

2005 Kansas City Maintenance Plan for Control of Ozone

**Missouri Air Conservation Commission
Adopted: July 21, 2005**



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**Missouri's Kansas City Ozone Maintenance Plan
Submitted to the U.S. Environmental Protection Agency
By the Missouri Department of Natural Resources'
Air Pollution Control Program**

**Missouri Air Conservation Commission
Adopted: July 21, 2005**

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**Kansas Department of Health and Environment
The United States Environmental Protection Agency (Region VII)
Mid-America Regional Council**

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1.0 EXECUTIVE SUMMARY

1.1 TIME LINE HISTORY OF MAINTENANCE PLAN

1.1.1 MAINTENANCE PLAN ISSUES AND ACTIONS FROM 1970 THROUGH 1994

The Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. The CAA requires any area that fails to attain the standard for any criteria pollutant to develop and implement a plan. In the 1970s, the Kansas City Area was determined to be in violation of the ozone NAAQS. The state of Missouri developed and implemented the first Kansas City Ozone Implementation Plan in 1979.

The U.S. Environmental Protection Agency (EPA) fully approved the 1979 Kansas City Ozone Implementation Plan and the Kansas City Maintenance Area (KCMA) was projected to meet the ozone NAAQS by December 31, 1982. The area appeared to meet the standard at that time. However, violations in 1983 and 1984 required the state to revise the 1979 ozone implementation plan.

These required revisions to the 1979 Plan were included in the 1987 ozone implementation plan. The 1987 ozone implementation plan projected attainment of the ozone NAAQS by December 31, 1987. The EPA fully approved the 1987 ozone implementation plan on November 2, 1989. However, three violations in the monitoring period from 1986 through 1988 halted the re-designation effort.

Ozone monitoring data from 1987 through 1991 demonstrated that the area had attained the one-hour standard. In accordance with the Clean Air Act Amendments of 1990 (CAAA), the Missouri Department of Natural Resources' Air Pollution Control Program revised the Missouri Ozone Plan for the KCMA to recognize that the area had achieved the ozone NAAQS. The EPA published final approval of the maintenance plan on June 23, 1992. The maintenance plan became effective on July 23, 1992. This action officially re-designated the KCMA to attainment.

1.1.2 MAINTENANCE PLAN ISSUES AND ACTIONS FROM 1995 THROUGH 1997

The Kansas City Area experienced a violation of the one-hour ozone standard in the summer of 1995. This violation mandated the implementation of the contingency control measures listed in the maintenance plan adopted in 1992. These control measures included:

- 1) Emissions offsets of 1:1 for all major sources;
- 2) Stage II Vapor Recovery or Enhanced Inspection and Maintenance (I/M);
- 3) Transportation Control Measures (TCM) achieving a 0.5% reduction in area Volatile Organic Compounds (VOC) emissions; and
- 4) A comprehensive emission inventory.

The states of Missouri and Kansas, along with the Mid-America Regional Council (MARC), expressed to the EPA that they wished to amend the control measures listed in the

contingency section of the 1992 implementation plan. The EPA agreed that the measures could be changed as long as the revised plan achieved the same level of control.

The states asked the MARC Air Quality Forum to aid in the review of the control measures available to the KCMA. The Air Quality Forum convened the Ozone Subcommittee to conduct a technical analysis of the control measures. The Ozone Subcommittee evaluated the following major control measures: federal reformulated gasoline (RFG), low Reid Vapor Pressure (RVP) gasoline, Stage II Vapor Recovery, and I/M (14 different programs). The Ozone Subcommittee also evaluated transportation control measures including:

- 1) Free transit for high ozone season;
- 2) Free transit on red skycast days;
- 3) Commuter rail in Interstate 35 corridor;
- 4) Increased bus service for high ozone season;
- 5) Light rail transit, clean fuel fleets;
- 6) Lanes for high occupancy vehicles;
- 7) Enhanced traffic signalization on arterial routes;
- 8) Nontraditional work scheduling and commuting;
- 9) Telecommuting;
- 10) Parking surcharges; and
- 11) Taxes on vehicles miles traveled and gasoline.

The Air Quality Forum reviewed the Ozone Subcommittee report and recommended the following control measures:

- 1) Expanded public education;
- 2) Low RVP gasoline;
- 3) Motor vehicle I/M;
- 4) Seasonal no-fare transit; and
- 5) Clean fuel fleets.

The Air Quality Forum also recommended enhanced traffic signalization, expanded transit, expanded Heartland Sky program, land use planning, air quality data collection, expanded public education, and a stationary source study as supplementary measures.

The department's Air Pollution Control Program prepared a revised maintenance plan, which was presented at public hearing on April 24, 1997. The plan was then presented to the Missouri Air Conservation Commission (MACC) for adoption at the June 28, 1997, meeting. The commission recommended that the department's Air Pollution Control Program revise the plan to include Stage II Vapor Recovery in the place of an I/M Program. The decision to relinquish the I/M Program was made partially due to the difficulty in implementing such a program considering the extended length of time necessary to develop it and put it into action. At the July 24, 1997, MACC meeting, the commission members agreed to allow the department's Air Pollution Control Program some time to reconsider the control strategies for the Kansas City area with the MARC Air Quality Forum and the local agencies. The commission directed the department's Air Pollution Control Program to bring the plan back for public hearing no later than December of 1997.

The Air Quality Forum held a meeting on September 3, 1997, to discuss the control options. The discussions at this meeting also addressed a second violation of the one-hour ozone standard, which occurred on August 28, 1997. The Air Quality Forum convened again

on October 7, 1997, to recommend the control strategies for the KCMA. The forum recommended the implementation of expanded public education and Heartland Sky programs, RFG, stationary source reductions, air quality data collection, and supplementary control measures including:

- 1) Seasonal reduced-fare and transit;
- 2) Clean cities programs;
- 3) Enhanced traffic signalization;
- 4) Expanded transit program; and
- 5) Land use planning.

The Air Quality Forum recommended the inclusion of Stage II Vapor Recovery as a contingency in the event the implementation of the RFG program was unsuccessful.

The department's Air Pollution Control Program amended the revised maintenance plan to reflect the latest MARC recommendations. One important element of the maintenance plan was left to the MACC to determine. This element was the implementation year for RFG. The department's Air Pollution Control Program drafted the plan with language requesting comments on an implementation date. As recommended, the department's Air Pollution Control Program also included a Stage II Vapor Recovery regulation to be promulgated if the RFG program could not be implemented.

1.1.3 MAINTENANCE PLAN ISSUES AND ACTIONS IN 1998

On February 3, 1998, the MACC adopted the revised Kansas City Ozone Maintenance Plan. The commission also set the recommended implementation date for the RFG program as April 15, 2000. The department's Air Pollution Control Program committed to request the Governor of Missouri to opt the Missouri counties of the KCMA into the federal RFG program.

The department's Air Pollution Control Program sent the revised maintenance plan to the EPA, Region VII on March 25, 1998. The EPA found the revised maintenance plan complete on May 26, 1998.

As was required in the maintenance plan, the department's Air Pollution Control Program updated the MACC on the status of the Federal RFG amendment at the August 1998 meeting. The department's Air Pollution Control Program recommended that the commission delay any action until the September 24, 1998, MACC meeting. The EPA finalized the Federal opt-in rule amendment to allow Kansas City as a former non-attainment area to opt-in the Federal RFG program on September 29, 1998.

At the September 24, 1998, MACC meeting, the Department's Air Pollution Control Program requested direction from the commission on moving forward with the maintenance plan as adopted. The department's Air Pollution Control Program informed the commission that the EPA had passed the needed regulation allowing Missouri and Kansas to request RFG for Kansas City. The commission agreed that the department's Air Pollution Control Program should move forward with the maintenance plan as adopted.

1.1.4 MAINTENANCE PLAN ISSUES AND ACTIONS IN 1999

On May 27, 1999, the EPA published a conditional approval of the maintenance plan. The conditions of this approval were that the governor of Missouri opt-in to the federal RFG program and the state implement a regulation for a state fuel, or implement Stage II Vapor Recovery by April 15, 2000.

On April 6, 1999, the EPA disapproved the Long Range Transportation Plan (LRTP) for the KCMA. The Federal Highway Administration stopped approving new roadway projects on May 7, 1999. July 28, 1999 was set as the date that highway funding would begin to be withheld.

On June 2 and 3, 1999, the Kansas Department of Health and Environment (KDHE), in conjunction with the department's Air Pollution Control Program, held a Kansas City Fuels Summit to discuss the implementation of the ozone maintenance plan options. While the fuels summit did not clearly result in the recommendation of the federal RFG program, the summit did illustrate the difficulties of not pursuing federal RFG.

On July 27 and 28, 1999, Governor Graves of Kansas and Missouri Governor Carnahan respectively, signed letters (See Appendix E) requesting that the KCMA be included in the federal RFG program. Submitting the opt-in letters to the EPA brought the LRTP into conformity, thereby making the plan approvable and allowing federal highway funding distribution again.

However, on November 9, 1999, the United States Court of Appeals for the District of Columbia Circuit issued an order to stay the effectiveness of the EPA amendments to 40 CFR part 80 Subpart 70(k). This stay prevented former nonattainment areas to opt-in to the federal RFG program.

1.1.5 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2000

On January 4, 2000, the same court revoked the EPA's rulemaking. The action of the court eliminated the availability of RFG for the KCMA at this time. The department's Air Pollution Control Program met with petroleum interests serving KCMA on March 3, March 20, and April 11 to discuss the availability of an RFG-like fuel for KCMA. The petroleum industry committed to providing a 7.0 RVP gasoline in the KCMA. This gasoline alone would not meet the emission reduction needed for the maintenance plan. The states would have to make up the difference in emission reductions through stationary source controls.

The EPA sent Governor Carnahan a letter dated April 11, 2000, which started a 90-day clock. Within this 90 days, the state was required to develop and submit a revised control strategy for the KCMA to replace the RFG strategy that was no longer a viable option.

On June 13, 2000, the Air Quality Forum voted to reaffirm their recommendation that Stage II Vapor Recovery be implemented if a state RFG-like fuel was not available to the KCMA. On June 29, 2000, the MARC Board of Directors also voted to reaffirm their commitment to implement Stage II Vapor Recovery if a state RFG-like fuel is not available for the KCMA.

The state of Kansas sent a letter (see Appendix E) to the EPA committing to a 7.0 RVP gasoline and a cold solvent cleaning rule on July 7, 2000.

In addition, the state of Missouri sent a letter (see Appendix E), on August 22, 2000, committing to implement a 7.0 RVP regulation and a cold solvent cleaning regulation. In

addition, department's Air Pollution Control Program committed to amend the Stage I Vapor Recovery Program in KCMA to include enhanced reporting and record keeping, increased inspection frequency, and installation of pressure vacuum relief valves. In addition, the department's Air Pollution Control Program proposed rule 10 CSR 10-2.205 Control of Emissions from Aerospace Manufacturing and Rework Facilities. This rule was identified in the Kansas City Ozone Maintenance Plan adopted in 1992 as a possible stationary source control, which the department's Air Pollution Control Program committed to pursue. This rule was presented at a public hearing on October 26, 2000. The rule was adopted by the MACC on December 7, 2000, and became effective on March 30, 2001.

The department's Air Pollution Control Program filed a new rule 10 CSR 10-2.215 Control of Emissions from Solvent Cleanup Operations on August 30, 2000. This rulemaking was identified in the Kansas City Ozone Maintenance Plan adopted in 1992 as a possible stationary source control, which the department's Air Pollution Control Program committed to pursue.

