MEMPHIS OZONE NONATTAINMENT AREA

Submitted by:
State of Tennessee, on behalf of Shelby County
State of Arkansas, on behalf of Crittenden County

PETITION FOR DOWNWARD RECLASSIFICATION

Pursuant to 42 U.S.C. § 7511(a)(4)

For submittal to:
U.S. E.P.A. Region IV
U.S. E.P.A. Region VI

July 15, 2004

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ACRONYMS

The following guide provides meanings for all acronyms contained in the Petition.

Acronym	Meaning
ADEQ	Arkansas Department of Environmental Quality
AQIP	Air Quality Improvement Plan
AR	Arkansas
AHTD	Arkansas Highway and Transportation Department
ATMOS	Arkansas-Tennessee-Mississippi Ozone Study
BACT	Best Available Control Technology
CAA	Clean Air Act
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
CO	Carbon Monoxide
DV	Design Value
EAC	Early Action Compact
EDV	Estimated Design Value
EPA	Environmental Protection Agency
FR	Federal Register
I / M	Inspection and Maintenance
LAER	Lowest Achievable Emission Rate
LEV	Low Emission Vehicle
MS	Mississippi
MDEQ	Mississippi Department of Environmental Quality
MLG&W	Memphis Light Gas & Water
MSCHD	Memphis-Shelby County Health Department
MONAA	Memphis Ozone Non-Attainment Area
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NSR	New Source Review
NOx	Oxides of Nitrogen
POTW	Publicly Owned Treatment Works
PPB	Parts Per Billion
PPM	Parts Per Million
RACT	Reasonably Available Control Technology
RVP	Reid Vapor Pressure
SCR	Selective Catalytic Reduction
SIP	State Implementation Plan
SULEV	Super Ultra Low Emission Vehicle

TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TN	Tennessee
TPD	Tons Per Day
TPY	Tons Per Year
USC	United States Code
VMT	Vehicle Miles of Travel
VOC	Volatile Organic Compounds

I. INTRODUCTION

A. Purpose

The States of Tennessee and Arkansas submit this Petition for Downward Reclassification ("Petition") of the Memphis Ozone Non-Attainment Area ("MONAA") from its current classification of "moderate" to a classification of "marginal." In addition to outlining control measures currently being implemented and planned as well as innovative public-private partnerships in furtherance of the goal of attainment by 2007, this Petition sets forth a commitment to develop and implement additional control measures immediately following an aggressive study and analysis, conducted in partnership with EPA, which is designed to evaluate the most effective additional control measures that will enable the MONAA to reach attainment by 2007.

By granting this petition, EPA will be endorsing the area's multi-jurisdictional efforts to achieve clean air sooner (2007, instead of 2010) and the development of control programs that are consistent with the needs of the area. A reclassification will foster the spirit of cooperation between the government, public and industrial communities in both Tennessee and Arkansas that is necessary to achieve clean air by 2007.

B. Authority

Under authority of the Clean Air Act ("CAA") § 181(a)(4), 42 U.S.C. § 7511(a)(4), an ozone nonattainment area may be reclassified downward if its design value ("DV") is within five-percent (5%) of the 8-hour DV range for the next lower classification. *See also* Preamble to Final 8-Hour Ozone Rule (40 CFR Pt. 81), 69 FR 23863.[1] By applying this rule, moderate areas with a DV of 0.096 parts per million ("ppm") or less are eligible for a reclassification to marginal. 69 FR 23864. The observation-based DV using 2001-2003 data for the MONAA is 0.092 ppm,[2] and the meteorologically-adjusted ("met-adjusted") DV for 2001-2003 is 0.090 ppm.

In making a downward reclassification, the Administrator may consider the number of exceedances of the national primary ambient air quality standard for ozone in the area, the level of pollution transport between the area and other affected areas, including both intrastate and interstate transport, and the mix of sources and air pollutants in the area. The CAA § 181(a)(4) provisions grant the Administrator broad discretion in making a reclassification. 69 FR 23863, 56 FR 56698.

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[1] Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Early Action Compact Areas with Deferred Effective Dates, Environmental Protection Agency [OAR-2003-0083; FRL-7651-8], 69 FR 23858-01 (April 30, 2004)("Final Rule.")

[2] This is the DV (0.092 ppm) used by EPA to classify the MONAA as moderate nonattainment.

The Preamble to the Final Rule (69 FR 23863) states that EPA intends to use the following criteria to evaluate whether it is appropriate to reclassify a particular area:

- Request by State: EPA will not initiate a reclassification on its own.
- Discontinuity: No illogical or excessive discontinuity with surrounding areas.
- Attainment: Evidence supports ability to attain by earlier date.
- Emissions Reductions: Appropriate emissions reductions are achievable.
- Trends: Emission and air quality trends support reclassification.
- Years of Data: 2001-2003 is the central period for classification.

EPA may approve reclassifications when: (1) the appropriate states make a request to EPA; (2) at least some of the other criteria are satisfied; and (3) none of the criteria are violated. 69 FR 23863. A downward reclassification is discretionary and does not require a rigorous attainment demonstration. EPA may reclassify a nonattainment area if the totality of all relevant considerations indicates that reclassification is appropriate.

This Petition demonstrates compliance with each of the criteria for a downward reclassification:

- Request by States: The States of Tennessee and Arkansas present this Petition.
- Discontinuity: Multiple screening tests demonstrate that no discontinuity exists with surrounding areas.
- Attainment: Use of a met-adjusted DV for 2001-2003 results in an estimated design value ("EDV") of 84 parts per billion ("ppb") in 2007.
- Emissions Reductions: This Petition details appropriate and achievable emissions reductions and establishes a mechanism for instituting additional control measures, as needed.
- Trends: Long term and near term emission and air quality trends support reclassification.
- Years of Data: The central period for classification used is 2001-2003.

Further, the Petitioners are committed to additional research focused on the factors affecting ozone conditions at the key monitor location (Marion, AR) and a Control Measures Evaluation process to further ensure attainment by 2007.

All relevant considerations indicate that reclassification is appropriate and should be granted.

C. Background

The EPA entered into Early Action Compacts ("EACs") on December 31, 2002, including with the Memphis, Tennessee-Arkansas-Mississippi area ("Memphis EAC Area.") This area successfully completed the December 31, 2002, and June 16, 2003, milestone requirements, and the June and December 2003 progress reports. By March 31, 2004, EAC areas submitted local plans, which also included specific implementation dates for the local controls, as well as technical assessment of whether the area could attain the 8-hour Ozone National Ambient Air Quality Standard ("NAAQS") by the December 31, 2007, milestone. On April 15, 2004, EPA designated nonattainment areas for the 8-hour ozone NAAQS.

EPA determined in its April 15 action that the Memphis EAC did not pass the modeled attainment test and the predicted air quality improvement test. EPA further indicated that the review of meteorological influences for the three areas was inconclusive. In addition to the technical analysis, EPA was critical of the strength of the control strategies proposed by these EACs in their March 31, 2004, plans. EPA determined that the States' technical assessments for each of these areas and their suite of measures were not sufficiently persuasive for effective date deferral under an EAC. In its April 15, 2004, action, EPA declined to defer the effective date of the nonattainment designations for these Memphis area. The original Memphis area was reconfigured to include Shelby County, TN, and Crittenden County, AR, only, which were designated as nonattainment under Title 1, Part D, Subpart 2 of the CAA, effective June 15, 2004.

Commitment to Targeted Control Strategies. As well as presenting a more focused analysis of the modeling data for the MONAA, this Petition will present evidence of the strength of the local control strategies proposed to reduce ozone precursor emissions in the region as well as supporting information for those controls. Information is also included concerning real emission reductions that either have or are expected to occur, but could not be considered in the EAC because the reductions were not considered 'permanent and enforceable'. Examples of these types of reductions include several projects designed to divert landfill and POTW gasses from flares to industrial uses. Since such projects are market-driven rather than regulatory in nature, there is reason to believe they will be successful without the need to impose permit restrictions. *See* discussion in Section III, below.

This Petition presents supplementary data to better describe the local conditions during exceedance events at the Marion monitor and to show that the effect is highly localized. The Arkansas Department of Environmental Quality ("ADEQ"), in conjunction with EPA, will take the lead in planning and executing a focused data collection and analysis study during 2004-2006 to better define specific conditions and sources producing high ozone readings at the Marion monitor. A future "Control Measures Evaluation" will allow refinements or additions to the proposed control

measures if indicated by the supplementary monitor-focused investigations. This work, which will be undertaken in collaboration with the Memphis-Shelby County Health Department ("MSCHD") and the Tennessee Department of Environment and Conservation ("TDEC"), will include conducting the field work and analysis as well as development and implementation of measures prior to ozone season of 2006 so as to ensure attainment in 2007. Demonstrated attainment in 2007 will be further protected by the continued implementation and reductions achieved by federal measures in the years following attainment.

Trends Support Reclassification. As shown in Section IV, below, emissions of VOC and NOx in the MONAA reflect a downward trend of these pollutants, which are precursors to the formation of ozone. Given that ozone DVs in the area, excluding those at the Marion county monitor, have also decreased, these data demonstrate that the overall reductions of VOC and NOx in the area have had a positive impact on reducing ozone levels in the area. A need to study the specific emission source or sources affecting the readings at the Marion monitor and to develop a specific control strategy designed to address such emissions is highlighted because the Marion county monitor has demonstrated, during certain time periods, a trend inconsistent with the other monitors in the MONAA and has not been influenced in the same manner by the overall reductions of VOC and NOx.

Model Refinement to Focus on Memphis Area. The modeling previously submitted in support of the Memphis EAC Area was one component of the larger Arkansas-Mississippi-Tennessee Ozone Study ("ATMOS"). The ATMOS modeling used databases and modeling tools designed to accommodate both regional and subregional influences. The modeling consultants selected the original simulation periods for the ATMOS on the basis of a regional-scale modeling exercise that could be used to address 8-hour ozone issues for all four of the ATMOS EAC areas (Memphis, Chattanooga, Knoxville, and Nashville) as well as Little Rock, AR, and Tupelo, MS. Therefore, the criteria were not specifically tailored for the Marion monitor, which controls the nonattainment designation for the MONAA.

For purposes of this Petition, the modeling consultants examined and refined the previous modeling results to be more representative of the MONAA and particularly the Marion monitor. Using 2001-2003 data, when all days are weighted according to the frequency of occurrence of meteorological conditions for the Marion monitor, the EDV is lowered from 86 ppb to 85 ppb. Likewise, the frequency of occurrence of different types of meteorological conditions and their associated ozone concentration levels were used to determine a met-adjusted DV for each three-year period from 1996 through 2003. The met-adjusted DV for the central period of classification (2001-2003) for the Marion monitor is 90 ppb, which indicates marginal classification. The modeled attainment test applying a DV of 90 ppb demonstrates attainment in 2007 with an EDV of 84 ppb at the Marion monitor. In addition to met-adjusted modeled attainment, further corroboratory

support for future attainment is provided by multiple screening tests and photochemical modeling. Although using this met-adjusted methodology results in attainment at the Marion monitor, Petitioners understand that this methodology may need further review by EPA and the scientific community. Therefore, the Petitioners acknowledge the need to do further work to identify the specific local measure that may have to be taken to produce attainment at this monitor.

II. COMMITMENT FOR MARION MONITOR STUDY AND CONTROL MEASURES EVALUATION

A review of the modeling submitted in support of this Petition clearly establishes that the Marion monitor, which is the controlling monitor for the MONAA designation, is the only monitor that failed to reach attainment by 2007. The modeling suggests that control measures do not influence the DV of this monitor as much as such control measures influence the other regional monitors. While the overall reductions of VOCs and NOx in area have resulted in a general reduction in ozone levels at all of the monitoring sites, the relative effectiveness of these reductions has not been as significant. Therefore, in conjunction with EPA, Memphis-Shelby County, and Tennessee, the ADEQ commits to design and implement a study to investigate which sources impact the Marion monitor and to develop control measures that would be most effective in reducing ozone exceedances at that monitor.

The ADEQ is in the process of finalizing a contract to conduct an air quality assessment and diagnostic field study for Crittenden County.[3] The Memphis Metropolitan Statistical Area ("MSA"), which has a population of just over 1 million, also includes Shelby, Tipton, and Fayette Counties in Tennessee and DeSoto County in Mississippi. Crittenden County, which lies adjacent to the Mississippi River and west of Memphis, is a rural county with small communities and little industry. In 2001, Crittenden County reported a population of just over 51,000, while Shelby County (which includes the City of Memphis) reported a population of 896,000. Fayette County had a population of 31,000, while Tipton County had a population of 53,000. DeSoto County, which is also primarily rural and serves as a bedroom community for Memphis, had a population of 114,000. Interstate 40 runs east-west through Crittenden County and Interstate 55 runs north-south and intersects I-40 in Crittenden County adjacent to the City of Memphis.

Within the Memphis MSA, ground-level ozone is measured at the Marion monitor, located 10 miles northwest of downtown Memphis, at two monitors in Shelby County (Edmund Orgill Park and Frayser Street), and at one monitor in DeSoto County. *See* Figure 1. The Marion monitor exhibits the highest 8-hour ozone DV for the current

[3] The ADEQ Fiscal Division is presently reviewing the proposed sole source contract with ICF Consulting (SAI) to conduct the study. Thereafter, the ADEQ will submit the proposal for the mandatory legislative committee review process. The ADEQ intends to award the contract by August 2004, but no later than October 2004.

period and thus controls the nonattainment status in the MONAA. In recent years, the Marion monitor has most often measured the highest ozone concentrations in the Memphis MSA, as shown in Table 1, below.

Figure 1. Memphis Ozone Monitor Locations

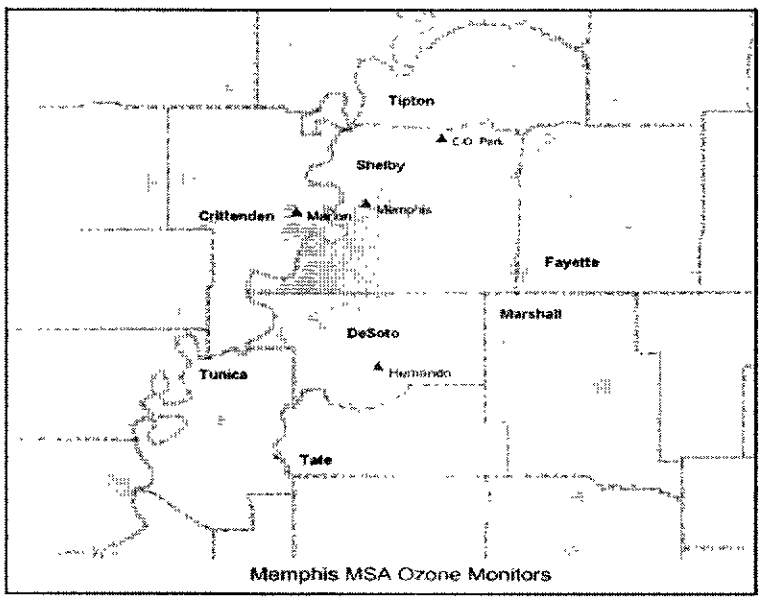


Table 1. 2001 – 2003 Annual 8-hour DVs (ppb).

MONITOR	YEAR		
	2001	**2002**	**2003**
Marion, AR	92	94	92
Edmund Orgill Park, TN	93	90	89
Frayser Street, TN	93	87	84
DeSoto Co., MS	86	86	81

Furthermore, a screening test using the ATMOS photochemical modeling results to examine the spatial representativeness of the Marion monitor site found that the highest EDVs in Crittenden County are located solely at or near the Marion monitor. Specifically, the highest EDVs are concentrated in the localized area between the Marion monitor and the Mississippi River (at the southwestern boundary of Shelby County). For further information, *see* the modeling discussion below in Section V; *see also* Exhibit 1 (Modeling Technical Analysis), at page 8, and Exhibit 2 (Electronic Copy of the EAC Modeling Technical Support Documentation).

Questions have been raised regarding the placement of the monitor and the emission sources influencing the observed ozone concentrations. Depending on wind direction, the monitor is influenced by the Memphis-Shelby County urban plume, which also includes an oil refinery complex, a coal-fired power plant, and the confluence of two interstate highways, two rail lines, and heavy water-borne transportation on the Mississippi River as well as other potential sources in the region. The study will involve a comprehensive analysis of available air quality and meteorological data and a review of recent photochemical modeling conducted as part of the ATMOS modeling analysis.

Additional modeling will analyze source-receptor relationships. The ADEQ intends to use the data analyses and modeling results to develop a more detailed conceptual description of ozone formation for the area. Based on initial results, the ADEQ will develop a supplemental air quality and meteorological data collection effort for the 2005 ozone season to update and refine initial investigation conclusions.

Pending feedback from EPA on the design of the study, the work is planned in several phases with a final report upon completion. *See* Table 2. The first meeting between ADEQ and EPA regarding the study is set for July 15, 2004, at Region VI in Dallas, Texas.

Table 2. Marion Monitor Impact Study with Schedule.

PHASE	DESCRIPTION	SCHEDULE
1	Analyze meteorological and air quality data	9/1/04 – 12/31/04
2	Analyze ATMOS/Little Rock modeling and conduct additional modeling	9/1/04/ - 2/28/05
3	Develop conceptual description	9/1/04 – 12/31/04
4	Develop draft 2005 field program	12/1/04 – 2/28/05
5	Ozone data collection/field studies	6/1/05 – 12/31/05
6	Plan 2006 Measures Implementation	To be determined in consult with EPA
7	Final Report	To be determined in consult with EPA

The ADEQ, the MSCHD, and the TDEC commit to immediate review the scope of this study with EPA Regions VI and IV and the Office of Air Quality Planning and Standards to ensure that the study will reveal the most cost-effective control strategies. As an element of this study, the ADEQ, the MSCHD, and TDEC commit to evaluate the most effective control strategies and implement these strategies prior to the 2006 ozone season, if possible. This commitment to the Control Measures Evaluation will be the most expeditious method of reaching attainment by 2007.

The ADEQ's supplemental focused monitor study is expected to enhance the understanding of the meteorological conditions and atmospheric chemistry that contribute to ozone formation in the region and at the Marion monitor in particular. It may identify specific ozone precursor pollutant emission sources that are significantly impacting the region and the ozone formation mechanisms that are prevalent in the region. If new effective control strategies are identified, there would be an opportunity to add such measures at the time of the Control Measure Evaluation.

III. EMISSION REDUCTION STRATEGIES: STATE and LOCAL COMMITMENTS

The Tennessee Air Pollution Control Board ("State Air Board"), the MSCHD, which has delegated air pollution control authority from the State of Tennessee, the TDEC, and Crittenden County, in conjunction with the ADEQ are making significant efforts to adopt and implement emissions reductions strategies which will ensure that the MONAA achieves attainment by 2007. The strategies and measures to be implemented by each jurisdiction are outlined below. While some of these measures were modeled for EAC purposes, others are new efforts recently developed. *See* Table 3, below. The Petitioners are further committed to conducting an analysis of the effectiveness of these measures by way of the Control Measures Evaluation and developing a revolving loan program for diesel retrofit and truck-stop electrification.

Table 3. Emission Reduction Strategies by Jurisdiction.

Emission Reduction Strategy	Modeled	Future Inventory[4]	Emission Reductions (tpd)		
			NOx	VOC	CO
Tennessee:					
• RACT Rule for NOx	Yes	Yes	4.9	0.00	0.00
• Expansion of Stage I	Yes	Yes	0.00	0.5	0.00
• Vehicle Emissions Inspections[5]	No	Yes	1.17	.59	8.47
• Anti-Tampering Measures	No	Yes	UQ[6]	UQ	UQ
• Visible Mobile Emissions Reductions	No	Yes	UQ	UQ	UQ
• Anti-Idling	No	Yes	UQ	UQ	UQ
• TN Public Ch. No. 926: I / M	No	Yes	UQ	UQ	UQ

[4] Measures will be included in further modeling analysis conducted as part of the Correction Measures Evaluation process.

Total Quantified Reductions Expected in Shelby County for Tennessee Measures:			**6.07**	**1.09**	**8.47**
Memphis-Shelby County:					
• Reduced Speed Limits	Yes	Yes	5.9	0.00	0.00
• CMAQ Projects (Modeled)	Yes	Yes	0.159	0.061	0.66
• Other CMAQ Projects (not modeled)	No	Yes	0.16	0.28	3.5
• Controlled-Burning Restrictions	Yes	Yes	0.30	7.17	13.14
• Stationary Sources	Yes/No[8]	Yes	60.11	1.48	2.48
• Stage I Inspection[7]	Yes	Yes	0.00	1.41	0.00
• Voluntary Measures	Yes/No[9]	Yes	.676	.449	.833
Total Reductions for Memphis-Shelby County Measures:			**67.305**	**10.85**	**20.613**
Crittenden County:					
• Stage I Vapor Recovery Equipment	Yes	Yes	0.00	0.49	0.00
• Truck Stop Electrification (44 Spaces)	Yes	Yes	0.04	0.00	0.28
• 20% Construction Equipment Replacement / Retrofit	Yes	Yes	0.11	0.01	0.05
• 1% VMT Reduction on Ozone Alert Days	Yes	Yes	0.02	0.03	0.35
Total Reductions for Crittenden County Measures:			**0.17**	**0.53**	**0.68**
Total Daily Emissions Reductions:			**73.545**	**12.47**	**29.763**

Although EPA found DeSoto County to be in attainment, Mississippi has acknowledged that the county exists in the context of a metropolitan area and has expressed a commitment to participate in regional efforts to address ozone issues. Letter of Charles Chisolm, Executive Director, Mississippi Department of Environmental Quality ("MDEQ"), to Administrator Mike Leavitt, dated May 18, 2004. Consistent with

[5] Efforts of both the State of Tennessee and the MSCHD regarding this measure are discussed in the section on Tennessee measures (subsection C). Reductions in the table, while unmodeled, will be realized by implementation of this program. Estimates were developed by the MSCHD using the MOBILE 6 model.

[6] Reductions designated as "Unquantified" or "UQ" have yet to be determined, but will be quantified, when possible, prior to a future inventory associated with the Control Measures Evaluation, discussed above.

[7] Subsection C.3 of the Memphis-Shelby County discussion outlines the existing Stage I program in Shelby County. Reductions from continued implementation of this program were modeled, but exact reduction estimates are unavailable at this time.

[8] See Table 5, below, for a break-down of which Stationary Source Emissions Reductions were modeled.

[9] For purposes of the EAC, and in accordance with EPA guidance, the maximum amount allowed for voluntary measures was modeled. These are the numbers included in Table 3. Additional voluntary measures for Memphis-Shelby County and their expected reductions, when known, are presented in the discussion below.

this commitment, discussions with the MDEQ have been initiated to explore its participation in efforts to address regional ozone issues.

With limited industrial activities and low population density, a significant contributor in Crittenden County's emissions inventory is the number of commercial truck stops built in the area at the convergence of I-40 and I-55. Arkansas has determined that electrification of these spaces may result in an estimated reduction per space of five pounds per day (0.9 tpy) of NOx and 0.034 pounds of VOC per day. The ADEQ supports the use of Congestion Mitigation and Air Quality ("CMAQ") funds for the development and implementation of a revolving loan program for truck stop electrification. Because distribution of the funds is the responsibility of the Arkansas Highway and Transportation Department ("AHTD"), which also supports cost-effective air quality control measures, discussions have begun with the AHTD to submit a proposal to the Arkansas Highway and Transportation Commission, which is the governing body over the AHTD, for appropriation of available CMAQ funds for electrification. *See* Exhibits 3 (Letter of Marcus Devine, ADEQ Director) and 4 (Letter of Dan Flowers, AHTD Director); *see also* Exhibit 5 (Letter of Eddie Brawley, Study Director, West Memphis Metropolitan Planning Organization ("MPO")). Arkansas would like to work with EPA to determine the feasibility and legality of a revolving loan fund whereby the CMAQ funds could be matched by both additional federal and private funds to provide a no-cost or low cost loan to the companies providing the electrification infrastructure. In this way, the funds could be leveraged in such a way to address all of the available truck stop spaces by 2006.

In Memphis, Shelby County has committed to begin an inventory of on-road and off-road diesel equipment. Following the conclusion of the inventory process, Shelby County would explore with EPA methods to create a revolving loan fund in Memphis and Shelby County, together with private sponsors who have already indicated their willingness to participate.

Additionally, it is anticipated that the nonattainment designation will result in further emission reductions not previously quantified in the EAC model which predicted growth of emissions tied to an economic growth factor. The new source review ("NSR") requirement of Best Available Control Technology ("BACT") for minor sources and Lowest Achievable Emission Rate ("LAER") with offsets for major source modifications and/or construction ensures that the emission growth projection will be greatly reduced; thereby providing additional emission reductions.

Tennessee

The State Air Board will meet on July 14-15, 2004. EPA Region IV and Headquarters staff will attend this meeting at the invitation of the State Air Board which is the rulemaking authority for air pollution control regulations in the State of Tennessee and proceeds independent of the Governor's Office. The State Air Board will consider

adopting state-level control measures to work in concert with the national measures underway to attain and maintain the 8-hour NAAQS. The proposed rules include:

- RACT rule for NOx;
- Expanded applicability of Stage I gasoline vapor emission control requirements;
- Emission inspections;
- Anti-tampering measures;
- Reduction of visible emissions of motor vehicles statewide;
- Reduction of unnecessary idling of motor vehicles statewide; and
- TN Public Chapter No. 926: inspection and maintenance.

Each of these proposed rules is briefly outlined below. For a more detailed discussion of the proposed rules, *see* Exhibit 6 (Draft Language for the RACT rule for NOx) and Exhibit 7 (Notice of Rulemaking, dated April 19, 2004).

Because a considerable number of comments have been received from the public and EPA regarding the proposed rulemaking, it is reasonable to conclude that the proposed rules may be modified in the final stages of rulemaking. Because the Board meeting where the rules will be finalized occurs on the same date that reclassification petitions are due to EPA, it will be necessary to file a supplement to this Petition soon after the July 15, 2004, Board meeting. Tennessee commits to file this supplement with EPA no later than July 20, 2004.

A. Reasonably Available Control Technology ("RACT") Rule for NOx

The State Air Board has proposed draft rule 1200-3-27-.08 to require sources with uncontrolled units capable of emitting 50 tons per year ("tpy") or more of NOx to meet specific emission limits or to perform a RACT analysis and to install new controls where that analysis indicates it is warranted. All new controls should be in place within 18 months of adoption. In west Tennessee, the counties affected by the proposed rule are Shelby, Tipton, Fayette, and Haywood. The MSCHD estimates that controls on sources in Shelby County affected by this rule could reduce NOx emissions in the county by 4.9 tons per day ("tpd"). *See* Table 4. These reductions were included in the EAC modeling. If the proposed state rule fails, the MSCHD will present a NOx RACT Rule to the County Commission for local adoption.

Table 4. Facilities Identified by the MSCHD Affected by New NOx RACT Rule and Associated Estimated Emission Reductions

Facility Name	Tons
Cargill - Unit #1	119
Unit #2	360
Unit #3	601
Buckeye	66.1
Dupont - Unit #1	170
Unit #2	151
Unit #3	62.7
Unit #4	284
Premcor	660
PCS Nitrogen - Unit #1	627
Unit #2	183
Crompton - Unit #1	109
Unit #2	105
Atofina	114
TOTAL TONS:	3611.8
50% NOx Reductions	1805.9 Tons Per Year or
Reductions:	**4.9Tons Per Day**

B. Expanded Stage I Gasoline Vapor Emission Control Requirements

Although Shelby County currently has a Stage I vapor emission control regulation, the proposed regulatory package to be considered by the State Air Board includes a provision for the expanded application of Stage I to additional counties in Tennessee. The MSCHD estimates that adoption of Stage I in Tennessee counties surrounding Shelby County will result in a reduction of approximately 0.5 tpd VOCs while Stage I in Crittenden County will add a reduction of another .5 tpd. Local officials will attend the State Air Board meeting in July 2004 to express their support for expansion of the Stage I rule.

C. Vehicle Emissions Inspections

Under the proposed rulemaking, the State Air Board would require gasoline and diesel vehicles 1975 and newer with gross weight ratings of 14,000 pounds or less to pass emission inspections as a precondition to vehicle registration renewal. The City of Memphis already operates a tail pipe idle test inspection and maintenance program ("I/M") that subjects over 400,000 vehicles in Shelby County to annual tailpipe testing. This represents a little over fifty-percent (50%) of the total vehicles in Shelby County. However, it is proposed in the new State Air Board rules that the Board could impose the

more advanced OBD-II vehicle testing in the existing program and expand it to other areas of Shelby County. The OBD-II test allows an examination of the vehicle's performance in all modes of operation by comparing its performance parameters to those established when the vehicle is undergoing its Federal Test Procedure certification. Even if the State Air Board fails to pass this measure, the City of Memphis will install OBD-II testing capabilities at its inspection stations in 2005. Analysis using the MOBILE 6 model shows this will result in reductions of 0.59 tpd VOCs, 8.47 tpd CO, and 1.17 tpd NOx.

D. Anti-Tampering

The Tennessee General Assembly amended the Tennessee Code on June 8, 2004, to make it unlawful to tamper with or disable a vehicle's emission control system. *See* Exhibit 8 (TN Public Ch. No. 926). This legislation essentially mirrors that of the federal anti-tampering statute, but the practical effect of this equals local inspection and enforcement authority that will make the federal anti-tampering measures enormously more effective. The State Air Board will consider a rule that articulates the statute in a form that will make increased inspections and enforcement possible at the administrative law level.

E. Anti-Idling

The State Air Board has opened a public comment period on proposed new Chapter 1200-3-37 Mobile Source Prohibitions imposing limits on excessive idling of mobile source engines. Coupled with federal grants, state grants funded through Supplemental Environmental Projects and private sector matching funds, there are significant potential reductions in NOx possible. Emissions reductions, in tons per day, resulting from the adoption of this rule are estimated to be: 0.07 NOx, 0.01 VOCs, and 0.07 CO. A smoking vehicle program is also anticipated in the July 15, 2004, rulemaking that will provide for the identification of gross polluting vehicles independent of an I/M program.

F. TN Public Ch. No. 926: Inspection and Maintenance

The Tennessee Code Annotated provisions governing provisions I/M found at T.C.A. § 55-4-100 *et seq.* was amended on June 8, 2004, to authorize the State Air Board to designate areas that need I/M to attain or maintain the NAAQS. Alternatively, through the legislation, the Shelby County Commission could pass a resolution establishing I/M. *See* Exhibit 8 (TN Public Ch. No. 926).

Memphis-Shelby County

Memphis-Shelby County pledges to undertake the below-listed measures, in addition to the OBD II emissions testing discussed above, which are quantifiable and enforceable. Further reductions will be achieved through stationary source emission reductions and numerous other miscellaneous (voluntary) programs and measures. Table 1, above, summarizes the measures generally including the estimated emission reduction claimed for each and whether the measure was previously modeled. All measures will be included in a future emissions inventory. All strategies discussed herein have either been implemented by local entities or will be implemented by May 1, 2005, if feasible, and not later than May 1, 2005, at the very latest.

A. Quantifiable Emission Reductions

During the EAC process, five quantifiable and enforceable measures were adopted into the Air Quality Improvement Plan ("AQIP") for inclusion in the future year modeling exercise. Officials from the local governing bodies of the City of Memphis, the Shelby County Government, and the MSCHD have agreed to continue support for these five measures, plus OBD II emissions testing; all of which will be implemented in an effort to reduce monitored ozone levels. These measures are:

- NOx RACT Rule (*see* discussion above);
- Idling Limits on Diesel Engines (*see* discussion above);
- Reduced Speed Limits;
- CMAQ Projects;
- Controlled-Burning Restrictions; and
- OBD II Emissions Testing (*see* discussion above).

