waste.

When the ADEQ Director declares that the air is polluted in an area of Arkansas, all open burning in the area shall be discontinued (ADEQ Reg. 18.604).

The State Forester will disseminate and administer the forestry SMP. Daily implementation of the SMP will be coordinated by the Arkansas Forestry Commission (AFC) Dispatch Center.

The prescribed fire manager is responsible for implementing the SMP.

BURN NOTIFICATION

The AFC Dispatch Center coordinates prescribed fire activities. The AFC Dispatch Center will: 1) retrieve U.S. National Weather Service data; 2) calculate smoke management category day and dispersion index; 3) advise prescribed fire managers on the amount of particulate matter that can be released within an air shed; 4) advise prescribed fire managers if other prescribed fires are planned nearby; and 5) maintain appropriate records so that ADEQ may further analyze air quality.

The fire weather or forestry forecast is available on the National Weather Service website (www.srh.noaa.gov).

Arkansas law requires prescribed fire managers to notify the AFC Dispatch Center on the morning of the prescribed fire by calling 1-800-830-8015. See Arkansas Code Annotated §20-22-302.

The AFC recommends that the prescribed fire manager prepare a written prescribed fire plan before starting the prescribed fire. On the day of a planned prescribed fire, the prescribed fire manager will inform the AFC Dispatch Center of the following:

1. person in charge of prescribed fire and how he/she can be contacted;
2. location of prescribed fire (Section, Township, Range or GPS reading and county);
3. acres to be burned;
4. purpose of prescribed fire (site preparation such as natural or artificial regeneration, hazard fuel reduction, wildlife habitat, ecosystem restoration, forage/grazing, or others);
5. fuel type and tonnage of fuel to be consumed (see section on determining the total amount of fuels to be consumed by the prescribed fire); and
6. planned ignition time and duration of prescribed fire.

AFC Dispatch Center will locate each prescribed fire in the center of the air shed for purposes of complying with these guidelines. If the fuel tonnage for a single prescribed fire causes the air pollution tonnage for a given air shed to exceed permissible limits, the AFC Dispatch Center will

recommend to the prescribed fire manager that the plan should be altered (either by delaying the burn or reducing the acreage to be burned).

There could be situations where a smoke sensitive area may lie within overlapping air sheds of simultaneous prescribed fires. When this occurs, prescribed fires are prioritized according to the order in which they are reported. When a prescribed fire is reported and the estimated fuel weight that will be burned is less than the recommended maximum fuel weight, a proportion of that maximum remains available for use.

Finally, if a prescribed fire is completed before 4:00 p.m., the prescribed fire manager should tell AFC Dispatch Center. This may allow another prescribed fire manager in the same air shed to conduct his/her prescribed fire.

OZONE ACTION DAYS

During periods of relatively stagnant air and at the request of ADEQ, the National Weather Service will issue an Ozone Action Day statement. The AFC Dispatch Center will advise prescribed fire managers when the National Weather Service declares an Ozone Action Day.

Prescribed fire managers should reduce ground-level ozone formation by delaying the prescribed fire on Ozone Action Days. The ozone season is typically May through September. Voluntary pollution reductions will minimize ozone related health risks.

ALTERNATIVES TO PRESCRIBED FIRE

Natural resource managers have an array of tools, including fire, to achieve management objectives. Natural resource managers are urged to evaluate the potential public health and environmental impacts of fire and other land management tools. If prescribed fire is likely to harm public health and the environment, other land management tools should be considered.

Land management tools include on-site chipping, whole tree harvesting, roll chopping, shear and pile, and removal of slash for off-site burning. When the management objective is to preclude, reduce, or remove live vegetation and/or specific plant species from a site, herbicide treatments may be an appropriate tool.

There maybe situations where fire in combination with other types of treatment methods may be a better approach to achieving the desired resource benefits while protecting air quality. Combinations of treatments may include mechanically pretreating the area to reduce the fuel load before use of prescribed fire.

SMOKE MANAGEMENT COMPONENTS OF THE PRESCRIBED FIRE PLAN

The prescribed fire manager should take measures to reduce the impact of smoke. Consider the following steps while planning the prescribed fire:

A. actions to minimize smoke impacts;
B. determine the total amount of fuels to be consumed by the prescribed fire;
C. identify the closest smoke sensitive target and distance from the prescribed fire;
D. determine under which conditions the prescribed fire can be safely conducted;
E. identify public notification and exposure reduction procedures; and
F. monitor air quality.