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.330 Control of Gasoline Reid Vapor Pressure on September 26, 2000. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan.

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.260 Control of Petroleum Liquid Storage, Loading, and Transfer on December 1, 2000. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan.

1.1.6 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2001

Rule 10 CSR 10-2.215 was adopted by the MACC on February 6, 2001, and became effective on May 30, 2001. The 10 CSR 10-2.330 rule amendment was adopted by the MACC on February 6, 2001, and became effective on May 30, 2001. The 10 CSR 10-2.260 rule amendment was adopted by the MACC on March 29, 2001, and became effective on July 30, 2001

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.210 Control of Emissions from Solvent Metal Cleaning on January 29, 2001. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan. The amendment requires low vapor solvents to be used for cold cleaning. This rule amendment was adopted by the MACC on May 24, 2001, and became effective on October 30, 2001.

The department's Air Pollution Control Program worked with the State of Kansas and MARC to develop the 1999 emission inventory for Kansas City Maintenance Area. The inventory has been completed.

1.1.7 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2002

In late January 2002, MOBILE 6 was issued by the EPA for use in calculating on-road mobile emissions. The department's Air Pollution Control Program through the interagency consultation group process and with the assistance of MARC elected to use MOBILE6 in

calculating on-road mobile emissions and to develop area, point and off-road emissions inventory numbers for 1999.

On June 11, 2002, MARC Board approved the Mobile Budgets. On June 28th the 2002 Maintenance Plan for Control of Ozone with the Mobile Budgets included was submitted to Public Hearing. On July 25, 2002 the 2002 Maintenance Plan for Control of Ozone plan was adopted by the MACC. The department's Air Pollution Control Program notified the MACC that a set of new population and employment forecasts was being received by MARC when available. Upon receipt of the forecast data necessary to calculate the impact of the employment and forecast changes, new mobile budgets may have to be developed. On September 24, 2002 MARC approved new employment and population forecasts. The forecasts impact to the projected area sources and projected mobile budgets was closely examined by interagency consultation group process and with the assistance of MARC. A new area inventory was developed for Kansas and Missouri and a new mobile emission budget was developed. MARC approved the New Mobile Emission Budget on October 29, 2002. The new Mobile Budget was submitted for Public Hearing at the MACC meeting on October 24, 2002. The Mobile Budgets was approved by MACC on December 05, 2002.

1.1.8 MAINTENANCE PLAN ISSUES AND ACTIONS FROM 2003 THROUGH 2005

In July 1997, after reviewing the one-hour ozone NAAQS, the EPA finalized a new eight-hour ozone standard. This standard defines an area in attainment of the 8-hour standard when the 3-year average of the annual 4th highest daily maximum 8-hour ozone concentration is less than or equal to 0.08 parts per million (ppm). Due to rounding conventions in the new standard, an eight-hour average ozone concentration above 0.085 ppm is considered an exceedance of the eight-hour ozone standard. This standard was designed to replace the existing one-hour standard. This replacement was done under subpart 1 of the CAA, Title I, Part D, which gives EPA discretion to shape nonattainment programs.

The EPA was challenged in court on the eight-hour standard, and the one-hour standard was reinstated. The Supreme Court upheld the constitutionality of the eight-hour standard setting process in the CAA, but ruled that the EPA could not implement the new standard under subpart 1 without considering subpart 2 requirements. Subpart 2 specifies area classification for nonattainment areas with additional control strategy requirements for each classification. The Supreme Court left it to EPA to develop a reasonable resolution of the roles of subparts 1 and 2 in implementing a revised ozone standard. The rule was remanded back to EPA in order to develop a reasonable approach to implement the new standard while considering the roles of subpart 1 and 2 in implementation.

On March 18, 2002, EPA published a Notice of Public Meeting in the *Federal Register* regarding the implementation of eight-hour ozone standard to address subpart 2 of the requirement per the Supreme Court decision. On March 26, 2002 the U.S. Court of Appeals for the District of Columbia unanimously rejected all remaining challenges to EPA's new ozone and fine particle standards. During the week of December 9, 2002, the governor of Missouri received a letter from the EPA requesting the submission of updated, revised, or new designation recommendations and documentation by April 15, 2003. Later, EPA extended the deadline to July 15, 2003.

On June 2, 2003, EPA published the Proposed Rule to implement the Eight-Hour Ozone National Ambient Air Quality Standard in the *Federal Register*. In April of 2004, the EPA

designated the Kansas City area “unclassifiable” for the eight-hour standard, and indicated that a decision on Kansas City’s attainment status would be made following the 2004 ozone season.

Due to a mild, wet summer, no exceedances of the 8-hour ozone standard were recorded at any of the Kansas City ozone monitors in 2004. Based on monitoring data from 2002 through 2004, Kansas City is in attainment of the 8-hour ozone standard. A letter was sent to EPA in December 2004 certifying the monitoring data and recommending that Kansas City be designated attainment for the 8-hour ozone standard.

In the May 3, 2005 *Federal Register*, EPA issued the final rule for the Air Quality Redesignation for the 8-Hour Ozone National Ambient Air Quality Standard for Some Counties in the States of Kansas and Missouri. This rule redesignated the KCMA as being in attainment for the 8-hour standard, effective June 2, 2005.

The purpose of this plan revision is to update the previously approved 2002 Kansas City Maintenance Plan for the Control of Ozone to add the new eight-hour standard and related triggers to the previously approved one-hour standard. As stated in the *Federal Register* on April 30, 2004 (69 FR 23954), the one-hour standard will be revoked in full on June 15, 2005. By including the eight-hour standard and triggers as a revision to this plan, the plan can remain in effect until a formal eight-hour plan is submitted by the June 2007 deadline. Due to the implementation of the new eight-hour standard, rules 10 CSR 10-6.010 Ambient Air Quality Standards and 10 CSR 10-6.040 Reference Methods are being amended to reflect this additional ozone standard for air quality monitoring. These rulemakings are scheduled to be filed in July of 2005. Draft copies of these rules are included in Appendix F.

Although the one-hour standard is revoked, as stated by EPA in 69 FR 23985 “The maintenance plan requirements will remain enforceable as part of the approved SIP until such time as EPA approves a SIP revision removing such obligations.” Therefore, although the one-hour standard will be revoked, the contingency measures and triggers associated with the one-hour standard will remain in effect until a new eight-hour standard SIP revision is approved by EPA. A revised section 110(a)(1) maintenance SIP demonstrating that KCMA is in attainment for the eight-hour standard is currently scheduled for submittal by the June 2007 deadline set by EPA.

Finally, it should be noted that when the one-hour standard is revoked, the conformity section (Section 2.5) of this document will no longer apply. The applicability section of Rule 10 CSR 10-2.390 Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws is being amended to reflect this change in applicability as it relates to the eight-hour ozone attainment status. Although the motor vehicle emissions budgets were originally developed for conformity purposes under the one-hour ozone standard, the department has decided to retain the one-hour maintenance plan language describing the motor vehicle emissions budget in the 2005 Kansas City Maintenance Plan for the Control of Ozone. The motor vehicle emissions budget information is useful in developing emission inventories and provides background to the general public. Retaining the mobile vehicle emissions budget language in this plan revision is also aids in understanding the transition between the one-hour and eight-hour standard in the KCMA.

1.2 KANSAS CITY OZONE MAINTENANCE PLAN COMPONENTS

1.2.1 ADMINISTRATIVE REQUIREMENTS

This section provides the legal authority statement, the public hearing notice along with the certification of public notice, the comments with the responses from Public Notice, and provides for the MACC Adoption Certification.

1.2.2 DEMONSTRATION OF CONTINUED ATTAINMENT

This section of the Kansas City Maintenance Plan for Control of Ozone reveals by comparing updated emission inventory data, the Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x) emissions from 1999, and projections of the VOC and NO_x emissions for the year 2012, that it is reasonable to conclude that the emission levels experienced in 1999 will not be exceeded in 2012. The analysis shows no increase in VOC and NO_x emissions through the life of the maintenance plan. In 1991, the EPA approved the Kansas City Maintenance Plan by demonstrating the Ozone action levels in 1989 that attained the NAAQS will remain below the action level through 2002. In a similar manner, the 2002 plan demonstrates the VOC and NO_x levels in 1999 when projected to 2012 reveals no increase in VOC and NO_x emissions. The 2005 Kansas City Maintenance Plan for Control of Ozone will allow the area to remain in compliance with NAAQS for the next ten years or the life of this plan.

The Plan shows that, without adding any new control measures to the KCMA, ozone precursor emissions will be reduced between 2000 and 2012. These reductions will be realized through a combination of already adopted State and Federal control measures and future federal programs affecting mobile sources, stationary sources, and transportation systems. The KCMA will meet the one-hour ozone standard through 2012 with the control measures listed in the Demonstration of Continued Attainment section.

1.2.3 TRACKING PLAN'S PROGRESS & INVENTORY PROVISION

This section of the Kansas City Maintenance Plan for Control of Ozone is divided into sections that describe the ozone-monitoring network and provides for the required emission inventory update provisions.

The primary tracking plan for the KCMA consists of continuous ozone monitoring. The ongoing regional transportation planning process carried out by the MARC, in coordination with the KDHE, the department's Air Pollution Control Program, and the EPA, will serve as a secondary means of tracking mobile source VOC and NO_x precursor ozone emissions into the future. The region's transportation improvement programs are prepared every two years, and must go through a transportation conformity finding until this conformity requirement is not longer required. This process will be used to periodically review progress toward meeting the vehicle miles traveled (VMT) and mobile source emissions projections in this maintenance plan.

The locations of the eight monitors in the Kansas City Area are provided and the agency responsible for the individual monitors is disclosed. Table 1a is provided which reveals the number of exceedances by monitor location during the ozone seasons from 1991 through 2004 for the one-hour standard. Table 1b lists the number of exceedances for each monitor location of the eight-hour standard during the ozone seasons from 2002 through 2004. Table 2 presents the ozone exceedances by monitor in the Kansas City Area for the years 1982 through 2004 for the one-hour standard in addition to the ozone exceedances for the eight-hour standard for the years 2002 through 2004. Table 3 is a list of design values for the maintenance area for both the eight-hour and one-hour standards. Design values are used as indicators of air quality. This section discusses the exact ozone monitor value that would be interpreted as an exceedance. In addition, this section discusses the history of missing monitor data, how missing monitor data is handled, and reveals sources of monitor down time. All recent missing monitor data occurrences qualified to be treated as discounted data or not counted as exceedances.

An emission inventory is an itemized list of emission estimates for sources of air pollution in a given area, for a specified time period. The inventory is divided into stationary sources (point, area and biogenic) and mobile sources. The department's Air Pollution Control Program realizes the importance of a quality up-to-date emissions inventory in planning for air quality. Therefore, the department's Air Pollution Control Program commits to updating the emissions inventory to enable tracking of emission levels for the KCMA every three years for the next ten years or the life of this plan. This emissions inventory update will include point, area, mobile and biogenic emission revisions.

1.2.4 EMISSION INVENTORY AND MOBILE VEHICLE BUDGETS

The base year for the new inventory is 1999. No violations of the one-hour ozone standard occurred during the 1998-1999 period. The region was in compliance with the one-hour ozone standard.