1. Reduced Speed Limits: The Shelby County Commission adopted a Resolution on March 22, 2004, that, in part, supported a posted and enforced 55 MPH speed limit for trucks during ozone season in all Tennessee EAC areas. A signed copy of the Resolution, attached as Exhibit 9 has been forwarded to the Commissioners of TDEC and Tennessee Department of Transportation ("TDOT"). During the EAC process, this measure was identified as one of the most effective strategies to reduce NOx emissions. As the most recent Tennessee Speed Monitoring Quarterly and Annual Report makes clear, posting reduced speed limits decreases the average speed driven. *See* Exhibit 10 (Report). Speed limits may be reduced for all vehicles but estimated reductions are based on reduced truck speeds alone. Expected NOx emission reductions from this measure in Shelby County are 5.9 tpd. These estimates were based on a 10 mile per hour reduction

in heavy duty diesel truck speeds in areas in Shelby County posted at 65 mph or over. In addition to the support of the Shelby County Mayor's Office and the County Commission, all suburban County Mayors endorsed this measure and are expected to continue supporting it. TDOT has informed Shelby County that members of the local MPO Executive Board must send a resolution requesting speed limit changes. Mayor Wharton is the Chairman of that Board and expects to have a concurrence on such a resolution.

2. CMAQ Projects and Other Transportation Measures: This item includes various approved local transportation improvement projects funded with CMAQ funds, as well as other transportation strategies in the Long Range Transportation Plan. The modeled reductions from the CMAQ projects are, in tons per day: 0.16 NOx, 0.06 VOCs, and 0.66 CO. Further review of the CMAQ projects listed in the AQIP reveals additional expected reductions, not modeled, to be 0.16 tpd NOx, 0.28 tpd VOCs, and 3.5 tpd CO. *See* Exhibit 11 (Shelby County - AQIP), pages 4 -8, for further information on these measures.

3. Controlled Burning Restrictions: Controlled burning is only allowed in Shelby County for the purpose of land clearing and special circumstances, such as after the windstorm of 2003. Permits are issued for 30 days that require the use of an air curtain destructor and specific siting criteria. Under the MSCHD's authority, beginning in 2003, a condition was added to all permits requiring operators to check the ozone forecast during ozone season before beginning the day's operation. In 2003, the MSCHD declared a 'No Burn' day when forecasted ozone was expected to exceed 84 ppb. In 2004, it will do so when forecasted 8-hr ozone levels are above 80 ppm. The MSCHD staff then visits each permitted site to verify compliance. Emissions from this activity are dependant on the amount of land clearing for development. Based on three years of permit information, the MSCHD expects the average ton per day emission reductions for 'No Burn' days to equal 0.3 of NOx, 7.17 VOCs, and 13.14 CO. *See* Exhibits 12 (Section 3-16 of the Shelby County Air Code and Section 16-50 of the Memphis City Air Code) and 13 (Shelby County Controlled-Burning Regulation). Arlington, one of the fast-growing municipalities in rural Shelby County, recently passed a ban on any open burning in its annex reserve area. This will reduce the number of permits issued by the MSCHD throughout the year.

B. Stationary Sources

The MSCHD has access to detailed information regarding the operation of all stationary sources of air pollution in Shelby County. Below is a discussion of current or expected changes in operation of some of these sources which effect emissions of ozone precursors. Some of these changes were discussed in the AQIP, but not all of them were included in the model for various reasons including the fact that they may not have been considered 'permanent and enforceable' at the time of the AQIP's development.

Table 5, below, contains a summary of the reductions which are quantifiable that the MSCHD expects to be realized as a result of both enforceable/regulatory reductions and adjustments which will be made to the inventory as a result of operational changes or practices at the facilities. These inventory adjustments will result in a more accurate inventory for future year model runs.

Table 5. Memphis-Shelby County Stationary Source Reductions.

Emission Reduction Strategy	Modeled	Future Inventory	Emission Reductions (tpd)		
			NOx	VOC	CO
Allen Plant - SCR	Yes	Yes	57.5	0.00	0.00
Allen Plant – POTW gases	No	Yes	UQ	UQ	UQ
Solae, LLC	No	Yes	0.163	0.005	1.40
American Yeast	No	Yes	0.062	0.007	0.059
Cargill, Inc.	Yes	Yes	UQ	0.244	UQ
PCS Nitrogen[10]	No	Yes	2.23	0.169	1.027
Lucite, Fite Road	No	Yes	0.00	0.233	0.00
Premcor	No	Yes	UQ	UQ	UQ
KTG	Yes	Yes	0.156	0.822	0.00
Total Quantified Emission Reductions for Stationary Sources:			**60.11**	**1.48**	**2.48**

1. TVA Allen Steam Plant: Starting with ozone season, 2003, the Allen Plant began using Selective Catalytic Reduction ("SCR") on its three coal-fired boilers which reduced emissions from 67.5 tpd to 10 tpd for a reduction of 57.5 tpd from May through September. During permit negotiations, the Allen Plant has agreed to permit conditions requiring the operation of SCR any time during the months of April or October that the MSCHD forecasts ozone levels above 74 ppm for the next day. Though rare, the area has experienced elevated ozone levels during these months in the past.

The Allen Plant recently completed upgrades to a system which receives POTW gases for combustion in its boilers. These gases include methane and other organic compounds, which would normally be released directly to the atmosphere or burned in the POTW flare, generating significant amounts of NOx and CO. These reductions have not been quantified and are not enforceable so they were not included in the EAC model.

[10] PCS Nitrogen emissions (not reductions) were included in the 2002 Emissions Inventory and were modeled. However, this plant has shut down and reductions of the emissions will be included in a future inventory.

2. Solae, LLC: The MSCHD recently completed permitting of a project involving Solae, LLC and BFI where Solae will accept significant amounts of landfill gas from BFI for combustion in its boilers. This fuel switch could result in actual local emission reductions of 59.4 tpy of NOx, 1.84 tpy of VOCs, and 511 tpy of CO. The reductions were not included in the EAC model because operation of this system is not an enforceable permit requirement.

3. American Yeast: This company recently built a new facility in Shelby County. Under an agreement with the City of Memphis, the company's boilers were permitted to burn POTW gases as an alternate fuel which would result in the diversion of those gases from direct emission or routing to the POTW flare. Use in the boilers of these gases could result in reductions of 22.8 tpy of NOx, 21.4 tpy of CO, and 2.4 tpy of VOCs compared to flaring. To date, this system has not been made operational due to problems with the operation of the North Treatment Plant. Since this is not an enforceable permit condition, no reductions were included in the EAC model.

4. Cargill, Inc.: Cargill is currently involved in global settlement negotiations with EPA involving unpermitted VOC emissions from nine facilities around the country including one operated on President's Island in Shelby County. During the EAC process, and in anticipation of that settlement, Cargill agreed to a permit condition to reduce 89 tpy of VOCs from the unpermitted emission points. This reduction was included in the EAC model. With the failure of the EAC, the permit will not be modified, but the negotiations continue. The timing and amount of reductions will be determined by the results of those negotiations. Those reductions will likely be at least 89 tons per year and could be in excess of 600 tons per year.

5. PCS Nitrogen: Effective June 4, 2003, PCS Nitrogen, Inc. shut down its operations, pending a reduction in natural gas prices. At this time, prices have not dropped to levels at which the plant could profitably operate and are not expected to drop to such levels for the foreseeable future. Included in the 2002 Emissions Inventory for use in the EAC model are 813.76 tpy [2.23 tpd] of NOx, 374.82 tpy [1.03 tpd] of CO, and 61.79 tpy [0.17 tpd] of VOCs. Even though these emissions will very likely not be emitted in the 2004-2007 timeframe, they were not removed from the model because the reduction is not enforceable.

6. Lucite, Fite Road: As a result of questions raised during an inspection in late 2002, the company made modifications to the operation of a bypass valve to a flare used to destroy VOC emissions. These modifications have resulted in reduced emissions of VOCs from the operation of this valve. An evaluation of the actual reductions is continuing, but it is estimated by the company to be as much as 85 tpy. This reduction will likely be made enforceable in the future, but could not be used in the EAC model.

7. Premcor: In preparation of the sale of the refinery to Premcor, Williams (the previous owner) identified that the facility was not meeting the requirements of the Benzene NESHAP rule. Premcor has indicated that evaluation and design of control equipment is continuing. There is no estimated date of installation of the controls and reductions of fugitive emissions have not been quantified. These controls will likely be installed by 2007, but reductions from the project were not included in the EAC model.

8. KTG: This company recently acquired the old Kimberly Clark plant located on N. Second Street in Memphis. During a review of the previous owner's permits, KTG identified several operational changes they expected to make and have since been repermitted as a synthetic minor source. Changes from previous permits include reductions of 57 tpy of NOx and 300 tpy of VOCs. Due to multiple ownership changes and varying levels of operation, the inventory numbers used in the EAC model for this source are very small; therefore, additional credit for this permitting modification could not be used in the model.

C. Miscellaneous (Voluntary) Measures

Given that the EAC model included the maximum allowed reduction for voluntary (miscellaneous) measures per EPA guidance, no specific measure's emission reduction was modeled. To the extent reductions for each measure can be quantified, they will be included in a future inventory.

1. Development of Revolving Loan Program for Diesel Retrofit: Shelby County is working on the establishment of a program to encourage and assist local and state agencies and private companies to upgrade or retrofit diesel engines that do not meet 2007 federal engine standards. Although, new federal standards for diesel fuel and diesel engines will have a significant role in reducing emissions from new on-road diesel engines, these new standards will not have an impact on existing heavy-duty diesel engines. This program should especially target school buses, mass transit buses, heavy-duty diesel engines in state fleets (on- and off-road), and heavy-duty diesel engines in local government fleets (on- and off-road). In addition to partnering with private industry for development of a revolving loan fund for this purpose, Shelby County will continue to look for other funding opportunities, such as grant programs.

2. Memphis Light Gas & Water Energy Efficiency Initiatives: MLG&W is the largest three-utility public utility in the country. Over the years they have been involved in many energy saving projects for residential, commercial and industrial customers. More recently, many of their service trucks have been converted to use compressed natural gas. They have begun a voluntary five-year program for energy efficient construction techniques called EcoBuild for new residential buildings to be constructed in the years 2003-2007. Projected emission reductions from this initiative by

2007 are 10.2 tpy of NOx. Finally, the company is actively researching emission reduction strategies to apply to heavy construction and maintenance equipment.

3. Stage I Vapor Recovery: All gasoline stations in Shelby County installed Stage I Vapor Recovery in the mid-1990s. The Pollution Control Section of the MSCHD conducted annual inspections 1995-1997 to confirm installation. To ensure continued compliance with this important control measure, each station will be inspected between April 2004 and April 2005. The MSCHD will keep records on any compliance problems identified. As noted above, the proposed regulatory package to be considered by the State Air Board in mid-July 2004 includes provisions for the expanded application of Stage I to additional counties in Tennessee. The MSCHD estimates that adoption of Stage I in the Tennessee counties of Fayette and Tipton and Crittenden County will result in a reduction of approximately .99 tpd VOCs.

4. Early Tier II Gasoline: The local refinery owned by Premcor produces over seventy-percent (70%) of the motor vehicle fuel marketed in this area. Beginning in May of this year, all gasoline produced at the refinery meets final federal Tier II standards for low-sulfur gasoline. This is almost two years ahead of the company's original schedule. In 2003, the company committed to shift plans for their next Tier II project from another refinery to the Memphis refinery in support of the EAC. The MSCHD has been unable to quantify emission reductions from this early introduction, but it is considered significant.

5. Low and Super Ultra Low Emission Vehicles ("LEVs" and "SULEVs"): The MSCHD is working with the Shelby County and City of Memphis Governments to create a preference for vehicle purchases of LEVs and SULEVs as local government fleet vehicles reach the end of their useful lives.

6. Ozone Forecasting: The MSCHD has a meteorologist on staff that prepares daily ozone and particulate matter (fine) forecasts. These forecasts are sent out to all local news outlets and are reported in the local daily newspaper. When alert levels are predicted, the National Weather Service and all local weather reports include that information in their forecasts. The alerts inform people what they can do to minimize their exposure as well as steps to take to reduce ozone formation. The MSCHD is in the process of expanding this outreach effort and is close to agreements with Arkansas and Mississippi to begin a regional ozone alert program. *See* Section D, below, under the Crittenden County discussion for more detail regarding strategies being considered for an ozone alert program.

7. Shelby County Smart Growth Initiative: Zoning and development policies, which have led to ever-increasing vehicle miles of travel ("VMT") in Shelby County, have also burdened local governments with unexpected costs. In an effort to reduce these trends, in 2003, the Shelby County Mayor introduced his Smart Growth

Initiative. This initiative does not seek to restrict growth, but rather to address the policies that lead to sprawl and increasing dependence on the automobile. Two of the main goals of the initiative are to promote the development of more livable communities and to encourage restoration and redevelopment of existing, underused facilities. Dramatic improvements have already been realized in and around downtown Memphis. The initiative will help to expand such redevelopment activities in all areas of Shelby County.[11]

8. Memphis International Airport Emission Reductions: Although the related emissions were not quantified in the EAC modeling, it is reasonably expected that the Memphis International Airport will reduce its emissions through several on-going programs. To the extent these measures can be quantified, they will be included in a future inventory.

- Electrification at Gates: Since the mid-1980s, the airport has provided gate electrification at most gates which eliminates the use of auxiliary power units by planes. Since this system already exists, there are no new emissions reductions to include in the computer modeling for the MSA.

- FedEx Conveyor System at Gates: FedEx continues to minimize the use of tugs in transferring cargo through the use of automated conveyor systems.

- Hybrid Fueling: Instead of using fuel tenders (large trucks), most gates are serviced by an underground fuel line which only requires a small transfer vehicle to pump fuel from the line to the planes. Since this system already exists, there are no new emissions reductions to include in the computer modeling for the Memphis MSA.

- New Underground Fuel Pipeline for FedEx: A second, dedicated pipeline has recently been installed to deliver jet fuel to the airport. This will eliminate truck deliveries of fuel and the associated transportation related emissions.

- Automated Vehicle Identification System: The Airport Authority spent $1 million to construct this system in 2003. It is designed to measure "dwell time" (idling time) at the curb by shuttles and taxis. After the shakedown period, a baseline will be developed. Thereafter, financial incentives will be offered for *reduced* idling time. A recordkeeping system will enable quantification of emission

[11] A copy of the initiative, which was included as an attachment to the AQIP, can be supplied upon request.

reductions at that point, but related emissions reductions were not yet quantified in the EAC modeling.

- Planned Consolidated Ground Transport Facility: A parcel of land already owned by the Airport Authority has been dedicated for this use. The project is on hold due to reduced passenger use of the airport. Construction of the facility is estimated at $50 million. All rental car agencies would be relocated to this parcel. Rental car agencies would contract with the Airport Authority and pay a fee. The project is designed to eliminate eighty-percent (80%) of the shuttles from rental car agencies. Quantification should be available if this facility is constructed between 2005 - 2007.

9. Clean Air Coalition: Recognizing the complex nature of the factors affecting air quality in the area, the Shelby County Mayor has convened a Clean Air Coalition to address those factors. The coalition is made up of a broad range of government, health, industrial, environmental and community representatives. Though the immediate concern of the coalition is with the area's nonattainment status, the Mayor expects it to become a permanent body serving as a clearinghouse and mechanism for community engagement. The Coalition will identify and implement activities that will lead to an improved environment to protect the health and welfare of the citizens of Shelby County.

Arkansas/Crittenden County

In cooperation with the Memphis-Shelby County governments, the State of Arkansas and Crittenden County local officials support the efforts to achieve attainment by 2007. The ADEQ, in conjunction with the county, propose the following control measures which will have the greatest impact on air quality considering Crittenden County's small emissions inventory[12]:

- Stage I Vapor Recovery;
- Truck Stop Electrification / Revolving Loan Program;
- Replacement or Retro-fitting of Construction Equipment; and
- VMT Reduction on Ozone Alert Days.

[12] Although an open burning ban, lower RVP gas, and an anti-idling regulation were included as measures being considered by Crittenden County in the EAC modeling, they are no longer being actively pursued as emission reductions, because reductions modeled for these three measures on the total emissions of the MONAA were deemed negligible.

A summary of the emission reductions estimated for these measures is presented in Table 6, below. The following estimated emission reductions are based on calculations provided by Dr. Terry Miller of the University of Tennessee.

Table 6. Estimated Emission Reductions from Measures Proposed for Crittenden County, AR

Emission Reduction Strategy / Source Category		Modeled?	Emission Reductions (tons per day)		
			NOx	VOC	CO
Stage I Vapor Recovery	Area	Yes	0.00	0.49	0.00
Truck Stop Electrification (44 Spaces)	Area	Yes	0.04	0.00	0.28
20% Replacement / Retrofit of Construction Equipment	Nonroad Mobile	Yes	0.11	0.01	0.05
1% VMT Reduction on Ozone Alert Days	Area / Mobile	Yes	0.02	0.03	0.35
Total Daily Emissions Reductions:			**0.17**	**0.53**	**0.68**

A. Stage I Vapor Recovery Equipment Installation

Installation of Stage I vapor recovery equipment will be required at all retail fuel facilities in Crittenden County. This measure is expected to reduce VOC emissions by 0.49 tpd. The costs associated with installation of the Stage I vapor recovery equipment vary depending upon the specific type of equipment installed and the specific design of the existing fuel system. Generally speaking, costs to retrofit an existing underground storage tank system consisting of three or four tanks would likely range from $1,000 to $5,000.

Small businesses (fewer than 100 employees) which meet certain financial requirements may be eligible for low interest loans through the Small Business Loan program administered by the ADEQ. The loans are made available to small businesses and farms to implement pollution control measures required by state or federal law, or to institute pollution prevention measures that reduce pollution.

Development of the regulations for implementation of Stage I vapor recovery equipment by the Arkansas Pollution Control & Ecology Commission is to commence in September 2004. Installation of the Stage I vapor recovery equipment will begin in February 2005, with completion by August 2005.

B. Truck Stop Electrification / Revolving Loan Program

A significant NOx source in Crittenden County's emissions inventory is the number of commercial truck stops built in the area to take advantage of the conjunction of I-40 and I-55. These facilities are located near the Marion monitor. Arkansas has determined that electrification of these spaces is one of the most cost effective NOx reduction efforts, with an estimated reduction per space of five pounds per day (.9 tpy) of NOx and 0.034 pounds of VOC per day. The service provides heat and air conditioning and other services to trucks parked in designated spaces. Having access to these units enables truck drivers to remain parked comfortably during rest periods without allowing their diesel engines to idle.

The ADEQ estimates that there are 1050 truck stop spaces in Crittenden County. Forty-four (44) electrified spaces are currently available in West Memphis, Crittenden County, AR. The ADEQ pledges to develop a program by June 2005 to begin the process of electrification. The ADEQ submitted an application for a grant of $200,000 from EPA, which has an award date of September 1, 2004. It is anticipated that this grant could develop at least 12 new spaces. Additional funding sources include appropriating a Department of Energy grant and the use of CMAQ funds. The ADEQ has a goal adding 200 additional spaces over the next two years (256 total).

Arkansas would like to work with EPA to determine the feasibility and legality of the revolving loan fund whereby the CMAQ funds could be matched by both additional federal and private funds to provide a no-cost or low cost loan or grant to the companies providing the electrification infrastructure. In this way, the funds could be leveraged in such a way to address all of the available truck stop spaces by 2006. As discussed briefly, above, in Section III, the AHTD, the ADEQ and the West Memphis MPO support the use of CMAQ funds to begin the electrification process by way of a loan fund. *See* Exhibits 3 (Letter of Dan Flowers, AHTD Director), 4 (Letter of Marcus Devine, ADEQ Director), and 5 (Letter of Eddie Brawley, Study Director, West Memphis MPO).

C. Replacement or Retro-fitting of Construction Equipment

It is expected that twenty-percent (20%) of the operating construction equipment fleet in Crittenden County will be replaced or retro-fitted with emission-reducing components by 2007. This twenty-percent (20%) turnover by 2007 is beginning immediately and will be accomplished by periodic replacement or retro-fitting of county- and city-owned construction equipment and through amended contract language to encourage county and city contractors to use upgraded equipment. The amendment of the contract language will be instituted at the local level. Low interest loans through the ADEQ Small Business Loan Program may be available for these activities.

Tracking of the upgrade process for publicly-owned equipment and county and city contractors will be accomplished through direct communication by the ADEQ with county and city government agencies. Upgrades of privately-owned equipment may also be estimated based upon periodic surveys of private contracting companies by the ADEQ.

The predicted twenty-percent (20%) replacement/retro-fit of existing equipment within Crittenden County will result reductions of 0.11 tpd in NOx, 0.01 tpd in VOCs, and 0.05 tpd in CO.

D. VMT Reduction on Ozone Alert Days

In cooperation with the ADEQ and the MSCHD, Crittenden County will establish a committee to implement an Ozone Alert Days program by January 1, 2005. The Committee will suggest public involvement strategies and funding by start of ozone season, May 1, 2005.

Ozone action days are announced when ozone levels are predicted to exceed the 8-hour ozone standard. The action days may be ozone advisories, ozone alerts, or ozone health alerts, depending upon the severity of the predicted exceedance. The ozone forecasts will be provided by the MSCHD. When the forecasted ozone levels exceed the 8-hour standard, the West Memphis MPO will notify the appropriate state, county, and local officials, other MPOs, and the media by phone, email, or fax. The information will then be broadcast to the public through appropriate media outlets.

The public is asked to undertake voluntary measures on ozone action days to reduce emissions of ozone precursor pollutants. Specific measures which may be implemented include:

- Using public transportation;
- Joining a car pool or van pool;
- Walking or biking, if possible;
- Postponing and/or consolidating errands;
- Reducing travel as much as possible during peak rush hours;
- Scheduling meetings and appointments as late in the day as possible;
- Avoiding driving at lunch time; and
- Taking advantage of alternative work arrangements, such as telecommuting, flex-time, four day work-weeks, or staggered work hours.

The expected one-percent (1%) reduction in VMT on ozone alert days would result in reductions of 0.02 tpd in NOx, 0.03 tpd in VOCs, and 0.35 tpd in CO emissions.

In a qualitative sense, these proposed measures should move all of the MONAA toward attainment. This suite of measures, which will work in concert with national measures, should be accepted by EPA as ample evidence that the MONAA will meet the 8-hour ozone standard by the Subpart 2 marginal nonattainment area attainment deadline of June 2007.

IV. EMISSION AND AIR QUALITY TRENDS ANALYSIS

Consistent with EPA's document "The Ozone Report- Measuring Progress through 2003", emissions of VOC and NOx in the MONAA reflect a downward trend of these pollutants which are precursors to the formation of ozone. As shown in Table 7, below, NOx and VOC emissions from stationary sources have declined significantly since 1993. It should be noted that these emission reduction trends represent the stationary sources in Shelby County only. The stationary sources contributions from Arkansas are insignificant. If the VOC and NOx emission associated with the mobile sector were added (refer to EPA Trends Reports), these emission trends would be even more significant.

Table 7. VOC and NOx Emission Trends.

Stationary source emission trends in Shelby County (tpy)		
YEAR	**NOx**	**VOC**
1993	49247	7891
1994	53233	8034
1995	41984	7800
1996	33748	7506
1997	34553	7151
1998	35639	6318
1999	22323	6212
2000	23279	5807
2001	23207	5507
2002	19475	5557
2003	15897	5673

Figure 2. 1993 – 2003 VOC Emission Trend

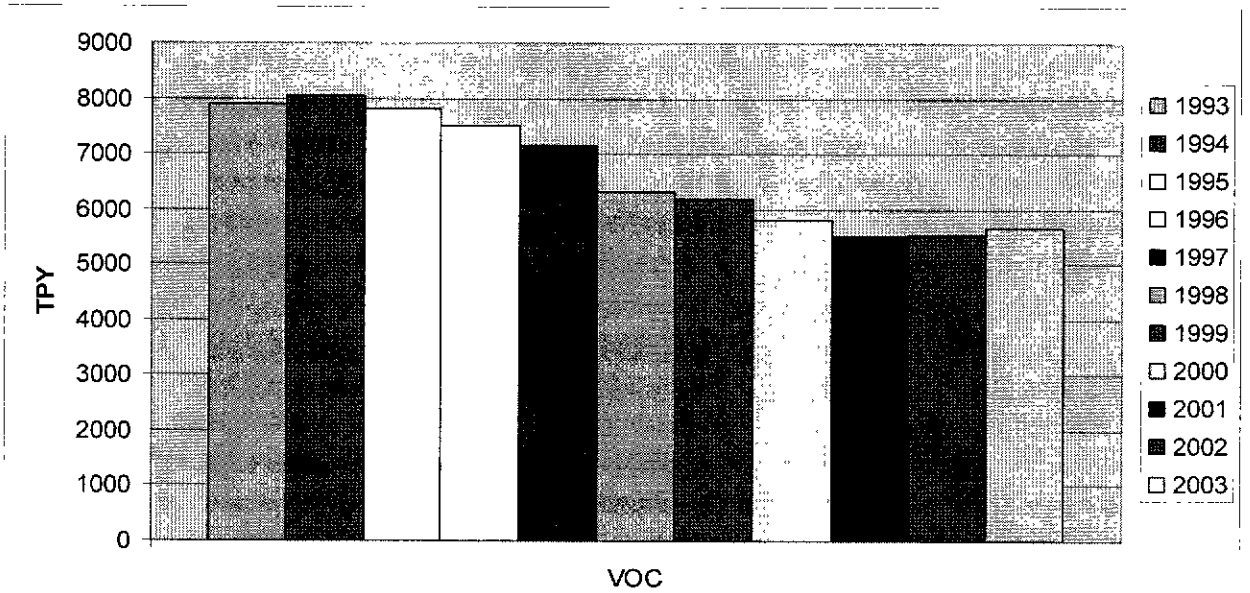
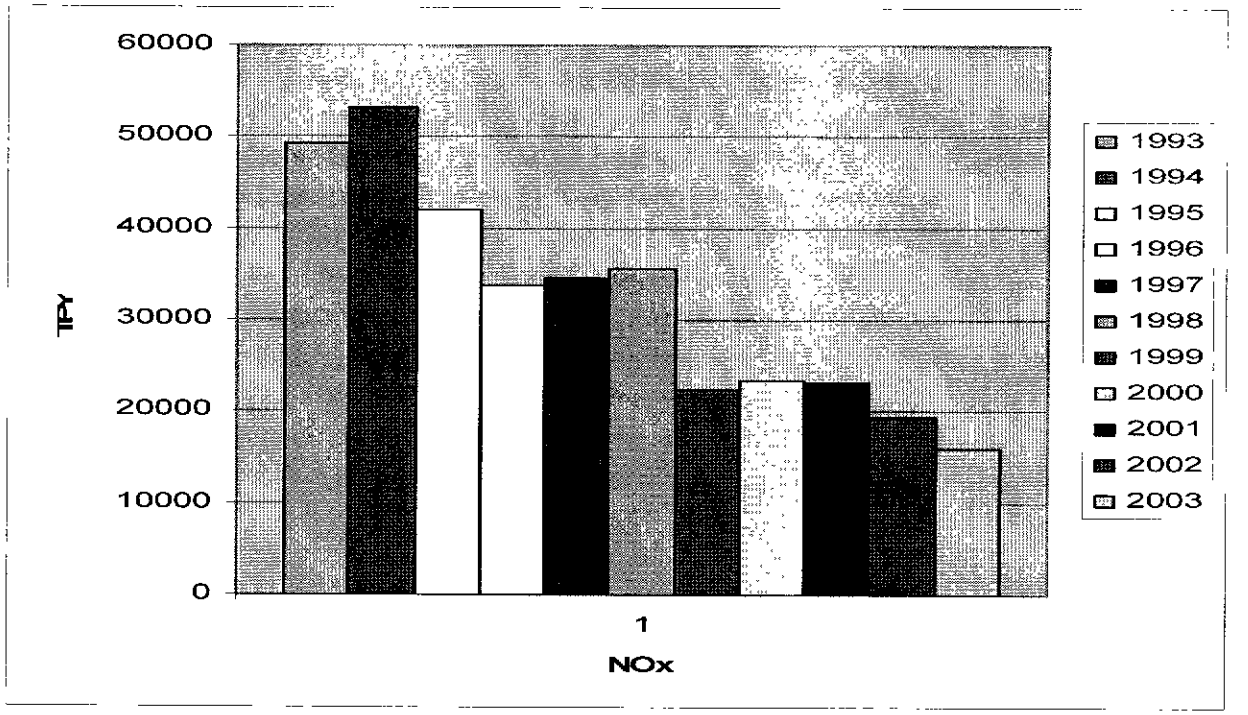


Figure 3. 1993 – 2003 NOx Emission Trend



In addition, consistent with EPA's ozone report, with the exception of the Marion county monitor, ozone DVs in the area have also decreased. As one can see from Table 8, below, the ozone values at three of the four monitoring sites have decreased over the period 1999 to 2003.

Table 8. Annual DVs for the Memphis MSA.

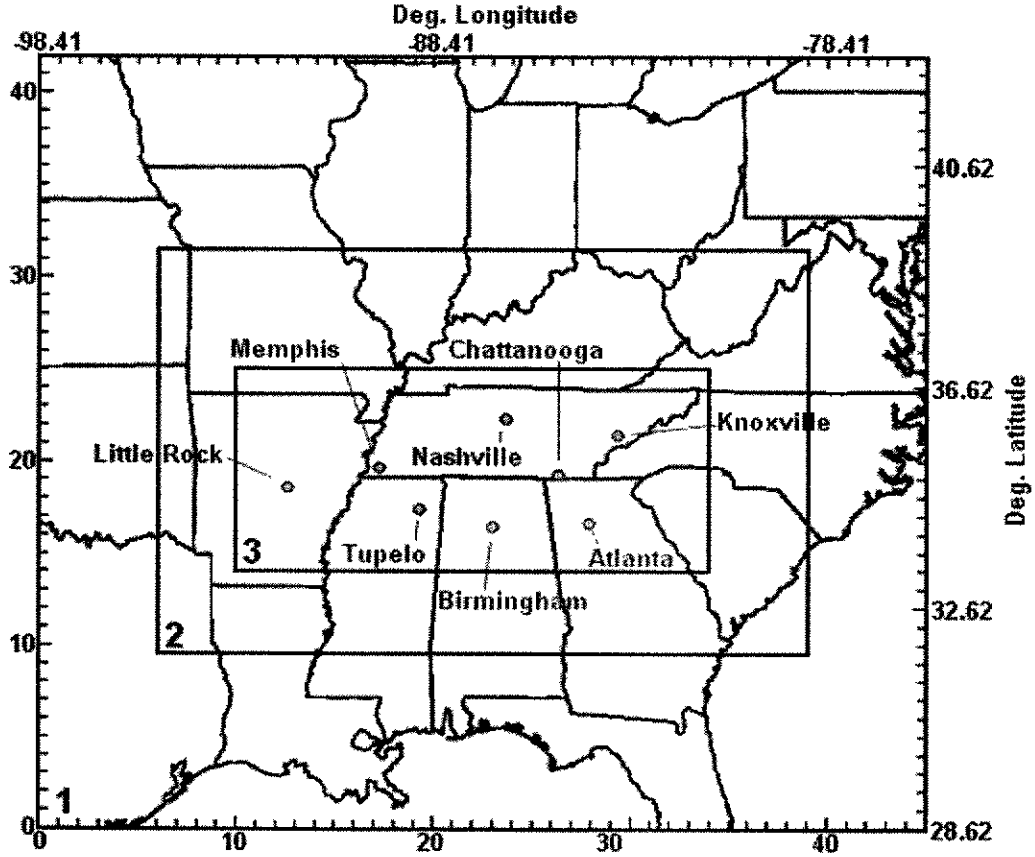
MONITOR	1999	2000	2001	2002	2003
Frayser	0.095	0.096	0.093	0.087	0.084
Edmund	0.095	0.097	0.093	0.090	0.089
Marion	0.090	0.090	0.093	0.094	0.092
DeSoto	0.088	0.091	0.087	0.086	0.081

These data further demonstrate that the overall reductions of VOC and NOx in the area have had a positive impact on reducing ozone levels of ozone in the area. The data also show that the Marion county monitor has demonstrated a trend inconsistent with the other monitors in the MONAA and has not been influenced in the same manner by the overall reductions of VOC and NOx. This data further supports the need to do an analysis of the specific emission source or sources affecting the readings at this monitor location and implementing a specific control strategy designed to address the emissions impacting this site.