A. Actions to minimize smoke impacts.

The prescribed fire plan should document the steps taken before, during and after the burn to reduce smoke impacts. Where applicable, use one of the following approaches:

- Reduce the size of the burn to achieve the allowed emissions.
- 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 fuels.
- Reference "Smoke Management Guide for Prescribed Fire and Wildland Fire" by National Wildfire Coordinating Group Fire Use Working Team, publication NFES 1279.

B. Determine the total amount of fuels to be consumed by the prescribed fire.

A wide variety of fuel types and conditions are found in Arkansas. Table 1 describes those fuel types that are found in greatest quantities on typical prescribed fire sites.

In most prescribed fires, "available" tons of fuel will be less than "total" tons of fuel. Due to fuel moisture and other factors, the burn will not consume all the fuel. The emission data needed by the AFC Dispatch Center is the consumption of "available" fuels. The prescribed fire manager must provide reasonable estimates of the total amount of available fuels that will be burned by the prescribed fire. The prescribed fire manager may need to consider a higher fuel loading estimate than shown in Table 1 for forest stands that have been fuel-loaded by insects, diseases, tornadoes, ice storms or other factors.

Fuel Loading Range can vary by amount and age of fuels or number of years since last burned. (Low – less than 2 years since last burned; Medium – 2 to 5 years; and Heavy - 6 years or more).

References used to predict fuel loading were computer model "FOFEM" (First Order Fire Effects Model) developed by the USFS Intermountain Research Station; "Aids to Determining Fuel Models for Estimating Fire Behavior" by Hal E. Anderson, General Technical Report INT-

122; and "Photo Guide for Appraising Surface Fuels in East Texas" by Hershel C. Reeves, Center for Applied Studies- School of Forestry, Stephen F. Austin State University.

Table 1 is an average. Organizations and agencies in Arkansas are involved in prescribed fire emission and fuel consumption studies. Published fuel loading data from these studies may be substituted. The fuel loading values, shown below, will be revised as new data is submitted to the Arkansas Prescribed Fire Committee and approved by the Arkansas Forestry Commission.

Table 1. Common Fuel Types

Typical Arkansas timber and vegetative types	Fuel Loading Range	Total fuels (tons/acre)	Available fuels (tons/acre)
Shortleaf pine with Oak – Overstory composed of shortleaf pine stands mixed with oak or oak/hickory. Amount of litter will vary with the age of the stand, degree of crown closure, species and age of rough. (FM 9)	Low Medium Heavy	8.5 8.9 9.3	3.0 4.0 4.4
Shortleaf pine regeneration – Overstory composed of immature shortleaf pine mixed with scattered oak brush. Surface fuel is mostly grass with some low shrubs. (FM 2)	Low Medium Heavy	4.8 7.1 8.8	2.6 3.8 5.1
Loblolly pine with Oak – Overstory composed of loblolly pine mixed with oak or oak/hickory. Amount of litter will vary with age of the stand, degree of crown closure, species, and age of rough. (FM 9)	Low Medium Heavy	10.7 11.1 12.0	6.4 6.8 7.9
Loblolly pine regeneration – Overstory composed of immature loblolly pine mixed with immature hardwood. Surface fuels are mostly grass, briers and low shrubs. (FM 2)	Low Medium Heavy	9.6 12.3 14.7	4.4 7.6 8.5
Hardwood leaf litter – Overstory usually composed of oak or hickory with a mixture of other hardwoods such as maple, elm, or gum. Amount of litter will vary with the age of the stand, degree of crown closure, species, and age of rough. (FM 9)	Low Medium Heavy	2.7 4.7 6.7	0.8 1.5 2.5
Grass/Brush – First fuel type to appear on site prepared, burned, or cutover areas. Also applies to pastures, old fields, or young pine stands where grass is the primary carrier of the fire. (FM 1,2,3)	Low Medium Heavy	2.0 3.0 5.0	2.0 3.0 5.0
Dispersed Slash – Normally follows heavy thinning, or a clear-cut, where debris is not piled. Needle or leaf litter may or may not be present. Limb-gate piles should be excluded because of residual smoke. (FM 11,12,13)	Low Medium Heavy	8.0 12.0 16.0	4.0 6.0 8.0
Piled Debris –Normally follows land clearing or timber cutting where all debris is piled. Due to heavy fuel loading, fuel size and arrangement, and inefficient burning, piled debris produces greater amounts of smoke and particulate matter for long time periods.	Low Medium Heavy	10.0 15.0 20.0	5.0 7.5 10.0
Shortleaf/Loblolly with grass – Open overstory composed of loblolly or shortleaf pine. Amount of grass or litter will vary with age of the stand, degree of crown closure, and age of rough. (FM 2)	Low Medium Heavy	3.7 7.4 11.7	1.5 3.8 5.9