The emission inventory update information is broken out into mobile on-road and off-road, area, point, and biogenic sources in Tables 4, 5, and 6. Table 4 is the total for the actual 1999 and projected 2012 emissions for the Missouri counties of the KCMA while Table 5 is the Total of the Kansas Counties of the KCMA. Table 6 is the combined Missouri and Kansas counties. A discussion of the mobile on-road and off-road emission data and the program used to estimate the emission data is provided. MARC, using the EPA MOBILE6 model for on-road modeling and Draft NONROAD model for off-road, developed the data for the on-road and off-road mobile emissions. The draft NONROAD model that was released in June 2001 in support of the 2007 heavy-duty vehicle rule was used to generate 1999 and 2012 emissions estimates for all off-road mobile source categories covered in the non-road model. A discussion of the biogenic data is provided which includes revealing the model used in the data development. This section contains general information about the emission data. The point and area sources calculation and source information is found in this section.

The existing budgets for 2000 and 2010 were calculated in 1995. In that exercise, the 1990 level of emissions was assumed to keep the region in compliance with the one-hour ozone standard and was used as a cap on overall emissions through 2010. The 2010 level of emissions was less than the emissions in 1990, and the difference was quantified as a margin, which allowed for some growth in emissions from all sectors in 2010. Approximately one-third of the margin, which was the percent of overall emissions contributed by vehicles,

was specifically allocated to motor vehicles. The motor vehicle emissions budget was the projected on-road mobile emissions in 2010 (assuming transportation investments through 2010) plus the motor vehicle proportion of the margin (allowing for growth in mobile emissions).

A plan revision submitted by the state in 1995 and approved by EPA (61 FR18251 on April 25, 1996) establishes the current motor vehicle emissions budgets used to ensure that transportation plans conform to the ozone maintenance plan, see 40 CFR 52.1321(e). The budgets are shown in the following table:

Motor Vehicle Emissions Budget (MVEB) for Conformity Purposes

Compounds	2000 Attainment MVEB for the KCMA
Non-methane hydrocarbons	87,548 kg/summer day (96.3 tpd)
NOx	119,889 kg/summer day (131.9 tpd)

The mobile source budgets for 2012 are:

VOC: 54.7 tons /ozone season day

NOx: 97.8 tons /ozone season day

This budget is expected to allow the area to maintain the eight-hour as well as the one-hour ozone standard.

1.2.5 CONTINGENCY MEASURES

Section 175A of the CAAA requires all maintenance plans to include such contingency commitments as needed to keep an area from exceeding the eight-hour or one-hour standard once attainment has been reached. The department's Air Pollution Control Program is obligated under the CAAA to set forth a plan to be implemented upon a violation of the eight-hour or one-hour ozone standard in the KCMA. The CAAA requires a group of specific control measures to be implemented in case of a violation of the eight-hour or one-hour ozone standard.

Contingency Measure Trigger for 2003 to 2004

Violation occurs anywhere within the maintenance area.

Statewide NOx rule (MO)

Federal Non-road Engine Standards

One or more of the following will be considered for implementation:

Industrial emission offsets of 1.15 to 1;

Stationary source controls for NOx and VOC;

Stage II Vapor Recovery program at gasoline refueling stations;

Enhanced vehicle emission reduction programs;

Alternate fuel programs for fleet vehicle operations;

Vehicle anti-tampering programs;

Other transportation control measures;

Vehicle inspection and maintenance program;

VOC controls on minor sources; and

The department's Air Pollution Control Program will further review and evaluate the current VOC rules to see if they need to be tightened, changed or modified.

Contingency Measure Trigger for 2005-2012

Level I Trigger

The KCMA NO_x or VOC emissions inventories for 1999 increase more than 5% above the levels included in the 3-year emissions inventories updates.

The department's Air Pollution Control Program will work cooperatively with KS to evaluate the exceedances, or determine if adverse emissions trends are likely to continue. If so, the states will determine what and where controls may be required, as well as level of emissions reductions needed, to avoid a violation of the NAAQS. The study shall be completed within 9 months. If necessary, control measures shall be adopted within 18 months of determination.

Level II Trigger

A violation of the eight-hour or one-hour ozone NAAQS at any monitoring station in the KCMA.

The department's Air Pollution Control Program will work cooperatively with Kansas to conduct a thorough analysis to determine appropriate measures to address the cause of the violation. Analysis shall be completed within 6 months. Selected measures shall be adopted within 18 months and implemented as expeditiously as practicable, taking into consideration the ease of implementation and the technical and economic feasibility of selected measures.

Point, Mobile and Area Control Measures

Point Source Measures

NO_x SIP Call Phase II (non-utility).

Reinstate requirements for Offsets and/or Lowest Achievable Emission Rate (LAER).

Apply Reasonably Available Control Technology (RACT) measures to smaller existing sources.

Tighten RACT for existing sources covered by EPA Control Techniques Guidelines (CTG).

Expand the geographic coverage of current point source control measures.

Maximum Achievable Control Technologies (MACT) controls for industrial sources.

Other control measures to be identified.

Mobile Source Measures

Tier 2 Vehicle Standards and Low Sulfur Fuel

Heavy Duty Diesel Standards and Low Sulfur Diesel Fuel

TCM's, including, but not limited to, area-wide rideshare programs, telecommuting, transit

improvements, and traffic flow improvements.

Vehicle testing I/M (OBDII)

California Engine Standards

Other measures to be identified

Area Source Measures

California Architectural/Industrial Maintenance (AIM)

California Commercial and Consumer Products

Broader geographic applicability of existing measures

California Off-road Engine Standards

Other measures to be identified

1.2.6 PROVISION FOR OPERATION OF MONITORING NETWORK

This section outlines actions to upgrade the monitoring network. Moving of the Worlds of Fun monitor to Rocky Creek is discussed. The new Leavenworth County and Johnson County monitors are also mentioned. Reference is made to commitment letters from the department's Air Pollution Control Program to the EPA and acceptances by the EPA of the commitment letter. A commitment to operate the monitoring network for ten years or the life of the plan is found in this section.

1.2.7 CONFORMITY

A general conformity regulation (10 CSR 10-6.300 Conformity of General Federal Actions to State Implementation Plans) became effective on September 30, 1996. This rule implements section 176(c) of the CAA, as amended (42U.S.C. 7401 et seq.) and regulations under 40 CFR part 51 Subpart W. Under those authorities, no department, agency, or instrumentality of the Federal Government shall engage in or approve any activity that does not conform to an applicable implementation plan. This applies to areas in Missouri that are designated as a nonattainment or maintenance area for any criteria pollutant of NAAQS.

A conformity analysis (see List of References # 7) is a demonstration that the regional emissions from proposed transportation projects would not exceed the motor vehicle emissions budgets. If the conformity requirements cannot be met, then only certain types of projects may proceed until the requirements can be met. The conformity analysis clearly indicates that regional motor vehicle emissions of VOC and NO_x remain below the budgeted level in the proposed regional plan while accounting for the network anticipated to be operational as a result of roadway capacity projects listed in the 2002 Transportation Improvement Plan (TIP). As such, the analysis indicates that the 2002 TIP and the 2020 LRTP are in conformity with the plan.

When the one-hour standard is revoked on June 15, 2005, the conformity regulations in this section will no longer apply to the KCMA. The Kansas City conformity rule (10 CSR 10-2.390 Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the

Federal Transit Laws) is being amended to reflect this change in applicability.

2.0 THE 2002 KANSAS CITY OZONE MAINTENANCE PLAN

2.1 ADMINISTRATIVE REQUIREMENTS

2.1.1 LEGAL AUTHORITY

The Missouri Air Conservation Commission is granted legal authority to develop and implement regulations regarding air pollution under section 643.050 of the Revised Statutes of Missouri.

2.1.2 PUBLIC HEARING NOTICE AND CERTIFICATION

The department's Air Pollution Control Program is required to announce a public hearing, at least 30 days prior to holding such hearing. This was accomplished by announcements submitted to newspapers at least 30 days prior to the public hearing which occurred on June 30, 2005. Attached in Appendix G is the public hearing notice along with certification of publication of the public notice for the entire Maintenance Plan.

2.1.3 COMMENTS, RESPONSES, AND EXPLANATIONS OF CHANGE

Attached in Appendix H are the department's Air Pollution Control Program's responses to comments received during the open public comment period on this plan. The comment period was open until seven days after the Public Hearing that occurred on June 30, 2005. The department's Air Pollution Control Program is required to respond to all comments received.

2.1.4 MACC ADOPTION CERTIFICATION

Attached in Appendix I is the MACC adoption certification to demonstrate approval by the commission of the entire Maintenance plan.

2.2 DEMONSTRATION OF CONTINUED ATTAINMENT

2.2.1 DEMONSTRATION OF DECREASING INVENTORY VALUES

The area wide VOC emissions inventory for 1989 that attained the NAAQS standard for ozone, less a margin for safety, is 236,872 kg/day (260.6 tons per day). In 2000, the area wide VOC emissions were projected to be 186,557 kg/day (205.2 tons per day), a decrease of 50,315 kg/day (55.4 tons per day). Given the margin, the EPA concluded that VOC

emissions will remain below the action level through the year 2002.

In 1999, the area wide VOC emissions were 253.6 tons per ozone season day (osd). In 2012, emissions are projected to be 221.7 tons per osd (biogenic emissions not counted). The projection of the 2012 maintenance plan emissions demonstrates the area will maintain the one-hour ozone standards for the next ten years, i.e. through 2012. However, some parts of the country show increases in ozone levels over the last ten years, due largely to increased NOx emissions and weather conditions favorable to ozone formation according to the National Air Quality and Emissions Trends Report in 1999. These increases appear to be explained by weather conditions more conducive to ozone formation (i.e., higher summer temperatures and drier conditions) in 1999 relative to 1990 paired with increased NOx emissions in many of the affected states. NOx are emitted from motor vehicles, power plants, and other sources of combustion and natural sources including lightening and biological process in soil.

VOC emissions will remain below the action level for the next ten years. NOx emissions levels are reviewed to provide more assurance for remaining in compliance. Since increases in NOx emissions and the associated changes in atmospheric chemistry could result in violations of the one-hour ozone standard. The 1999 NOx emissions are 424.2 tons per ozone day and the projected 2012 NOx emissions are 373.5 tons per ozone day. The analysis shows no increase in NOx emissions through the life of the maintenance plan. Therefore, with VOC emissions below the action level and with NOx emissions not increasing, the area will be in attainment for the next ten years.

2.2.2 CONTROL MEASURES

The Plan shows, without adding any new control measures to the KCMA, ozone precursor emissions will be reduced between 2000 and 2012. These reductions will be realized through a combination of already adopted control measures and programs affecting mobile sources, stationary sources, and transportation systems. The KCMA will rely on the State and Federal control measures and programs contained in the plan to demonstrate maintenance of the one-hour ozone standard through 2012. These control measures and programs are listed below:

2.2.2.1 DEPARTMENT'S AIR POLLUTION CONTROL PROGRAM CONTROL

MEASURES

Reference for Code of State Regulations	Title of State Regulation
10 CSR 10-2.040	Maximum Allowable Emission of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating
10 CSR 10-2.080*	Emission of Visible Air Contaminants From Internal Combustion Engines.
10 CSR 10-2.090**	Incinerators

Reference for Code of State Regulations	Title of State Regulation
10 CSR 10-2.100	Open Burning Restrictions
10 CSR 10-2.150	Time Schedule for Compliance
10 CSR 10-2.205	Control of Emissions From Aerospace Manufacture and Rework Facilities
10 CSR 10-2.210	Control of Emissions from Solvent Metal Cleaning
10 CSR 10-2.215	Control of Emissions from Solvent Cleanup Operations
10 CSR 10-2.220	Liquefied Cutback Asphalt Paving Restricted
10 CSR 10-2.230	Control of Emissions From Industrial Surface Coating Operations
10 CSR 10-2.260	Control of Petroleum Liquid Storage, Loading, and Transfer
10 CSR 10-2.280	Control of Emissions From Perchloroethylene Dry Cleaning Installations
10 CSR 10-2.290	Control of Emissions From Rotogravure and Flexographic Printing Facilities
10 CSR 10-2.300	Control of Emissions From the Manufacturing of Paints, Varnishes, Lacquers, Enamels and Other Allied Surface Coating Products
10 CSR 10-2.310	Control of Emissions From the Application of Underbody Deadeners
10 CSR 10-2.320	Control of Emissions From the Production of Pesticides and Herbicides
10 CSR 10-2.330	Control of Gasoline Reid Vapor Pressure
10 CSR 10-2.340	Control of Emissions From Lithographic Printing Facilities
10 CSR 10-2.360	Control of Emissions From Bakery Ovens.
10 CSR 10-2.390	Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

*In process of being rescinded from State regulations and replaced with 10 CSR10-6.220.