V. SUMMARY OF MODELING FINDINGS and ANALYSIS

Regional ATMOS EAC Modeling Study. This Petition provides refinements and additional analyses that build on the previous ATMOS EAC modeling study. The ATMOS EAC modeling domain was designed to represent emissions, meteorological fields, and ozone (and precursor) concentrations over a broad regional area including all or parts of five states. *See* Figure 4. The ATMOS simulation periods were designed to optimize representation of typical conditions for the entire region, not for a particular nonattainment area or a particular monitor. Of the four monitoring sites in the Memphis area (Figure 2), only the Marion monitor in Crittenden County, AR failed to show a result of 84 ppb or less in the unadjusted ATMOS modeled attainment test (using the 2000-2002 DV period). The raw observation-based DV from the regional-scale ATMOS modeling for this site is 92 ppb for the 2001-2003 DV period, with a corresponding EDV of 86 ppb. Consequently, the unadjusted attainment test for the Marion monitoring site (and, thus, the MONAA) resulted in an area-wide EDV of 86 ppb in the ATMOS study.

Figure 4. Modeling Domain for the ATMOS Study



Refinement of the ATMOS Model for the MONAA Demonstrates Attainment in 2007. In this exercise, results from the ATMOS regional-scale modeling regime were weighted according to the frequency of occurrence of meteorological conditions for the Marion monitor to provide a more accurate representation of the MONAA conditions and a more reliable prediction of future EDVs. Furthermore, additional analyses indicate that meteorological conditions were atypical during the 2001-2003 DV period, particularly in 2002, reducing the predictive capability of the observation-based DV. Adjusting that value to account for the frequency of occurrence of types of meteorological conditions and their associated ozone concentrations resulted in a met-adjusted DV for 2001-2003 of 90 ppb, compared to the unadjusted DV of 92 ppb. Photochemical modeling results demonstrate that under typical (expected) future meteorological conditions, *the Marion monitor will reach attainment (84 ppb) by 2007*. A more detailed technical analysis is attached as Exhibit 1. Exhibit 2 contains an electronic copy (CD-ROM) of the EAC Modeling Analysis for the State of Tennessee and Adjacent Areas in Arkansas and Mississippi, which previously was submitted to EPA in March, 2004, as part of the EAC process.

Effects of Episode Selection. Several analyses, designed to examine the effects of episode selection and meteorological representativeness on the outcome of the attainment

test, were conducted. Consistent with EPA guidance, these complementary analyses were used to examine underlying assumptions and to help guide application of the air quality model. EPA Model Guidance, page 92.[13] These analyses indicated that the regional-scale episode selection and representativeness were not specifically tailored to conditions in the MONAA or the Marion site in particular. In all cases, a lower EDV for 2007 is indicated when actual local conditions are taken into account. This consistent result, despite a variety of approaches, corroborates the conclusion of attainment for 2007.

Weighting Modeling Days to Represent the MONAA Conditions. The reliable application of the modeled attainment test requires that the simulation periods and, thus, the modeling results, represent the type and range of meteorological and ozone air quality conditions that accompany ozone episodes and result in the determination of the DV. The overall set of the ATMOS modeling days was selected to represent multiple areas within a regional-scale modeling domain, and thus contain some representative days for the Marion site but not necessarily with a frequency that is consistent with typical conditions for Marion. When the results are weighted according to the frequency of occurrence of meteorological conditions for the Marion site, the EDV is lowered by one ppb.

Model Reliability and Diagnostic Analyses. The reliability and predictive capability of the model were tested in several ways. These complementary diagnostic analyses provide guidance for adjustments to improve the quality of model predictions when applied to the MONAA. The outcome of the modeled attainment test depends quite heavily on the observation-based DV that is used in the calculation (and thus the DV period from which it is selected). Year-to-year variations in the DV for the Marion monitor suggest that the somewhat arbitrary selection of a current-year of 2001, which required the use of the 2000-2002 DV in the ATMOS modeled attainment test calculations,[14] may have provided a worst-case outcome for the Marion monitor.

The representativeness of the DV period was investigated by comparing to other 3-year periods for which data were available. An analysis of the days considered in the calculation of the DV for the Marion site for four three-year periods including 1998-2000, 1999-2001, 2000-2002, and 2001-2003 suggests that the conditions associated with the 12 exceedance days representing the 2000-2002 DV period are atypical compared to a longer analysis period (1996-2002). The three-year period that best describes the long-term type and range of typical high ozone conditions is the 1998-2000 period for which the DV is 90 ppb. Use of the more representative 1998-2000 DV in the modeled attainment test results in an EDV for 2007 of 84 ppb.

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[13] EPA Office of Air Quality Planning and Standards, *Draft Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS*, EPA-454/R-99-004 (May 1999) (hereafter referred to as "EPA Model Guidance").

[14] The current design period available for the ATMOS EAC model, as required for attainment demonstrations, was 2000-2002. *See* EPA Model Guidance, page 35.

Relationship Between Modeled Days and Design Value Days. The investigators also used information about the meteorology of the ATMOS modeling days to estimate the DV represented by those days. In other words, a DV was determined as if the ATMOS modeling days accurately represented the meteorological and ozone conditions during the design period. This simulation-days-based DV is 92 ppb. Use of this DV in the modeled attainment test results in an EDV for 2007 of 86 ppb and suggests that the end result of the attainment test depends in part on the extent to which the modeled days represent the DV days.

Met-Adjusted Design Value Demonstrates Attainment. Most importantly, the investigators used information about the frequency of occurrence of different types of meteorological conditions and their associated ozone concentration levels in the MONAA to fine tune the model's predictive reliability. Investigators used the area-specific information to develop a met-adjusted DV for each three-year period from 1996 through 2003. The met-adjusted DV is 90 ppb for 2001-2003, the central period for classification, and is 89 ppb for 2000-2002. *Use of a value of 90 ppb in the modeled attainment test yields a 2007 EDV of 84 ppb.* Due to the amplitude of observed annual meteorological variability at the Marion site, the model's reliability for predicting EDVs in future years is greatly enhanced by using the more representative met-adjusted DV.

Application of Screening Tests. Application of the EPA screening test here showed that the high simulated ozone concentrations in the greater Memphis area were limited to the vicinity of the monitoring sites. The EPA screening test is designed to identify areas in the domain where the simulated maximum 8-hour ozone concentrations are consistently greater than any in the vicinity of a monitoring site. Investigators applied an additional screening test using the ATMOS photochemical modeling results to examine the spatial representativeness of the Marion monitoring site and to test for future attainment in non-monitored locations. The supplemental screening test found that the highest EDVs in the county are located solely at or near the Marion monitor site, and specifically, in the localized area between the Marion site and the Mississippi River (southwestern boundary of Shelby County).

Additional Data Collection and Analysis. The photochemical modeling results indicate that under typical meteorological conditions, the Marion monitor will reach attainment by 2007. Furthermore, screening tests demonstrate that offending ozone levels are highly localized. To enhance existing data, the ADEQ is planning a data collection and analysis study for 2004-2006 to better understand the specific causes of high ozone at the Marion monitor, and to better characterize the extent of the high ozone concentrations. This supplemental data is expected to enhance the area's ability to identify those existing and/or new control measures that would be most effective in reducing ozone exceedances at the Marion monitor. Initial implementation of newly identified control measures is planned to occur prior to the 2006 ozone season.

VI. ADDITIONAL OZONE REDUCTIONS THROUGH UPCOMING FEDERAL MEASURES

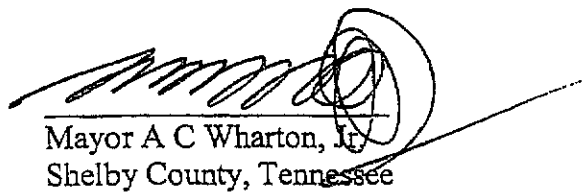
The MONAA will benefit from the expected reductions associated with national measures that come into effect in the 2007 through 2012 timeframe from the heavy-duty diesel engine standards, the full implementation of the NOx SIP call, the off-road engine rule, and potential reductions from the Clean Air Interstate Rule. As indicated in the modeling analysis, the MONAA is influenced by precursor emissions and ozone transport from other areas within the southeast. Further reductions in regional emissions resulting from the federal measures will serve to ensure that the MONAA will maintain attainment beyond 2007.

VII. CONCLUSION

Through an exhaustive collaborative effort, the States of Tennessee and Arkansas, along with the local governments of Shelby and Crittenden Counties, have produced in this Petition a plan of action which will result in real ozone reductions and attainment by 2007. By approving this Petition, EPA will be supporting the cooperation and commitments those governments have undertaken to ensure success of this effort and to achieve cleaner air sooner in the Memphis area.

This Petition is consistent with EPA guidance on reclassifications and demonstrates compliance with each of the criteria for a downward reclassification. The model findings and analysis sets forth data that indicate that attainment is achievable in 2007. The emission reduction strategies described in this Petition represent additional reductions to those analyzed in the model findings discussion. Furthermore, the Marion monitor study will result in a specific reduction strategy required to address emissions impacts at this monitor. Finally, the emission trends and air quality indicators are trending in a direction that supports attainment in 2007. The exception of the Marion monitor will be addressed by a tailored evaluation and reduction strategy developed in concert with EPA.

The States of Tennessee and Arkansas, as well as the local governments of Shelby and Crittenden Counties, ask that EPA join in this collaborative effort to improve air quality and to achieve cleaner air sooner for the region's citizens by granting this Petition.



Mayor A C Wharton, Jr.
Shelby County, Tennessee

Milton Holt
County Judge
Crittenden County, Arkansas

Yvonne Madlock
Director
Memphis-Shelby County Health Department

Marcus Devine
Director
Arkansas Department of Environmental Quality

Betsy Child
Commissioner
Tennessee Department of Environment & Conservation

EXHIBIT 1
PETITION FOR DOWNWARD RECLASSIFICATION
MODELING - TECHNICAL ANALYSIS

The attainment demonstration analysis for the Memphis Early Action Compact ("EAC") area included the application of the modeled attainment and screening tests, and several additional analyses that were presented to support future attainment of the 8-hour ozone standard. Of the four monitoring sites in the Memphis EAC area, only the Crittenden County, Arkansas monitoring site (Marion) did not show a result of 84 parts per billion ("ppb") or less in the modeled attainment test.

The modeling study previously submitted in support of the Memphis EAC Area was one component of the larger Arkansas-Mississippi-Tennessee Ozone Study ("ATMOS"). The ATMOS modeling used databases and modeling tools designed to accommodate both regional and sub-regional influences. Simulation periods for the ATMOS were selected on the basis of a regional-scale modeling exercise that could be used to address 8-hour ozone issues for all four of the ATMOS EAC areas (Memphis, Chattanooga, Knoxville, and Nashville). Therefore, the criteria were not specifically tailored for the Crittenden County monitor, which controls the nonattainment designation for the Memphis Ozone Non-Attainment Area ("MONAA").

For purposes of the MONAA's Petition for Downward Reclassification ("Petition"), previous modeling results were examined and refined to be more representative of the MONAA and particularly the Crittenden County (Marion) monitor. Using 2001-2003 data, when all days are weighted according to the frequency of occurrence of meteorological conditions for the Marion monitor, the estimated design value ("EDV") is lowered from 86 ppb to 85 ppb. Likewise, the frequency of occurrence of different types of meteorological conditions and their associated ozone concentration levels were used to determine a meteorologically adjusted ("met-adjusted") design value ("DV") for each three-year period from 1996 through 2003. The met-adjusted DV for the central period of classification (2001-2003) for the Marion monitor is 90 ppb, which indicates marginal classification. The modeled attainment test applying a DV of 90 ppb demonstrates attainment with a 2007 EDV of 84 ppb. The results for met-adjusted modeled attainment in the MONAA are presented in this Exhibit. Further corroboratory support for future attainment is provided by multiple screening tests and photochemical modeling. Additional data to better describe the local conditions during exceedance events at the Marion monitor is also included.

Review of the Modeled Attainment Test Results for Memphis

The modeled attainment test is applied for each monitoring site, and the results for all sites within an area of interest are used to determine whether the test is passed for the area. For a monitoring site to pass the attainment test, the future-year EDV for that site must not exceed 84 ppb. Future-year EDVs are calculated for each site using "current-year" DVs and relative reduction factors ("RRFs") derived from future-year and current-

year modeling results (2001-2003 for the Petition). The current-year DV for a given site is the three-year average of the annual fourth highest measured 8-hour ozone concentration. The RRF is the ratio of the future- to current-year 8-hour simulated maximum ozone concentration in the vicinity of that monitoring site. The EDV is obtained by multiplying the current-year DV by the RRF. The area-wide EDV is the maximum of the site-specific EDVs over all sites in the area.

The ATMOS modeled attainment test was applied for all sites in the Memphis EAC area, using all days with current-year simulated ozone concentrations greater than 70 ppb and using both a 15-km and 9-cell radius of influence to define maximum 8-hour ozone concentration in the vicinity of the site. In applying this test, the modeling consultants used both the 2000-2002 and 2001-2003 DVs for each site. The 2000-2002 DV period straddles the current modeled year of 2001 used in the ATMOS modeling, but it is also the highest DV ever recorded for the Marion monitoring site. The Preamble to the EPA's Final Rule (69 FR 23863) prescribes 2001-2003 as the central period for classification to be applied in a "bump-down" request. For that reason, and in order to account for the year-to-year variability in the DV, the 2001-2003 period was also considered. Table 1 lists the raw (unadjusted) observation-based DVs and future-year 2007 EDV for the ATMOS attainment strategy (AS-4) simulation for each site in the Memphis EAC area.

Table 1. Observed and Estimated DVs (ppb) for Sites in the Memphis EAC Area Calculated Using the 15-km and 9-cell Approaches and the 2000–2002 and 2001–2003 DVs.

Site	2000–2002			2001–2003		
	Observed DV	**EDV (15-km)**	**EDV (9-cell)**	**Observed DV**	**EDV (15-km)**	**EDV (9-cell)**
Edmund Orgill Park	90	82	83	89	81	82
Frayser	87	82	82	84	79	79
Marion	94	88	88	92	86	86
DeSoto Co.	86	80	81	81	75	76

The EDVs for the Edmund Orgill Park and Frayser sites in Shelby County, TN and the DeSoto County site in Mississippi are well below 84 ppb. The maximum observation-based DV for the 2000–2002 period is 94 ppb, for the Marion monitoring site. The corresponding maximum future-year (2007) EDV for this same site and for the area is 88 ppb. The maximum observation-based DV for the 2001–2003 period is 92 ppb, again for the Marion monitoring site. The corresponding maximum future-year (2007) EDV is 86 ppb. For both DV periods, the same result is achieved whether the 15-km or 9-cell radius of influence is applied. Since the results of the test were the same in both cases, the remainder of this discussion will focus on the results using the 15-km radius of influence.

Limiting or otherwise selecting the days based on observed exceedances or model performance does not change the resulting EDV for the Marion site. This is because model performance is acceptable for most days and all high ozone days.

In summary, the attainment test for the Memphis EAC area using raw observation-based data is nearly passed for the model run AS-4 2007 control measure scenario, with a maximum area-wide EDV of 86 ppb when the 2001-2003 DV is used in the application of the attainment test. These modeling results were examined and refined to be more representative of the MONAA and particularly the Marion monitor as set forth below.

Alternative Application of the Attainment Test Based on the ATMOS Episode Representativeness

Weighting Modeling Days to Represent the MONAA Conditions. The reliable application of the modeled attainment test requires that the simulation periods and, thus, the modeling results, represent the type and range of meteorological and ozone air quality conditions that accompany ozone episodes and result in the determination of the DV. The ATMOS simulation periods were selected to optimize representation of the typical meteorological conditions associated with 8-hour ozone exceedances in the Memphis, Nashville, Knoxville, and Chattanooga areas, including all or part of five states, such that the results from the regional-scale modeling exercise could be used to address 8-hour ozone issues for all four areas. For the Memphis area, the three modeling episodes include 10 exceedance days and represent two of the three key exceedance meteorological regimes as well as several other high ozone regimes. For the ATMOS, however, the criteria were applied for the entire area, and not specifically for the Marion monitor. Applying similar criteria specifically for the Marion site, we find that the ATMOS episodes include six exceedance days that represent one of two key regimes as well as two other high ozone regimes. Note that the key regimes are those containing at least seven days (one day per year) for the analysis period 1996-2002.

In applying the ATMOS attainment test, all days with simulated current-year (2001) 8-hour ozone concentrations greater than 70 ppb (per EPA guidance) were used to calculate the EDV for each monitoring site. Using this approach, each meteorological regime assumes an effective weight that is based on the number of days included in the calculations for that regime. Thus, the representation of the regimes may be different than their actual frequency of occurrence. In this exercise, the modeling consultants weighted the days according to the frequency of occurrence of the conditions during the seven-year period (1996-2002). The weights were calculated specifically for the Marion site (using the results from a Classification and Regression Tree ("CART") analysis for the Marion monitor to determine the regimes and their frequency of occurrence). The results are presented in Table 2.

Table 2. Relative reduction factors and EDVs for the Marion, AR monitoring site using all eligible days with and without weighting by frequency of occurrence of meteorological conditions.

	RRF	EDV (02)	EDV (03)
All days	0.94	88	86
All days weighted by frequency of occurrence	0.93	87	85

The EDV is one ppb lower when the days are weighted according to the frequency of occurrence of the meteorological regimes for the Marion site. This brings the EDV closer to simulated attainment for the Memphis area.

Relationship Between Modeled Days and DV Days. Another way to approach this same issue of simulation day representativeness is to estimate the DV that is represented by the ATMOS modeling days and to use that value in the application of the attainment test. In other words, a DV was determined as if the ATMOS modeling days accurately represented the meteorological and ozone conditions during the design period. The ATMOS days comprise 26 days and represent a subset of the conditions that occur during a typical ozone season.

To estimate the DV that is represented by these days, the modeling consultants calculated a weighting factor for each day, based on the frequency of occurrence of the conditions represented by that day. They then normalized the weighting factors to account for conditions (CART bins) that are not represented by the ATMOS days. The adjusted weighting factors were applied to the total number of days in the ozone season to arrive at the number of days to be represented by each type of condition or bin that is represented by the ATMOS days. The observed values for the ATMOS days were then used to populate the ozone season with daily values of maximum 8-hour ozone for each day in accordance with the frequency of occurrence of the meteorological conditions. For bins with more days during a typical ozone season than represented by the ATMOS days, the values for the ATMOS days were repeated until the total number of values equaled the number of ozone season days represented by the certain type of conditions. For bins with fewer days during a typical ozone season than represented by the ATMOS days, two approaches were used. First, the highest values were used. Second, the values were chosen from the middle of the bin, selecting the next highest, next lowest values in turn until the total number of values was achieved. The maximum 8-hour ozone concentrations ranged from 41 to 100 ppb. From this list, the values were sorted and the fourth highest concentration was selected. In both cases, the ATMOS-based DV is 92 ppb.

Use of the ATMOS simulation-days-based DV in the attainment test results in an EDV for 2007 of 86 ppb, two ppb lower than the value achieved using unmatched

observation-based DV and modeling days. This suggests that the end result of the attainment test depends in part on the extent to which the modeled days represent the DV days. If consistency between the two sets of days is assured, the EDV is closer to simulated attainment.

Review of the Screening Test Results for Memphis

The EPA screening test is intended as an accompaniment to the attainment test and is specifically applied to areas in the domain where the simulated maximum 8-hour ozone concentrations (for the base-case simulation) are consistently greater than any in the vicinity of a monitoring site. EPA guidance defines "consistently" as fifty-percent (50%) or more of the simulation days and "greater than" as more than five-percent (5%) higher. Thus, the screening test is designed to be applied to an array of grid cells where the simulated maximum 8-hour ozone concentrations are more than five-percent (5%) higher than any near a monitored location on fifty-percent (50%) or more of the simulation days. The screening test procedures are otherwise identical to the attainment test procedures; the current-year DV for the unmonitored area is set equal to the maximum value at any site.

The modeling consultants applied the screening test in two ways. First, they considered the entire ATMOS region included in the high-resolution grid. No screening test locations were found. The screening test was also applied for a subregion encompassing the Memphis area and again no screening test locations were found. In the subregional analysis, locations with maximum concentrations more than five-percent (5%) higher than any near a site were found for six days and thus on fewer than fifty-percent (50%) of the analysis days.

Spatial Representativeness and Alternative Screening Test Analysis

In addition to the EPA-prescribed screening test, the modeling consultants used the ATMOS photochemical modeling results to examine the spatial representativeness of the Marion monitoring site for Crittenden County and to test for future attainment in non-monitored locations throughout the county. First, they placed pseudo sites throughout the county as illustrated in Figure 1. Note that these surround and are positioned to capture the continuation of any ozone plumes impacting the Marion site. The entire county is "sampled". To estimate the 8-hour ozone DVs for these hypothetical sites, they calculated the ratio of the average simulated 8-hour ozone concentration at the site and the same value for the Marion site, for all days used in the modeled attainment test for the Marion site. They applied this ratio to the raw observation-based 2000-2002 and 2001-2003 DVs for Marion to obtain a future-year (2007) EDV for each of the pseudo sites. They then applied the modeled attainment test (following the procedures outlined in EPA guidance) for each of the pseudo sites. The results are presented in Figure 2. Figure 2a shows the results based on the 2000-2002 DV and Figure 2b presents the results of the calculations based on the 2001-2003 DV.

Figure 1. Pseudo sites for Crittenden County.

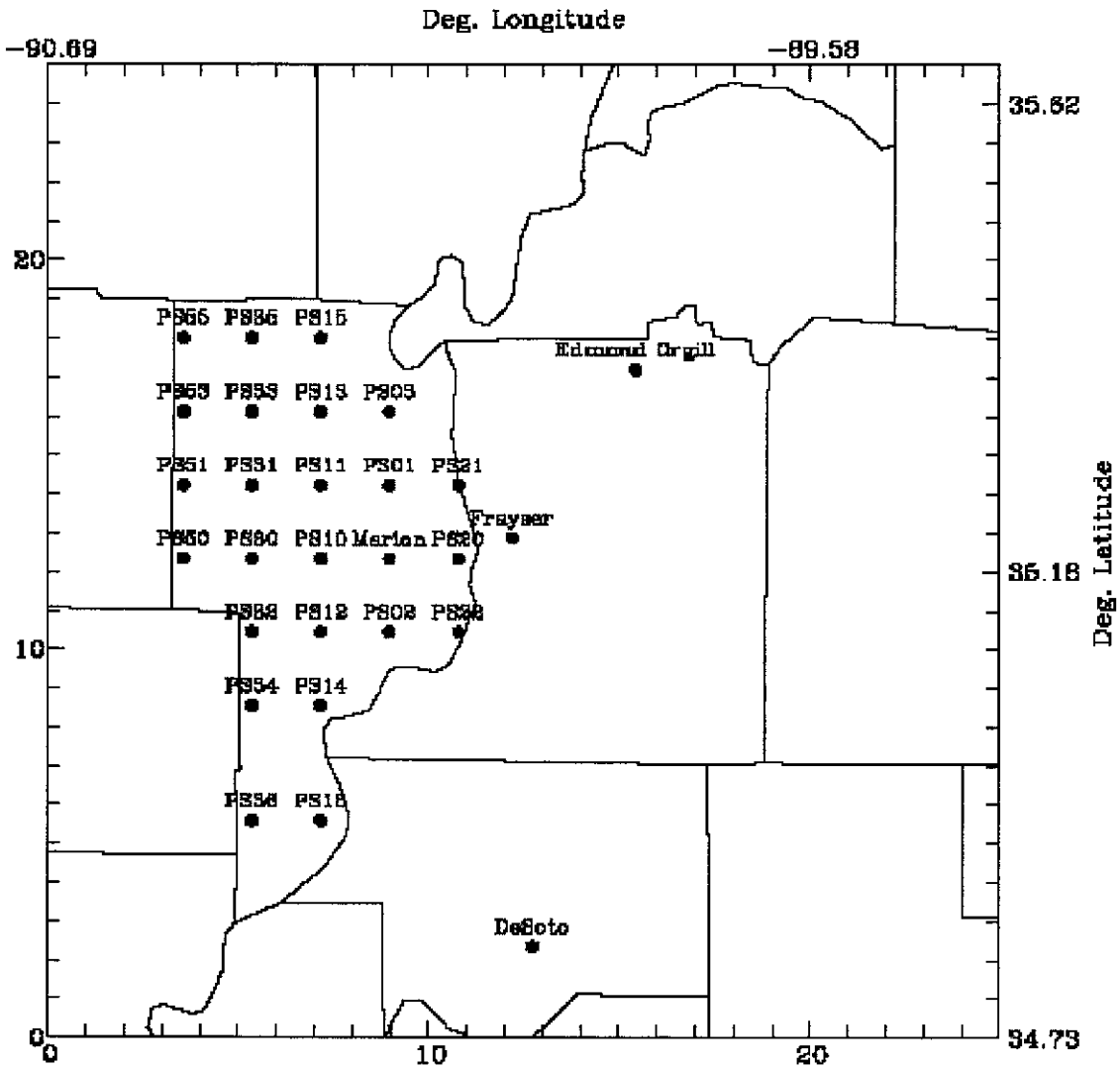


Figure 2a. EDVs for pseudo sites: based on 2000-2002 DVs.

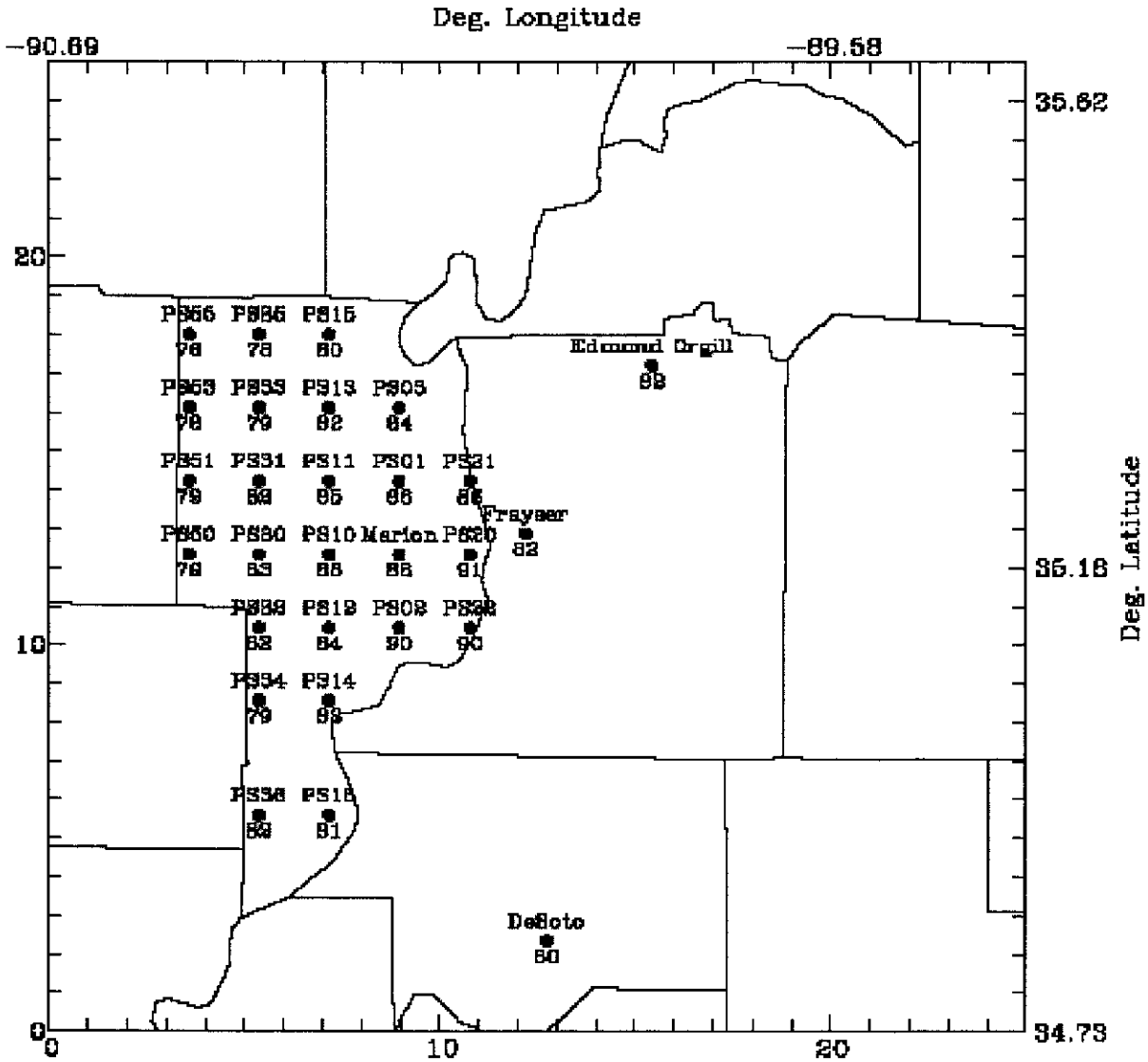
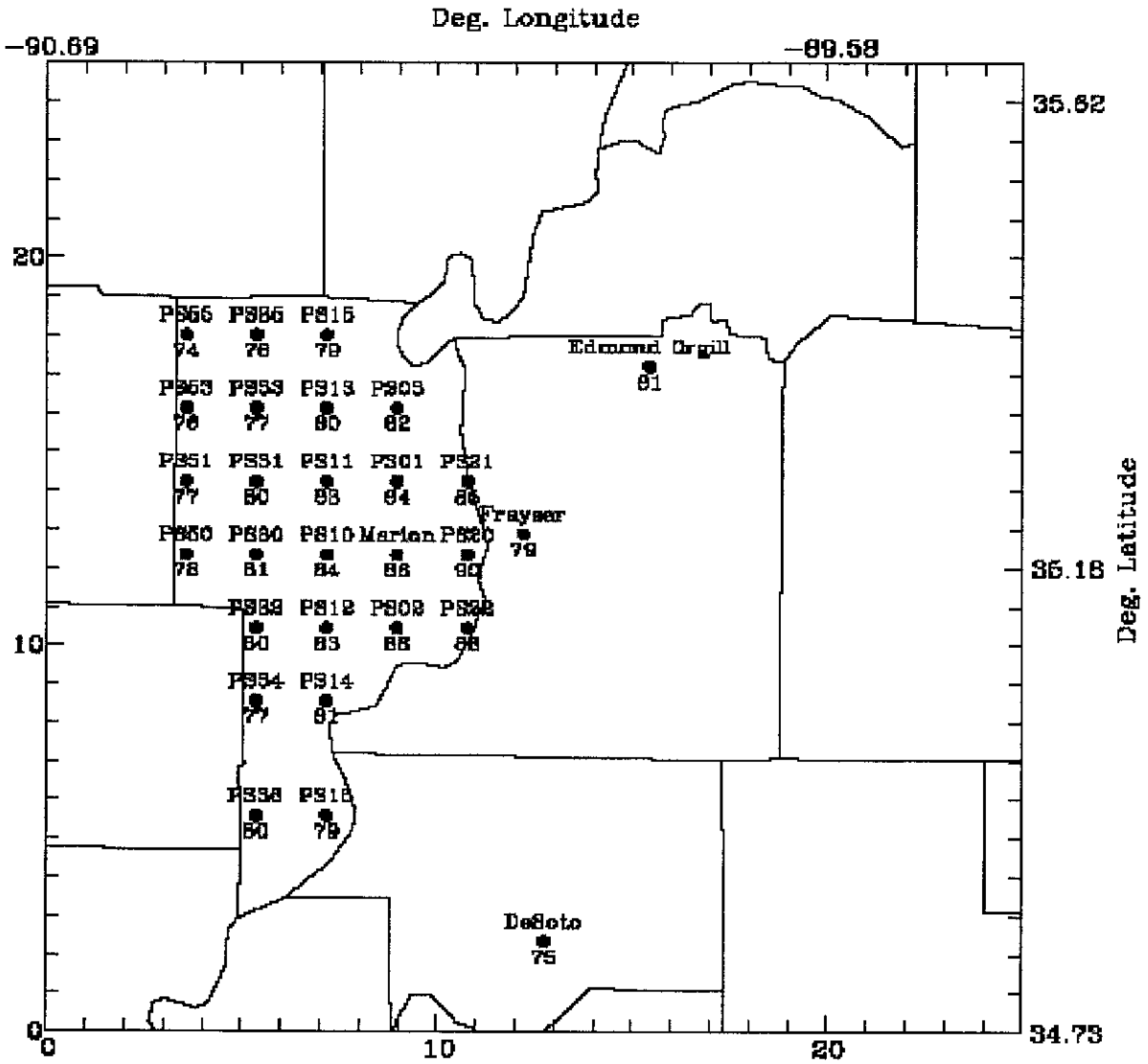


Figure 2b. EDVs for pseudo sites: based on 2001-2003 DVs.