(FM- National Fire Danger Rating System fire behavior fuel models)

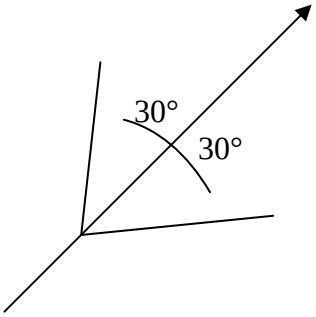
Determining available fuels:

Once the amount of fuels that will be consumed has been determined, multiple the value times the amount of acres to be burned. For example, a person plans to burn 300 acres of a loblolly pine stand mixed with oak. The stand was burned previously two years ago and examination of the site reveals there is a low amount of fuels on the ground. Therefore, the prescribed fire is expected to consume 1920 tons of fuel (6.4 tons/acre times 300 acres).

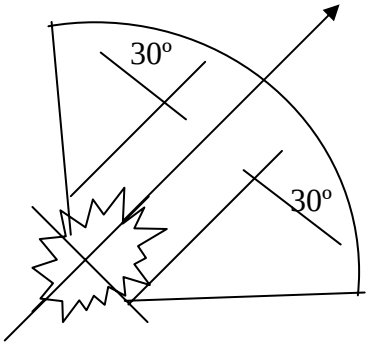
C. Identify the closet smoke sensitive target and distance from the prescribed fire.

Every effort should be made to keep smoke away from sensitive areas. Examples are: airports, highways, communities, Class I areas recreation areas, schools, hospitals, nursing homes, and industry (especially facilities that emit sulfur dioxide – smelters, coal fired power plants, and factories with large boilers). Follow these five steps to identify smoke- sensitive targets:

1. Locate on a map the prescribed fire and all potential smoke sensitive targets, plus areas known to already have air pollution problems. (Table 4 considers targets up to 30 miles from the prescribed fire.)
2. Determine the wind direction that will have the least impact on smoke sensitive targets.
3. Draw a line representing the centerline of the path of the smoke plume using the wind direction chosen in the previous step.
4. Determine the distance from the edge of the prescribed fire to the nearest smoke-sensitive target.
5. To allow for horizontal dispersion of the smoke, as well as shifts in wind direction, draw two other lines from the burn at an angle of 30 degrees from the centerline(s). If a prescribed fire is represented as a spot, draw as in Figure A. If larger, draw as shown in Figure B.



A



B

Figures A and B. Examples of how to estimate a smoke plume dispersion for prescribed fire planning.

Planning and public notification are recommended when igniting large areas in a short amount of time, such as is done with aerial ignition. The heat produced from the prescribed fire may allow the smoke to penetrate above the mixing height where dispersion of the smoke is minimal. Smoke from these prescribed fires may travel long distances before descending to the ground. Therefore, it is important to monitor the smoke column downwind to determine if a problem will develop.

D. Determine under which conditions the prescribed fire can be safely conducted.

One goal of safely conducting a prescribed fire in Arkansas is to perform the burn when atmospheric conditions will disperse the smoke so people and Class I areas are not effected. The smoke management plan uses two pieces of information to determine how many tons of fuels can be consumed within an air shed:

1) downwind distance to the nearest smoke-sensitive target, and
2) category day.

The National Weather Service measures the transport wind speed and mixing height daily by 8:00 a.m. and an estimate is made for the afternoon. The predicted afternoon mixing height and transport wind speed will be used by the AFC Dispatch Center to calculate category day. See Table 2 for category day burning guidelines. Table 3 lists the category day for each combination of mixing height and transport wind speed.