**Rescinded from State regulations in 1991, but still in SIP.

2.2.2.2 FEDERAL CONTROL MEASURES

This list contains the Federal motor vehicle emissions control measures that were in effect as of May 22, 2002 and which were relied on in the mobile emissions projection calculations using MOBILE6.

Tier 1

Heavy Duty Diesel rule starting mid-year 1991

National Low Emission Vehicles (mid-year-1997 for New England States and mid-year 2001 for USA)

Onboard Refueling Vapor Recovery (ORVR) (phase in with 40% of mid-year-1998)

Tier II

Heavy Duty Diesel rule starting with mid-year 2004

Heavy Duty Diesel rule starting with mid-year 2007

The department's Air Pollution Control Program will maintain all of the control measures listed in this section to ensure maintenance of the one-hour ozone NAAQS. Revisions to the control measures included in the maintenance plan will be submitted to the EPA for inclusion in the Missouri State Implementation Plan. The revisions will be accompanied with documentation showing that such a change will not interfere with maintenance of either NAAQS. The department's Air Pollution Control Program has the necessary resources to enforce any violation of its rules or permit provisions and intends to continue enforcing all rules or permit provisions that relate to the emission of ozone precursors in the KCMA.

2.3 TRACKING PLAN'S PROGRESS & INVENTORY PROVISION

2.3.1 TRACKING THE PLAN'S PROGRESS

2.3.1.1 TRACKING METHODS

The primary tracking plan for the KCMA consists of continuous ozone monitoring. The ongoing regional transportation planning process carried out by the MARC, in coordination with the KDHE, the department's Air Pollution Control Program, and EPA, will serve as another means of tracking mobile source VOC and NOx precursor emissions into the future. Since revisions to the region's transportation improvement programs are prepared every two years, and must go through a transportation conformity finding until this conformity requirement is no longer valid, this process will be used to periodically review progress toward meeting the VMT and mobile source emissions projections in this maintenance plan.

Specifically, the Kansas City ozone-monitoring network consists of eight monitors. Two monitors, in Liberty and Watkins Mill Park, are placed downwind, assuming winds are predominantly from the southwest, to record peak afternoon readings. Two monitors are placed in populated areas, at Rocky Creek (previously located at Worlds of Fun) and Kansas City International Airport (KCI). One monitor is placed upwind, at Richards Gebaur Air Force Base (AFB), to monitor ozone transport from outside the area. One monitor is in

downtown Kansas City, Kansas, in Wyandotte County. The last two monitors are located at the U.S. Penitentiary in Leavenworth, Kansas and at Heritage Park in Olathe, Kansas. The addition of these last two monitors were the result of a determination by staff of EPA, KDHE and the department's Air Pollution Control Program that there were areas in the Kansas City area where additional monitoring was needed.

The Kansas City Missouri Health Department maintains the monitors at Rocky Creek and KCI. The department's Air Pollution Control Program operates the Liberty and Watkins Mill Park monitors. The monitor in Kansas City, Kansas is operated by the Wyandotte County Department of Air Quality. The monitor at Worlds of Fun was moved to a new site called Rocky Creek early 2002. It is now located at 13131 NE 169th Highway, Kansas City, MO 64141- Clay County. Two monitors began operation for the 2003 ozone season. One is located at the U.S. Penitentiary at 2010 Metropolitan Avenue, Leavenworth, Kansas. The other is located at Heritage Park, 13899 W. 159th Street, Olathe, Kansas. These two monitors are operated by KDHE's Bureau of Air and Radiation.

2.3.1.2 AMBIENT AIR MONITORING

The Clean Air Act Amendments of 1977 established the NAAQS for one hour ozone as 0.12 parts per million (ppm). A single monitor is allowed to experience an average of one exceedance of the standard each year over a three-year period. The fourth exceedance in a three-year period is considered a violation of the one-hour ozone standard. An ozone reading of higher than 0.125 ppm is considered an exceedance as it is rounded to 0.13 ppm. It is a misunderstanding to consider a value of 0.124 ppm as an exceedance for it is not interpreted as an exceedance. Because the one-hour standard is 0.12 ppm, a value must be 0.125 or higher in order to be counted as an exceedance. This is due to the rounding convention of the standard. It is important to understand the rounding convention when evaluating the data. Upon reviewing the data that generated Table 2, it was common to see values between 0.12 and 0.124 that are not counted as exceedances because of the rounding convention.

In 1997, the ozone NAAQS was reviewed, and EPA recommended that the ozone standard be changed from the then current one-hour standard of 0.12 ppm to a new standard of 0.08 ppm averaged over eight hours. Following court decisions in 2002, EPA requested updated, revised, or new designation recommendations and documentation from states regarding the implementation of the eight-hour ozone standard. As with the one-hour standard, an exceedance of the eight-hour standard is determined on a per monitor basis. An exceedance of the eight-hour standard at a specific monitor is determined by taking the fourth highest ozone reading each year for three years and averaging them together. If this three year average value is greater than 0.08 ppm, that monitor has experience a violation of the eight-hour ozone NAAQS. An ozone reading of higher than 0.085 ppm is considered an exceedance as it is rounded to 0.09 ppm. It is a misunderstanding to consider a value of 0.084 ppm as an exceedance for it is not interpreted as such. Based on the rounding conventions of the standard, an ozone reading must be at least 0.085 ppm to be considered an exceedance. It is important to understand the rounding convention when evaluating the data found in Table 2.

The number of one-hour ozone exceedances during the ozone seasons from 1991 through 2004 is listed by individual monitor in Table 1a. The number of eight-hour ozone exceedances during the ozone seasons from 2002 through 2004 are listed by each monitor in Table 1b. All exceedances must come from the same monitor; exceedances are not summed

across monitors. The states of Kansas and Missouri along with the EPA conducted a monitoring network review during 2000. The department's Air Pollution Control Program has made recommendations to change the monitoring network to relocate and add monitors. These changes to the network are intended to allow for enhanced regional location and diverse meteorological condition coverage.

The KCMA has experienced seven exceedances of the one-hour ozone standard since 1997. Five of these exceedances occurred in 1998. The Liberty site had two exceedances and Watkins Mill Park sites (Lawson) experienced one exceedance in 1998. The Wyandotte site in Kansas registered two exceedances and the KCI Airport site had one exceedance in 1998. The KCI Airport and the Richards Gebaur AFB monitors each experienced an exceedance during the 2000 ozone season. During 1999, and from 2001 through 2004 none of the monitoring sites in the maintenance plan area recorded exceedances of the one-hour NAAQS.

The KCMA has experienced fifty-two exceedances of the eight-hour ozone standard since 2002. Twenty-five of these occurred in 2002, and twenty seven occurred in 2003. No exceedances of the eight-hour standard occurred in 2004. The Liberty site had five exceedances in 2002 and seven in 2003. Watkins Mill Park (Lawson) experienced three exceedances in 2002 and four in 2003. Rocky Creek recorded ten and six exceedances, respectively. The monitor at Richards Gebaur AFB had only one exceedance each in 2002 and 2003. KCI had four exceedances in 2002 and only one in 2003. The Wyandotte site in Kansas registered two exceedances in 2002 and three in 2003. The site at Heritage Park in Olathe, Kansas did not begin monitoring until 2003. In that year, it registered three exceedances. The monitor at the U.S. Penitentiary in Leavenworth, Kansas also began monitoring in 2003. That year it recorded two exceedances.

The value of the exceedances of the one-hour ozone standard for the time period 1982 to 2004, from the first highest to the fourth highest exceedance for each year, are found in Table 2. The exceedances range from 0.13 to 0.17 ppm, with the majority being in the 0.13 to 0.14 range. Table 2 also lists the four highest exceedances of the eight-hour standard for the time period from 2002 through 2004. These values range from 0.085 to 0.106 ppm.

Table 1a. One-Hour Standard Ozone Exceedances by Year in the Kansas City Area

Maintenance Monitors Site Address	Year of Ozone Monitoring (April 1 st to October 31 st)													
	1991	92	93	94	95	96	97	98	99	00	01	02	03	04
Missouri														
Liberty-Hwy 33 and County Hwy	0	0	1	0	3	0	1	2	0	0	0	0	0	0
Lawson-Watkins Mill State Park Road	0	0	0	0	3	0	0	1	0	0	0	0	0	0
Kansas City-49 th and Winchester Worlds of Fun	0	0	0	0	2	0	0	0	0	0	0			
Kansas City – 13131 NE 169 th Highway Rocky Creek*												0	0	0
Kansas City-Richards Gebaur AFB	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Kansas City-11500 N. 71 Hwy Kansas City International Airport	0	1	0	0	1	0	1	1	0	1	0	0	0	0
Kansas	1991	92	93	93	95	96	97	98	99	00	01	02	03	04
Wyandotte County Ann Avenue	0	0	1	0	0	1	0	1	0	0	0	0	0	0
Leavenworth, KS – U.S. Penitentiary**													0	0
Olathe, KS – Heritage Park**													0	0
Total	1	1	2	0	9	1	2	5	0	2	0	0	0	0

Table 1b. Eight-Hour Standard Ozone Exceedances by Year in KC Maintenance Area

Maintenance Monitors Site Address	Year of Ozone Monitoring (April 1 st to October 31 st)		
	02	03	04
Missouri			
Liberty-Hwy 33 and County Hwy	5	7	0
Lawson-Watkins Mill State Park Road	3	4	0
Kansas City – 13131 NE 169 th Highway Rocky Creek*	10	6	0
Kansas City-Richards Gebaur AFB	1	1	0
Kansas City-11500 N. 71 Hwy Kansas City International Airport	4	1	0
Kansas	02	03	04
Wyandotte County Ann Avenue	2	3	0
Leavenworth, KS – U.S. Penitentiary**		3	0
Olathe, KS – Heritage Park**		1	0
Total	25	27	0

* Formerly located a Worlds of Fun

** Monitors began collecting data in 2003

The monitor at Liberty has historically been the source of violations of the one-hour standard. This monitoring site recorded violations in the three-year periods 1982 through 1985, 1983 through 1986, 1986 through 1988, 1993 through 1995 and 1995 through 1997. The Worlds of Fun monitoring site experienced a violation in the monitoring period from 1986 through 1988. No monitors have experienced a violation of the eight-hour ozone standard in 2004 due in part to the wet, mild summer that the Kansas City area experienced.