These results demonstrate that the highest EDVs in the county are found near the Marion site, and specifically, in the localized area between the Marion site and the Mississippi River (adjacent to the greater Memphis area and the southwestern boundary of Shelby County, TN). The higher values in Arkansas, compared to the Frayser site in Tennessee, are due to the use of the Marion DV to estimate DVs for the pseudo sites. The relative reduction factors are similar between the Frayser site and the neighboring Arkansas sites. As a result of using the 2000-2002 DV period as the basis of the calculations, seven of the 24 pseudo sites (29%) have EDVs greater than 84 ppb. For the 2001-2003 period, four of the 24 pseudo sites (17%) have EDVs greater than or equal to 84 ppb.

Use of a Meteorologically-Adjusted DV

The DV is a critical part of the modeled attainment test, in which future DVs are estimated. For the ATMOS, the modeled attainment test primarily uses, as its basis, the observation-based DV for the three-year period spanning the current model year. This value is expected to represent the current period in the same way the modeled simulation periods are expected to represent typical or frequently occurring meteorological conditions. Thus, for the model to have predictive reliability, it is important that the base or current DV is representative of typical meteorological conditions. Given the form of the DV metric, however, year-to-year variations in meteorology and especially unusually persistent meteorological conditions during one or more of the years comprising a DV cycle can lead to a DV that is not representative of typical conditions.

As noted earlier, the DV is defined for each monitoring site as the three-year average of the fourth highest 8-hour ozone concentration. This 8-hour ozone NAAQS (in its current form) requires the DV to be less than or equal to 84 ppb. In using the fourth highest ozone concentration and by averaging over a three-year period, the 8-hour ozone DV is formulated in part to accommodate year-to-year variations in meteorological conditions. However, recent variations in the DVs for several of the ATMOS EAC areas, and specifically for the Marion site, indicate that the metric is less stable when weather conditions (either ozone conducive or not) persist over the region for large portions of the ozone season. In developing met-adjusted DVs for each area, the objective was to create a metric similar to the 8-hour DV but less sensitive to yearly meteorological variation. By using information about the frequency of occurrence of different types of meteorological conditions and their associated ozone concentration levels, the modeling consultants can fine-tune the model's predictive reliability, because it more closely simulates future expected conditions. This exercise relies on results of the CART analysis, as mentioned earlier in this appendix and as described in detail in the ATMOS EAC Modeling Technical Support Document ("TSD"), an electronic copy (CDROM) of which is attached to the Petition as Exhibit 2.

CART was used in the ATMOS episode selection analysis to classify all ozone season days for the years 1996-2002 according to meteorological and air quality parameters. While the category of a bin reflects the severity of ozone associated with the bin's meteorological conditions, the number of days in a bin represents the frequency with which those conditions occur. Since the bins are determined using a multi-year period, individual years may be normalized such that the different sets of meteorological conditions are represented no more or less than they are on average over all years in the period. This is the basis for the creation of met-adjusted DVs.

The methodology described here utilizes the original ATMOS CART analysis for years 1996-2002, and extends the period of consideration to 2003, by applying the same classification rules to 2003 data that were defined in the CART tree. Thus each day during the period 1996–2003, April to October inclusive, is classified into one of the

CART bins. For the DV analysis, the modeling consultants treat the exceedance categories (Categories 3 and 4 bins) as a single category - this does not change the bin structure but broadens the number of days that are considered correctly classified. Finally, they determine DVs for the key sites for each EAC area, following the steps outlined below:

Step 1. Determine "key" bins that represent sufficiently frequent conditions

- Key bins are represented in at least four of the eight years by at least one day whose maximum 8-hour ozone value at the site matches the bin category (call these, "site-correct" days).
- Key bins are represented by, on average, at least one day per year, of days whose area-wide maximum 8-hour ozone values match the bin category (call these, "area-correct" days).

Step 2. Determine the number of days to include from each bin.

- For "key" bins, use the rounded average of area-correct bin days per year.
- Include zero days from bins that do not meet the "key" bin requirements.

Step 3. For each year, eliminate non-representative days and excess days from over represented bins.

- Keep only site-correct days.
- For bins with excess days, eliminate days with lower values first.

Step 4. For each year, add days to underrepresented bins.

- Use the average value of site-correct days within that bin, for that year, if available.
- Otherwise, use the average value of site-correct days within that bin for the five-year span centered on that year, if values are available.
- Otherwise, use the average value of site-correct days within that bin for the full eight-year span.

Step 5. Use resulting fourth-highest values from these normalized years to define met-adjusted DV.

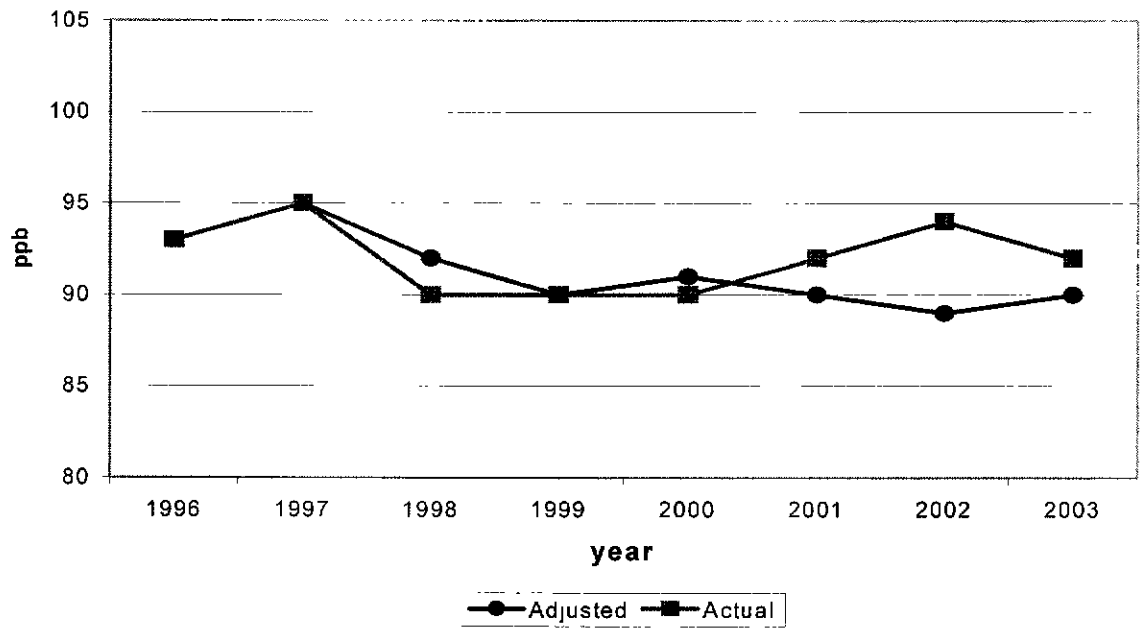
Additional discussion on the methodology for calculated the met-adjusted DVs is presented in Petition – Exhibit 2 (ATMOS EAC TSD).

Using the steps outlined above, the modeling consultants created for each year a normalized, or met-adjusted, year. The resulting DVs for the Memphis area, based on the Marion site, are listed in Table 3, and plotted in Figure 3.

Table 3. Actual and Met-Adjusted 8-Hour Ozone DVs for Marion.

Metric	1996	1997	1998	1999	2000	2001	2002	2003
Actual								
• DVs	93	95	90	90	90	92	94	92
• 4th highest	96	91	85	95	91	92	100	84
Adjusted								
• - DVs	93	95	92	90	91	90	89	90
• - 4th highest	98	88	92	91	91	89	89	92

Figure 3. Actual and Met-Adjusted 8-Hour Ozone DVs for Marion.



For 1996 and 1997, the adjusted DVs are calculated using actual fourth-highest values for 1995 and 1994, since the CART analysis did not include those years. The average adjusted DV for the eight-year period is 91 ppb, one ppb lower than the average actual DVs. But, as intended, the adjusted DVs exhibit less variation between years.

The results of this analysis indicate that a met-adjusted DV is much more stable than the observation-based DV and increases its predictive reliability. Using this methodology, the high DV for 2002 is attributable to more persistent than usual ozone conducive meteorological conditions. Unfortunately, this was the primary value used in the ATMOS modeling analysis as the basis of the modeled attainment test. These results indicate that a more appropriate DV for application of the attainment test is 90 ppb. Use of a value of 90 ppb in the attainment test results in a 2007 EDV of 84 ppb, which demonstrates attainment.

Analysis of DV Days

The DV is a critical part of the modeled attainment test, in which future DVs are estimated. For the ATMOS, the modeled attainment test primarily used, as its basis, the observation-based DV for the three-year period spanning the current model year. This value is expected to represent the current period in the same way the modeled simulation periods are expected to represent typical or frequently occurring meteorological conditions. Thus, for the model to have predictive reliability, it is important that the base or current DV is representative of typical meteorological conditions. Given the form of the DV metric, however, year-to-year variations in meteorology and especially unusually persistent meteorological conditions during one or more of the years comprising a DV cycle can lead to a DV that is not representative of typical conditions.

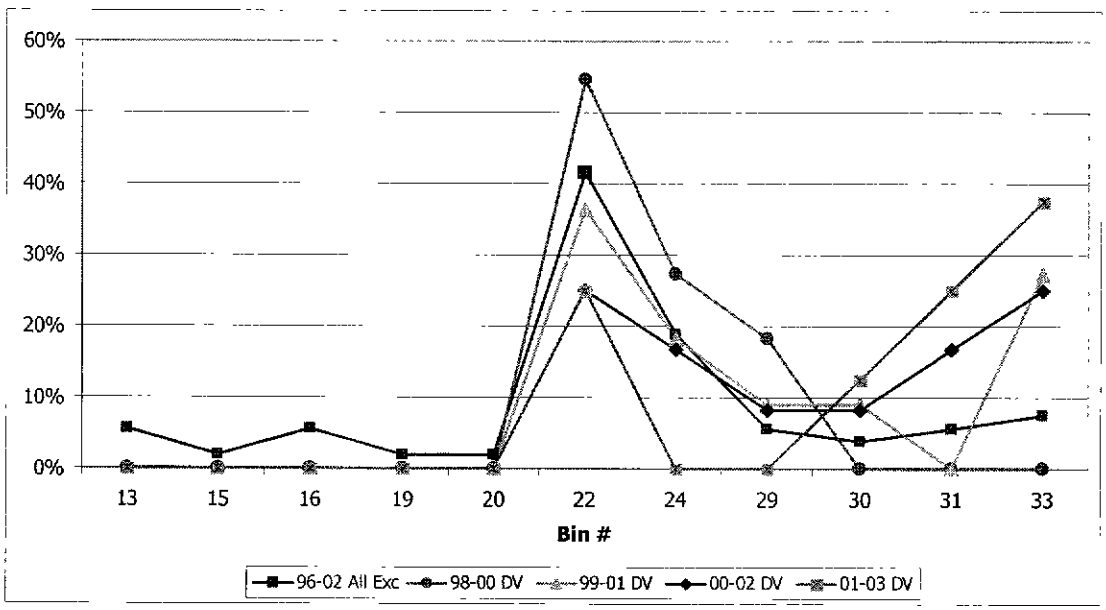
The DV for each monitoring site is the three-year average of the fourth highest 8-hour ozone concentration. The 8-hour ozone NAAQS (in its current form) requires the DV to be less than or equal to 84 ppb. Thus the observed ozone concentrations for 12 days are considered in the calculation of the DV for a site, and the concentrations for three of these days are used explicitly in the calculation.

Additional analyses were used to further corroborate the basis for meteorological adjustment. In this exercise, the modeling consultants explored the conditions associated with the DV days for four three-year periods including 1998-2000, 1999- 2001, 2000-2002, and 2001-2003 and assessed their representativeness relative to typical conditions. Figure 4 shows the percent frequency of occurrence of the CART-based exceedance meteorological regimes. For the full analysis period, two bins (Bins 22 and 24) stand out as having the greatest number of days. Days within Bin 22 are characterized by high surface temperatures, low relative humidity, relatively high ozone on the previous day, northeasterly to easterly surface winds, low surface wind speeds, northeasterly winds aloft during the morning hours that become southerly during the afternoon hours, and moderate wind speeds aloft. Days within Bin 24 have many of these same characteristics but are characterized by southerly surface winds, southwesterly winds aloft during the morning hours that become southerly during the afternoon hours, and lower wind speeds aloft.

Compared to the full ATMOS analysis period (1996-2002), the conditions associated with the 12 exceedance days representing the 2000-2002 DV period are

atypical for ozone exceedance days. Bin (or regime) 22 is represented, but is not as dominant as for a typical year. More exceedance days than usual are associated with the conditions described by Bins 31 and 33. Days within these two bins are characterized by higher ozone concentrations than those within the more common bins. The higher ozone concentrations are associated with higher (but not extremely high) relative humidity, less stable conditions, lower ozone on the prior day (a more pronounced build up of ozone), and a greater tendency for southeasterly winds aloft. Days within Bin 31 are further characterized by southeasterly winds at the surface and very low afternoon wind speeds. Those within Bin 33 are distinguished by very light, westerly surface winds during the afternoon hours.

Figure 4. Distribution of exceedance days among the CART classification bins considering: all exceedance day (1996-2002), 12 DV days comprising the 4th highest values for each overlapping three-year period from 1998 – 2003, as used for the calculation of the DV.



The 1999-2001 and 2001-2003 results also show a greater representation of the higher numbered CART bins, than occurs during a typical ozone season. The 1998-2000 days best represent the average distribution of days among the meteorological regimes. The DV for that year (90 ppb) is also close to the met-adjusted value for that year (91 ppb).

The high DV for 2000-2002 is primarily attributable to a very high fourth highest value during 2002. The two highest ozone days for this year were extreme events for Memphis, with maximum 8-hour ozone values for Marion of 108 and 107 ppb. Both days were classified as belonging to CART Bin 31, which has a frequency of occurrence during the analysis period of three times in seven years. Thus the 2000-2002 DV and all other DVs using data from 2002 will be affected by the unusual meteorological

conditions and specifically a higher than usual occurrence of extreme meteorological conditions in 2002.

These results provide further corroboratory support for the use of a met-adjusted DV for the Memphis EAC modeling as presented in the Petition Exhibit 2 (ATMOS EAC TSD).

Effect of Meteorological Adjustment on Other Monitor Locations

For the Memphis area, the modeling consultants also calculated a met-adjusted DV for the Edmund Orgill Park site in Shelby Co, in addition to the Marion site. This analysis is useful to explore whether similar results were observed when other monitor locations were adjusted to account for meteorology. The met-adjusted DV for Edmund Orgill Park is equal to the actual observation-based DV for both 2000-2002 and 2001-2003. The value is 90 ppb for 2000-2002 and 89 ppb for 2001-2003. The data for this site for 2002 do not include very high 8-hour ozone values, as were observed at the Marion site. This indicates that the year-to-year variations at Marion are more pronounced and may have more to do with the prevalence of specific wind directions than other meteorological factors.

As part of the ATMOS EAC modeling analyses, met-adjusted DVs were also calculated for Nashville, Knoxville, and Chattanooga. In all cases, the adjusted DVs exhibit less variation between years than the actual DVs, which suggests a more stable predictor. For a given three-year period, the adjusted value is sometimes lower and sometimes higher than the actual value, depending upon the frequency of occurrence of ozone-conducive meteorological conditions during that period. This result is expected because during any given three-year period, the actual conditions could be either more or less conducive to high ozone measurements, when compared to long-term average or "typical" conditions.

For Nashville, for example, the met-adjusted values for both 2000-2002 and 2001-2003 are higher than the observation-based DVs. This upward adjustment accounts for fewer days with ozone-conducive conditions than for a "typical" year (as indicated by long-term meteorological trends) during one or more of the three years for each period. For 2000-2002, the actual DV is 88 ppb and the adjusted value is 91 ppb. For 2001-2003, the actual DV is 86 ppb and the adjusted value is 90 ppb.

For Knoxville, the met-adjusted values are lower than the observation-based values for 2000-2002, but higher for 2001-2003. For 2000-2002, the actual DV is 96 ppb and the adjusted value is 93 ppb. For 2001-2003, the actual DV is 92 ppb and the adjusted value is 93 ppb.

Finally, for Chattanooga, the adjustment lowers the DVs and emphasizes a downward trend in 8-hour ozone concentrations. For 2000-2002, the actual DV is 93 ppb

and the adjusted value is 86 ppb. For 2001-2003, the actual DV is 87 ppb and the adjusted value is 86 ppb.

Analysis of Emission-Reduction Measures

The EAC modeling exercise for the Greater Memphis area included the evaluation of the effects of various emission reduction measures for point, area, and mobile sources located in each of the EAC counties (Shelby, Fayette, and Tipton County, TN; Crittenden County, AR; DeSoto County, MS). The initial scenario (Scenario AS-2) examined the effects of emission control measures, selected from a master list by each of the county representatives, which could be put into place in each of the EAC counties. This scenario was referred to as the "all measures" scenario and was only run for two of the ATMOS episodes (August 1999 and June 2001). The AS-2 scenario included the following measures:

Shelby County, TN : Total reductions (tpd) – NOx: 16.1, VOC: 10.3

- Open burning ban – land clearing
- Intelligent transportation systems
- Vehicle I&M program
- Lower interstate truck speeds
- Anti-idling legislation
- Voluntary control measures
- NOx RACT on selected sources

Crittenden County, AR : Total reductions (tpd) – NOx: 1.4, VOC: 0.7

- Open burning ban- garbage and land waste
- Lower RVP gasoline
- Stage I controls
- Ozone action day controls
- New construction equipment
- New airport vehicles
- Truck electrification
- Anti-idling legislation

DeSoto County, MS : Total reductions (tpd) – NOx: 1.52, VOC: 3.3

- NOx RACT
- Stage I controls
- Open burning on ozone action days
- Idling limits
- Vehicle I&M program

- HOV lane extension

Fayette and Tipton, TN : Total reductions (tpd) – NOx: 1.3, VOC: 1.5

- Open burning ban – garbage and land waste
- Stage I controls
- Ozone action day controls
- Lower interstate truck speeds
- Truck-stop electrification
- Anti-idling legislation

The total emission reductions for the AS-2 scenario for the Memphis EAC area were 20.3 tpd for NOx and 15.8 tpd for VOC, which resulted in a 62% reduction in 8-hour exceedance exposure for the Memphis EAC area (compared to the current year 2001), and an EDV of 87 ppb at the Marion monitor.

Scenario AS-3 included slight revisions to the AS-2 list for Shelby County and DeSoto County: less of a reduction in NOx emissions for Shelby County and no assumed reductions for DeSoto County. Emission reduction totals for this scenario for the Memphis EAC area were 19 tpd NOx and 12.5 tpd VOC. This scenario was run for the three episodes and resulted in a 63% reduction in 8-hour exceedance exposure for the Memphis EAC area and an EDV of 87 ppb at the Marion monitor. The AS-3 scenario included the following measures:

Shelby County, TN : Total reductions (tpd) – NOx: 15.2, VOC: 10.3

- Open burning ban – land clearing
- Intelligent transportation systems
- Vehicle I&M program
- Lower interstate truck speeds
- Anti-idling legislation
- Voluntary control measures
- NOx RACT on selected sources

Crittenden County, AR : Total reductions (tpd) – NOx: 1.4, VOC: 0.7

- Open burning ban- garbage and land waste
- Lower RVP gasoline
- Stage I controls
- Ozone action day controls
- New construction equipment
- New airport vehicles
- Truck electrification

- Anti-idling legislation

DeSoto County, MS : Total reductions (tpd) – NOx: 0.0, VOC: 0.0

- No control measures simulated

Fayette and Tipton, TN : Total reductions (tpd) – NOx: 1.3, VOC: 1.5

- Open burning ban – garbage and land waste
- Stage I controls
- Ozone action day controls
- Lower interstate truck speeds
- Truck-stop electrification
- Anti-idling legislation

The "final" EAC strategy (AS-4), included changes to the AS-3 scenario: less reductions in Shelby County, no reductions in Tipton and Fayette Counties, and the addition of very slight reductions (less than one tpd) in DeSoto County. For Shelby County, the vehicle I&M program was dropped and slight revisions (lower expected reduction estimates) were assumed for open burning for land clearing, lower interstate truck speed limits, and voluntary control measures. Emission reduction totals for Scenario AS-4 for the Memphis EAC area were 14 tpd of NOx and 8.9 tpd of VOC. Because less emission reductions were assumed in the AS-4 scenario compared to the AS-2 scenario, this resulted in a 59% decrease in 8-hour exceedance exposure and an EDV at the Marion monitor of 88 ppb based on the DV period 2000-2002; for the 2001-2003 DV period, the EDV was 86 ppb. The measures simulated in the AS-4 scenario include the following:

Shelby County, TN : Total reductions (tpd) – NOx: 11.9, VOC: 7.7

- Open burning ban – land clearing
- Intelligent transportation systems
- Lower interstate truck speeds
- Anti-idling legislation
- Voluntary control measures
- NOx RACT on selected sources

Crittenden County, AR : Total reductions (tpd) – NOx: 1.4, VOC: 0.7

- Open burning ban- garbage and land waste
- Lower RVP gasoline
- Stage I controls
- Ozone action day controls

- New construction equipment
- New airport vehicles
- Truck electrification
- Anti-idling legislation

DeSoto County, MS : Total reductions (tpd) – NOx: 0.27, VOC: 0.05

- Open burning on ozone action days
- Voluntary idling limits
- Voluntary reduction of maintenance equipment use on ozone action days

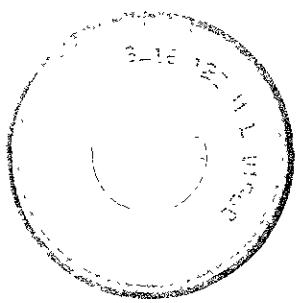
Fayette and Tipton, TN : Total reductions (tpd) – NOx: 0.0, VOC: 0.0

- No control measures simulated

As discussed above, use of a more representative met-adjusted DV for 2001-2003 results in an EDV of 84 parts per billion in 2007, which demonstrates attainment. Corroboratory analyses support the conclusion that the met-adjusted DV has higher predictive reliability than raw observation-based values for 2001-2003, the central period of classification. In addition, the attached Petition describes supplemental control measures, commitments for innovative public-private partnerships, additional research focused on factors affecting ozone conditions at the key monitor location, and a mid-course evaluation to further ensure attainment by 2007.

As more national controls come into play in the 2007 to 2012 timeframe from the heavy-duty diesel engine standards, the full implementation of the NOx SIP call, the off-road engine rule, and potential reductions from the Clean Air Interstate Rule, the MONAA will benefit from the expected reductions associated with these regional/national measures. As indicated in the ATMOS modeling study the MONAA is influenced by precursor emissions and ozone being transported from other areas within the mid-south. Reductions in regional emissions and resulting ozone concentrations influencing the Memphis area along with local control measures will serve to ensure that the area will maintain the standard beyond 2007.

EXHIBIT 2 TO PETITION FOR
DOWNWARD RECLASSIFICATION
EAC Modeling Analysis for the State of Tennessee and Adjacent Areas in Arkansas and Mississippi
Dated March 24, 2004



Memphis Ozone
Nonattainment Area
Submitted by:
State of Tennessee, on behalf of Shelby County
State of Arkansas, on behalf of Crittenden County

ADEQ
ARKANSAS
Department of Environmental Quality

July 13, 2004

Jeff Holmstead
US EPA
1200 Pennsylvania Avenue
Washington, D.C. 20460

Dear Mr. Holmstead:

I write to express my support for the use of Congestion Mitigation and Air Quality (CMAQ) funds for the purpose of electrification of truck stops in Crittenden County, Arkansas.

As you know, Crittenden County is the only Arkansas county currently in non-attainment of the 8-hour ozone standard. Truck stop electrification is an important control strategy for reaching attainment under the standard. While the distribution of these funds is a responsibility of the Arkansas Highway and Transportation Department (AHTD), the Arkansas Department of Environmental Quality (ADEQ) and the AHTD will exercise a collaborative relationship to address control strategies for Crittenden County, including the funding of truck stop electrification through the use of CMAQ funds.

I understanding that CMAQ funds are allocated to non-attainment areas based on a federal formula, and that there are certain other dedicated uses for these funds. I do not wish to take funds from these other dedicated uses to fund this project, but I strongly believe this control strategy is important for the area to attain the 8-hour ozone standard.

Thank you for your attention to this matter as we work collaboratively to address environmental quality concerns in Crittenden County.

Sincerely,

Marcus C. Devine
Director

ARKANSAS STATE HIGHWAY COMMISSION

P.O. BOX 2261
LITTLE ROCK, ARKANSAS 72203-2261
PHONE (501) 569-2000 FAX (501) 569-2400
WWW.ARKANSASHIGHWAYS.COM

July 9, 2004

Mr. Richard E. Greene
Regional Administrator
U.S. EPA, Region VI
1445 Ross Avenue
Suite 1200
Dallas, TX 75202

Mr. J.I. Palmer, Jr.
Regional Administrator
U.S. EPA, Region IV
Sam Nunn Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303

Dear Mr. Greene and Mr. Palmer:

Reference is made to the State of Arkansas's request for a bump-down in the air quality designation for Crittenden County.

The Department has committed Federal-aid Congestion Mitigation and Air Quality (CMAQ) funds for air quality planning activities in Crittenden County in the past and will continue this funding in the future. In addition, we support the development and implementation of cost effective measures to improve air quality in the State and will consider the use of unobligated CMAQ funds for eligible activities in order to protect the health of our citizens.

If additional information is needed, please advise.

Sincerely,

Dan Flowers
Director of Highways
and Transportation

c: Highway Commission
Chief Engineer
Assistant to the Director
Jeff Holmstead, EPA Headquarters ✓
Federal Highway Administration-Arkansas Division
Arkansas Department of Environmental Quality
West Memphis MPO

5

MPO
METROPOLITAN PLANNING ORGANIZATION
796 WEST BROADWAY WEST MEMPHIS, AR. 72301
TELEPHONE 870-735-8148 FAX 870-735-8158

July 9, 2004

Mr. Tony Davis
ADEQ
8001 National Drive
Little Rock, AR 72219-8913

Dear Mr. Davis:

As per our discussion, since truck stop electrification was one of the priorities submitted for action in Crittenden County under the Early Action Compact, it will remain a priority for the local MPO's use of available CMAQ funds. Truck stop electrification will be a key measure in our area along with other measures that may be of significance such as Intelligent Transportation Systems particularly relating to incident management on the Interstates, traffic signal synchronization, and other CMAQ eligible projects.

As you know, priorities for use of available CMAQ funds will ultimately be determined by the MPO Policy Committee and they are very much aware of the air quality concerns in the region.

We look forward to continuing to work with ADEQ, EPA, and the area partners toward improving our air quality to attainment status. If there are any questions pertaining to these matters or if we may be of any other service, please let us know.

Sincerely yours,

Eddie E. Brawley, P.E.
MPO Study Director

c: Mayor William H. Johnson, West Memphis, MPO Chairman
Mayor Frank Fogleman, Marion, MPO Vice Chairman
Judge Melton Holt, Crittenden County

Draft Rule
(April 6, 2004)

Summary

A new Rule 1200-3-27-.08 is added to Chapter 1200-3-27 as part of a State program to reduce NOx emissions from stationary sources.

Chapter 1200-3-27
Nitrogen Oxides

New rule

Table of Contents

1200-3-27-.08 STANDARDS AND REQUIREMENTS FOR NITROGREN OXIDE EMISSION REDUCTION AND TO SUPPORT EARLY ACTION COMPACTS

(1) This rule is to require nitrogen oxides (NOx) emission reduction and to support early action compacts in the state.

(2) For the purpose of this rule, terms not defined in this rule shall have the meanings given in Chapter 1200-3-2, except as specified in the paragraphs below.

(3) Applicability of this rule is as follows:

(a) Except as specified in subparagraph (b) of this paragraph, the requirements of this rule apply to any fuel burning equipment (e.g., boiler or engine), incinerator, or unit of processing equipment (e.g., kiln) of a process emission source, no matter when constructed or installed, that has potential emissions of 50 or more tons of NOx per calendar year and is in one of the counties as follow:

1. Fayette, Shelby, or Tipton.

2. Haywood.

3. Cheatham, Davidson, Dickson, Robertson, Rutherford, Sumner, Williamson, or Wilson.

4. Putnam.

5. Hamilton, Marion, or Meigs.

6. Anderson, Blount, Jefferson, Knox, Loudon, Sevier, or Union.

7. Carter, Hawkins, Johnson, Sullivan, Unicoi, or Washington.

Potential emissions of NOx are those at maximum capacity under the physical and operational limitations that apply. Any physical or operational limitation on the capacity to emit NOx, including control equipment and restrictions on hours of operation or on the type or amount of material combusted or processed, shall be treated as applying if the effect it would have on emissions is legally enforceable.

(b) The requirements of this rule do not apply to any fuel burning equipment, incinerator, or unit of processing equipment that satisfies any of the criteria as follow:

1. For this equipment or incinerator a reasonably available control technology (RACT), best available control technology (BACT), or lowest achievable emission rate (defined in rule 1200-3-9-.01) determination for nitrogen oxides has been made by the technical secretary after (5 years before rule-effective date).

2. The equipment or incinerator is subject to a new source performance standard for nitrogen oxides promulgated after (5 years before rule-effective date).

3. The equipment either is a NOx Budget unit, as defined in rule 1200-3-27-.06, which the owner or operator certifies by letter to the technical secretary contains components or is served by add-on emission controls the result of which is emission reductions in pounds of NOx per million Btu heat input that aid the unit complying with its NOx Budget emissions limitation (also defined in rule 1200-3-27-.06) or is a cement kiln subject to the requirements of rule 1200-3-27- .04.

4. The equipment or incinerator is exempt from permitting through rule 1200-3-9-.04 or is held to be an insignificant activity or insignificant emission unit by this rule 1200-3-9-.04. For the purpose of this rule 1200-3-27-.08, the exclusion from exemption specified in paragraph 1200-3-9-.04(1) because of standards and requirements in chapter 1200-3-27 does not apply. Therefore, equipment and incinerators described in rule 1200-3-9-.04 are exempt from the requirements of this rule 1200-3-27-.08 notwithstanding the provisions of paragraph 1200-3-9-.04(1).

5. The engine solely drives a mobile source, e.g., an engine that propels a locomotive without generating electricity for uses other than on the locomotive and mobile rail equipment it propels.

6. The nitrogen oxide emissions from the unit of processing equipment result exclusively from the use of incineration equipment to reduce the emission of other air contaminants, e.g., the use of a thermal oxidizer to control volatile organic compound emissions.

7. The incinerator is a control device employed exclusively to reduce the emission of other air contaminants, e.g., a thermal oxidizer to control volatile organic compound emissions.