The National Weather Service issues an afternoon forecast predicting conditions for the following day. Using the afternoon forecast, the predicted category day for the following day is for planning purposes only. The category day issued by the AFC Dispatch Center will remain in effect until a new forecast is received the following day.

Table 2. Category Day Guidelines

Category Day	Guidelines
1	Daytime burning only, between 11:00 a.m. and 4:00 p.m., maximum of 100 acres. No burning in slash, piled debris, or heavy fuel loads.
2	No burning until 11:00 a.m. and not before surface inversion has lifted. Burn should be substantially burned out by 4:00 p.m.
3	Burn only after surface inversion has lifted.
4	Burn anytime.
5	"Unstable" and windy. Excellent smoke dispersal. Burn with caution.

Table 3. Relationship between category day, transport wind speed – TWS - (miles per hour), and mixing height (feet).

TWS Wind (m.p.h.)	MIXING HEIGHT (Feet) CATEGORY DAY												
	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
7			1	1	1	2	2	3	3	3	3	3	3
8		1	1	2	2	3	3	3	3	3	3	3	4
9	1	1	1	2	3	3	3	3	3	3	3	4	4
10	1	1	1	3	3	3	3	3	3	4	4	4	4
11	1	1	2	3	3	3	3	3	4	4	4	4	4
12	1	1	3	3	3	3	3	4	4	4	4	4	4
13	1	2	3	3	3	3	3	4	4	4	4	4	4
14	1	2	3	3	3	3	4	4	4	4	4	4	4
15	2	3	3	3	3	4	4	4	4	4	4	4	4
16	2	3	3	3	3	4	4	4	4	4	4	4	5
17	2	3	3	3	4	4	4	4	4	4	4	5	5
18	2	3	3	3	4	4	4	4	4	4	4	5	5
19	2	3	3	3	4	4	4	4	4	4	5	5	5
20	3	3	3	4	4	4	4	4	4	5	5	5	5

Exercise caution with high transport wind speeds and low mixing height, or low transport wind and high mixing height. These conditions can cause poor smoke dispersion and burn behavior problems.

Table 4 provides guidelines on the total amount of fuel that can be allocated to an air shed. Estimates were developed where VSMOKE (Lavdas 1996) model predicted between 159 to 175 ug/m^3. All model calculations had a stability class of slightly unstable. The fine particulate release rate and heat release rate were estimated by using the Fire Emission Production Simulator (http://www.fs.fed.us/pnw/fera/feps/).

Table 4. The range in tons of fuel that can be allocated to an airshed based upon the downwind distance to the nearest smoke-sensitive target and the category day.

Distance to Smoke Sensitive Target (miles)	Category Day 2	Category Day 3	Category Day 4	Category Day 5
0-0.19	Recommend do not burn			
0.2-4.9	488	560	720	1,280
5-9.9	1,000	1,200	1,840	3,200
10-19.9	1,840	2,240	4,200	7,200
20-29.9	2,880	3,280	6,400	11,600

For sensitive targets further than 29.9 miles, use the maximum range in tons of fuel for the category day.

E. Public notification and exposure reduction procedures.

The prescribed fire plan should identify actions that will be taken to notify people and authorities at smoke-sensitive areas before the prescribed fire. The prescribed fire plan should identify contingency actions that will be taken during a prescribed fire to reduce the exposure of people at smoke-sensitive areas if smoke intrusions occur. Appropriate contingency actions may include:

- Notifying the affected public (especially sensitive persons) of elevated pollutant concentrations,
- Suggesting actions to be taken by sensitive persons to minimize their exposure (e.g., remain indoors, avoid vigorous activity, avoid exposure to tobacco smoke and other respiratory irritants), and
- Halting ignitions of any new prescribed burning that could add smoke to the same area.

F. Monitor air quality.

The prescribed fire plan should include monitoring of the smoke from the prescribed fire. Visibility in Class I areas will be monitored. The extent of the monitoring 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.