**Table 2 Ozone Exceedances by Monitor in the Kansas City Area
One-Hour Standard Exceedances**

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Richards Gebaur AFB (Jackson County)	1982					0
	1983					0
	1984	0.15*				1
	1985					0
	1986					0
	1987					0
	1988					0
	1989					0
	1990					0
	1991	0.13				1
	1992					0
	1993					0
	1994					0
	1995					0
Richards Gebaur South (Jackson County)	1996					0
	1997					0
	1998					0
	1999					0
	2000					1
	2001	0.15				0
	2002					0
	2003					0
2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Richards	2002	0.088				1
Gebaur South (Jackson County)	2003	0.097				1
	2004					0

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
County Home Road Liberty, MO (Clay County)	1982					0
	1983	0.14*	0.13	0.13		3
	1984	0.17	0.14	0.14		3
	1985					0
	1986	0.13				1
	1987					0
	1988	0.15	0.15	0.13		3
	1989					0
	1990					0
	1991					0
	1992					0
	1993	0.13				1
	1994					0
	1995	0.16	0.13	0.13		3
	1996					0
	1997	0.13				1
	1998	0.14	0.13			2
	1999					0
	2000					0
	2001					0
2002					0	
2003					0	
2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
County Home Road Liberty, MO (Clay County)	2002	0.102	0.094	0.089	0.087	4
	2003	0.099	0.094	0.090	0.088	4
	2004					

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Watkins Mill Park (Clay County)	1982					0
	1983					0
	1984	0.16*	0.13	0.13		3
	1985					0
	1986					0
	1987					0
	1988	0.17	0.15	0.14		3
	1989					0
	1990					0
	1991					0
	1992					0
	1993					0
	1994					0
	1995	0.16	0.13	0.13		3
	1996					0
	1997					0
	1998	0.13				1
	1999					0
	2000					0
	2001					0
2002					0	
2003					0	
2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Watkins Mill Park (Clay County)	2002	0.091	0.086	0.085		3
	2003	0.096	0.087	0.086	0.085	4
	2004					0

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total	
Worlds of Fun* Kansas City, MO (Clay County)	1982					0	
	1983					0	
	1984					0	
	1985					0	
	1986	0.13*	0.13			2	
	1987	0.13				1	
	1988	0.14	0.13			2	
	1989					0	
	1990	0.13				1	
	1991					0	
	1992					0	
	1993					0	
	1994					0	
	1995	0.13	0.13			2	
	1996					0	
	1997					0	
	1998					0	
	1999					0	
	*moved in 2002 to Rocky Creek, 13131 NE 169 th Ave., Kansas City, MO	2000					0
		2001					0
	2002					0	
	2003					0	
	2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Rocky Creek Kansas City, MO (Clay County)	2002	0.097	0.094	0.091	0.091	4
	2003	0.101	0.089	0.089	0.088	4
	2004					0

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
KC International Airport Kansas City, MO (Platte County)	1982					0
	1983					0
	1984	0.13*	0.13			2
	1985					0
	1986					0
	1987					0
	1988					0
	1989					0
	1990	0.14				1
	1991					0
	1992					0
	1993					0
	1994					0
	1995	0.13				1
	1996					0
	1997	0.13				1
	1998	0.13				1
	1999					0
	2000	0.13				1
	2001					0
2002					0	
2003					0	
2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
KC International Airport Kansas City, MO (Platte County)	2002	0.092	0.088	0.085	0.085	4
	2003	0.092				1
	2004					0

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
619 Ann Ave. Kansas City, KS (Wyandotte County)	1982					0
	1983	0.13*				1
	1984					0
	1985					0
	1986	0.15	0.14			2
	1987	0.13				1
	1988					0
	1989	0.14				1
	1990					0
	1991					0
	1992					0
	1993	0.13				1
	1994					0
	1995					0
	1996	0.13				1
	1997					0
	1998	0.14				1
	1999					0
	2000					0
	2001					0
2002					0	
2003					0	
2004					0	

*Parts Per Million

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
619 Ann Ave. Kansas City, KS (Wyandotte County)	2002	0.086	0.086			2
	2003	0.096	0.088	0.085		3
	2004					0

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
U.S. Penitentiary* 2010 Metropolitan Ave. Leavenworth, KS (Leavenworth County)	2002					
	2003	0.094	0.085			2
	2004					0

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Heritage Park* 13899 W. 159 th St., Olathe, KS (Johnson County)	2002					
	2003	0.106	0.096	0.092		3
	2004					0

* These two monitors were put into place before the start of the 2003 ozone season.

Table 2 Ozone Exceedances by Monitor in the Kansas City Area (cont.)

One-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Total Monitors	1982					0
	1983					4
	1984					9
	1985					0
	1986					5
	1987					2
	1988					8
	1989					1
	1990					2
	1991					1
	1992					1
	1993					2
	1994					0
	1995					9
	1996					1
	1997					2
	1998					5
	1999					0
	2000					2
	2001					0
2002					0	
2003					0	
2004					0	

Eight-Hour Standard Exceedances

Monitor Location	Year	1 st High	2 nd High	3 rd High	4 th High	Total
Total Monitors	2002					25
	2003					27
	2004					0

Design values are used as indicators of air quality. The higher the design value implies poorer the air quality. Each monitor in the Kansas City area has a design value and the entire KCMA has a design value. A monitor's design value is defined as the ozone concentration that would only be expected to be exceeded once per year on average over a three-year period. A monitor's design value is the "fourth highest ozone concentration value" recorded in the past three years. The design value is an indicator of the expected ozone value for the area. This design value is not determined based on any other monitor's "fourth highest ozone concentration value."

The design value for the maintenance area is the maximum "fourth highest ozone concentration value" of all the individual monitors for the maintenance area. The maintenance area's design value is the highest individual monitor design value for each three-year monitor period. Attainment or nonattainment status is determined by the individual air monitor with the highest design value for a three-year period. If the individual air monitor site has no more than one exceedance per year on average, it has attained the NAAQS for the one-hour ozone. Note that a site exceeds the one-hour ozone NAAQS if its fourth highest value is at least 125 parts per billion (ppb), which is the effective level of the standard. Section 181 of the Clean Air Act Amendments describes the areas designated as nonattainment for ozone. They are classified as marginal, moderate, serious, severe, and extreme, based on area design values. From 1996 through September 30, 2004, the design values were below the value established in the amendments to the CAA for classifying the area as marginal nonattainment area. Table 3 contains a listing of the design values for the one-hour standard for the KCMA for the time periods from 1982 through 2004.

For each monitor, the design value for the eight-hour standard is determined by averaging the fourth highest eight-hour concentration value that a monitor records in each of three consecutive years. When the three year average from the same time period is compare across all monitors in the KCMA, the highest average value for a specific monitor is designated the design value for the region. For the eight-hour ozone standard, the design value for the 2002 through 2004 time period achieves attainment for the KCMA. Table 3 includes the design value for the eight-hour standard for the KCMA for the time period from 2002 through 2004.

Table 3 Ozone Design Values for the KCMA**One-Hour Standard**

3-Year Time Period	MAINTENANCE AREA DESIGN VALUE
1982 through 1984	0.14*
1983 through 1985	0.14
1984 through 1986	0.13
1985 through 1987	0.12
1986 through 1988	0.13
1987 through 1989	0.12
1988 through 1990	0.12
1989 through 1991	0.11
1990 through 1992	0.11
1991 through 1993	0.11
1992 through 1994	0.11
1993 through 1995	0.13
1994 through 1996	0.12
1995 through 1997	0.13
1996 through 1998	0.12
1997 through 1999	0.12
1998 through 2000	0.12
1999 through 2001	0.12
2000 through 2002	0.12
2001 through 2003	0.11
2002 through 2004	0.11

(* In Parts Per Million)

Eight-Hour Standard

3-Year Time Period	MAINTENANCE AREA DESIGN VALUE
2002 through 2004	0.08*

(* In Parts Per Million)

2.3.1.3 EXPECTED EXCEEDANCES/MISSING DATA

In addition to recorded exceedances, a region is allowed an average of one expected exceedance per year over a three-year period. An expected exceedance can occur when a monitor has missing data. Missing data is the result from a malfunction at a monitor, incorrect calibration standards, or acts of nature.

The EPA will look at the day prior to the missing data and the day following to determine if the highest recorded ozone reading for each day is 75% of the ozone standard. If both days meet the 75% test then the “missing” data can be discounted.

The KCMA has had “missing” data problems twice in recent history. The Liberty monitoring site experienced a period of 32 days in 1988, and the Worlds of Fun monitoring site missed 45 days in 1990. In both cases, the EPA was able to discount the episode as a violation of the standard through additional analysis. The KCMA has not experienced any

extended period of “missing” data since the 1990 episode, but Kansas City has had equipment malfunctions the last two years that resulted in extended (longer than one day) periods of no data. In all cases, the missing data was discounted.

2.3.1.4 EIGHT-HOUR OZONE/MISSING DATA

Eight-hour “missing” days are determined when less than 18 valid eight-hour averages are calculated for the day. For each three-year compliance period, 90% of the 214 ozone season days must be validly monitored. Any one year can include only 75% of the days, but the three year average must be 90%. If these criteria are not met, then compliance cannot be established. To date, acceptable monitoring has been maintained in Missouri for the eight-hour standard.

2.3.2 PROVISION FOR EMISSION INVENTORY UPDATES

An emission inventory is an itemized list of emission estimates for sources of air pollution in a given area, for a specified time period. The inventory is divided into stationary sources (point, area and biogenic) and mobile sources. The department’s Air Pollution Control Program realizes the importance of a quality up-to-date emissions inventory in planning for air quality. Therefore, the department’s Air Pollution Control Program commits to updating the emissions inventory to enable tracking of emission levels for the KCMA every three years for the next ten years or the life of this plan. This emissions inventory update will include point, area, mobile and biogenic emission revisions.

2.4 EMISSION INVENTORY AND MOTOR VEHICLE BUDGETS

2.4.1 EMISSION INVENTORY

The base year for the new inventory is 1999. No violations of the one-hour ozone standard occurred during the 1998-1999 period. The region was in compliance with the one-hour ozone standard.

An ozone emissions inventory was prepared for the KCMA for calendar year 1999. The inventory addresses emissions of VOC, NO_x, and carbon monoxide (CO) from point, area, on-road mobile, and off-road mobile sources. VOC emissions from biogenic sources are also addressed. The complete KCMA inventory includes emissions from Johnson and Wyandotte counties in Kansas and Clay, Jackson, and Platte counties in Missouri. This report covers the Missouri counties in the KCMA only.

The objectives of the inventory are to support the revision of the KCMA maintenance plan as required by CAA Section 175A(b) and to provide emissions data for transportation planning in the KCMA. In addition, the inventory may be used in future regional ozone modeling applications.

Emissions were also projected to year 2012 to provide the basis for establishing new motor vehicle emissions budgets. 1999 emissions are reported as actual annual emissions in tons

per year and actual summer weekday emissions in pounds or tons per osd. Projected emissions are reported as pounds per osd or tons per osd.

The 1999 KCMA emissions inventory was a cooperative effort among MARC, KDHE, the department's Air Pollution Control Program, and EPA Region VII. MARC coordinated the effort and developed the on-road and off-road mobile source emissions estimates for the five-county area. The department's Air Pollution Control Program developed the point, area, and biogenic source emissions estimates for Clay, Jackson, and Platte counties (See Appendix C). KDHE prepared the point, area, and biogenic source emissions estimates for Johnson and Wyandotte counties. KDHE also developed locomotive emissions estimates for the two Kansas counties. EPA Region VII drafted the inventory preparation plan.

The ozone season daily emissions are presented in tons per osd because of the magnitude of the numbers; elsewhere in this document, ozone season day emissions are in units of pounds per osd. An emission inventory lists all sources of specific air pollutants in a given area and the amount of each source emits. The two main or most important pollutants that lead to the formation of ground-level ozone are VOC and NO_x. An Ozone emissions inventory was prepared for the KCMA for calendar year 1999. The inventory addresses emissions of VOC, NO_x and CO from point, area, on-road mobile and off-road mobile sources.