8. The equipment, incinerator, or unit does not operate during the five-month period May through September.

(4) The owner and operator of each unit of fuel burning equipment, incinerator, or unit of processing equipment subject to the requirements of this rule shall apply, according to the compliance schedule specified in paragraph (5) below, NOx emission control during the five-month period May through September of each year as follows:

(a) If the equipment or incinerator received a construction permit or operating permit under chapter 1200-3-9 on or before (rule-effective date), NOx emission control that satisfies either part 1 or 2, perhaps with offsetting credit as provided for in part 3, as follows:

1. The emission limits as follow:

(i) 0.10 pound per million Btu input for boilers in industrial or commercial application, e.i. other than dedicated exclusively to electric power generation.

(ii) 0.08 pound per million Btu input for units of process emission sources.

(iii) 0.16 pound per million Btu input for gas turbines.

(iv) 4 grams per horsepower-hour for reciprocating internal combustion engines that, as designed by their manufacturer, are not capable of being operated with exhaust oxygen concentrations equal to or less than 1.0 percent, by volume on a dry basis.

(v) 2 grams per horsepower-hour for reciprocating internal combustion engines other than as described in subpart (iv) above.

2. Reasonably available control technology (RACT).

3. Emission control on the equipment or incinerator along with emission control on fuel burning equipment, incinerators, or units of processing equipment that are not subject to the requirements of this rule, the total resulting emission control at least as much as the emission reduction that otherwise would be required be achieved through implementation of the requirements of parts 1 or 2 above.

(b) Best available control technology (BACT) if the equipment or incinerator receives a construction permit under chapter 1200-3-9 after (rule-effective date) and did not have either a construction or an operating permit before this date.

(5) Compliance schedules apply as follow:

(a) The owner or operator of equipment or an incinerator subject to the requirements of this rule and required to apply the emission control specified in subparagraph (4)(a) above shall satisfy the following schedule:

1. By (6 months after rule-effective date) submit to the technical secretary an emission control plan, including an implementation schedule, that, when implemented, will achieve that control, e.g., RACT, as expeditiously as reasonably available.

2. Within 45 days following notification from the technical secretary to the owner or operator that the technical secretary has determined the submitted emission control plan will not achieve the prescribed control or will not achieve control as expeditiously as reasonably available, submit to the technical secretary an amended emission control plan that, when implemented, will achieve emission control as expeditiously as reasonably available.

3. Achieve the emission control no later than 12 months following notification by the technical secretary to the owner or operator that the submitted emission control plan will achieve emission control as expeditiously as reasonably available or following notification as provided in part 2 above from the technical secretary to the owner or operator that the technical secretary has determined the submitted emission control plan will not achieve emission control as expeditiously as reasonably available.

(b) Instead of satisfying the schedule specified in subparagraph (a) above, the owner or operator of equipment or an incinerator may petition the board, through the technical secretary, for a different schedule that will apply in place of the schedule specified in subparagraph (a) above. The petition must be to the technical secretary by (6 month after rule-effective date) and must include supporting information that persuades the board to grant a different schedule. Upon receipt of

the petition the technical secretary shall forward copies of the petition and supporting information to the board and shall request the board act on the petition at its next regular meeting following the board's receipt of the petition and supporting information. The board shall specify by board order the schedule that the petitioner is to satisfy.

(c) The owner or operator of equipment or an incinerator that was exempt from the requirements of this rule through maintenance of emissions below the 50-tons per calendar year threshold specified in subparagraph (3)(a) above but that later exceeds the applicable threshold shall, within 6 months after exceeding this threshold, submit to the technical secretary an emission control plan, including an implementation schedule, that, when implemented, will achieve emission control as specified in subparagraph (4)(a) above as expeditiously as reasonably available. Following this submittal the schedule specified in parts (a)2 and 3 above shall be followed. In lieu of satisfying this schedule, the owner or operator may petition the board according to the provisions of subparagraph (b) above. In this case the petition shall be to the technical secretary within 6 months after the applicable threshold is exceeded.

(d) The owner or operator of equipment or an incinerator subject to the requirements this rule and required to apply BACT shall apply BACT on start-up.

(6) Recordkeeping and reporting requirements for equipment and incinerators referred to in subparagraph (3) of this rule apply as follow:

(a) The owner or operator of equipment or an incinerator referred to in subparagraph (3)(a) above shall maintain records that document its applicable compliance schedule has been satisfied. Each of these records shall be maintained for 5 years following the date of creation of the record and shall be made available for review by the technical secretary or his representative. A copy of these records shall be submitted to the technical secretary upon request.

(b) The owner or operator of equipment or an incinerator that achieves exemption from the emission control requirements of this rule through maintenance of emissions below the 50-tons per calendar year threshold specified in subparagraph (3)(a) above shall maintain records that document the equipment or incinerator is exempt from these standards through the applicable exempting provision. Each of the records shall be maintained for 5 years following the date of creation of the record. These records shall be made available for review by the technical secretary or his representative. A copy of these records shall be submitted to the technical secretary upon request.

Authority: T.C.A. 68-201-105 and 4-5-210 et. seq

Notice of Rulemaking Hearing
Tennessee Department of Environment And Conservation
Division of Air Pollution Control

There will be a public hearing before the technical secretary of the Tennessee Air Pollution Control Board to consider the promulgation of amendments to the Tennessee Air Pollution Control Regulations and the state implementation plan under the authority of Tennessee Code Annotated, Section 68-201-105. The comments received at this hearing will be distributed to the members of the Tennessee Air Pollution Control Board for their review in regard to the proposed amendments. The hearing will be conducted in the manner prescribed by the Uniform Administrative Procedures Act, Tennessee Code Annotated, Section 4-5-201 et. seq. and will take place in the 9th Floor Conference Room of the L & C Annex, located at 159 Fourth Avenue North, Nashville, at 9:30 a.m. on Monday, April 19, 2004. Anyone desiring to make oral comments at this public hearing is requested to prepare a written copy of these comments to be submitted to the hearing officer at the public hearing.

Written comments not submitted at the public hearing will be included in the hearing record only if received by the close of business on Monday, April 19, 2004, at the following address: Technical Secretary, Tennessee Air Pollution Control Board, 9th Floor, L & C Annex, 401 Church Street, Nashville, TN 37243-1531

Any individuals with disabilities who wish to participate in these proceedings or to review these filings should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such participation. Such initial contact may be in person, by writing, telephone, or other means, and should be made no less than ten (10) days prior to Monday, April 19, 2004, or the date such party intends to review such filings, to allow time to provide such aid or service. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, Mr. John Rae White, 21st Floor, 401 Church Street, Nashville TN 37243, (615) 532-0207. Hearing impaired callers may use the Tennessee Relay Service (1-800-848-0298).

If you have any questions about the origination of these rule changes, you may contact Ms. Vicki Lowe or Mr. John Patton at (615) 532-0554. Copies of documents concerning this matter are available for review at the office of the technical secretary and at certain public depositories. For information about reviewing these documents, please contact Ms. Vicki Lowe or Mr. John Patton, 9th Floor, L & C Annex, 401 Church Street, Nashville, TN 37243-1531, telephone (615) 532-0554.

Summary of Proposed Rules

The Tennessee Air Pollution Control Regulations are proposed to be amended to expand to additional counties the applicability of stage 1 and 2 gasoline vapor emission control requirements, to require gasoline and diesel vehicles 1975 and newer with gross vehicle weight ratings of 14,000 pounds or less pass emission inspections as a precondition to vehicle registration renewal, to prohibit tampering with motor vehicle emission control systems statewide, and to minimize visible emissions and unnecessary idling of motor vehicles statewide.

Substance of Proposed Rules

Chapter 1200-3-18
Volatile Organic Compounds

Amendments

Chapter 1200-3-18 is amended in the following six respects:

1. Subparagraph (a) of paragraph (1) of rule 1200-3-18-.22 Bulk Gasoline Plants is amended by inserting between the words "in" and "Davidson" the words "Anderson, Blount, Carter, Cheatham;" between the words

"Davidson" and "Rutherford" the words "Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson;" between the words "Rutherford" and "Shelby" the word "Sevier;" between the words "Shelby" and "Sumner" the word "Sullivan;" and between the words "Sumner" and "Williamson" the words "Tipton, Unicoi, Union, Washington," so that, as amended, the subparagraph shall read:

(a) This rule applies to all unloading, loading, and storage operations at bulk gasoline plants in Anderson, Blount, Carter, Cheatham, Davidson, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson, Rutherford, Sevier, Shelby, Sullivan, Sumner, Tipton, Unicoi, Union, Washington, Williamson, and Wilson Counties and to gasoline tank trucks delivering or receiving gasoline at these bulk gasoline plants.

Authority: TCA 68-201-105 and 4-5-202. Effective April 22, 1993.

2. Paragraph (6) of rule 1200-3-18-.22 Bulk Gasoline Plants is amended by adding a comma and the words "except that for any bulk gasoline plant in Anderson, Blount, Carter, Cheatham, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson, Sevier, Sullivan, Tipton, Unicoi, Union, or Washington County that is an existing source on (rule-effective date) the initial compliance certification required in paragraph .04(1) shall be submitted by (the May 1 after one year after rule-effective date) instead of the date specified in this paragraph .04(1)," so that, as amended, the paragraph shall read:

(6) The owner or operator of any facility containing sources subject to this rule shall comply with the requirements in paragraphs .04(1) and (2) of this chapter, except that for any bulk gasoline plant in Anderson, Blount, Carter, Cheatham, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam. Robertson, Sevier, Sullivan, Tipton, Unicoi, Union, or Washington County that is an existing source on (rule-effective date) the initial compliance certification required in paragraph .04(1) shall be submitted by (the May 1 after one year after rule-effective date) instead of the date specified in this paragraph .04(1).

Authority: TCA 68-201-105 and 4-5-202. Effective April 22, 1993.

3. Subparagraph (a) of paragraph (1) of rule 1200-3-18-.24 Gasoline Dispensing Facilities--Stage I and Stage II Vapor Recovery is amended by inserting between the words "in" and "Davidson" the words "Anderson, Blount, Carter, Cheatham;" between the words "Davidson" and "Rutherford" the words "Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson;" between the words "Rutherford" and "Shelby" the word "Sevier;" between the words "Shelby" and "Sumner" the word "Sullivan;" and between the words "Sumner" and "Williamson" the words "Tipton, Unicoi, Union, Washington," so that, as amended, the subparagraph shall read:

(a) This rule applies to any gasoline dispensing facility in Anderson, Blount, Carter, Cheatham, Davidson, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson, Rutherford, Sevier, Shelby, Sullivan, Sumner, Tipton, Unicoi, Union, Washington, Williamson, or Wilson County and the appurtenant equipment necessary to the gasoline dispensing facility and to any gasoline tank truck that transfers gasoline to storage vessels at such facilities.

Authority: TCA 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed March 8, 1993; effective April 22, 1993. effective June 21, 1996. Amendment filed May 30, 1996; effective August 10, 1996.

4. Part 1 of subparagraph (d) of paragraph (1) of rule 1200-3-18-.24 Gasoline Dispensing Facilities--Stage I and Stage II Vapor Recovery is repealed.

Authority: TCA 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed March 8, 1993; effective April 22, 1993. effective June 21, 1996. Amendment filed May 30, 1996; effective August 10, 1996.

5. Subparagraph (a) of paragraph (6) of rule 1200-3-18-.24 Gasoline Dispensing Facilities--Stage I and Stage II Vapor Recovery is amended by substituting for the present subparagraph a different subparagraph so that, as amended, the resulting subparagraph shall read:

(a) Comply with the requirements in paragraphs .04(1) and (2) of this chapter, except that for gasoline dispensing facilities in Anderson, Blount, Carter, Cheatham, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson, Sevier, Shelby, Sullivan, Tipton, Unicoi, Union, and Washington Counties that are existing sources on (rule-effective date) the initial compliance certifications required in paragraph .04(1) shall be submitted by (the May 1 after one year after rule-effective date) instead of the date specified in this paragraph .04(1) and the initial compliance demonstrations with the applicable requirements specified in Subparagraph (3)(c) shall be according to the schedules specified in subparagraph (7)(c) below using the applicable test methods specified in subparagraphs (4)(b) and (c) of this rule;

Authority: TCA 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed March 8, 1993; effective April 22, 1993. effective June 21, 1996. Amendment filed May 30, 1996; effective August 10, 1996.

6. Paragraph (7) of rule 1200-3-18-.24 Gasoline Dispensing Facilities--Stage I and Stage II Vapor Recovery is amended by adding a new subparagraph (c), so that as amended the paragraph shall read:

(7) Compliance with the requirements of subparagraph (3)(c) shall be as follows:

(a) For facilities subject to this rule owned by an independent small business marketer of gasoline:

1. No less than one-third of these facilities shall have achieved compliance by June 21, 1994;

2. No less than two-thirds of these facilities shall have achieved compliance by June 21, 1995;

3. All facilities shall have achieved compliance by June 21, 1996; and

4. By June 21, 1994, the independent small business marketer shall designate in writing to the Technical Secretary which facilities will achieve compliance by the respective dates of Parts 1, 2, and 3 of this subparagraph.

(b) For facilities subject to this rule not owned by an independent small business marketer of gasoline:

1. For which construction commenced after November 15, 1990, compliance shall be achieved by December 21, 1993,

2. Which dispense at least 100,000 gallons of gasoline per month, based on average monthly sales for the 2-year period before June 21, 1993, and for which construction commenced before November 15, 1990, compliance shall be achieved by June 21, 1994, and

3. Not accounted for in Parts 1 and 2 of this subparagraph, compliance shall be achieved by June 21, 1995.

(c) With regard to achieving compliance for gasoline dispensing facilities in Anderson, Blount, Carter, Cheatham, Dickson, Fayette, Hamilton, Hawkins, Haywood, Jefferson, Johnson, Knox, Loudon, Marion, Meigs, Putnam, Robertson, Sevier, Shelby, Sullivan, Tipton, Unicoi, Union, and Washington Counties that are existing sources on (rule-effective date), the dates listed below shall apply in place of the corresponding dates in subparagraphs (a) and (b) above:

1. For dates in subparagraph (a):

(i) (The May 1 after one year after rule-effective date) in place of June 21, 1994.

(ii) (The May 1 after two years after rule-effective date) in place of June 21, 1995.

(iii) (The May 1 after three years after rule-effective date) in place of June 21, 1996.

2. For dates in subparagraph (b):

(i) (Rule-effective date) in place of June 21, 1993.

(ii) (The May 1 after one year after rule-effective date) in place of December 21, 1993, and June 21, 1994.

(iii) (The May 1 after two years after rule-effective date) in place of June 21, 1995.

Authority: TCA 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed March 8, 1993; effective April 22, 1993. effective June 21, 1996. Amendment filed May 30, 1996; effective August 10, 1996.

Chapter 1200-3-29
Light-Duty Motor Vehicle Inspection and Maintenance

Chapter 1200-3-29 Light-Duty Motor Vehicle Inspection and Maintenance is amended by substituting for the present chapter a new chapter so that as amended the chapter shall read:

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1200-3-29-.01 Purpose

The purpose of this Chapter is to reduce the air pollution produced by the operation of light-duty motor vehicles.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; effective April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994.

1200-3-29-.02 Definitions

As used in this Chapter, all terms not defined herein shall have the meaning given them in Chapter 1200-3-2:

(1) Air Pollution is any particulate matter or any gas or vapor other than water or any combination thereof including any physical, chemical, biological, radioactive substance or matter which is emitted into or otherwise enters the ambient air.

(2) Antique motor vehicle is any motor vehicle over twenty-five years old which is owned solely as a collectors' item and is used for participation in club activities, exhibits, tours, parades and similar uses, but in no event for general transportation.

(3) Carbon dioxide is a compound consisting of the chemical formula (CO_2).

(4) Carbon monoxide is a compound consisting of the chemical formula (CO).

(5) Catalytic converter is a pollution control device containing a catalyst for converting automobile exhaust into mostly harmless products.

(6) Centralized Network means that motor vehicle inspections are conducted by the State and/or a single contractor in an area.

(7) Certificate of Compliance is a certification issued by a Department vehicle inspector or a fleet vehicle inspector that the motor vehicle identified on the certificate complies with the emission performance and anti-tampering criteria appropriate to the vehicle as specified in this regulation.

(8) Check Engine Light: for the definition see Malfunction Indicator Light (MIL).

(9) Contractor is a person, business firm, partnership, city or county government, or corporation with whom the Department has a contract that provides for the operation of one or more Official Inspection Stations.

(10) Department means the Tennessee Department of Environment and Conservation, Division of Air Pollution Control.

(11) Department Vehicle Inspector is any person employed by the Tennessee Division of Air Pollution Control and/or contractor who is certified by the Technical Secretary as qualified to perform vehicle emissions performance and anti-tampering inspections.

(12) Diagnostic Trouble Codes (DTCs) is an alphanumeric code which is set in a vehicle's onboard computer when a monitor detects a condition likely to lead to (or has already produced) a component or system failure or otherwise contribute to exceeding emissions standards by 1.5 times the certification FTP standard.

(13) Diesel powered motor vehicle is a motor vehicle powered by a compression-ignition internal combustion engine.

(14) Electric powered motor vehicle is a motor vehicle which uses a propulsive unit powered exclusively by electricity.

(15) Exhaust emissions are substances emitted into the atmosphere from any opening downstream from the exhaust ports of a motor vehicle engine.

(16) Exhaust gas analyzer is a device for sensing the amount of air pollutants, including carbon monoxide and hydrocarbons, in the exhaust emissions of a motor vehicle. For the purpose of this regulation, this shall mean analyzing devices of the nondispersive infrared type or any other analyzing devices that provide equal or greater accuracy as approved by the Technical Secretary.

(17) Factory-Installed Motor Vehicle Pollutant Control System is a motor vehicle pollution control system installed by the vehicle or engine manufacturer to comply with the United States government motor vehicles emission control laws and regulations.

(18) Federal Test Procedure (FTP) is the test procedure used to determine the compliance of vehicles with federal emission standards.

(19) Fleet means 50 or more light-duty motor vehicles owned by the same person or business entity which are in-use, registered in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program in order to attain and maintain compliance with national ambient air quality standards within any area of Tennessee or an adjoining state and not owned or held primarily for the purpose of resale.

(20) Fleet Inspection Location is any motor vehicle inspection facility operated by a fleet operator holding a valid fleet inspection permit.

(21) Fleet Inspection Permit is a certificate issued by the Technical Secretary authorizing a fleet operator to conduct motor vehicle inspection in accordance with this regulation and other requirements as determined by the Department.

(22) Fleet Operator is the person owning a group of motor vehicles which constitute a fleet as defined in this regulation.

(23) Fleet Vehicle Inspector is any person retained by a fleet operator holding a valid fleet inspection permit and who is certified by the Technical Secretary as qualified to perform vehicle emissions performance and anti-tampering inspections.

(24) Gasoline inlet restrictor is the leaded fuel nozzle restrictor installed on motor vehicles which was designed for the use of unleaded gasoline only.

(25) Gasoline powered motor vehicles is any motor vehicle powered by spark-ignition internal combustion engine.

(26) GVWR is a term defining the gross vehicle weight as determined from the combined manufacturer vehicle and maximum load rating.

(27) Heavy-duty motor vehicle is any motor vehicle having a combined manufacturer vehicle and maximum loading rate (GVWR) to be carried thereon in the excess of 14,000 pounds (6350 kilograms).

(28) Hydrocarbon is any organic compound consisting predominantly of carbon and hydrogen.

(29) Idle speed means the unloaded engine speed of a motor vehicle when the accelerator pedal is fully released. In a vehicle equipped with an automatic transmission, this is with the drive selector in neutral or park. In a vehicle equipped with a manual transmission, this is with the gear selector in neutral and the clutch fully engaged. In all vehicles, the engine operated accessories shall be turned off.

(30) Internal combustion engine is any engine in which the combustion of gaseous, liquid or pulverized solid fuel takes place within one or more cylinders, or any engine with one or more combustion chambers.

(31) Light-duty motor vehicle is any motor vehicle having a combined manufacturer vehicle and maximum load rating to be carried thereon (GVWR) of 14,000 pounds (6350 kilograms) or less.

(32) Malfunction Indicator Light (MIL) is known as the Check Engine light. The Malfunction Indicator Light is illuminated on the dashboard when conditions exist likely to result in emission exceeding FTP standards by 1.5 time or worse. Alternatives include "Service Engine Soon," as well as an unlabeled icon of an engine.

(33) Manufacturers Idle-speed Specification is the engine idle speed specified for a particular motor vehicle as printed on the engine compartment emissions system data plate or in the owners manual.

(34) Model Year means the annual production period of new motor vehicles or new motor vehicle engines designated by the calendar year in which such production ends. If the manufacturer does not designate a production period, the year with respect to such vehicle or engines shall mean the twelve (12) month period beginning January of the year in which production thereof begins. The model year for a motor vehicle constructed by other than the original manufacturer shall be assigned by the Technical Secretary.

(35) Motor vehicle is any self-propelled vehicle used for transporting persons or commodities on public roads.

(36) Motor Vehicle Regulatory License is the annual motor vehicle license required as a condition for legal operation of certain classes of motor vehicles.

(37) Motorcycle is any motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground, and having a curb weight of 2000 pounds (907 kilograms) or less.

(38) New motor vehicle is any motor vehicle that has never been previously titled or registered in this or any other jurisdiction and whose ownership document remains as a manufacturer's certificate of origin.

(39) Official Inspection Station means a facility operated by the Department and/or contractor to conduct test only vehicle inspections pursuant to this regulation, in a Centralized Network.

(40) Onboard Diagnostics (OBD) is a system of vehicle component and condition monitors controlled by a central, onboard computer designed to signal the motorist when conditions exist which could lead to a vehicle's exceeding its certification standards by 1.5 times the FTP standard.

(41) OBD Data Link Connector (DLC) is and serve as an interface between vehicle's usually located under the dashboard on the driver's side between a vehicle's OBD computer and the OBD scanner. Connecting an OBD scanner to the DLC allows inspectors and vehicle repair technicians to read the readiness status of the vehicle's various onboard monitors as well as any diagnostic trouble codes.

(42) Pollution Control Device is the equipment designed by the manufacturer for installation on a motor vehicle for the purpose of reducing pollutants emitted from the vehicle, or a system or engine modification on a motor vehicle which causes a reduction of pollutants emitted from the motor vehicle.

(43) Readiness codes are status flags stored by a vehicle's onboard computer which is different from the DTC in that it does not indicate a vehicle fault, but rather whether or not a given monitor has been run (i.e. whether or not the component or system in question has been checked to determine if it is functioning properly).

(44) RPM is a term describing the engine crankshaft revolutions per minute.

(45) Tampering means to remove, render inoperative, cause to be removed, or make less operative any emission control device, unless such removal or act to render inoperative or less operative is for the purpose of motor vehicle disposal or salvage operation.

(46) Technical Secretary is the Technical Secretary of the Air Pollution Control Board of the State of Tennessee or his designated representative.

(47) Vehicle Exhaust System means all devices, equipment and systems which transport exhaust emissions from the exhaust ports of the motor vehicle engine to the atmosphere.

(48) Wheel Tax is the annual commercial vehicle tax required as a condition for the legal operation of certain classes of motor vehicles.

(49) Category I County is any county that has been designated by the Board to have a motor vehicle inspection and maintenance program applicable to light-duty motor vehicles having a model year of 1975 and newer.

(50) Category II County is any county that has been designated by the Board to have a motor vehicle inspection and maintenance program applicable to light-duty motor vehicles having a model year of 1981 and newer.

(51) Opacity is the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(52) Snap Acceleration Smoke Opacity Test is a test that measures the opacity levels of diesel powered motor vehicles. Tests will be conducted in accordance with the Society of Automotive Engineers (SAE) practice referred to as SAE1667 Snap Acceleration Smoke Test Procedure for Heavy-Duty Diesel Powered Vehicles.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed July 8, 2001; effective October 1, 2001. Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.03 Motor Vehicle Inspection Requirements

(1) All of the light-duty motor vehicles registered in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program or directly with the motor vehicle division of the Tennessee Department of Revenue pursuant to T.C.A. § 55-4-207 and used within or assigned to a user within that county, except those exempted by Rule 1200-3-29-.04, are required to be inspected annually for compliance with emissions performance and anti-tampering test criteria in Rules 1200-3-29-.05 and 1200-3-29-.06. Owners of vehicles so inspected are required to obtain a Certificate of Compliance. A Certificate of Compliance shall be valid for 90 days following the date of issuance, except for those registered pursuant to T.C.A. § 55-4-207, which shall be valid for one year.

(2) Any light-duty vehicle which is owned or operated by an agency of the federal government and which is operated on a federal installation located in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program is required to be inspected annually for compliance with emissions performance and anti- tampering criteria in Rules 1200-3-29-.05 and 1200-3-29-.06. This requirement shall not apply to a vehicle, which is on the facility for less than a total of 60 days during the calendar year. The federal installation shall provide documentation of proof of compliance to the Technical Secretary. The documentation at a minimum shall include a list of all subject vehicles showing proof of compliance. An updated list of the subject vehicles shall be submitted to the Technical Secretary annually.

(3) A Certificate of Compliance shall be issued only by the Department and/or contractor vehicle inspector or a licensed fleet vehicle inspector and only after the vehicle demonstrates compliance with the test criteria established in Rules 1200-3-29-.05 and 1200-3-29-.06.

(4) All light-duty motor vehicles required to obtain a Certificate of Compliance except those vehicles contained in a fleet which has a valid fleet inspection permit and those vehicles registered in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program but not subject to either the Wheel Tax or the Motor Vehicle Regulatory License requirements shall obtain a valid Certificate of Compliance within 90 days prior to the required date for payment of the wheel tax or the motor vehicle regulatory license fee as appropriate to the class of motor vehicle.

(5) All light-duty motor vehicles required to obtain a Certificate of Compliance that are contained in a fleet having a valid fleet inspection permit operated on a Federal installation registered in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program or vehicles registered in any county that has been designated by the Board to have a motor vehicle inspection and maintenance program in order to attain and maintain compliance with national ambient air quality standards within any area of Tennessee or an adjoining state but exempt from the Wheel Tax and Motor Vehicle Regulatory License requirements shall obtain a valid Certificate of Compliance

within 90 days prior to a compliance date for that particular motor vehicle. The Technical Secretary shall establish a schedule of compliance dates for such vehicles. A copy of the Certificate of Compliance for each fleet vehicle shall be submitted to the Technical Secretary within 90 days of the compliance date.

(6) The Certificate of Compliance must be presented to the County Clerks' office prior to the issuance of the Wheel Tax or the Vehicle Regulatory License.

(7) The requirements contained in this Chapter shall become effective July 1, 1994. The provisions concerning OBD testing shall become effective July 1, 2002.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed October 12, 1998; effective December 26, 1998. Amendment filed July 8, 2001; effective October 1, 2001.

1200-3-29-.04 Exemption from Motor Vehicle Inspection Requirements

(1) The following classes of motor vehicles are exempt from the requirements established in Rule 1200-3-29-.03 of this Chapter:

(a) antique motor vehicles

(b) (repealed)

(c) electric powered light-duty vehicles

(d) gasoline powered light-duty motor vehicles with a designated model year prior to 1975

(e) motorcycles

(f) heavy-duty motor vehicles

(g) new motor vehicles being registered for the first time or one year from initial registration

(h) tactical military vehicles

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.05 Motor Vehicle Emission Performance Test Criteria

(1) Standard for Category I Counties

(a) Vehicles shall not be allowed to complete emission performance testing if one or more of the following conditions exist when the vehicle is presented for testing:

1. For 1975 through 1995 model gasoline powered motor vehicles, if the vehicle exhaust system leaks in such a way as to dilute the exhaust emissions being sampled by the exhaust gas analyzer; the sum of carbon monoxide and carbon dioxide concentrations recorded for idle speed reading from an exhaust outlet must not be less than 6%.

2. For 1975 through 2001 model diesel powered motor vehicles, if the vehicles exhaust system leaks in such a way as to dilute the exhaust emissions being sampled.

3. The visible emissions from the motor vehicle are such that it would interfere with operation of the testing equipment.

(b) Gasoline powered motor vehicle models 1975 through 1995 which have idle speed emission values that exceed the test standards specified in Table I shall fail the emission performance test.

TABLE I
MAXIMUM IDLE SPEED EMISSIONS ALLOWABLE
DURING IDLE SPEED EMISSIONS TEST

	CO (%)		HC (PPM)	
VEHICLE MODEL YEAR	LIGHT-DUTY VEHICLES LESS THAN OR EQUAL TO 6000 LBS GVWR	LIGHT-DUTY VEHICLES GREATER THAN 6000 LBS GVWR	LIGHT-DUTY VEHICLE LESS THAN OR EQUAL TO 6000 LBS GVWR	LIGHT-DUTY VEHICLES GREATER THAN 6000 LBS GVWR
1975	5.0	6.5	500	750
1976	5.0	6.5	500	750
1977	5.0	6.5	500	750
1978	4.0	6.0	400	600
1979	4.0	6.0	400	600
1980	3.0	4.5	300	400
1981 & NEWER	1.2	4.0	220	400

(c) Diesel powered motor vehicle models 1975 through 2001 shall be subject to the Snap Acceleration Smoke Opacity Test and shall not exceed the following opacity standards:

1. For model years 1975 through 1990, the opacity shall not exceed 55 percent.

2. For model years 1991 through 2001, the opacity shall not exceed 40 percent.

(d) All 1996 and newer gasoline powered motor vehicles and all 2002 and newer diesel powered motor vehicles shall be subject to an OBD inspection. An OBD check shall consist of two parts, a visual check of the MIL, and an electronic examination of the OBD computer itself. The vehicle is required to pass a MIL command on test, and a bulb check test. After the vehicle has passed the MIL command on test and the bulb check test, it must not have any DTCs set and all of the required readiness codes must be set in order to pass an OBD inspection.

(e) When a motor vehicle is equipped with other than the original engine or when a motor vehicle has been constructed, modified, customized or altered in such a way so that the model year cannot be clearly determined, the vehicle shall be classified for purposes of the emission performance test by the model year of the chassis.

(2) Standard for Category II Counties

(a) Vehicles shall not be allowed to complete emission performance testing if one or more of the following conditions exist when the vehicle is presented for testing:

1. For 1981 through 1995 model gasoline powered motor vehicles, if the vehicle exhaust system leaks in such a way as to dilute the exhaust emissions being sampled by the exhaust gas analyzer; the sum of carbon monoxide and carbon dioxide concentrations recorded for idle speed reading from an exhaust outlet must not be less than 6%.

2. For 1981 through 2001 model diesel powered motor vehicles, if the vehicles exhaust system leaks in such a way as to dilute the exhaust emissions being sampled.

3. The visible emissions from the motor vehicle are such that it would interfere with operation of the testing equipment.

(b) Gasoline powered motor vehicle models 1981 through 1995 which have idle speed emission values that exceed the test standards specified in Table II shall fail the emission performance test.

TABLE II
MAXIMUM IDLE SPEED EMISSIONS ALLOWABLE
DURING IDLE SPEED EMISSIONS TEST

	CO (%)		HC (PPM)	
VEHICLE MODEL YEAR	LIGHT-DUTY VEHICLES LESS THAN OR EQUAL TO 6000 LBS GVWR	LIGHT-DUTY VEHICLES GREATER THAN 6000 LBS GVWR	LIGHT-DUTY VEHICLE LESS THAN OR EQUAL TO 6000 LBS GVWR	LIGHT-DUTY VEHICLES GREATER THAN 6000 LBS GVWR
1981 & NEWER	1.2	4.0	220	400

(c) Diesel powered motor vehicle models 1981 through 2001 shall be subject to the Snap Acceleration Smoke Opacity Test and shall not exceed the following opacity standards:

1 For model years 1981 through 1990, the opacity shall not exceed 55 percent.

2. For model years 1991 through 2001, the opacity shall not exceed 40 percent.

(d) All 1996 and newer gasoline powered motor vehicles and all 2002 and newer diesel powered motor vehicles shall be subject to an OBD inspection. An OBD check shall consist of two parts, a visual check of the MIL, and an electronic examination of the OBD computer itself The vehicle is required to pass a MIL command on test, and a bulb check test. After the vehicle has passed the MIL command on test and the bulb check test, it must not have any DTCs set and all of the required readiness codes must be set in order to pass an OBD inspection.