COMPONENTS OF PRESCRIBED FIRE PLANS

Prescribed fire managers should prepare a prescribed fire plan for each burn (or, if the units are small and the burn objectives and prescription is the same, one plan may cover several burn units). These plans are written following protocols specific to each agency. At a minimum, the prescribed fire plan should include the following information:

- Location and description of the area to be burned.
- AFC Dispatch Center, local fire department or sheriff's office to be contacted.
- Occupants in all dwellings within ¼ mile of prescribed fire to be contacted.
- Personnel responsible for managing the fire.
- Type of vegetation to be burned.
- Number of acres to be burned.
- Amount of fuel to be consumed (tons/acre).
- Fire prescription including weather, ignition techniques, personnel and equipment.
- If available, documentation (along with any maps or tables) from atmospheric dispersion

models/ smoke dispersion prediction models which present information on what impact the smoke may have on any smoke sensitive areas.

- Actions needed to stop a burn if weather conditions degrade from the forecast values.
- Criteria the fire manager will use for making burn/no burn decisions.
- Safety precautions for personnel on the prescribed fire.

SMOKE EVALUATION

Determining tons of fuel to be consumed for the prescribed fire completes an important part of the analysis. Prescribed fire managers should examine the results of their analysis to determine if the prescribed fire could be divided into smaller units since others may be burning near them on the same day.

If weather parameters are questionable, the prescribed fire manager should conduct a test burn to determine feasibility of the burn.

The prescribed burn managers should evaluate frequently traveled roads within one mile of the prescribed fire, especially if these roads are down smoke-drainage of the burn. Residual smoke flows and settles in low areas during the night and early morning and may contribute to heavy fog, which creates hazardous road conditions.

Predicting visibility and smoke drift is more difficult at night. Winds may lessen or die out completely, and smoke will tend to stay near the ground. Although burning at night may help achieve other objectives, it may aggravate smoke management problems. Night time burning will require the same planning as daytime burns. For night burns, consider the following recommendations:

1. Burn in light fuels.
2. Use backing fire.
3. Burn when humidity is 80 percent or less.
4. Do not burn if overnight low is within 5 degrees of dew point.
5. Burn with surface wind speed of 4 miles per hour or more.
6. Obtain a night time dispersion index. (See Table 5.)
7. Monitor down drainage and low areas, especially populated areas, airports or roads near the burn site.

The following situations could result in smoke impacting the surface downwind, particularly when there has been a large production of smoke:

1. Transport wind speed exceeds 25 mph, and average surface wind speed is over 20 mph with stronger gusts.
2. Transport wind direction carries smoke over a large lake.
3. A thick layer of smoke from a large burn significantly reduces the heating of the ground.

4. Transport wind direction moves smoke from a fire on the slope of a ridge toward and over the top of the ridge. Smoke may return to the ground in the eddy that can develop on the lee side of the ridge.

To ensure optimum dispersal of smoke during prescribed fire, the mixing layer must be sufficiently deep and transport wind speed adequate. Table 5 uses mixing height, transport wind speed and stability class to produce an index that describes the ability of the atmosphere to disperse smoke. The dispersion index will be included as part of the daily fire weather forecast by AFC Dispatch Center. Estimates of the dispersion index for each hour of the day for Arkansas can be obtained from http://shrmc.ggy.uga.edu. Prescribed fire managers who intend to ignite burns in the morning should consult their local National Weather Service office to determine the anticipated dispersion at the time of ignition. A low dispersion index indicates the atmosphere has poor capacity to disperse smoke; the ignition of a prescribed fire is discouraged. A high dispersion index indicates the possibility of losing control of the prescribed fire.

Table 5. Relationship between dispersion index and atmospheric conditions to disperse air pollution. (Lavdas 1996).

Dispersion Index	Burning Condition
100	Very good burning conditions; fires may be difficult to control. Reassess decision to burn.
61-100	Good-preferred range for prescribed fires.
41-60	Generally OK afternoon climatological values in most inland-forested areas fall in this range.
21-40	Fair-stagnation may be indicated if accompanied by low windspeeds. Reassess decision to burn.
13-20	Generally poor-do not burn. Stagnant if persistent, although better than average for a night burn.
7-12	Poor-do not burn. Stagnant during the day, but not near or above average at night.
1-6	Very poor-represents the majority of nights at many locations.

SURVEILLANCE AND ENFORCEMENT

Trained and experienced people should supervise prescribed fires. The prescribed burn manager ensures that the burn is conducted in accordance with the prescribed fire plan.