Area sources are small, stationary sources that do not emit large amounts of pollution but are very numerous. Examples include dry cleaners, printers, bakeries, and automobile painting and repair shops. Consumers that consume household items that contain VOC and NO_x are an area source.

Point sources are large industrial pollution emitters and power plants. On-road mobile sources include cars and light trucks, as well as medium and heavy-duty commercial trucks. Off-road mobile sources include aircraft, railroad locomotives, watercraft, construction, and agricultural equipment.

VOC emissions from biogenic sources are also addressed. The complete KCMA inventory includes emissions from Johnson and Wyandotte counties in Kansas and Clay, Jackson and Platte counties in Missouri.

The 1999 emissions are reported as actual annual emissions in tons per year and actual summer weekday emissions in pounds per OSD. 2012 emissions projections are reported as pounds per osd. EPA Region VII drafted the inventory preparation plan.

Table 4 1999 and 2012 VOC, NO_x & CO Emissions for MO

Source of Emissions	1999 Daily Emissions (tons/osd)			2012 Daily Emissions (tons/osd)		
	VOC	NO _x	CO	VOC	NO _x	CO
On-road Mobile*						
Off-road Mobile	21.6	54.9	286.4	12.9	45.5	354.5
Biogenic	73.05	-----	-----	73.05	-----	-----
Area	43.1	13.0	5.3	54.3	13.8	5.5
Point	15.9	107.2	9.7	24.6	148.2	14.0
Total	153.65	175.1	301.4	164.85	207.5	374.0

* Due to model limitations, on-road mobile emissions are not broken out into individual counties for 1999 and 2012.

Table 5 1999 and 2012 VOC, NO_x & CO Emissions for KS

Source of Emissions	1999 Daily Emissions (Tons/osd)			2012 Daily Emissions (Tons/osd)		
	VOC	NO _x	CO	VOC	NO _x	CO
On-road Mobile*						
Off-road Mobile	21.4	54.0	288.0	11.8	40.5	357.3
Biogenic	40.8	-----	-----	-----	-----	-----
Area	46.8	10.3	19.6	57.9	12.2	22.2
Point	12.3	31.9	4.6	14.8	39.0	5.3
Total	121.3	96.2	312.2	84.5	91.7	384.8

* Due to model limitations, on-road mobile emissions are not broken out into individual counties for 1999 and 2012.

Table 6 1999 and 2012 VOC, NO_x & CO Emissions for KCMA

Source of Emissions	1999 Daily Emissions (Tons/OSD)			2012 Daily Emissions (Tons/OSD)		
	VOC	NO _x	CO	VOC	NO _x	CO
On-road Mobile*	92.3	152.9	1092.4	45.5	74.2	579.0
Off-road Mobile	43.0	108.9	574.4	24.7	86.0	711.8
Biogenic	113.85	-----	-----	113.85	-----	-----
Area	89.9	23.3	24.9	112.1	26.0	27.7
Point	28.3	139.1	14.3	39.4	187.2	19.3
Total	367.35	424.2	1706.0	335.55	373.4	1337.8

2.4.1.1 MOBILE SOURCE EMISSIONS

On January 29, 2002, the EPA released the MOBILE6 motor vehicle emissions model. EPA guidance issued along with the model grants a two-year grace period before use of the MOBILE6 model is required in the State Implementation Plan development. The 2002 revision of the Kansas City Maintenance Plan used MOBILE6 in the development of the mobile budgets in the plan. The 2002 revision of the Kansas City Maintenance Plan did not use MOBILE5 and MOBILE5B to develop the budgets or for any projection of mobile emissions. The two-year grace period does not apply to this plan as only MOBILE6 was used in the development of the Kansas City Maintenance Plan. Appendix D contains the parameters chosen for operation of MOBILE6 and for the calculation of emission projections. The MOBILE6 inputs are: default vehicle age distribution; 7.2 RVP fuel assumed in 1999; 7.0 RVP fuel assumed in 2012; refueling emissions not included (inventoried separately as area source). The draft NONROAD model that was released in June 2001 in support of the 2007 heavy-duty vehicle rule was used to generate 1999 and 2012 emissions estimates for all off-road mobile source categories covered in the non-road model.

The CAAA mandated the EPA to study and regulate emissions from off-road mobile sources. Section 213(a) of the CAAA required the EPA to conduct a study to determine if emissions from off-road engines and vehicles cause or significantly contribute to air pollution. The non-road study was completed in 1991. The EPA constructed two sets of emissions inventories for the entire country and for 19 ozone non-attainment areas and for 16 carbon monoxide non-attainment areas. The local areas were selected to represent a variety of demographic and geographic regions, as well as the major air pollution problems in the nation.

2.4.1.2 BIOGENIC EMISSIONS

Biogenic sources are those of natural sources which result from some sort of biological

activity. Vegetation such as forest plants, urban trees, shrubs, agricultural crops, and other plants is the predominant, biological activity of VOC. These biogenic emissions are emitted as the plant transpires, mostly during the daylight hours.

In the past, the impacts of biogenic VOC were not considered when ozone control strategies to limit emissions of either NO_x or VOC were developed. However, the importance of biogenic VOC emissions in an ozone inventory became apparent in some regions when the biogenic VOC emission estimates were compared to the anthropogenic VOC emission estimates (Chameides et al., 1988).

Biogenic emission estimates for the United States have been reported at 30,860,000 tons of VOC per year and 346,000 tons of NO_x per year (Novak et al., 1993). This is in comparison to estimates of 21,090,000 tons of anthropogenic VOC and 23,550,000 tons of anthropogenic NO_x, estimated for 1990 (EPA, 1994). Isoprene, one of the major constituents of biogenic emissions, is very photoreactive, making biogenic emissions an even more important source of VOC. Because of the interaction between NO_x and VOC in terms of atmospheric ozone levels, biogenic emissions should be included in any inventory, which will be used to predict or to monitor atmospheric ozone levels. Inclusion of biogenic emissions is essential for photochemical air quality modeling.

The Biogenic Emissions Inventory System (BEIS-2) is the preferred method for air quality models using biogenic estimates, because it is the most scientifically advanced model for estimating biogenic ozone precursors. It can be used with several air quality models, and it estimates emissions of soil NO_x, which can be an important source in many rural areas. The Personal Computer version Biogenic Emissions Inventory System (PCBEIS2.2) is the preferred method when an emission estimate is needed for reporting purposes only. The Biogenic Model for Emissions (BIOME) model, the collection of local data for use in any of these models, and BEIS, the precursor of BEIS-2, are alternative methods.

The Personal Computer version of the Biogenic Emissions Inventory System (BEIS 2.3) allows users to estimate hourly emissions of biogenic VOC and soil NO_x emissions for any county in the contiguous United States. This system was developed by EPA Office of Research and Development via collaboration between the National Risk Management Research Laboratory, Emissions and Modeling Branch and the National Exposure Research Laboratory, Atmospheric Modeling Division. BEIS 2.3 has been written in C++/JAVA to allow better operability with current PC operating systems and to take advantage of more recent approaches in object-oriented programming. BEIS 2.3 uses the same emission factors and land use data as PCBEIS 2.2 and should produce very similar results.

Meteorological data for air temperature and cloud cover was incorporated specifically for the Kansas City area covering Jackson County. The biogenic emissions for the Kansas counties in the KCMA are 40.8 tons per ozone season day. The biogenic emissions for the Missouri counties in the KCMA are 73.05 tons per ozone season day. Combined, all counties in the KCMA have total biogenic emissions of 113.05 tons per ozone season day. (See Tables 4, 5 and 6)

2.4.1.3 AREA SOURCE EMISSIONS

The area source inventory (see Appendix B and C) is reported in terms of VOC emissions for the Missouri Counties in the KCMA, the Kansas Counties in the KCMA, and the entire

KCMA. These totals are shown in tables 4 and 5, and 6 respectively.

The area source inventory includes small point sources, those sources with less than ten tons of actual emissions, as well as sources not reported in the point source description. Examples of sources included in the area source emissions include, but are not limited to: printing presses, dry cleaning facilities, degreasing operations, incinerators, and painting operations. The individual area source categories are compared to their respective point source categories to eliminate double counting of VOC emissions.

The area source inventory was prepared using 1999 as a base year. The 1999 inventory was evaluated for rule effectiveness using the criteria outlined by the EPA. The area source categories included in this inventory were identified based on a review of the previous area source inventory done for the region and judgement based on knowledge of population and types of emissions sources in Johnson and Wyandotte counties (see reference 1). EPA guidance regarding the expected magnitude of VOC, NO_x, and CO emissions from area source categories was also considered (see reference 2). The area source categories expected to emit the most significant amounts of VOC, NO_x, and CO were given the highest priority in this inventory.

For many of the area source categories, emissions estimation methodologies outlined in the *Emissions Inventory Improvement Program* (EIIP) documents were followed. In some cases, a methodology given in the EIIP was impractical due to the quality of data available or the level of effort required for data collection. An alternate methodology was then chosen or developed based on the available data.

Because some area source methodologies estimate emissions from all sources within the category, emissions already listed in the point source inventory may be double-counted. In the development of the area source inventory for Johnson and Wyandotte counties, emissions from point sources were subtracted from the area source emissions where it could be determined that the two inventories overlapped (see Appendix B).

Emissions estimates for several of the area source categories were calculated using population as a surrogate for activity. The 1999 population estimates were obtained from the U.S. Census Bureau (see reference 3). The 2000 and 2012 population forecasts are from MARC policy-based, long-range population forecasts (see reference 4). Since the MARC forecast is done in ten-year increments, the 2012 forecast was interpolated from the 2010 and 2020 forecasts. In cases where population was used as a basis for the emissions projections, the forecast for calendar year 2000 was used as the base year because it is the base year of MARC population forecast.

2.4.1.4 POINT SOURCE EMISSIONS

Point source emissions are collected each year, in **Missouri**, via the Emission Inventory Questionnaire (EIQ). All facilities in Missouri that have the potential to emit more than 40 tons of VOC per year are required to submit an EIQ. Facilities with less than 10 tons of actual VOC emissions per year are included in the area source inventory.

Missouri's portion of the 1999 point source inventory for the KCMA includes Jackson County, Platte County, and Clay County (see Appendix C). The report in Appendix C includes CO, NO_x, and VOC emissions from point sources in the three county areas as reported by the facility. The inventory data was obtained from the EIQs. EIQs are submitted

on an annual basis by point sources to report air pollutant emissions from processes within the facility. The completed EIQs are submitted to the Kansas City Health Department or the department's Air Pollution Control Program depending on location. The department's Air Pollution Control Program compiles the local data and the submitted data into a database. The department's Air Pollution Control Program performs the overall quality assurance/quality compliance.

The Missouri portion of the KCMA inventory consists of point sources that emitted VOC, NO_x, and CO in the three county areas. The data was obtained from the department's Air Pollution Control Program Emission Inventory System (moeis) database. The information in Appendix C is based on the EIQ information data entered into the department's Air Pollution Control Program's database, including the EIQs submitted to the Kansas City Health Department.