(e) When a motor vehicle is equipped with other than the original engine or when a motor vehicle has been constructed, modified, customized or altered in such a way so that the model year cannot be clearly determined, the vehicle shall be classified for purposes of the emission performance test by the model year of the chassis.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.06 Motor Vehicle Anti-Tampering Criteria

(1) Each gasoline powered motor vehicle subject to an emission performance test is also subject to a visual anti-tampering inspection under this rule and shall comply with the following minimum anti-tampering requirements:

(a) At a minimum, the emissions control devices subject to an inspection are the catalytic converter, gasoline fuel inlet restrictor and fuel filler cap. If any emission control devices are found in a tampered condition, such devices shall be repaired or replaced prior to any retesting or reinspection as provided for in Rule 1200-3-29-.10. For the purpose of this rule, tampering of the

gasoline fuel inlet restrictor shall constitute tampering of the catalytic converter, and such catalytic converter shall be replaced prior to any retesting or reinspection.

(b) Nothing in this Rule shall be construed as to relieve a motor vehicle owner from complying with the provisions of Rule 1200-3-29-.05.

(2) Each gasoline powered motor vehicle subject to an OBD inspection is also subject to an anti-tampering test, and shall comply at a minimum with a visual inlet restrictor check, a DLC check, and a gas cap pressure test.

(3) Each diesel powered motor vehicle subject to an emission performance test is also subject to an anti-tampering test and shall comply at a minimum with a catalytic converter check, if applicable, and a gas cap pressure test.

(4) Each diesel powered motor vehicle subject to an OBD inspection is also subject to an anti-tampering test, and shall comply at a minimum with a DLC check and a gas cap pressure test.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.07 Motor Vehicle Emissions Performance Test Methods

(1) For gasoline powered motor vehicles the motor vehicle emissions performance test shall consist of the sampling of exhaust emission at idle speed and measurement of CO_2 dilution, CO concentration and HC concentration.

(2) For gasoline powered motor vehicles sampling of exhaust emission shall consist of measurement of CO_2 dilution, CO concentration and HC concentration during idle operation using an approved exhaust gas analyzer. Measurements taken during the initial idle phase may be succeeded by measurements taken during a second idle phase which has followed an engine conditioning phase consisting of engine operation at approximately 2500 RPM for approximately 20 seconds. The lowest emission readings from either of these idle speed test phases shall be used to determine pass or failure of the emissions performance test.

(3) For diesel powered motor vehicles, the motor vehicle emissions performance test shall consist of measuring exhaust opacity levels as the accelerator pedal is rapidly depressed while the vehicle transmission is disengaged.

(4) For gasoline powered motor vehicles with a model year of 1996 and newer and for diesel powered motor vehicles with a model year of 2002 and newer, an onboard diagnostic test shall be performed. All vehicles that have a readily accessible OBD system shall be tested. The results of the test shall be used to determine pass or failure of the vehicle.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.08 Motor Vehicle Anti-Tampering Test Methods

(1) For gasoline powered motor vehicles in a Category I county with model years 1975 through 1995, and gasoline powered motor vehicles in a Category II county with a model year of 1981 through 1995, the motor vehicle anti-tampering test shall be verified by the Department vehicle inspector and consist of the following elements:

(a) The vehicle shall be checked by the Department vehicle inspector to see that the appropriate gas cap is securely in place. If the appropriate gas cap is not in place, it shall result in the failure of the anti-tampering test.

(b) If the gas cap is present, it shall be removed and the gasoline inlet restrictor on the vehicle shall be checked to see if it has been damaged or removed. If the inlet restrictor has been damaged or removed, it shall result in the failure of the anti-tampering test.

(c) The vehicle shall be checked visually (with a mirror or otherwise) to see if the catalytic converter is the correct type for the certified vehicle configuration and is properly connected. If the catalytic converter has been tampered with, removed or is the incorrect configuration it shall result in the failure of the anti-tampering test.

(2) Each gasoline powered motor vehicle with a model year of 1996 and newer is subject to an anti-tampering test, and shall comply at a minimum with a visual inlet restrictor check, the DLC and a gas cap pressure test. The anti-tampering test shall consist of the following elements:

(a) Vehicle shall be visually checked to see if the appropriate gas cap is securely in place.

(b) If the gas cap is present, it shall be removed and a gas cap pressure test shall be performed to assure the cap is working properly. If the gas cap fails the pressure test, it shall result in a failure of the anti-tampering test. While the gas cap is removed, the gasoline inlet restrictor on the vehicle shall be visually checked to see if it has been damaged or removed. Tampering to the gasoline fuel inlet restrictor shall constitute a failure of the anti-tampering test.

(c) If the DLC has been tampered with or is missing, it must be repaired or replaced prior to any retesting or reinspection. If the vehicle is incompatible with the OBD test equipment or if the DLC is readily unavailable, then the vehicle is required to pass the idle speed emission values as specified in Paragraph 1200-3-29-.05.

(3) Each diesel powered motor vehicles with a model year of 2002 and newer is subject to an anti-tampering test, and shall comply at a minimum with a DLC check and a gas cap pressure test. The anti-tampering test shall consist of the following elements:

(a) Vehicle shall be visually checked to see if the appropriate gas cap is securely in place.

(b) If the gas cap is present, it shall be removed and a gas cap pressure test shall be performed to assure the cap is working properly. If the gas cap fails the pressure test, it shall result in a failure of the anti-tampering test.

(c) If the DLC has been tampered with or is missing, it must be repaired or replaced prior to any retesting or reinspection. If the vehicle is incompatible with the OBD test equipment or if the DLC is readily unavailable, then the vehicle is subject to the Snap Acceleration Smoke Opacity Test as specified in Paragraph 1200-3-29-.05.

(4) Pass/fail determination. A pass or fail determination shall be made for each of the test elements in Paragraph 1200-3-29-.08(1), (2), or (3). If a vehicle fails any of the anti-tampering elements in Paragraph 1200-3-29-.08(1), (2), or (3), it shall result in the failure of the motor vehicle inspection test and a Certificate of Compliance shall not be issued until the repairs have been made to the vehicle.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed September 19, 2001; effective December 3, 2001.

(1) The motor vehicle inspection program shall be operated by the Tennessee Department of Environment and Conservation, Division of Air Pollution Control, the State approved local government and/or the State approved contractor.

(2) All motor vehicle inspections shall be conducted at official or mobile inspection stations operated by the Department, local government and/or contractor except those fleet inspections provided for in Paragraph 1200-3-29-.09(3) of this regulation.

(3) In lieu of the requirement in Paragraph 1200-3-29-.09(2) of this regulation, vehicles owned or operated by a fleet operator to whom a fleet inspection permit has been issued may be inspected by a licensed fleet vehicle inspector at a site other than an official inspection station.

(4) A light-duty fleet vehicle operator may make application to the Technical Secretary for fleet inspection permit. Minimum requirements for issuance of a permit shall be:

(a) Possession of an approved analyzer, tools and equipment determined by the Technical Secretary to be adequate for conducting the required emissions inspections;

(b) Demonstration of knowledge of methods and procedures for conducting the required emissions performance and anti-tampering inspections according to criteria developed by the Technical Secretary;

(c) Provisions of appropriate facility for vehicle testing and appropriate secure storage facility for storage of Certificates of Compliance and records of inspections;

(d) Agreement to supply inspection and Certificate of Compliance issuance information as requested by the Technical Secretary and to allow access to testing facility, testing equipment, testing personnel, testing data, Certificate of Compliance inventory and fleet vehicles as requested by the Technical Secretary;

(e) Retention of licensed fleet vehicle inspector to conduct fleet vehicle inspections.

(5) A fleet inspection permit shall be valid for one year from the date of issuance and may be renewed through application to the Technical secretary within 30 days prior to the date of expiration. A fleet inspection permit is not transferable and may be denied, suspended or revoked by the Technical Secretary for failure to comply with this regulation and other requirements as determined by the Department.

(6) A person employed or retained by a fleet operator holding a valid fleet inspection permit may make application to the Technical Secretary for a fleet vehicle inspector's license. Minimum requirements for issuance of this license shall be:

(a) Successful completion of a vehicle inspector training course prepared and offered by the Department;

(b) Successful completion of the mechanics training course approved by the Technical Secretary;

(c) Agreement to participate in additional training activities from time to time as specified by the Technical Secretary;

(d) Provision of written evidence that applicant is employed or retained by the fleet operator.

(7) A fleet inspector's license shall be valid for one year from the date of issuance and may be renewed through application to the Technical Secretary within thirty (30) days prior to the date of expiration. A fleet vehicle inspector's license is not transferable and may be denied, suspended or revoked by the

Technical Secretary for failure to comply with this regulation and other requirements as determined by the Department.

(8) All vehicles issued a Certificate of Compliance under the provision of Paragraph 1200-3-29-.09(3) of this regulation shall be subject to retesting at either the fleet inspection location or an official inspection station as deemed necessary by the Technical Secretary in order to maintain compliance with the intent of this regulation.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994.

1200-3-29-.10 Motor Vehicle Inspection Fee

(1) There shall be a fee set by the Tennessee Air Pollution Control Board for the Inspection & Maintenance program. The fee shall be for each emission test and payable at the time of inspection by the operator of the vehicle subject to the testing.

(2) There shall be a fee of five dollars ($5.00) for each Certificate of Compliance generated by licensed fleet inspectors for issuance to motor vehicles which comply with the testing provisions of this regulation.

(3) Each vehicle which fails its initial inspection is entitled to one (1) reinspection at no charge if the vehicle is accompanied by the entire initial inspection report.

(4) Motor vehicle owners or operator shall be given in writing the results of all inspection procedures carried out at any official inspection station.

(5) There shall be a fee of One Hundred Dollars ($100.00) for each annual Fleet Inspection Permit issued to fleet vehicle operators.

(6) There shall be a fee of One Hundred Dollars ($100.00) for each initial annual Fleet Vehicle Inspector's License issued to a fleet vehicle inspector; there shall be a fee of Twenty-Five Dollars ($25.00) for each annual renewal of a Fleet Vehicle Inspector's License.

Authority: T.C.A. §§ 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed February 14, 1994; April 30, 1994. Stay of effective date filed April 15, 1994; effective June 14, 1994. Amendment filed July 8, 2001; effective October 1, 2001; Amendment filed September 19, 2001; effective December 3, 2001.

1200-3-29-.11 Waiver Provisions

(1) The purpose of this rule is to allow a person to operate a motor vehicle that fails to meet the applicable motor vehicle emission performance test criteria as specified in Rule 1200-3-29-.05, provided the department has issued to the owner of the motor vehicle a waiver.

(2) A waiver issued pursuant to this rule shall relieve the owner of a motor vehicle from responsibility for taking any further action to reduce exhaust emissions from the motor vehicle until the motor vehicle is next due for inspection, pursuant to Rule 1200-3-29-.03.

(3) Any owner of a motor vehicle may be eligible and may apply to the department for a waiver pursuant to this rule if:

(a) An application for a waiver is submitted to a representative at an inspection site designated by the department;

(b) The vehicle passed the tampering portion of the vehicle inspection;

(c) All of the exhaust emissions components appropriate to make, model, year, series, and engine size are in place and visually operating;

(d) The vehicle failed the first initial emissions test and subsequent retest after repairs;

(e) The owner of the vehicle has spent the required amount, pursuant to part 1, 2, or 3 of this subparagraph, in parts and/or labor as an attempt to bring the vehicle into compliance with the motor vehicle emission performance test criteria as specified in Rule 1200-3-29-.05.

1. For 1975 through 1980 model year vehicles – the minimum expenditure requirement is $75.00. All repairs must be appropriate and/or related to the cause of the test failure. This expenditure includes parts and labor, as specified in part 4.

2. For 1981 through 1995 model year vehicles – the minimum expenditure requirement is $200.00. All repairs must be appropriate and/or related to the cause of the test failure. This expenditure includes parts and labor, as specified in part 4.

3. For 1996 and newer model year vehicles – the minimum expenditure requirement is $650 00. All repairs must be appropriate and/or related to the cause of the test failure. This expenditure includes parts and labor, as specified in part 4.

4 The cost of labor can be applied towards the expenditure amount only if the repairs were performed by a certified repair technician (National Institute for Automotive Service Excellence[ASE] certified in engine repair and engine performance). Repairs performed by non-technicians (e.g., owners) may only apply the cost of parts towards the expenditure.

(f) Documentation of repairs must be provided to the department. Documentation shall include receipts itemized, dated and include the name of each part, part number, and manufacturer.

(g) Emission related repairs were preformed on the vehicle sixty (60) days before or after the initial failed exhaust emissions inspection; and

(h) Proof of county residence is provided to the department. (Example: Driver's License and/or vehicle registration)

(4) The owner of a motor vehicle still within the failed vehicle's warranty period shall use all available warranty coverage to have repairs made that are directed toward correcting the cause of the motor vehicle's inspection failure prior to applying for a waiver and provide support documentation pursuant to subparagraph (a) or (b) of this paragraph.

(a) Documentation indicating that any available warranty coverage has been used to have the repairs made that are directed toward correcting the cause of the motor vehicle's failure to pass the motor vehicle inspection shall be provided to the Department; or

(b) A written denial of warranty coverage for the needed repairs from the manufacturer or authorized dealer shall be provided to the Department.

(5) Prior to the issuance of a waiver, Division staff shall perform a visual (underhood) inspection of the motor vehicle. This inspection will be performed to determine that emission related repairs have been completed and verify that the minimum expenditure has been met. If during the visual inspection any motor vehicle tampering, as defined in Division Rule 1200-3-36, is discovered, a waiver cannot be granted.

(6) The waiver shall be valid for one year or until the next registration expiration date, whichever is sooner.

(7) A waiver shall be granted to the owner of a motor vehicle provided the requirements of this rule have been fulfilled.

(8) Upon receiving a waiver from the department, the motor vehicle owner shall be exempt from the requirements of paragraph (6) in rule 1200-3-29-.03 within the time period prescribed in paragraph (6) of rule 1200-3-29-.11.

Authority: T. C.A. Section §§ 55-4128, 68-201-105 and 4-5-201 et. seq. Administrative History: Original rule filed August 30, 2001; effective date November 13, 2001.

Chapter 1200-3-36
Motor Vehicle Tampering

New rules

Table of Contents

1200-3-36-.01 Purpose

The purpose of this chapter is to reduce the air pollution caused by tampering with a motor vehicle emissions system.

Authority: TCA 68-201-105 and 4-5-202

1200-3-36-.02 Definitions

Unless specifically defined in this chapter, the definitions from Chapters 1200-3-2 and 1200-3-29 shall apply:

(1) "Aftermarket part" means any part offered for sale for installation in or on a motor vehicle after such vehicle has left the vehicle manufacturer's production line.

(2) "Air pollution emission control device" is a mechanism or equipment installed on a motor vehicle by the manufacturer that controls and reduces generated emissions that would otherwise be released into the atmosphere.

(3) "Antique motor vehicle" is any motor vehicle over twenty-five years old which is owned solely as a collectors' item and is used for participation in club activities, exhibits, tours, parades and similar uses, but in no event for general transportation.

(4) "Catalytic converter" is an air pollution emission control device containing a catalyst for converting automobile exhaust into mostly harmless products.

(5) "Department" means the Tennessee Department of Environment and Conservation, Division of Air Pollution Control.

(6) "EGR valve" means an exhaust gas recirculation valve.

(7) "Federal Motor Vehicle Standards" are the required emission standards as defined in Title 40, Code of Federal Regulations, Parts 86 and 88.

(8) "Individual" is a private citizen who may or may not be the owner or operator of the motor vehicle that performs engine, transmission, and/or exhaust system repairs without obtaining the services of a repair technician provided that all repairs are in accordance with Rule 1200-3-36-.03.

(9) "Kit Car" means a motor vehicle which does not utilize a chassis from a vehicle certified to meet emissions control standards or for which the original manufacturer's identification has been eliminated due to the replacement of the vehicle's body with one of a different make and/or style.

(10) "Leaded gasoline" means gasoline containing greater than five hundredths (0.050) gram of lead per gallon of gasoline.

(11) "Motor vehicle" is any self-propelled vehicle used for transporting persons or commodities on public roads.

(12) "New motor vehicle" is any motor vehicle that has never been previously titled or registered in this or any other jurisdiction and whose ownership document remains as a manufacturer's certificate of origin.

(13) "Repair" means to replace any component of an engine, transmission, exhaust, and/or electrical system of a motor vehicle.

(14) "Repair facility" is any garage, muffler shop, dealership, or other commercial establishment that performs engine, transmission, and/or exhaust system repairs, including electronic computer systems associated with the above-mentioned systems, on motor vehicles.

(15) "Repair technician" is any person who:

(a) is professionally engaged full-time in vehicle repair or employed by an ongoing business whose purpose is vehicle repair, or

(b) is a certified mechanic with valid certifications that are current from the National Institute for Automotive Service Excellence (ASE) in Electrical Systems (A6), Engine Performance (A8), and Advanced Engine Performance Specialist (L1); or

(c) has satisfactorily completed an independent or vehicle manufacturer's training course, or has passed a nationally-recognized test, which course or test covers the emissions test methods used, diagnosis of the causes for failures, and repair work most frequently done for vehicles failing the transient emission test.

(16) "Routine maintenance" is the replacing of motor vehicle parts that routinely wear as a result of normal operation.

(17) "Tampering" means to modify, remove, render inoperative, cause to be removed, or make less operative any air pollution emission control device or element of design installed on a motor vehicle or motor vehicle engine which results in an increase in emissions beyond established federal motor vehicle standards. Tampering includes, but is not limited to, any of the following:

(a) Removing or rendering inoperative such devices as catalytic converter, air pump, or EGR valve,

(b) Disconnecting or plugging vacuum lines or electrical or mechanical portions of the pollution control system such as electrical solenoids or vacuum-activated valves,

(c) Modifying a motor vehicle's emission control design to other than the manufacturer's specifications,

(d) Installing any replacement part that is not equivalent in design and function to the part that was originally on the motor vehicle,

(e) Adding a part on a motor vehicle that does not meet the manufacturer's specifications, such as installation of dual carburetors to replace a single carburetor, or installing a dual exhaust prior to the catalytic converter on a vehicle that was manufactured as single exhaust only,

(f) Installing a motor vehicle engine unless the resulting motor vehicle is identical to aconfiguration of the same or newer model year as the original motor vehicle chassis. This configuration must comply with the federal motor vehicle standards,

(g) Introducing leaded gasoline or any gasoline additive into a motor vehicle that was originally designed to use unleaded gasoline only that would result in the poisoning of catalysts,

(h) Installing any electrical device that is attached to the motor vehicles computer system that is designed to give false onboard diagnostic readiness codes and is used to pass the onboard diagnostic test,

(i) Introducing any chemical or gas into the gasoline other than what is recommended by the manufacturer to be an approved fuel or fuel additive,

(j) Detuning the motor vehicle engine to a lower or higher idle to run out of manufacturer's design specifications,

(k) Operating the motor vehicle without the appropriate gas cap or the appropriate gasoline fuel inlet restrictor,

(l) Installing high performance chips which reprograms or overrides the motor vehicles on-board computer system,

(m) Installing any aftermarket part that does not meet the manufacturer's specifications.

(18) "Technical Secretary" is the Technical Secretary of the Air Pollution Control Board of the State of Tennessee or his designated representative.

(19) "Vehicle owner" is any individual, business, or corporation that holds the title to a motor vehicle.

Authority: TCA 68-201-105 and 4-5-202

1200-3-36-.03 Motor Vehicle Tampering Prohibited

(1) No person shall cause, suffer, allow, or permit tampering of a motor vehicle or motor vehicle engine that is in compliance with federal motor vehicle standards except where the purpose of modification or removal of the air pollution emission control device is to install another device which is equally effective in reducing emissions from the vehicle.

(2) No person shall manufacture, sell, offer to sell, or install any part or component on a motor vehicle or motor vehicle engine where the purpose of the part or component is to bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine that is in compliance with the federal motor vehicle standards.

(3) No person shall perform repairs on any part of a motor vehicle that is in a tampered state unless such repairs are performed that brings the vehicle into compliance with federal motor vehicle standards, or not work on that part of the motor vehicle, in order not to be liable for tampering. This provision applies regardless of the age or mileage of a vehicle that was designed to meet federal motor vehicle standards.

(4) No person shall rent, lease, sell, offer for sale, or in any manner transfer ownership of a motor vehicle that is in a tampered state unless such vehicle is to be used solely for parts or scrap or is in a condition that it cannot be operated on roads.

(5) No person shall operate a motor vehicle if such vehicle is in a tampered condition except when it is necessary to transport the motor vehicle to be repaired in order to bring it into compliance with federal motor vehicle standards.

Authority: TCA 68-201-105 and 4-5-202

1200-3-36-.04 Record Keeping Requirements.

(1) A complete record of all repairs performed by any person as defined at Rule 1200-3-2-.01(ll) must be kept on file and shall include repair orders, receipts, and warranty information. These documents must contain the following: vehicle identification number (VIN), vehicle make, vehicle model, model year, name, address and telephone number of the vehicle owner.

(2) In the event of a catalytic converter replacement, the old replaced catalyst must be kept for a minimum of fifteen (15) days. The new replacement catalyst must be accompanied by a copy of the warranty tag issued with it.

Authority: TCA 68-201-105 and 4-5-202

1200-3-36-.05 Certification

(1) Certification Statement.

(a) At the time of sale, lease, or transfer of title of a motor vehicle, the seller, lessor, or person transferring the title shall provide a written certification to the purchaser, lessee, or transferee that the air pollution emission control devices of the motor vehicle have not been tampered with by the seller, lessor, transferor, or by his or her agents, employees, or other representatives. This certification must be kept in the motor vehicle at all times and made available for inspection by the Technical Secretary or his designated representative.

(b) As provided in Rule 1200-3-36-.05(1)(d), a licensed motor vehicle dealer shall also visually observe and certify in writing that the air pollution emission control devices are in place and appear properly connected and undamaged.

(c) For sales, leases, or transfers of title by any person, the certification shall read as follows:

1. Tennessee law prohibits the operation, sale, lease, or transfer of title of any motor vehicle that has been tampered with. Tampering means to modify, remove, render inoperative, cause to be removed, or make less operative any air pollution emission control device or element of design installed on a motor vehicle or motor vehicle engine which results in an increase in emissions beyond established federal motor vehicle standards.

2. As the vehicle owner, or on behalf of the vehicle owner which is an organization, firm, or other such entity, I hereby certify that the air pollution emission control devices of this motor vehicle, if installed by the vehicle manufacturer or importer, have not been tampered with by me or with my permission, or by or with the permission of the owner of said vehicle.

3. This certification shall not be deemed or construed as a warranty that any air pollution emission control device of the motor vehicle is in functional condition, nor does the execution or delivery of this certification create by itself grounds for a cause of action between the parties to this transaction.

(d) For sales, leases, or transfers of title by licensed motor vehicle dealers to any person, the certification shall read as follows:

1. Tennessee law prohibits the operation, sale, lease, or transfer of title of any motor vehicle that has been tampered with. Tampering means to modify, remove, render inoperative, cause to be removed, or make less operative any air pollution emission control device or element of design installed on a motor vehicle or motor vehicle engine which results in an increase in emissions beyond established federal motor vehicle standards.

2. As a motor vehicle dealer licensed to conduct business in the State of Tennessee, I hereby certify that the air pollution emission control devices of this motor vehicle, if installed by the vehicle manufacturer or importer, have not been tampered with by me or by my agents, employees, or other representatives. I also hereby certify that I, or persons under my supervision, have inspected this motor vehicle and, based on said inspection, have determined that the air pollution emission control devices, if installed by the vehicle manufacturer or importer, are in place and appear properly connected and undamaged as determined by visual observation.

3. This certification shall not be deemed or construed as a warranty that any air pollution emission control device of the motor vehicle is in functional condition, nor does the execution or delivery of this certification create by itself grounds for a cause of action between the parties to this transaction.

(e) The document containing the certification statement shall be provided by the County Clerk's office and shall include the following: name of the vehicle owner, date of certification, license number, make, model, year, color, and vehicle identification number of the motor vehicle being sold, leased, or transferred.

Authority: TCA 68-201-105 and 4-5-202

1200-3-36-.06 Exemptions

(1) The Technical Secretary may exempt any motor vehicle or motor vehicle engine from Rule 1200-3-36-.03 subsection (1) or (2) upon such terms and conditions as he may find necessary for the purpose of investigations, demonstrations, or training.

(2) The following classes of motor vehicles are exempt from the requirements established in Rule 1200-3-36-.03 of this chapter:

(a) antique motor vehicles

(b) kit cars

(3) New motor vehicles as defined at Rule 1200-3-36-.02(12) and motor vehicles older than 1981 are exempt from the provisions of Rule 1200-3-36-.05(1)(a).

(4) Routine maintenance and repair of motor vehicles and motor vehicle engines which require the use of an aftermarket part, alteration or add-on part will not constitute tampering if the repair does not adversely affect emissions performance.

Authority: TCA 68-201-105 and 4-5-202

Chapter 1200-3-37
Mobile Source Prohibitions

New rules

Table of Contents

1200-3-37-.01 Purpose

The purpose of this Chapter is to reduce the emission of air contaminants produced by the operation of mobile sources into the ambient air.

Authority: TCA 68-201-105 and 4-5-202

1200-3-37-.02 Definitions

Unless specifically defined in this chapter, the definitions from Chapters 1200-3-2 shall apply:

(1) "Commercial watercraft" is any self-propelled water vehicle that is used in relationship to a business where there is an exchange of goods and/or money for services.

(2) "Condensed moisture plume" is a discharge that results in the formation of small condensed water particles that becomes visible under certain meteorological conditions.

(3) "Emergency vehicle" is any mobile source that is being used to respond to an emergency that results in the necessity for immediate action.

(4) "Idling" is the operation of an engine in the operating mode where the engine is not engaged in gear, where the engine operates at a speed at the revolutions per minute specified by the engine or vehicle manufacturer for when the accelerator (throttle) is fully released, and the engine is not performing work.

(5) "Mobile source" is a mobile source, engine, or any equipment designed or constructed to move from one location to another during normal operation. Mobile sources include vehicles that operate on roads and highways as well as non-road vehicles, engines, and equipment. (Examples: included, but is not limited to, cars, trucks, buses, tractors, earth moving equipment, hoists, cranes, aircraft, locomotives, commercial and recreational watercraft, emergency vehicles, tactical military vehicles, lawnmowers, and other lawn and garden power equipment.)

(6) "Motor vehicle" is any self-propelled vehicle used for transporting persons or commodities on public roads.

(7) "Recreational watercraft" is any self-propelled water vehicle that is privately owned and is solely used for hobby, pleasure, and/or recreational activities and is not involved in business practices.

(8) "Smoke" is small gas-borne particles resulting from incomplete combustion consisting predominantly, but not exclusively, of carbon and other combustible material. It does not include water vapor or water droplets.

(9) "Tactical military vehicle" is a vehicle that has specialized military characteristics to fit it for use by forces in the field in direct connection with, or in support of, combat operations or the training of troops for such operations.

(10) "Uncombined water" means condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

Authority: TCA 68-201-105 and 4-5-202

1200-3-37-.03 Smoking Mobile Sources

(1) No person shall operate a gasoline or any other non-diesel fuel powered mobile source in this state which emits visible smoke from the exhaust pipe for more than a period of five (5) consecutive seconds except as specifically exempted by Rule 1200-3-37-.05.

(2) No person shall operate a diesel fuel powered mobile source in this state which emits visible smoke from t

Authority: TCA 68-201-105 and 4-5-202

1200-3-37-.04 Idling Mobile Sources

No person shall cause or allow a mobile source to operate for more than three (3) consecutive minutes when such mobile source is not in motion except as specifically exempted by Rule 1200-3-37-.05.

Authority: TCA 68-201-105 and 4-5-202

1200-3-37-.05 Exemptions

(1) The provisions of Rule 1200-3-37-.03 shall not apply when a mobile source fails to meet the requirements of paragraph (1) or (2) of said Rule due to the presence of uncombined water which forms a condensed moisture plume.

(2) Smoke resulting from a catastrophic failure of the engine, exhaust system or other related components shall not be considered a violation of Rule 1200-3-37-.03(1) or (2).

(3) Smoke resulting from pyrotechnic displays or smoke generators used for entertainment, training and reenactments shall not be considered a violation of Rule 1200-3-37-.03(1) or (2).

(4) Diesel electric locomotives shall be exempt from Rule 1200-3-37-.03(2).

(5) The provisions of Rule 1200-3-37-.04 shall not apply in the following situations upon condition that there is no visible discharge of smoke:

(a) When a mobile source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;

(b) When a mobile source is at a truck stop, rest area, welcome center, or other approved area designated by the Technical Secretary;

(c) When the mobile source is being brought to the manufacturer's recommended operating temperature;

(d) When a mobile source is undergoing mechanical repair that requires such source be operated for more than three (3) consecutive minutes;

(e) When an emergency vehicle is being used in a standby or emergency situation;

(f) When a mobile source is engaged in the process of connection or detachment of a trailer or of exchange of trailers;

(g)When a mobile source is discharging, picking up, or otherwise occupied with passengers (not including the driver);

(h) When a mobile source is being or waiting to be examined by a state, federal, city, or county mobile source inspector or their representative;

(i) When a mobile source is in a drive through service or in line for parking to a special event;

(j) When a mobile source is being operated solely to defrost a windshield;

(k) To the owner of a mobile source rented or leased to a person who operates the vehicle and is not employed by the owner;

(l) When a diesel-fueled mobile source has been stopped for three or more hours, the idling limit is fifteen consecutive minutes.

(6) The following mobile sources do not apply to the provisions of Rule1200-3-37-.04:

(a) recreational watercraft

(b) tactical military vehicles

(c) aircraft

(d) mobile sources having horsepower 30 or less

Authority: TCA 68-201-105 and 4-5-202

Legal contact and/or party who will approve final copy for publication:

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I certify that this is an accurate and complete representation of the intent and scope of rulemaking proposed by the Tennessee Division of Air Pollution Control.

_____
Barry R. Stephens
Director
Tennessee Division of Air Pollution Control

Subscribed and sworn to before me this the _____ day of _____, 2004.

_____
Notary Public

My commission expires on the _____ day of _____, _____.

This notice of rulemaking set out herein was properly filed in the Department of State on the _____ day of _____, 2004.

_____
Riley C. Darnell
Secretary of State

By: _____

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CHAPTER NO. 926

HOUSE BILL NO. 3498

By Representatives McMillan, Briley, Bowers, Cooper, Brenda Turner

Substituted for: Senate Bill No. 3410

By Senators Haynes, Crutchfield

AN ACT to amend Tennessee Code Annotated, Title 55, Chapter 4 and Title 68, Chapter 2, relative to the emission of certain air pollutants.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF TENNESSEE:

SECTION 1. Tennessee Code Annotated, Section 55-4-128, is amended by deleting subdivision (a)(3) and substituting instead the following:

(a)

(3) The Air Pollution Control Board created by Tennessee Code Annotated, Section 67-201-104, shall promulgate rules providing conditions under which owners of motor vehicles that do not successfully complete an emissions test may apply for waivers or variances. Such rules may set appropriate conditions for such waivers that are consistent with federal as well as state law and consider the expenditures made by the owner in order to come into compliance.