ADEQ will enforce national and Arkansas air quality regulations and laws. ADEQ will investigate smoke nuisance complaints.

PUBLIC EDUCATION AND AWARENESS

The AFC in cooperation with the Arkansas Prescribed Fire Committee will explain 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 will use posters, pamphlets, news releases, and public presentations. Prescribed fire managers should train on-the-ground personnel to understand the SMP.

AFC Dispatch will maintain 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. AFC will cooperate with organizations and government agencies such as Arkansas Lung Association or ADEQ to make the public aware of planned prescribed fires.

PROGRAM EVALUATION

The AFC will annually:

1. Collect and review information on acres burned by prescribed fire and wildfire.
2. Review the reference, continuous, and IMPROVE monitoring station data maintained by ADEQ.
3. Use information from reports of nuisance complaints or significant smoke intrusions to measure the effectiveness of the SMP.
4. Provide recommendations to ADEQ and Arkansas Prescribed Fire Committee concerning the SMP.

GLOSSARY

Air shed – the atmosphere covering a 36 square mile area (6 miles by 6 miles) approximately 23,040 acres. The amount of fuel that can be burned in the air shed depends on the distance to the nearest downwind smoke sensitive area and meteorological conditions.

Ambient air – the surrounding air external to a building, which the public is exposed to.

Air quality – characteristics of the ambient air, as indicated by concentrations of the six air pollutants for national standards, have been established. For the purposes of this document, concentrations of PM 2.5 are the primary indicator of ambient air quality.

Available fuel - an estimate of the tons of fuel per acre that will actually be consumed by a burn under a specific set of burning conditions. It is influenced by fuel moisture and other factors.

Category day - a scale from 1 to 5 based on transport wind speed and mixing height. For smoke dispersal, 1 is poor and 5 is excellent.

Class I area – an area set aside under the Clean Air Act to receive the most stringent protection from air quality degradation. Designated Class I areas in Arkansas are Caney Creek and upper Buffalo Wilderness.

Cooperator - those forest landowners or managers that have agreed to carry out prescribed burning consistent with the Smoke Management Plan.

Dispersion index - this index is an estimate of the atmosphere's capacity to disperse smoke from prescribed burns over a 1,000-square-mile area. It takes into account mixing height, transport wind, and stability near the ground.

Fuel loading – total amount of fuel at the prescribed burn site.

Inversion - increase of temperature with height in the atmosphere. This condition often exists in the morning and prevents smoke from rising into the atmosphere.

Mixing height - the layer of the atmosphere that pollutants are dispersed into due to turbulent mixing. A forecast of mixing height indicates the height of the top of the layer with respect to mean sea level.

National Ambient Air Quality Standards – established procedures that Federal agencies must follow in making decisions on Federal actions, which may impact the environment.

National Fire Danger Rating System (NFDRS) – system used by the USFS and other organizations to integrate the effects of topography, fuels, and weather on fire behavior.

Ozone Action Day – an action day is declared when the ozone concentrations are expected to reach a level that will affect the health of sensitive groups such as children, the elderly, and people with respiratory disease.

Particulate matter - any airborne finely divided material except water vapor, which exists as a solid or liquid at standard conditions.

PM 2.5 – particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Prescribed fire – any fire ignited by management actions to meet specific objectives.

Prescribed fire manager – person responsible for managing a prescribed fire from planning to ignition and mop up.

Residual smoke - smoke that continues after the initial burn has passed through the fuel.

Screening distance - the area to examine for possible sensitive targets.

Sensitive area - areas that can be harmed by smoke. Examples: Airports, major highways, communities, Class 1 areas, recreation areas, schools, hospitals, nursing homes, and factories, etc.

Smoke management - conducting a prescribed fire under fuel moisture, meteorological conditions, and firing techniques that keep the impact of the smoke on the environment within acceptable limits.

Smoke plume – the column of smoke resulting from prescribed fire.

Stagnant air - conditions under which pollutants build up faster than the atmosphere can disperse them.

Transport wind – the average wind speed and direction through the mixing layer. Higher wind speeds allow for more rapid transport of pollutants downwind.

Ventilation rate - the mixing height times the transport wind speed gives a rate indicating the ability of the lower atmosphere to diffuse and disperse smoke.

Wind direction – compass direction from which the wind is blowing.