2.4.1.4.1 APCP Point Source Emissions Calculation Method

The actual annual emissions reported were used to calculate an ozone season daily emission rated based on the percentage of operating time during the summer months of June through August. The following equation was used:

$$1999 \text{ osd emissions} = (1999 \text{ annual emissions}) \times (2,000 \text{ lbs/1 ton}) \times (\text{Summer operating \%}/\text{Days of operation})$$

Emissions projections for calendar year 2012 were performed using the Department of Commerce's Bureau of Economic Analysis (BEA) growth factors. BEA factors were derived for each Source Classification Code (SCC) and county combination using EPA Economic Growth Analysis System (EGAS) v4.0 software. Growth of emissions was normalized to the 1999 inventory base year because EGAS v4.0 has a base year of 1996. The following equation was used for the emissions projections:

$$2012 \text{ osd emissions} = (1999 \text{ osd emissions}) \times (2012 \text{ growth factor}/1999 \text{ growth factor})$$

Below is an example calculation showing the manner in which the **1999** NO_x Emissions are calculated for a Point Source. This example is for a **Missouri** facility that emitted 8.259 tons of NO_x in 1999. The facility operated seven days per week in 1999, during this quarter 18% of the facility's annual operations occurred.

$$1999 \text{ osd emissions} = (8.259 \text{ tons NO}_x/\text{yr.}) \times (2,000 \text{ lbs/1 ton}) \times (0.18/(7 \text{ days/week} \times 13 \text{ weeks/ozone season}))$$

$$= 32.7 \text{ lbs. NO}_x/\text{osd}$$

Below is an example calculation showing the manner in which the **2012** NO_x Emissions are calculated for a Point Source. A facility located in Jackson county with two-digit SIC 20 emits 262.4 lbs. NO_x/osd. BEA growth factors for SIC 20 in Jackson county are 1.0621 and 1.4241 for 1999 and 2012 respectively.

$$2012 \text{ OSD emissions} = (262.4 \text{ lbs. NO}_x/\text{osd}) \times (1.4241/1.0621)$$

$$= 352 \text{ lbs. NO}_x/\text{OSD}$$

Appendix B summarizes 1999 and 2012 annual and ozone season daily VOC, NO_x, and CO emissions from point sources by two-digit Standard Industrial Classification (SIC) code and county.

2.4.1.4.2 KDHE Point Source Emissions Calculation Method

Kansas and Missouri for all practicable purposes used the same calculation methods. Examples are provided of MO and KS calculation methods to demonstrate the slight differences in original data. Kansas point source emissions were taken from KDHE I-Steps emissions inventory database for calendar year 1999 (see reference 5). The reported emissions represent the results from facility surveys of actual annual emissions emitted in 1999. The actual annual emissions were used to calculate an ozone season daily emission rate based on the days of operation and the percentage of operating time during the summer months of June through August. The following equation was used:

$$1999 \text{ OSD emissions} = (1999 \text{ annual emissions}) \times (2,000 \text{ lbs/1 ton}) \times (\text{Summer operating \%}/\text{Days of operation})$$

Emissions projections for calendar year 2012 were performed using the Department of Commerce's BEA growth factors. BEA factors were derived for each SCC and county combination using EPA EGAS v4.0 software (see reference 6). The BEA growth factors are developed from the EPA model. The growth factors are used in the projection of emissions for the area. Growth of emissions was normalized to the 1999 inventory base year because EGAS v4.0 has a base year of 1996. The following equation was used for the emissions projections:

$$2012 \text{ osd emissions} = (1999 \text{ osd emissions}) \times (2012 \text{ growth factor}/1999 \text{ growth factor})$$

Below is an example calculation showing the manner in which the **1999** NO_x Emissions are calculated for a Point Source. This example is for a facility that emitted 8.259 tons of NO_x in 1999. The facility operated 65 days from June through August 1999, which represents 18% of the facility's annual operations.

$$\begin{aligned} 1999 \text{ osd emissions} &= (8.259 \text{ tons NO}_x/\text{yr.}) \times (2,000 \text{ lbs/1 ton}) \times (0.18/65 \text{ days}) \\ &= 45.7 \text{ lbs. NO}_x/\text{osd} \end{aligned}$$

Below is an example calculation showing the manner in which the **2012** NO_x Emissions are calculated for a Point Source. A facility located in **Kansas** Wyandotte county with SCC 10200602 emits 45.7 lbs. NO_x/osd. BEA growth factors for SCC 10200602 in Wyandotte county are 1.0162 and 1.1578 for 1999 and 2012, respectively.

$$2012 \text{ osd emissions} = (45.7 \text{ lbs. NO}_x/\text{osd}) \times (1.1578/1.0162) = 52.1 \text{ lbs. NO}_x/\text{osd}$$

2.4.2 NEW MOBILE SOURCE BUDGETS

2.4.2.1 EXISTING MOBILE SOURCE BUDGET

The existing budgets for 2000 and 2010 were calculated in 1995. In that exercise, the 1990 level of emissions was assumed to keep the region in compliance with the one-hour ozone standard and was used as a cap on overall emissions through 2010. The 2010 level of emissions was less than the emissions in 1990, and the difference was quantified as a margin, which allowed for some growth in emissions from all sectors in 2010. Approximately one-third of the margin, which was the percent of overall emissions contributed by vehicles, was specifically allocated to motor vehicles. The motor vehicle emissions budget was the projected on-road mobile emissions in 2010 (assuming transportation investments through

2010) plus the motor vehicle proportion of the margin (allowing for growth in mobile emissions). A conformity analysis is a demonstration that the regional emissions from proposed transportation projects would not exceed the motor vehicle emissions budgets. The emission inventory provides a basis for establishing new motor vehicle emission budgets, which are used to demonstrate consistency between the region's air quality goals and emissions expected from implementation of transportation plans and programs.

A plan revision submitted by the state in 1995 and approved by EPA (61 FR18251 on April 25, 1996) establishes the current motor vehicle emissions budgets used to ensure that transportation plans conform to the ozone maintenance plan, see 40 CFR 52.1321(e). The current budgets are shown in the following table:

Motor Vehicle Emissions Budget for Conformity Purposes

Compounds	2000 Attainment MVEB for the KCMA
Non-methane hydrocarbons	87,548 kg/summer day (96.3 tpd)
NOx	119,889 kg/summer day (131.9 tpd)

In June 2002, the MARC Board proposed motor vehicle emissions budgets based on updated emissions inventories prepared collaboratively by staff from the Kansas and Missouri State air agencies, MARC, and EPA. The proposed budgets were based on population and employment forecasts adopted by the MARC board in January 1998.

The new budgets incorporate updated planning assumptions and use the MOBILE6 model, which became available in January 2002. The new budgets are set to keep total emissions below their estimated level in 1999 (see Appendix J). The last horizon year of the proposed SIP is 2012.

The mobile budgets are calculated by starting with the on-road mobile 2012 totals for VOC, NOx, and adding an extra amount over and above what is necessary, for safety reasons or to allow for delays. The extra amount is called the margin. The amount of margin to add could be derived using a variety of methods. A simple and easily explained calculation method would help in calculating and communicating the budgets. In the recent past the VOC budget, NOx budgets and margins have been tied together by ratios of reductions between the beginning and last years. The margin for this mobile budget was determined by recognizing the NOx budget has led to conformity issues in the past and coupling the acquired understanding of the regions ozone level, which is thought to be VOC limited. The margin should take into account, that any additional lowering of the VOC margin would have more of an impact to regional air quality than placing tighter constraints on NOx emissions. A method was chosen that would accommodate a lower VOC margin and allow for the NOx emission levels required to maintain conformity and be easy to calculate and communicate.

The amount of margin chosen for this new budget was based on a straight percent of the conformity calculation amounts determined for 2010. The last horizon year for the existing SIP is 2010. The amount of the 2010 conformity emission levels was supplied by MARC and is 89.6 NOx ton/osd and 51.1 VOC ton/osd. A margin of 0.091 of the 2010 NOx and a margin of 0.07 of the VOC was determined by the inter-agency consultation group process. The 2012 NOx budget from the 1999 budget levels represents a 26.2 percent reduction while the 2012 VOC budget represents a 40 percent reduction. The 1999 mobile emission budgets are 132.4 NOx tons/osd and 91.4 VOC tons/osd while the new 2012 budgets are 97.8 NOx

tons/osd and 54.7 VOC tons/osd.

97.8 NOx tons/osd 2012 divided by 132.4 NOx tons/osd 1999 equals 0.738

54.7 VOC tons/osd 2012 divided by 91.4 VOC tons/osd 1999 equals 0.598

(1 minus 0.738) multiplied by 100 equals 26.2 % reduction of NOx from 1999 to 2012

(1 minus 0.598) multiplied by 100 equals 40.2 % reduction of VOC from 1999 to 2012

2.4.2.2 NEW MOBILE SOURCE BUDGET CALCULATIONS

2.4.2.2.1 NOx Calculation

A. NOx projected emission level needed for conformity in 2010 (Provided by MARC).

2010 Total Mobile NOx is 89.6 multiplied by 0.091 equals 8.153 tons/osd NOx margin

$$89.6 \text{ tons/osd} \times 0.091 = 8.153 \text{ tons/osd}$$

B. Add the margin to the 2010 NOx projected mobile emission total

$$89.6 \text{ tons/osd} + 8.153 \text{ tons/osd} = 97.75 \text{ or } 97.8$$

2012 Mobile Source NOx Budget: 97.8 tons/osd

2.4.2.2.2 VOC Calculation

A. VOC projected emission level needed for conformity in 2010 (Provided by MARC).

2010 Total Mobile VOC is 51.1 multiplied by 0.07 equals 3.57 tons/osd VOC margin

$$51.1 \text{ tons/osd} \times 0.07 = 3.57 \text{ tons/osd}$$

B. Add the margin to the 2010 VOC projected mobile emission total

$$51.1 \text{ tons/osd} + 3.57 \text{ tons/osd} = 54.67 \text{ tons/osd}$$

2012 Mobile Source VOC Budget: 54.7 tons/osd

2.5 CONTINGENCY MEASURES

When selecting control measures to implement in case of a violation of the eight-hour or one-hour ozone standard, it is important to consider the implementation time frame. A contingency plan needs to contain control measures that can be implemented in a very short time and will demonstrate results quickly. Other control measures, which take substantially more time to be implemented, can also be included as secondary controls. It is important to

concentrate on control measures that will achieve results throughout the area. Mobile source control measures are ideal for this reason.

The department's Air Pollution Control Program is obligated under the CAAA to set forth a plan to be implemented upon a violation of the eight-hour or one-hour ozone standard in the KCMA. The CAAA requires setting forth a group of specific control measures to be implemented in case of an ozone violation. A pattern of exceedances of the eight-hour or one-hour ozone NAAQS will trigger consideration of contingency measures. However, the only federally enforceable trigger for mandatory implementation of contingency measures shall be a violation of the eight-hour or one-hour ozone NAAQS.

After 2004, the contingency measures are triggered by different levels of corrective responses should the eight-hour or one-hour ozone NAAQS be exceeded or violated, or if emissions in the region increase significantly above current levels. A level 1 response would occur in the event that the eight-hour or one-hour ozone NAAQS establishes a pattern of exceedances, or if VOC or NO_x emissions increase more than 5% above the levels contained in the attainment year (1999) emission inventory. To facilitate the emissions trends analysis, department's Air Pollution Control Program commits to compiling VOC and NO_x emissions inventories every three years for the duration of the maintenance plan. Department's Air Pollution Control Program will coordinate with the state of Kansas and MARC to evaluate the causes of exceedances or the emission trends and to determine appropriate control measures needed to assure continued attainment of the eight-hour and one-hour NAAQS for ozone.