SECTION 2. Tennessee Code Annotated, Section 55-4-130 is amended by deleting subsection (a) and substituting instead the following:

(a) Sections 55-4-101(d)(2), 55-4-104(d)(2), and 55-6-105(a)(9) shall only apply in those counties:

(1) that have been designated by the Air Pollution Control Board to have an inspection and maintenance program because it is necessary to attain or maintain compliance with national ambient air standards, provided that the board may only designate counties that:

(A) have been designated by the US EPA as not attaining the national ambient air standards and have over 50,000 registered vehicles in the most recent year;

(B) are former non-attainment counties with over 50,000 registered vehicles in the most recent year that are under a maintenance plan designed to continue to meet the national ambient air standards; or

(C) that contribute significantly to non-attainment in another county and have more than 60,000 motor vehicles registered in the county in the most recent year; or

(2) for which a resolution has been passed by the governing body of the county which specifically establishes an inspection and maintenance program for the county and the board approves such resolution as providing for a program that is consistent with the programs

operated under subsection (1). The board may also oversee the implementation of such program to assure statewide consistency and shall review such programs at least once every three (3) years. The implementation of §§ 55-4-101(d)(2), 55- 4-104(d)(2), and 55-6-105(a)(9) shall be in a manner as to assure compliance with the Clean Air Act, 42 U.S.C. § 7401 et seq., and the Air Pollution Control Act, Title 68, Ch. 201, Pt. 1. All such counties implementing a vehicle inspection and maintenance program may only charge fees that are directly related to the county's cost of establishing and implementing the vehicle inspection and maintenance program.

SECTION 3. Tennessee Code Annotated, Section 55-4-130(b), is amended by deleting it in its entirety and by substituting instead the following:

For purposes of this section, the state or county may purchase goods and services on the same terms and conditions as such goods and services have been purchased by the state or a county where such contract, as amended or extended, is in effect at the date of the purchase by the state or a county and where such contract was executed in the first instance by the state or a county pursuant to its regular purchasing procedures for such goods and services. Such contract, whether the existing contract from which the purchase is made or the new contract, may be modified by the state or county for one (1) additional term of not more than sixty (60) months, the policy of the state being to promote statewide uniformity of price and term of such contracts.

SECTION 4. Tennessee Code Annotated, Section 55-4-130(c), is amended by deleting such subsection and substituting instead the following:

(c) The rules promulgated by the Tennessee Air Pollution Control Board shall provide that, with respect to any fleet of motor vehicles owned or leased by any manufacturer of motor vehicles located in any county designated in subsection (a) of this section, such manufacturer shall be allowed to provide its own vehicle inspection and maintenance program so long as such vehicle inspection and maintenance program meets the standards required by the board.

SECTION 5. Tennessee Code Annotated, Title 68, Chapter 201, Part 1, is amended by adding the following as a new, appropriately designated section:

Section __. The Tennessee Air Pollution Control Board shall promulgate rules that:

(a) Specify the type of vehicle inspection and maintenance program to be established and implemented; and

(b) Establish that the inspection associated with the vehicle inspection and maintenance program will occur on an annual basis in connection with vehicle registration renewal.

SECTION 6. Tennessee Code Annotated, Title 68, Chapter 201, Part 1, is amended by adding the following as a new, appropriately designated section:

Section __. It is unlawful for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under the federal Clean Air Act, 42 U.S.C. §§ 7401 et seq., prior to its sale and delivery to the ultimate purchaser, or

for any person knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser.

SECTION 7. Tennessee Code Annotated, Section 68-201-102(2), is amended by inserting a period after the words "chimney outlets from any of the foregoing" and deleting the remainder of the subsection.

SECTION 8. Tennessee Code Annotated, Section 68-201-203, is amended by deleting such section in its entirety.

SECTION 9. If any provision of this act or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the act which can be given effect without the invalid provision or application, and to that end the provisions of this act are declared to be severable.

SECTION 10. This act shall take effect upon becoming a law, the public welfare requiring it.

PASSED: May 19, 2004

JIMMY NAIFEH, SPEAKER
HOUSE OF REPRESENTATIVES

JOHN S. WILDER
SPEAKER OF THE SENATE

APPROVED this 8th day of June 2004

PHIL BREDESEN, GOVERNOR

Item #: 12 Prepared by: Charles P. Wolfe

Commissioner: AVERY Approved by _____

RESOLUTION IN SUPPORT OF A 55 MPH SPEED LIMIT FOR TRUCKS DURING OZONE SEASON IN EARLY ACTION COMPACT AREAS; IN SUPPORT OF ANTI-IDLING PROVISIONS IN EARLY ACTION COMPACT AREAS; IN SUPPORT OF STATEWIDE ANTI-TAMPERING PROVISIONS; AND IN SUPPORT OF STATEWIDE REQUIREMENTS FOR REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) FOR SOURCES OF NITROGEN OXIDES; ALL STRATEGIES TO ATTAIN THE 8-HOUR OZONE STANDARD NOT LATER THAN 2007 IN SHELBY COUNTY.

WHEREAS, Pursuant to the Federal Clean Air Act, the United States Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards for ground level ozone including a 1-hour ozone standard promulgated February 8, 1979 and an 8-hour ozone standard promulgated July 17, 1997; and

WHEREAS, Ground level ozone is the result of a photochemical reaction of volatile organic compounds and nitrogen oxides in sunlight; and

WHEREAS, In 1998 the States of Arkansas, Tennessee, and Mississippi joined in the Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) that has continued to date to determine the most effective control strategies to reduce ozone formation in the Memphis Metropolitan Area and other air quality planning areas throughout the State of Tennessee; and

WHEREAS, Shelby County, Tennessee is designated as in attainment of the 1-hour National Ambient Air Quality Standard for ground level ozone; and

WHEREAS, Ambient air monitoring data for Shelby County, Tennessee for the three-year period 2001-2003 demonstrates that Shelby County has not yet attained the 8-hour National Ambient Air Quality Standard for ground level ozone; and

WHEREAS, By April 15, 2004, the EPA will designate attainment areas and nonattainment areas for the 8-hour ground level ozone standard and Shelby County, Tennessee will be designated as nonattainment; and

WHEREAS, According to the U.S. Centers for Disease Control and Prevention, the asthma rate in the United States is 1 in 15 for children under the age of 18, and

WHEREAS, According to the U.S. Centers for Disease Control and Prevention the Chronic Obstructive Pulmonary Disease (COPD) rate in the United States is approximately 65 of every 1,000 adults aged 60 and older; and

WHEREAS, Tennessee Code Annotated § 68-201-103 indicates the intent and purpose of the Tennessee Air Quality Act is to maintain purity of the air resources of the state consistent with the protection of normal health, general welfare and physical property of the people, maximum employment and the full industrial development of the state; and

WHEREAS, The Memphis & Shelby County Health Department administers a local air pollution control program for Shelby County, the City of Memphis, and the municipalities of Arlington, Bartlett, Collierville, Germantown, Lakeland and Millington pursuant to Tennessee Code Annotated § 68-201-115; and

WHEREAS, Designation as a nonattainment area will trigger mandatory air pollution control requirements such as emissions offsets and Lowest Achievable Emission Reduction Technology (LAER) regardless of cost for new major sources and major modifications to existing sources and other requirements to reduce air pollution from stationary and mobile sources to be promulgated by the United States Environmental Protection Agency for all nonattainment areas; and

WHEREAS, The United States Environmental Protection Agency announced in the Federal Register published December 16, 2003, its intent to defer the effective date of a nonattainment designation for Early Action Compact Areas that take voluntary early actions to reduce ozone in order to attain the 8-hour ozone standard no later than 2007 and that meet all milestones for such Early Action Compacts; and

WHEREAS, Shelby County and the City of Memphis entered into an Early Action Compact with Fayette and Tipton Counties in Tennessee and the Tennessee Department of Environment and Conservation; DeSoto County, Mississippi and the Mississippi Department of Environmental Quality; Crittenden County, Arkansas and the Arkansas Department of Environmental Quality; and the United States Environmental Protection Agency in December 2002 in order to protect the health of the citizens of the Memphis Metropolitan Statistical Area and to attain the 8-hour ground level ozone standard as expeditiously as possible,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF SHELBY COUNTY, TENNESSEE, To support the early action compact to attain the 8-hour ozone standard not later than 2007 in Shelby County.

BE IT FURTHER RESOLVED, That Shelby County expresses its support for the following air pollution control measures.

1. A POSTED AND ENFORCED 55 MPH SPEED LIMIT FOR TRUCKS DURING OZONE SEASON IN EARLY ACTION COMPACT AREAS.

2. ANTI-IDLING PROVISIONS FOR DIESEL ENGINES IN EARLY ACTION COMPACT AREAS.

3. STATEWIDE ANTI-TAMPERING PROVISIONS.

4. STATEWIDE REQUIREMENTS FOR REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) FOR SOURCES OF NITROGEN OXIDES.

5. OPEN BURNING RESTRICTIONS DURING OZONE ACTION DAYS.

6. CONGESTION MITIGATION AND AIR QUALITY PROJECTS INCLUDING INTERSECTION IMPROVEMENT, SIGNAL SYNCHRONIZATION, FREEWAY SERVICE PATROL IMPROVEMENTS, AND THE INTELLIGENT TRANSPORTATION SYSTEM.

7. STAGE 1 VAPOR RECOVERY IN EARLY ACTION COMPACT AREAS.

8. VOLUNTARY MEASURES INCLUDING, BUT NOT LIMITED TO, THE SHELBY COUNTY SMART GROWTH INITIATIVE (April 21, 2003) AND OZONE ACTION DAY ACTIVITIES.

A C Wharton, Jr.
County Mayor

Date: April 7, 2004

BOARD OF COUNTY COMMISSIONERS SHELBY CO., TENN.

ATTEST:

Clerk of County Commission

ADOPTED: MARCH 22, 2004

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STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
MAPPING AND STATISTICS OFFICE
SUITE 1600, JAMES K. POLK BUILDING
NASHVILLE, TENNESSEE 37243-0344

October 31, 2003

2003

Mr. Bobby W. Blackmon
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
640Grassmere Business Park
Nashville, Tennessee 37211

SUBJECT: Tennessee Speed Monitoring Quarterly and Annual Report

Dear Mr. Blackmon:

We are submitting herewith, three (3) copies of the "Tennessee Quarterly Statewide Speed Summary Report" which covers the period of July, August and September 2003. Also enclosed are (3) copies of the "Tennessee Annual Speed Summary Report, for the period of October 2002 thru September 2003. Also enclosed are computer disks, which contains the annual and 4th quarter report summaries and speed data for each station.

The Quarterly report shows Twenty -Eight (27) locations were monitored during the quarter. There were Nine (10) locations that were out of service during the Quarter. Each monitoring session was for twenty-four hours. The stations were monitored according to our Speed Monitoring Plan unless otherwise noted.

The format used for reporting was as required by regulations published in the Federal Register of October 22, 1993. The Lotus 1-2-3 spreadsheet furnished by your office is used for reporting the data.

Sincerely,

Steve Allen
Transportation Manager 2
Mapping and Statistics Office

SA:cdl

Attachments

cc: Commissioner Gerald Nicely
Commissioner Fred Phillips
Mr. William L. Moore
Mr. Dennis Cook
Mr. Ralph Comer
Sgt. Jimmy Pitts
Capt. Mike Walker
Mrs. Luanne Grandinetti
Mr. Mike Tugwell
Mr. Tom Moore, Deputy Comm.
Mr. Harold Dilmore
Mr. Joe Sotton
Mr. Jimmy Johnston
Mr. Harold Dilmore
Mr. David Lollar
Col. Lynn Pitts
Capt. Lee Chaffin
Ms. Kim Keelor

Fax:615-532-0353

STATE OF TENNESSEE

SPEED SUMMARY REPORT

Send Quarterly Report to Office of Highway Information Management HPM-30

Send Annual Report to Office of Highway Safety HHS-32 4th QUARTER JUL. - SEP. 2003

(Quarterly Report) Annual Report (Circle One) - Quarter of Year 4th 2003 State TENNESSEE

HIGHWAY CATEGORY	NO. OF MILES	NO. OF VEHICLES OBSERVED	NO. OF LOCATIONS	NO. OF SESSIONS	PERCENT EXCEEDING							AVERAGE SPEED IN M.P.H.	MEDIAN SPEED IN M.P.H.	85 th Percentile SPEED IN M.P.H.
					55 MPH	60 MPH	65 MPH	70 MPH	75 MPH	80 MPH	85 MPH			
FREEWAYS POSTED AT 55 MPH.....	323	98,838	2	2	76.5%	46.5%	19.1%	6.1%	1.1%	****	****	59.6	59.4	66.6
FREEWAYS POSTED AT 70 MPH.....	709	115,907	5	5	****	****	84.7%	59.5%	25.5%	5.7%	0.9%	71.5	71.4	77.5
NONFREEWAYS POSTED AT 55 MPH.....	7885	60,515	20	20	70.3%	35.6%	12.3%	3.5%	0.9%	****	****	58.4	57.9	64.4

**** DATA NOT TO BE REPORTED

Note: 27 Stationns were monitored during this Quarter
10 Stations were out of order or unable to monitor.
6 Station were removed from the monitoring plan.
1 New Station was added to Plan
43 Total Stations were in original plan.

STATE OF TENNESSEE

DISTRIBUTION OF VEHICLE SPEED

Send Annual Report to Office of Highway Safety HHS-32 4th QUARTER JUL. - SEP. 2003

(Quarterly Report) Annual Report (Circle One) - Quarter of Year 4th 2003

NUMBER OF VEHICLES MEASURED

RECORDED SPEEDS	FREEWAYS POSTED AT 55 MPH						FREEWAYS POSTED AT 70 MPH				NON-FREEWAYS POSTED AT 55 MPH			
	RURAL INT	RURAL ART.	RURAL OTHER	URBAN INT	URBAN ART.	URBAN OTHER	RURAL INT.	RURAL ART.	RURAL OTHER	RURAL ART.	RURAL OTHER	URBAN ART.	URBA OTHE	
30 MPH AND BELOW	...	...	...	0	...	...	0	...	...	0	0	0	...	
31 TO 35 MPH	...	...	...	2599	...	...	65	...	...	201	9	7	...	
36 TO 40 MPH	...	...	...	517	...	...	13	...	...	239	31	39	...	
41 TO 45 MPH	...	...	...	830	...	...	31	...	...	951	142	222	...	
46 TO 50 MPH	...	...	...	3913	...	...	154	...	...	3349	439	1054	...	
51 TO 55 MPH	...	...	...	15406	...	...	663	...	...	10201	823	288	...	
56 TO 60 MPH	...	...	...	29566	...	...	3236	...	...	17820	731	2409	...	
61 TO 65 MPH	...	...	...	27096	...	...	13598	...	...	12757	341	1024	...	
66 TO 70 MPH	...	...	...	12886	...	...	29174	...	...	5016	70	208	...	
71 TO 75 MPH	...	...	...	4933	...	...	39465	...	...	1522	14	48	...	
76 TO 80 MPH	...	...	...	867	...	...	22903	...	...	400	6	7	...	
81 TO 85 MPH	...	...	...	160	...	...	5525	...	...	94	2	1	...	
86 AND ABOVE	...	...	...	65	...	...	1080	...	...	50	0	0	...	

INT.=INTERSTATE, ART.=NON INTERSTATE ARTERIALS, OTHER=NON ARTERIALS

	98838	115907	52600	2608	5307	
			60515			

STATE OF TENNESSEE

SPEED SUMMARY REPORT

Send Quarterly Report to Office of Highway Information Management HPM-30

Send Annual Report to Office of Highway Safety HHS-32

Annual Report Quarters 1-2-3-4
Oct 2001 - Sept 2003

Quarterly Report (Annual Report) (Circle One) - Quarter of Year ANNUAL 2003 State TENNESSEE

HIGHWAY CATEGORY	NO. OF MILES	NO. OF VEHICLES OBSERVED	NO. OF LOCATIONS	NO. OF SESSIONS	PERCENT EXCEEDING							Average Speed In M.P.H.	Median Speed In M.P.H.	85 th Percentile Speed In M.P.H.
					55 MPH	60 MPH	65 MPH	70 MPH	75 MPH	80 MPH	85 MPH			
FREEWAYS POSTED AT 55 MPH.....	323	417,311	10	10	76.2%	50.3%	28.2%	14.0%	5.0%	****	****	60.7	60.1	69.7
FREEWAYS POSTED AT 70 MPH.....	709	306,184	18	18	****	****	82.4%	57.2%	22.7%	4.6%	0.8%	70.8	70.9	77.0
NON-FREEWAYS POSTED AT 55 MPH.....	7885	298,392	86	86	69.6%	36.6%	12.6%	3.3%	0.8%	****	****	58.4	58.0	64.5

**** .DATA NOT TO BE REPORTED

114 Stations were monitored during the Year
33 Stations were out of Service during the Year
6 Stations were removed from Plan
1 New Station was Added to plan
43 total Stations were in Original Plan

Fax:615-532-0353

STATE OF TENNESSEE

DISTRIBUTION OF VEHICLE SPEED

Send Annual Report to Office of Highway Safety HHS-32

QUARTERS,1,2,3,4 / 2003
Oct. 2002 - Sept. 2003

Quarterly Report Annual Report (Circle One) - Quarter of Year ANNUAL 2003

NUMBER OF VEHICLES MEASURED

RECORDED SPEEDS	FREEWAYS POSTED AT 55 MPH						FREEWAYS POSTED AT 70 MPH			NON-FREEWAYS POSTED AT 55 MPH			
	RURAL INT	RURAL ART.	RURAL OTHER	URBAN INT	URBAN ART.	URBAN OTHER	RURAL INT.	RURAL ART.	RURAL OTHER	RURAL ART.	RURAL OTHER	URBAN ART.	URBAI OTHEI
30 MPH AND BELOW	...	...	...	0	...	...	0	...	...	0	0	0	...
31 TO 35 MPH	...	...	...	13074	...	...	529	...	...	771	279	168	...
36 TO 40 MPH	...	...	...	1828	...	...	107	...	...	1017	561	244	...
41 TO 45 MPH	...	...	...	5075	...	...	275	...	...	3597	984	1210	...
46 TO 50 MPH	...	...	...	20401	...	...	894	...	...	13300	2913	5820	...
51 TO 55 MPH	...	...	...	63017	...	...	2952	...	...	40871	5151	13785	...
56 TO 60 MPH	...	...	...	103850	...	...	11026	...	...	68750	3937	25718	...
61 TO 65 MPH	...	...	...	92199	...	...	38202	...	...	48247	1384	22149	...
66 TO 70 MPH	...	...	...	59253	...	...	77011	...	...	18137	295	9223	...
71 TO 75 MPH	...	...	...	37928	...	...	105544	...	...	5288	56	2149	...
76 TO 80 MPH	...	...	...	15264	...	...	55561	...	...	1345	22	384	...
81 TO 85 MPH	...	...	...	3996	...	...	11777	...	...	308	11	82	...
86 AND ABOVE	...	...	...	1426	...	...	2306	...	...	189	1	46	...

INT.=INTERSTATE, ART.=NON INTERSTATE ARTERIALS, OTHER=NON ARTERIALS

417311	306184	201820 298392	15594	80978	

EARLY ACTION COMPACT

Shelby County, Tennessee portion of
Memphis Metropolitan Statistical Area

AIR QUALITY IMPROVEMENT PLAN

Prepared by the
Memphis & Shelby County Health Department
Pollution Control Section

March 31, 2004 Milestone

For submittal to the
United States Environmental Protection Agency Region IV

through the Tennessee Department of Environmental and Conservation

TABLE OF CONTENTS

INTRODUCTION

Shelby County, Tennessee entered into a voluntary Early Action Compact (EAC) with the State of Tennessee; Crittenden County, Arkansas and the State of Arkansas; DeSoto County, Mississippi and the State of Mississippi; and the U.S. Environmental Protection Agency in December, 2002 to achieve attainment of the 8-hour ozone standard (promulgated July 17, 1997 and subsequently upheld by the U.S. Supreme Court), as soon as practicable but not later than December 31, 2007. Beginning in 1998, the same parties had entered into a Memorandum of Understanding to conduct the Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) to improve understanding of conditions underlying ozone formation throughout the State of Tennessee and in the Memphis Metropolitan Statistical Area (including DeSoto County, Mississippi and Crittenden County, Arkansas), and to clarify the most effective control measures to further reduce ozone formation. ATMOS builds on the Southern Oxidant Study.

This Air Quality Improvement Plan (AQIP) demonstrates attainment of the 8-hour ozone standard by December 31, 2007 and maintenance of that standard through at least 2012 with emission inventories; a modeling analysis; emission reduction strategies; a component addressing emissions growth from January 1, 2008 through 2012; weight of evidence information; State and Local commitments to specific, quantified, and permanent control measures that, if approved by U.S. EPA will be Federally enforceable as part of the Tennessee State Implementation Plan (SIP), the Transportation Improvement Plan (TIP) or the Long Range Transportation Plan (LRTP); and specific implementation dates for adopted local control measures (other than voluntary measures).

1-Hour Ozone Standard and the Memphis & Shelby County Planning Area

Effective February 16, 1995, the Memphis & Shelby County air quality planning area was redesignated to Attainment status for the 1-Hour Ozone National Ambient Air Quality Standard that measures acute exposure. This National Ambient Air Quality Standard is set at 0.120 parts per million (or 120 parts per billion). A violation of the standard occurs when the fourth highest value at a monitor over a 3-year period exceeds the standard *or* when the second highest ozone value in a single year equals or exceeds 125 parts per billion. The fourth highest high value at any ozone monitor in the planning area is called the "1-hour ozone design value." Taking rounding into account, a violation occurs when the 3-year "design value" is equal to or greater than 125 parts per billion. Only Shelby County, Tennessee is in this planning area.

8-Hour Ozone Standard

On July 17, 1997 U.S. EPA promulgated an 8-hour average National Ambient Air Quality Standard to measure chronic exposure to ozone. This standard is set at 0.08 parts per million (or 80 parts per billion) averaged over each rolling 8-hour period throughout the ozone season. Ozone season is March 1st through October 31st for Shelby County. A violation of the standard occurs when the three-year average of the fourth highest value at a monitor exceeds the standard. The fourth highest value is called the "8-hour average

ozone design value." Taking rounding into account, a violation occurs when the 3-year average is equal to or greater than 85 ppb.

For the 3-year period 2000-2002, the 8-hour ozone design value for Memphis & Shelby County is 90 ppb. For the period 2001-2003, the design value is 89 ppb. Based on this data, a Nonattainment designation is expected on April 15, 2004.

8-Hour Ozone Air Quality Expanded Planning Area Boundaries

On March 28, 2000 the U.S. EPA issued a Memorandum entitled "Boundary Guidance on Air Quality Designations for the 8-Hour Ozone National Ambient Air Quality Standards (NAAQS or Standard)." EPA stated therein that the presumptive boundary is the Metropolitan Statistical Area (MSA). When the EAC was executed, the Memphis MSA consisted of the following counties: Fayette, Shelby and Tipton in Tennessee; Crittenden in Arkansas; and DeSoto in Mississippi. Based on the 2000 Census, the Office of Management and Budget expanded the Memphis MSA in 2003 to add the counties of Marshall, Tate and Tunica in Mississippi. Ozone levels continue to drop at all monitors in the Memphis MSA except at the Marion, Arkansas monitor in Crittenden County. The Tennessee Valley Authority and Arkansas Department of Environmental Quality have begun a study to confirm the accuracy of the Marion, Arkansas monitor.

Governors were provided an opportunity to make recommendations on planning area boundaries based on eleven criteria. Governor Ronnie Musgrove of Mississippi submitted a letter on July 14, 2003 recommending that DeSoto County be designated a separate nonattainment area from the rest of the Memphis MSA. EPA Region IV Administrator Jimmy Palmer notified Mississippi in a letter dated December 3, 2003, of its preliminary conclusion that DeSoto County should be included in the Memphis MSA Nonattainment planning area. Mississippi was given until February 6, 2004 to provide additional information to substantiate its recommendation. Desoto County contains three Title V Major Sources of NOx: Texas Gas Transmission, L.L.C.; Cogentrix (formerly Southaven Power), a baseload power plant that came on-line in 2003 [permitted at 341 TPY NOx and 38 TPY VOCs]; and Southaven Energy (owned by Duke Power), a peaking power plant that came on-line in 2003 [permitted at 897 TPY NOx and 49 TPY VOCs]. Both of these power plants have Best Available Control Technology limits: (1) Dry Low NOx combustion with Selective Catalytic Reduction (2) Dry Low NOx . Both of these power plants are located on State Line Road one-half mile south of the Shelby County line that is also the Tennessee State Line.

Governor Mike Huckabee of Arkansas "reluctantly" recommended that Crittenden County be included in the Memphis MSA Nonattainment planning area. EPA Region VI Administrator Richard Greene notified Arkansas in a letter dated December 3, 2003, of its preliminary conclusion that Crittenden County would be included in the Memphis MSA. In recent years the Crittenden County ozone monitor in Marion has recorded the highest ozone levels in the Memphis MSA, although 2003 data evidenced downward levels. Neither Arkansas nor Mississippi were subject to the NOx (Nitrogen Oxides) SIP

(State Implementation Plan) call. They may be subject to the proposed Interstate Transport Rule.

Tennessee Department of Environment and Conservation Commissioner Betsy Child submitted a letter on July 14, 2003 recommending that Fayette and Tipton Counties not be included in the Memphis MSA Nonattainment planning area but that Shelby County be included. Shelby County has approximately forty (40) Title V Major Sources and a coal-fired Tennessee Valley Authority power plant that is subject to the NOx SIP Call and has installed all required controls. EPA Region IV Administrator Jimmy Palmer notified Tennessee in a letter dated December 3, 2003, of its preliminary conclusion that Fayette, Shelby and Tipton Counties should all be included in the Memphis MSA Nonattainment planning area. Tennessee was given until February 6, 2004 to provide additional information to substantiate its recommendation.

EPA will promulgate the Nonattainment planning area boundaries on April 15, 2004 when it promulgates the Nonattainment designations.

EMISSION INVENTORIES

These inventories are included in the SAI, Inc. component of this AQIP.

MODELING ANALYSIS

Predicted 2007 and 2012 8-hour average ozone concentrations, a screening analysis, and the modeling weight of evidence for the Memphis MSA will be separately submitted by Systems Applications International, Inc. (SAI, Inc.) That submittal demonstrates that by 2007 overall ambient concentrations of ozone in terms of hours of exposure to exceedances would drop by more than 50% throughout the Memphis MSA as a result of the EAC.

EMISSION REDUCTION STRATEGIES

The Federal, State and local emission reduction strategies that have been or will be implemented as soon as practicable but not later than December 31, 2005 have been included in the EAC/Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) Modeling Analysis. Mandatory emission reduction strategies are specific, quantified, permanent and enforceable. Voluntary strategies will be documented and quantified to the extent practicable.

A. TRANSPORTATION MEASURES

Transportation strategies in the TIP and in the LRTP through 2012 have been included in the Modeling Analysis through MOBILE 6, to the extent that they are quantifiable. Annual reports on implementation of Congestion Mitigation and Air Quality Improvement (CMAQ) projects including quantification of resulting emission reductions

will be prepared by the Metropolitan Planning Organization (MPO). Some information is included below regarding expected emission reductions.

- CMAQ Improvement Projects in 2004-2006 TIP Adopted 8/21/03: $3.4 Million Annual Average Allocation

The following strategies are included in the TIP:

1.	Congestion Management in Unincorporated Shelby County, Bartlett, Collierville, Germantown, And Millington	$1.0 Million each year
2.	Deploy Traffic Signals Year 3 Throughout City of Memphis	$2.5 Million for 2004 only
3.	City of Bartlett Signal Improvements at Sycamore View/Yale Road and at Memphis-Arlington/Bartlett Blvd.	$1.0 Million for 2004 only
	VOC Emission Reductions	0.03 Tons Per Day
	NOx Emission Reductions	0.01 Tons Per Day
	CO Emission Reductions	0.22 Tons Per Day
4.	Kimbrough/Dogwood Intersection Improvements in Germantown	$275,000 for 2004 only
	VOC Emission Reductions	0.01 Tons Per Day
	NOx Emission Reductions	0.01 Tons Per Day
	CO Emission Reductions	0.02 Tons Per Day
5.	Deploy Traffic Signals Year 4 City of Memphis	$1.0 Million for 2005 $1.0 Million for 2006
6.	Communication Trunk Line For Signalized Intersections And CCTV control	$1.0 Million for 2004 $1.0 Million for 2005 $2.5 Million for 2006

The Engineering Study Phase will produce no emission reductions but after construction has been completed:

VOC Emission Reductions	0.06 Tons Per Day
NOx Emission Reductions	0.12 Tons Per Day
CO Emission Reductions	0.36 Tons Per Day

7.	Medical Center Rail Extension [Madison Avenue Trolley Line opened March 15, 2004]	$1.00 Million for 2004 $1.05 Million for 2005 $1.10 Million for 2006
8.	Memphis Area Rideshare 136 vans at 92 organizations More 12-passenger vans to be added	$ 900,000 for 2004 $ 900,000 for 2005 $ 900,000 for 2006

Vanpool Emission Reductions (155 Vans in service)

VOC Emission Reductions	23.24 Tons Per Year
NOx Emission Reductions	115.35 Tons Per Year
CO Emission Reductions	214.73 Tons Per Year

Fulltime Employee Carpool Emission Reductions (600 carpools)

VOC Emission Reductions	8.44 Tons Per Year
NOx Emission Reductions	5.62 Tons Per Year
CO Emission Reductions	78.37 Tons Per Year

Part-time Employee Carpool Emission Reductions (240 carpools)

VOC Emission Reductions	4.05 Tons Per Year
NOx Emission Reductions	2.70 Tons Per Year
CO Emission Reductions	37.62 Tons Per Year

Combined Tons Per Day Reductions:

VOC Emission Reductions	0.10 Tons Per *Day*
NOx Emission Reductions	0.06 Tons Per *Day*
CO Emission Reductions	0.10 Tons Per *Day*]

9.	MATA Transit Centers Suburban areas	$ 875,000 for 2004 only (Section 5307 and Section 5309 funds also to be used)
10.	I-40/Covington Pike Interchange Improvement	$ 400,000 for 2004 $2.66 Million for 2005
11.	4th I/M Inspection Station to serve 55,000 annexed residents in City of Memphis	$3.550 Million for 2004 $1.0 Million for 2005
	VOC Emission Reductions NOx Emission Reductions CO Emission Reductions	0.09 Tons Per Day 0 3.43 Tons Per Day
12.	Farmington/Germantown Road Intersection Improvements	$ 60,000 for 2004

VOC Emission Reductions	0.02 Tons Per Year
NOx Emission Reductions	0.01 Tons Per Year
CO Emission Reductions	0.03 Tons Per Year

In addition, CMAQ holdover funds will continue to be expended to complete CMAQ projects that have not yet been completed including Deployment of Traffic Signal Systems Year 2 ($3.4 Million); Restoration of Signal Loop System ($846,000); Upgrade of Traffic Signals ($462,805); Design and Build Traffic Signal Systems ($396,647); and Signal Improvements at specified locations ($2.1 Million). Traffic Signal projects were delayed during a dispute with Memphis Light Gas & Water over a "per pole fee" that has since been resolved. About 200 signals will be synchronized.

A recently completed CMAQ Project:

13. Purchase of six 40-foot buses that meet new urban bus emission standards to replace buses at end of useful lives

VOC Emission Reductions	0.03 Tons Per Day
NOx Emission Reductions	0.11 Tons Per Day

SAI, Inc. has modeled 0.16 Tons Per Day NOx; 0.06 Tons Per Day VOCs; and 0.66 Tons Per Day CO reductions for all CMAQ projects for the EAC.

- Long Range Transportation Plan (LRTP) 2026

Freeway Incident Management: The State of Tennessee has implemented the Tennessee Help Truck Program along I-240, I-40, I-55, and State Route 385. It clears stalled vehicles and vehicles involved in accidents from travel lanes. Congestion is reduced significantly. The Freeway Management System will enhance this strategy.

Freeway Management System: The Memphis Intelligent Transportation System Regional Architecture adopted by the Memphis MPO allowed the Tennessee Department of Transportation to program $445.5 Million into the TIP for Early Phase and First Phase implementation. These phases include communication lines, cameras, speed detection, dynamic message signs, highway advisory radio, 511 messaging, and a traffic control center. The State of Mississippi has begun operating video surveillance on I-55 in northern DeSoto County.

High Occupancy Vehicle Lanes have been built on I-40 and I-55 and will be extended, as described in Appendix K of the LRTP. (Selected pages from Appendix K are attached as an **Exhibit)**. Two HOV projects have been completed: (1) I-40 between I-240 and Germantown Road and (2) I-55 from I-240 to the Mississippi State Line.

Four new HOV Corridor projects are in the 2004-2006 TIP as under study:

a. I-240 South, Lamar Avenue to Nonconnah Parkway

b. I-240 Midtown from I-40 to I-55

c. I-55 from Mississippi State Line to Goodman Road
d. I-240 from Walnut Grove to Nonconnah Parkway

Inter-Modal Facilities: An Arena Inter-Modal Transfer Facility is planned near the new FedEx Forum National Basketball Association Grizzlies Stadium. A South Inter-Modal Terminal has been planned for the Whitehaven are in southern Memphis.

Park and Ride Lots: Six (6) such lots have been planned at key interchanges on I-40 and I-55 that have HOV lanes. The two Inter-Modal Facilities will also have Park and Ride Lots.

City of Memphis Bicycling Network: Phase I is scheduled for 2004 to include a 40-mile, five loop, shared roadway that extends west from Downtown Memphis to Kirby Parkway to the east. Every half-mile signs will alert motorists that it is part of the Bicycling Network.

City of Bartlett Bicycle Routes are planned parallel to Fletcher Creek greenbelt and near the Bartlett Wastewater Treatment Plant.

Lakeland Bicycle Routes are planned to connect Canada Road to Seed Tick Road; to extend northward along Scott's Creek to the Loosahatchie River, and to inter-connect along Cobb Road, Monroe Road, and Canada Road. Developers would construct paths as development occurs.

Germantown Bicycle Routes would connect to City of Memphis routes at Wolf River Boulevard, Neshoba Road, and Messick Road.

Wolf River and Nonconnah Creek Greenbelts phased over the next 15 years and involving work by the U.S. Army Corps of Engineers would also add bicycle paths and links.

Tennessee Designated Bicycle Route Highway 64 is an east-west route. The State plans to add more State routes.

B. STATIONARY SOURCE MEASURES

- Nitrogen Oxides (NOx) SIP Call Reductions

The Tennessee Valley Authority (TVA) Allen Steam Plant (coal-fired power plant) is subject to the NOx SIP call. By May 5, 2002 Selective Catalytic Reduction (SCR) had been installed on two of the three Electric Generating Units (EGU) and a reduction of approximately 6,600 Tons of NOx from Acid Rain Allowable permit limits was achieved during the NOx SIP call control season (May 1-September 30). By May 5, 2003 SCR had been installed on the third EGU, achieving additional reductions of about 2,200 Tons of NOx. These controls result in NOx reductions of 57.5 Tons Per Day. Installation and operation was completed one year before the applicable Federal deadline. Note that

neither Arkansas nor Mississippi were subject to the NOx SIP Call. SAI, Inc. computer modeling shows that both Louisiana and Texas contribute to ozone formation in the Memphis MSA, and neither of these states were subject to the NOx SIP Call. The proposed Interstate Transport Rule would not include Texas for ozone purposes.

- New Stationary Source Ozone Action Day NOx Reduction Measure

The TVA Allen Steam Plant has agreed to an additional enforceable permit condition in its Title V Major Source Operating Permit requiring emissions reductions if an ozone exceedance is forecasted for the next day (predicted concentrations of 75 ppb or more) during the months of April and October beginning in 2005. Historically, Shelby County has experienced ozone exceedances in April in only in one year--during the 2003 ozone season. Occasional October ozone exceedances have occurred. The Memphis & Shelby County Pollution Control Section's Meteorologist will advise the assigned permit engineer and the facility during April and October if the next day is a predicted ozone exceedance day. In that event, the TVA Allen Steam Plant will operate its Selective Catalytic Reduction controls on all three EGUs throughout the next day. The 30-day public comment period for the TVA Title V permit will be opened in April.

- New Stationary Source VOC Reduction Measure

Solae, LLC is switching to an alternative fuel by the end of 2004. This is authorized by its Title V Major Source Operating Permit. VOC reductions of 39 TPY or 0.10 Tons Per Day are expected. The Title V permit will be modified to add hourly emission limits.

- Inspection of Stage I Vapor Recovery Equipment

About 550 gasoline stations in Shelby County installed Stage I Vapor Recovery in the mid-1990s. The Pollution Control Section conducted annual inspections 1995-1997 to confirm installation. This equipment has not been inspected since 1997, and it is possible that some gaskets have deteriorated. Each station will be inspected between April, 2004 and April, 2005 to ensure maximum reductions from this strategy. The Section will keep records on any compliance problems identified. It is expected that compliance is high, and inspections will confirm that level of confidence.

- Pending Tennessee Department of Environment and Conservation Nitrogen Oxides Reductions Rule for Uncontrolled Stationary Sources [NOx RACT Rule]

A. Tennessee proposed a rule to require sources with uncontrolled emissions of 50 Tons Per Year or more from the entire facility to install Reasonably Available Control Technology (RACT). The Memphis & Shelby County Health Department (the Department) has identified seven (7) facilities that have uncontrolled 50 TPY NOx emission units.

Facility Name	Tons

1.	Cargill	Unit #1	119
		Unit #2	360
		Unit #3	601
2	Buckeye		66.1
3	Dupont	Unit #1	170
		Unit #2	151
		Unit #3	62.7
		Unit #4	284
4	Premcor		660
5	PCS Nitrogen	Unit #1	627
		Unit #2	183
6	Crompton	Unit #1	109
		Unit #2	105
7	Atofina		114
	TOTAL TONS		3611.8
	50% NOx Reductions		1805.9 Tons Per Year or
			4.9 Tons Per Day

A 50% emission reduction from application of NOx RACT on these units is estimated by the Department to result in NOx reductions of 4.9 Tons Per Day. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this standard. Pending local adoption of the new standard, the Tennessee Air Pollution Control Program would have enforcement authority for this rule.

The Department would present a local NOx RACT Rule for adoption in the City of Memphis in June, 2004 if the State rule has not been adopted by then. Six of the seven facilities are within the City of Memphis. One (PCS Nitrogen) is in the unincorporated portion of Shelby County. [See "Additional Weight of Evidence" below concerning emissions from that facility.]

B. During the August 19, 2003 public hearing and preceding public comment period, industry requested that the rule apply to individual emission units that emit 25 TPY or more. The Tennessee Air Pollution Control Board has not yet finalized this rule. Twelve (12) *additional* emission units would be subject to NOx RACT at the 25 TPY threshold:

	Facility Name	Tons
1.	Con Agra Grocery Products	28.23
2.	Southern Cotton Oil Company Division of Archer-Daniels-Midland	33.3
3.	Buckeye Technologies, Inc.	42.2
4.	The Premcor Refining Group, LLC	42.8 Unit #1 29.4 Unit #2

		29.2 Unit #3
5.	Protein Technologies International	29.0 Unit #1
		27.1 Unit #2
6.	BFI South Shelby Landfill	28.0
7.	Lucite International	26.7
8.	Federal Express Memphis Air Operations	43.4
9.	BFI Waste Systems of North America	28.0
	TOTAL TONS	387.4 TONS
	50% NOx reductions	193.7 TPY
		0.5 Tons Per Day

If the State Rule or a local rule applicability is finalized at the 25 TPY per emission unit threshold, 5.4 Tons Per Day NOx Reductions would result.

- Ozone Action Day Forecasting and Burning Ban

A new permit condition has been added to each permit issued for an air curtain destructor to be used for land clearing within Shelby County beginning in Ozone Season 2003.The requirement is that the permittee contact the Department's Computerized Local Air Index Reporting (CLAIR) system recorded line at (901) 544-7489 or 544-7490 before igniting a fire to determine if it is a Burning Day or a No Burning Day. Department staff visit each permittee site on No Burning Days to verify that burning is not occurring or to instruct the permittee to extinguish any such burning. The Department's Meteorologist performs the forecasting and adds the Burning Day/No Burning Day information to the forecasts that are distributed to the media and the AirNow map on the Worldwide Web. Estimated emission reductions of 0.3 Tons Per Day NOx; 7.17 Tons Per Day VOCs; and 13.14 Tons Per Day CO would result from this measure.

Permittee compliance has been good throughout the ozone season. This requirement was tested in particular during the burning of debris generated by a July 22, 2003 "land hurricane" of fifteen minutes' duration. Twelve special storm debris burning locations were sited and operated during the months of August, September and October 2003. None of these sites were allowed to burn on those days for which ozone problems were forecasted.

- Pending Tennessee Anti-Idling and Smoking Vehicle Regulatory Proposal

The Tennessee Air Pollution Control Board has opened a public comment period on proposed new Chapter 1200-3-37 Mobile Source Prohibitions. This rule would prohibit operation for more than a period of 5 consecutive seconds of a gasoline-powered mobile source that emits visible smoke from its exhaust pipe. It would prohibit operation for more than a period of 10 consecutive seconds of a diesel-powered mobile source that emits visible smoke from its exhaust pipe. Some exemptions are listed. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this

standard. Pending local adoption of the new standard, the Tennessee Air Pollution Control Program would have enforcement authority for this rule. The following emissions reductions resulting from diesel engines are estimated: 0.07 Tons Per Day NOx; 0.01 Tons Per Day VOCs; and 0.07 Tons Per Day CO.

- Pending Tennessee Anti-Tampering Regulatory Proposal

The Tennessee Air Pollution Control Board has opened a public comment period on proposed new Chapter 1200-3-36 Motor Vehicle Tampering. Tampering with the emissions control system on a motor vehicle would be prohibited even for vehicles not subject to an Inspection and Maintenance program. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this standard. Pending local adoption of the new standard, the State Air Pollution Control Program would have enforcement authority for this rule.

- Truck Speed Limit of 55 MPH During Ozone Season

According to the Insurance Institute for Highway Safety website, ten (10) states have differential speed limits for cars and trucks. Of these ten states, five (5) limit truck speed limits to 55 MPH on Rural Interstates [California, Illinois, and Michigan since 1996; Ohio and Oregon since 1987]. Three (3) of the ten states have limited truck speed limits to 55 MPH on Urban Interstates since 1996 [California, Michigan, and Ohio].

The Shelby County Commission adopted a Resolution on March 22, 2004 in support of a posted and enforced 55 MPH speed limit for trucks during ozone season in all Early Action Compact areas in Tennessee. This was the speed limit for all vehicles on the Interstates in Shelby County until about one year ago, when the Tennessee Department of Transportation raised the speed limit for all vehicles to 65 MPH on some segments of the Interstate, without consulting the Memphis Metropolitan Planning Organization.

Restoring the 55 MPH speed limit would add 4 minutes and 9 seconds travel time on the I-40/240 North Loop from the eastern Shelby County boundary to the Mississippi River, and it would add 6 minutes 6 seconds travel time on the I-40/240 South Loop/I-55 to the Mississippi State Line. A copy of the unsigned Resolution is attached as an **Exhibit**. A copy of the signed resolution will be forwarded when it is available. The signed Resolution will also be forwarded to the Commissioner of the Tennessee Department of Environment and Conservation and to the Commissioner of the Tennessee Department of Transportation. Expected NOx emission reductions in Shelby County are 5.9 Tons Per Day.

The Tennessee Air Pollution Control Board at its March 10th meeting expressed its intent to request that the Commissioner of the Tennessee Department of Environment and Conservation convene a special meeting of the Interagency Task Force—the Tennessee Department of Transportation is also a member—to focus on the truck speed limit issue and achieve a change in the Early Action Compact areas because this is the single most

effective strategy to reduce NOx emissions. It addresses emissions from trucks that are not garaged/registered in Shelby County that would not be subject to an Inspection and Maintenance program but that emit significant amount of air pollutants into the ambient air that is measured at Shelby County air monitors.

Tennessee Code Annotated §55-8-152(c) defines "truck" as used in the speed limit provisions as "any motor vehicle of one and one half (1 ½) ton rated capacity or more." Section 55-8-152(b) makes it illegal for a truck to drive in excess of 50 MPH "upon the highways of this state" except as provided in § 55-8-152(d). The exception in (d) authorizes trucks to travel up to 65 MPH on an Interstate and on 4-lane controlled access federal or state routes. Tennessee Code Annotated § 55-8-152(g)(1)(a) authorizes TDOT to lower speed limits "as it deems appropriate to concerns regarding the roadway, traffic, or other conditions." This authority is in addition to Tennessee Code Annotated § 55-8-153, which authorizes the Tennessee Department of Transportation to lower the speed limits in business, urban or residential districts, congested areas, dangerous intersections "or whenever and wherever the department shall determine, upon the basis of an engineering and traffic investigation that the public safety requires a lower speed limit." No rulemaking procedures are required under Tennessee laws to change speed limits.

- Pending Revisions to Tennessee Light-Duty Motor Vehicle Inspection and Maintenance Rule

Chapter 1200-3-29 would be amended to define Category I and Category II Counties. The Tennessee Air Pollution Control Board would classify counties and two sets of I/M requirements would apply. The Board is considering I/M with Onboard Diagnostics and gas cap tests.

- Pending Tennessee General Assembly House Bill 3498/Senate Bill 3410

This legislation would amend Inspection and Maintenance provisions found in Tennessee Code Annotated § 55-4-100 *et seq.* It would authorize the Tennessee Air Pollution Control Board to designate areas that need I/M to attain or maintain the National Ambient Air Quality Standards, or a County Commission could pass a resolution establishing I/M for the County. It would also add a statutory Anti-Tampering provision.

Each of the emission reduction measures embodied in an ordinance/rulemaking would become SIP Revisions for the Shelby County component of the Tennessee SIP.

C. VOLUNTARY MEASURES

- Shelby County Smart Growth Initiative

Phase I includes 12 steps that range from updating land development regulations unchanged since 1986 to allow for more innovative building and development techniques to collection of an adequate facilities tax.. Shelby County adopted a residential corridor ordinance and is in the process of designating residential corridors. Memphis and Shelby

County have provided and will continue to provide incentives for re-use and restoration of commercial structures downtown and throughout the County in an effort to concentrate employment centers and facilitate transit. A copy of this Initiative is attached as an **Exhibit**.

- Low Emission Vehicle and Related Clean Fuels Measures

The Department is working with Shelby County Government and City of Memphis Government to create a preference for vehicle purchases of LEVs and SULEVs such as the Toyota Prius as Shelby County Fleet vehicles reach the end of their useful lives.

D. Implementation Timeframe

All strategies will be implemented by May 1, 2005 if feasible and not later than December 31, 2005 at the very latest.

EMISSIONS REDUCTIONS FROM JANUARY 1, 2008 THROUGH 2012

- Airport Light Rail Line

The 9-mile Airport Line of the Memphis Area Transportation Authority's light rail system is scheduled to open in 2010. It will connect the Memphis International Airport to the major employment centers in the Medical District and Downtown. It will also facilitate tourist access to lodging and attractions Downtown including the FedEx Forum stadium for the Grizzlies National Basketball Association games, the Pyramid, the Autozone Baseball Park, Beale Street, and Tom Lee Park along the Mississippi River that is the site of the 4-weekend Memphis in May Festival and other events. MATA proposes using 50% federal funds, 25% City of Memphis funds, and 25% State of Tennessee funds. The Draft Environmental Impact Statement is currently under review by the Federal Transit Administration. Main Street Rail Trolley has operated since 1993, and Riverfront Loop Rail Extension has operated since 1997. This is included in the Long Range Transportation Plan.

- Enforceable Local Permit Condition and Pending Cargill, Inc. Global VOC/NOx Enforcement Settlement

An enforceable permit condition to achieve reductions in Volatile Organic Compound (VOC) emissions is being added in 2004 as a "significant modification" to the Title V Major Source Operating Permit issued to Cargill, Inc. by the Memphis & Shelby County Pollution Control Section. This permit condition will require by May 1, 2007 and continuing thereafter specific, quantified and permanent VOC reductions in the amount of approximately 89 Tons Per Year or 0.24 Tons Per Day. This agreement has been reached in advance of Federal global settlement negotiations concerning all nine Cargill plants that are the subject of enforcement action by U.S. EPA in order to facilitate the

Early Action Compact process. It is anticipated that as a result of Federal negotiations, one or more new VOC test methods will be promulgated to address the corn milling processes at issue. Cargill and EPA's Office of Air Quality Procedures and Testing are currently working to determine the accuracy and reliability of various approaches. Testing pursuant to new methods may demonstrate that greater emissions reductions have, in fact, been achieved at the Memphis Cargill, Inc. plant. Reductions of Nitrogen Oxides (NOx) are also expected to result from the global settlement reductions.

ADDITIONAL WEIGHT OF EVIDENCE

Source Shutdown and Resulting Inflated Emissions Inventory: Effective June 4, 2003, PCS Nitrogen, Inc. shut down its operations, pending a reduction in natural gas prices. PCS Nitrogen, Inc. hopes to restart by June of 2005 to retain "existing source" status, but natural gas prices have not dropped to levels at which the plant could profitably operate and are not expected to drop to such levels for the foreseeable future. This plant makes fertilizers and competes with South American suppliers. Included in the 2002 Emissions Inventory used by SAI, Inc. for prediction of 8-Hour Average Ozone concentrations in 2007 and 2012 are 813.76 Tons Per Year [2.23 Tons Per Day] of NOx; 374.82 Tons Per Year [1.03 Tons Per Day] of Carbon Monoxide; and 61.79 Tons Per Year [0.017 Tons Per Day] of VOCs for PCS Nitrogen, Inc. that very likely will not be emitted in the 2004-2007 timeframe.

Memphis International Airport Emission Reductions

a. Electrification at Gates: Since the mid-1980s, a 400 hertz electrical system at the gates has provided power for heating, cooling and other electrical needs of planes while they are parked at the gate. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
b. FedEx Conveyor System at Gates: Tugs are no longer used by FedEx.since installation of a conveyor system. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
c. Hybrid Fueling: Instead of using fuel tenders (large trucks), lower emitting hybrids are used to fuel planes at this airport. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
d. New Underground Fuel Pipeline for FedEx: FedEx has paid for construction of this pipeline from Arkansas under the Mississippi River to the Memphis International Airport. It is eliminating truck deliveries of aviation fuel to FedEx and associated evaporative emissions. It will also double the capacity and throughput of aviation fuel to FedEx.

e. Automated Vehicle Identification System (AVI): The Airport Authority spent $1 million to construct this system in 2003. It is designed to measure "dwell time" (idling time) at the curb by shuttles and taxis. After the shakedown period, a baseline will be developed. Thereafter, financial incentives will be offered for *reduced* idling time. A recordkeeping system will enable quantification of emission reductions at that point, but related emissions reductions are not quantified in the computer modeling for the Memphis MSA yet.

f. Planned Consolidated Ground Transport Facility: A parcel of land already owned by the Airport Authority has been dedicated for this use. The project is on hold due to depressed passenger use of the airport after the September 11, 2001 terrorism incidents involving airplanes. Construction of the facility is estimated at $50 million. All rental car agencies would be relocated to this parcel. Rental car agencies would contract with the Airport Authority and pay a fee. The project is designed to eliminate 80% of the shuttles from rental car agencies. Quantification should be available if this facility is constructed between 2005-2007.

Memphis Light Gas & Water Energy Efficiency Initiatives:
EcoBuild: This is a voluntary 5-year program for energy efficient construction techniques similar to the International Building Code for new residential buildings to be constructed 2003-2007. Builders have signed up with MLG&W to participate and projected emission reductions by 2007 are:

10.2 TPY NOx
4,117.0 TPY CO_2
23.0 TPY SOx

COMBINED EXPECTED VOC AND NOX EMISSION REDUCTIONS PER DAY

SAI, Inc. has modeled 0.16 Tons Per Day NOx; 0.06 Tons Per Day VOCs; and 0.66 tons Per Day CO reductions. Upon completion of all of the listed CMAQ projects, 0.32 Tons Per Day NOx ; 0.34 Tons Per Day VOCs; and 4.16 tons Per Day CO reductions are expected—at a minimum. Only partial quantification is currently available for some of the projects. An additional 5.9 Tons Per Day would result from the 55 MPH truck speed limit.

In addition, using the 2002 Emission Inventory as the starting point, the following reductions are expected from stationary sources: 65.9 Tons Per Day NOx (including NOx SIP Call reductions); 8.07 Tons Per Day VOCs; and 14.24 Tons Per Day CO.

The grand total emissions reductions since 2002, then would be:

71.22 Tons Per Day NOx
8.41 Tons Per Day VOCs
18.40 Tons Per Day CO.

These totals do not include the TVA Ozone Action Day emission reductions.

PLEASE NOTE: Section 3-16 of the Shelby County Air Code follows Section 16-50 of the Memphis City Air Code in this file as there are language differences that need to be distinguished from one another unlike most portions of these Codes which are identical to one another.

Section 16-50. Open Burning

(a) No person shall cause, suffer, allow or permit open burning of refuse, garbage, trade waste, trees, limbs, brush, or materials from salvage operations.

(b) Open burning as listed below may be conducted without permit subject to fire department approval and provided further that no public nuisance is or will be created by the open burning.

(1) Fires used for the cooking of food or for ceremonial or recreational purposes including barbecues and outdoor fireplaces.

(2) Fires set for the training and instruction of firemen or for research in fire protection or prevention.

(3) Smokeless flares or safety flares for the combustion of waste gases provided other applicable sections of this chapter are met.

(c) Exceptions to subsection (a) may be permitted if all of the following conditions are met:

(1) A request is filed with the health officer giving the reason why no method except open burning can be employed to dispose of the material involved, the amount and kind of material to be burned, the exact location where the burning will take place, and the dates when the open burning will be done.

(2) Approval is received from the health officer.

(3) Permission is secured from the fire department in the jurisdiction involved.

(4) The burning will be done between the hours of 9:00 am and 4:00 pm or as authorized by the health officer.

(d) This grant of exemption will not relieve the person responsible for such burning from the consequences of any damages, injuries, or claims resulting from such burning.

(Ord. No. 1265, §1, 4-25-72; Code 1967, §3-16.)

Section 3-16. Open Burning

(a) No person shall cause, suffer, allow or permit open burning of refuse, garbage, trade waste, trees, limbs, brush, or materials from salvage operations.

(b) Open burning as listed below may be conducted without permit subject to fire department approval and provided further that no public nuisance is or will be created by the open burning.

1) Fires used for the cooking of food or for ceremonial or recreational

purposes including barbecues and outdoor fireplaces.

(2) Fires set for the training and instruction of firemen or for research in fire protection or prevention.

(3) Smokeless flares or safety flares for the combustion of waste gases provided other applicable sections of this chapter are met.

(4) Fires used for the reduction of leaves on the premises on which they fall by the person in control of the premises.

(5) Fire used for carrying out recognized agricultural procedures necessary for the removal of grain crop stubble.

(c) Exceptions to subsection (a) may be permitted if all of the following conditions are met:

(1) A request is filed with the health officer giving the reason why no method except open burning can be employed to dispose of the material involved, the amount and kind of material to be burned, the exact location where the burning will take place, and the dates when the open burning will be done.

(2) Approval is received from the health officer.

(3) Permission is secured from the fire department in the jurisdiction involved.

(4) The burning will be done between the hours of 9:00 a.m. and 4:00 p.m. or as authorized by the health officer.

(d) This grant of exemption will not relieve the person responsible for such burning from the consequences of any damages, injuries, or claims resulting from such burning.

(Ord. No. 1265, §1, 4-25-72; Code 1967, §3-16.) **NOTE: Section 3-16 is applicable only in the unincorporated areas of Shelby County.**

TO: LAND CLEARING CONTRACTORS AND PROSPECTIVE OPEN BURNERS

FROM: MEMPHIS & SHELBY CO. HEALTH DEPT., POLLUTION CONTROL

RE: STANDARD OPERATING PROCEDURES FOR ISSUANCE OF AN OPEN BURNING PERMIT IN SHELBY COUNTY

Open burning in Shelby County is prohibited. Exceptions can be granted under specific conditions that do not interfere with the maintenance of acceptable air quality or create a public nuisance.

The Health Department's Air Pollution Control Section operates under Memphis City (16-50) or Shelby County (3-16) codes, and works in conjunction with local Fire Departments in issuing permits. At land clearing sites, temporary permits for the controlled burning of waste trees and brush can be issued. Grinding or chipping is the preferred method of disposal, however, burning this material is environmentally and economically preferred over disposal by landfill.

The Fire Departments are concerned with preventing the spread of fire and potential fire hazards to nearby citizens. The Health Department is interested in minimizing the amount of smoke and fly ash released into the air that also impacts nearby residents.

(1) PERMITS

To burn in Shelby County, outside incorporated areas, contact the Memphis & Shelby County Health Department at 544-7349. The Shelby County Fire Department currently charges fifty dollars ($50.00) in addition to the one hundred dollars ($100.00) charged by the Health Department. A minimum 24-hour advance notice is requested to allow coordination of the joint on site visit by both inspectors. We will attempt to schedule the appointment on the day and time requested by the land clearing contractor, however, a permit may be delayed if both inspectors are unable to meet at the requested time.

To burn inside the Memphis City Limits, first obtain a permit from the Memphis Fire Department at 320-5422. The City of Memphis requires a 48-hour advance notice to schedule a permit inspection and their fee is fifty dollars ($50.00) or seventy-five dollars ($75.00) for a 24-hour notice. Other incorporated areas of Shelby County may require an additional permit to be issued by their city fire department. Permits are currently required by the City of Collierville and the City of Germantown and both fees are twenty-five dollars ($25.00). Incorporated areas include: Arlington, Bartlett, Collierville, Germantown, Lakeland, and Millington.

After obtaining the appropriate city permit, contact the Health Department at 544-7349 to schedule a burn permit inspection. The Air Pollution Control's controlled burn permit fee for either the incorporated or unincorporated areas is one hundred dollars ($100.00) and is collected at the time of permit issuance. Please make check or money order payable to "SHELBY COUNTY GOVERNMENT". Cash may be accepted at the discretion of the inspector.

If you are uncertain about the jurisdiction of the area where you are planning to burn or if you are not sure the site meets the minimum distances specified in part (5), contact the Health Department for a site suitability inspection. There is no charge for this service. Information regarding nearby streets, cross streets, direction, and distance will help determine the exact location of the burn site. If the location is remote and cannot be adequately identified or located on our maps, the clearing contractor will be asked to meet the inspector at a nearby location, such as an identified cross street, and the inspector will accompany the contractor to the site.

The Health Department permit is valid for thirty days (30) after issuance. If weather conditions prohibit burning for a significant period during those thirty days, a short extension may be granted, if requested, **before the permit expires**.

Only trees and brush from the burn site may be burned. Material may not be hauled in from other sites. Other materials including buildings, construction debris, furniture, plastic, tires, and roofing material must not be burned in the pit.

(2) BURN PIT SPECIFICATIONS

The air curtain destructor (ACD) blows a sheet of air across the top of the pit to increase burning efficiency and reduce smoke and fly ash emissions. The ACD's nozzles are slanted so they impact about three (3) feet below the surface on the side opposite the blower. The ACD does not blow directly down into the fire. In a properly operating pit, the air curtain rolls under and oxygenates the fire for more complete combustion (see Figure 1). The pit walls must be vertical, not sloped or slanted. The pit must be no more than twelve (12) feet wide because the air stream must reach the far side. A pit width of less than twelve (12) feet should be used for smaller air blowers.

The pit length is determined by the length of the air curtain plenum or blower manifold. The plenum should be centered on the pit and the pit length can extend up to a maximum of five (5) feet beyond each end of the plenum.

The pit must be at least ten (10) feet deep. Pit depth is determined by available digging equipment and the water table. A pit cannot be permitted where groundwater is encountered during construction. Deeper pits usually burn better and cleaner.

(3) PROCEDURE FOR THE SCHEDULED INSPECTION DAY

Prior to the scheduled inspection, construct a pit according to the permit requirements. The pit must be partially filled with trees and brush, **do not overfill**. An overfilled pit has material above the sheet of air that results in blockage of airflow and excessive smoke emissions.

After the inspectors approve the pit's dimensions and position, diesel fuel may be used to ignite the contents. The equipment's ability to control smoke is observed before the permit is issued.

A Health Department permit fee is not required for pits that are not approved.

(4) PROCEDURES FOR DAYS YOU BURN

During the burn period, the jurisdictional Fire Department **must be notified each day before burning begins and again when burning ends for the day**. The Fire Department telephone number is usually written at the bottom of the permit.

Arlington Fire Department	867-8905
Bartlett Fire Department	385-5536 or 385-6412
Collierville Fire Department	853-3238 or 853-3290
Germantown Fire Department	757-7269
Memphis Fire Department	320-5422 or 320-5401
Millington Fire Department	872-7851
Shelby County Fire Department	379-7070
Memphis & Shelby County Health Dept.	544-7349 or 544-7775
Computerized Local Air Index Reporting System (CLAIR)	544-7489 or 544-7490
National Weather Service (Memphis area wind speed info)	522-8888

Burning normally takes place only during daylight hours for fire safety and to protect the workers charging the pit. **Someone must be at the site to monitor the pit when burning is taking place**. Operation of the blower should continue until the fire has burned down completely and a fence or barrier should be placed completely around the pit or the pit completely filled and covered with dirt prior to leaving the site. A metal fence is required for the prevention of mishaps such as falling into unfilled pits. A wooden or plastic fence is unacceptable.

(5) PROBLEMS SOMETIMES ENCOUNTERED WITH BURN PITS

A permit is issued for a particular pit. If a pit is moved, another inspection, permit, and fee are required for the new pit, even if both pits are on the same construction site.

A pit too long for the ACD plenum or wider than the permit specifications will have to be backfilled and replaced with another pit.

Burning must take place below the air curtain. Overfilled pits tend to smoke and release fly ash which are the most common citizen complaints.

Additional restrictions, such as limited burning hours and days or the presence of a water truck on site may be imposed based on the site's location and distance to the nearest water hydrant. Wind speed and direction limitations may also be imposed, either at the time the permit is issued or as a result of citizen complaints. Weather conditions are available from the National Weather Service at 522-8888.

Occasionally a permit cannot be issued because of the small size of the site or the site's proximity to occupied residences, schools, nursing homes, hospitals, airports, major roadways, or public parks. The presence of overhanging trees or other flammable material may also prevent the issuance of a permit. No standing timber or overhead electrical lines are permitted within one hundred (100) feet of the burn pit.

Minimum allowable distances for acceptable burn pits:

Five hundred (500) feet away from any Federal or State highway
One thousand (1000) feet from any school, occupied residence, or National/State park
One half (1/2) mile from any airport, nursing home, or hospital

Burning is to be conducted when ambient conditions ensure maximum dispersion of smoke. **Burning is not allowed when the air quality index for the Memphis area is in the "unhealthful" (code orange) or higher range (code red or code purple).** Burn permit holders are not allowed to burn when projected weather conditions and pollution modeling indicates a code orange or higher condition is expected. **To determine if burning has been restricted you must call the Health Department's Computerized Local Air Index Reporting System (CLAIR) at 544-7489 or 544-7490 each day.** The automated system will tell you if it is a "burn" or "no burn" day. The permit can be revoked and the company/owner may be assessed a penalty for violation of this permit condition. Permits are also occasionally revoked because of substantiated complaints regarding excessive smoke and fly ash due to improper burn pit operation. The Health Department is authorized to fine violators of permit conditions up to a maximum of twenty-five thousand dollars ($25,000.00) per violation.

Most problems and complaints associated with burn pit operation may be avoided by following these guidelines.

If you have any questions regarding this document, please call the Memphis & Shelby County Health Department, Air Pollution Control Section, Field Services Branch at 544-7349 or 544-7775.

REVISED 3-2004