A Level 2 response would be implemented in the event that a violation of the eight-hour or one-hour ozone NAAQS were to be measured at a monitoring site. In order to select appropriate corrective measures, department's Air Pollution Control Program will work with Kansas and MARC to conduct a comprehensive study to determine the cause of the violation, and the control measures necessary to mitigate the problem. The comprehensive analysis shall examine:

- 1) The number, location and severity of the ambient ozone concentration;
- 2) The weather patterns contributing to ozone levels;
- 3) Potential, contributing emissions sources;
- 4) The geographic applicability of possible contingency measures;
- 5) Emission trends, including timeliness of implementation of scheduled control measures;
- 6) Current and recently identified control technologies; and
- 7) Air quality contributions from outside the maintenance area.

Contingency measures shall be selected from those listed in the following table or from any other measure deemed appropriate and effective at the time of selection. Control measure selection shall be based upon cost-effectiveness, emission reduction potential, economic and social considerations, ease of timing of implementation, and other appropriate factors. Adoption and implementation of controls shall take place no later than 18 – 24 months after department's Air Pollution Control Program makes a determination, based on quality-assured ambient data, that a violation of the eight-hour or one-hour NAAQS has occurred.

Adoption of additional control measures is subject to necessary administrative and legal

process. MODNR will solicit input from all interested parties and affected persons in the area prior to selecting appropriate contingency measures. No contingency measures will be implemented without providing the opportunity for full public participation. This process will include publication of notices, an opportunity for public hearing, and other measures required by department's Air Pollution Control Program regulation.

Contingency Plan for the Kansas City Ozone Attainment Area

Year	Contingency Measure Trigger	Action to be Taken	List of Contingency Measures
2003 - 2004	Violation occurs anywhere within the maintenance area.	Depending upon the degree and nature of the transgression, the department will begin implementation of control measures sufficient to achieve at least a five-percent reduction in area wide emissions	Statewide NOx rule (MO) Federal Non-road Engine Standards One or more of the following will be considered for implementation: 1) industrial emission offsets of 1.15 to 1; 2) stationary source controls for NOx and VOC; 3) Stage II Vapor Recovery program at gasoline refueling stations; 4) enhanced vehicle emission reductions programs; 5) alternate fuel programs for fleet vehicle operations; 6) vehicle anti-tampering programs; 7) other transportation control measures; 8) vehicle inspection and maintenance program; 9) VOC controls on minor sources, and; 10) The department will further review and evaluate the current VOC rules to see if they need to be tightened, changed or modified.
	2005 - 2012	Level I Trigger The KCMA NOx or VOC emissions inventories for 1999 increase more than 5% above the levels included in the 3-year emissions inventories updates. A pattern of monitor exceedances.	MO will work cooperatively with KS to evaluate the exceedances of the 3-year inventory, or determine if adverse emissions trends are likely to continue. If so, the States will determine what and where controls may be required, as well as level of emissions reductions needed, to avoid a violation of the eight-hour or one-hour Ozone NAAQS. The study shall be completed within 9 months. If necessary, control measures shall be adopted and implemented within 18 - 24 months of determination.
		Level II Trigger A violation of the eight-hour or one-hour Ozone NAAQS at any monitoring station in the KCMA.	MO will work cooperatively with KS to conduct a thorough analysis to determine appropriate measures to address the cause of the violation. Analysis shall be completed within 6 months. Selected measures shall be adopted and implemented within 18 - 24 months, taking into consideration the ease of implementation and the technical and economic feasibility of selected measures.

2.6 PROVISION FOR OPERATION OF MONITORING NETWORK

The department's Air Pollution Control Program commits to continue monitoring ozone levels according to an EPA-approved monitoring plan, as required to ensure maintenance of the eight-hour and one-hour ozone NAAQS for the next ten years. Should changes become necessary concerning location of a monitoring station, the department's Air Pollution Control Program will work cooperatively with the EPA to ensure the adequacy of the monitoring network. The department's Air Pollution Control Program will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58. The department's Air Pollution Control Program will continue to enter all data into the AIRS on a timely basis in accordance with federal guidelines.

Control strategies, area growth, and new source configurations have clearly changed the face of ozone formation in the area. Because of the changes, the Kansas City Area State and Local Agencies with the EPA Region VII decided that a review of the area network was of high priority, to determine if the continued network was adequate. Recommendations for network changes were submitted to the EPA on November 6, 2000. A letter from the EPA submitted on February 8, 2001, approved monitoring network changes.

Analysis tools used in the evaluation included basic statistical rankings of exceedances, design value trends, point source mappings, population, economic and mobile source information, and meteorological wind roses and trajectories. Based upon the examination of the data generated from using the tools, a best network configuration, which characterizes the ozone levels in the Kansas City Metropolitan Area, was obtained. A team of Kansas, the department's Air Pollution Control Program, and EPA staff collected and reviewed data and discussed potential recommendations. The most significant findings for the trajectory and the wind and episode analysis, coupled with the determination of the emissions centroid, is that some parts of the area appeared to be lacking in coverage for potential ozone episodes. The area due north of the centroid is the most predominant wind direction from emission sources and may be of great potential for exceedances. The area, near the Wyandotte-Leavenworth county line is also an area of concern. Precursor emissions in the metropolitan area, which may be affected by winds from the east-southeast, could lead to ozone exceedances in the area. Wind roses from that direction are also significant, as are forward trajectories for high ozone days. The conclusion of the monitoring network review is that one additional site should be located due north of the downtown core about 12-15 miles downwind. The monitoring equipment for this site originated from the current Worlds of Fun monitor site. The moving of Worlds of Fun site to the new site, which is called Rocky Creek, occurred in early 2002. The monitor at Rocky Creek is located at 13131 NE 169th Highway, Kansas City, MO 64141 with coordinates: 39 deg. 19 min 56 sec. NORTH latitude and 94 deg. 34 min 50 sec WEST longitude. Relocation of the Worlds of Fun site to a second area of poor coverage, equidistant from the Liberty and KCI monitors, and in extreme northern extent of Kansas City, Missouri was necessary. This was due to the predominant wind direction from emission sources due south, and has a greater potential for exceedances. An alternative site was selected and approved by the EPA and KDHE near the City of

Leavenworth in Leavenworth County. An additional monitor was put in place at the U.S. Penitentiary at 2010 Metropolitan Ave, Leavenworth, Kansas City, MO 66048. This monitor began recording readings in early 2003 to monitor emissions readings in the Leavenworth area to determine if ozone exceedances are occurring when the winds are generated from the east-southeast. These locations will serve as maximum concentrations sites for the eight-hour and one-hour ozone NAAQS. The downwind distance from the urban area is critical to achieve the proper atmospheric mixing and allow photochemical reactions time to occur for high ozone concentrations. Based on the current network and past experiences, sites most distant to the north and west will provide for maximum eight-hour or one-hour ozone concentrations.

Finally, an additional site in southern Johnson County, Kansas would allow for evaluation of potential near term transport. An evaluation of the effect of local sources on Richards Gebauer Air Force Base would be possible.

Monitoring near Richards Gebauer has shown considerable trends in higher ozone levels, including recent exceedances. Therefore, the monitoring should continue at the site currently being operated. The state of Kansas has assumed the responsibility to install a background site in a location generally upwind of the majority of the area, near the southern Johnson County line. This monitor was constructed at Heritage Park, 13899 W. 159th Street, Olathe Kansas 66062. It began recording in early 2003. This location is expected to be a more suitable site for upwind monitoring for the area. In addition, it will increase the spatial coverage in a portion of the Kansas City area that is experiencing considerable economic growth and may also be seeing growth in ozone precursors.

2.7 CONFORMITY

The department's Air Pollution Control Program filed a transportation conformity regulation, 10 CSR 10-2.390 Conformity to State Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws, which became effective on December 30, 1996. This rule implements section 176(c) of the CAA, as amended (42 U.S.C. 7401-7671q.), the related requirements of 23 U.S.C. 109(j) and regulations under 40 CFR part 51 subpart T, with respect to the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (DOT), and by the metropolitan planning organizations or other recipients of funds under title 23 or the Federal Transit Act (49 U.S.C. 1601 et seq.). This rule sets forth policy, criteria, and procedures for demonstrating and assuring conformity of such activities to the applicable implementation plan, developed and applicable, pursuant to section 100 and Part D of the CAA. Transportation plans, programs, and projects must conform to an implementation plans purpose of eliminating or reducing the severity and number of violations of the eight-hour or one-hour NAAQS. Transportation plans, programs and projects must not cause or contribute to any new violation of any standards nor increase the frequency or severity of any existing violations of any standard or any required interim emission reductions or other milestones. This rule applies to the Kansas City ozone maintenance area.

A general conformity regulation (10 CSR 10-6.300 Conformity of General Federal Actions to State Implementation Plans) was filed on January 30, 1996, and became effective on September 30, 1996. This rule implements section 176(c) of the CAA, as amended (42

U.S.C. 7401 et seq.) and regulations under 40 CFR part 51 subpart W, with respect to the conformity of general federal actions to the applicable implementation plan. Under those authorities, no department, agency or instrumentality of the federal government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan. This rule applies to all areas in the state of Missouri, which are designated as non-attainment or maintenance for any criteria pollutant or standard for which there is a NAAQS.

A conformity analysis (See List of References #7) is a demonstration that the regional emissions from proposed transportation projects will not exceed the motor vehicle emissions budgets. If the conformity requirements cannot be met, then only certain types of projects may proceed until the requirements can be met. The emission inventory provides a basis for establishing new motor vehicle emission budgets, which are used to demonstrate consistency between the region's air quality goals and emissions expected from implementation of transportation plans and programs.

The Metropolitan and Statewide Planning Regulations that govern MARC's LRTP and TIP require the projects in both documents, for the time periods they cover, to be financially constrained and sufficient in project detail to permit an air quality conformity determination. Projects for both the LRTP and the TIP are analyzed as a group to determine that their projected air quality impacts are lower than a budgeted amount to ensure that the region's air quality is not adversely affected by mobile source pollutants. In the case of the LRTP, the projects are required to be specific within intervals not to exceed ten years. An important limit found in the TIP requires reexamining financial constraint and a new conformity determination if one of the projects listed after the first three years be advanced to one of the first three years. This requires a TIP amendment, which would require reexamining financial constraint and a new conformity determination. The conformity determination for the TIP applies only to the first three years of projects, consistent with the period recognized for federal programming purposes.

The 2020 LRTP was found to conform to the plan prior to its adoption in February of 1999. Conformity of LRTP and TIP must be approved by U.S. Department of Transportation (DOT) in consultation with EPA. DOT approved air quality conformity in February 1999 LRTP update on July 28, 1999, following the governors' of Kansas and Missouri opting in to the federal RFG program for the Kansas City region. Once a subsequent court decision disallowed maintenance areas from opting into the federal RFG program, the air quality conformity of the LRTP was reanalyzed and found to conform by incorporating the 2001 National Low Emission Vehicle (NLEV) Standard. DOT re-approved conformity of the 2020 LRTP on February 14, 2000. The existing FY 2000-2004 TIP as amended was most recently approved by DOT on February 6, 2001.

The following table lists the estimated VOC and NO_x emissions for the years 2010 and 2020 for the regional network including those regionally significant capacity projects contained in the FY 2002-2006 TIP and compares them with their respective motor vehicle emissions budgets from the plans. Regionally significant projects in the LRTP beyond the time frame of the TIP are also included in the analysis. All figures are in kilograms per summer day.

Year	Seasonally adjusted VMT/sd	Factored net mobile VOC emissions Kg/sd	VOC Budget Kg/sd	Margin	Factored mobile NOx emissions Kg/sd	NOx Budget Kg/sd	Margin
2010	57,003,000	57,734	82,885	25,151	85,896	120,121	34,225
2020	65,758,000	69,994	82,885	12,891	88,815	120,121	31,306

The conformity analysis clearly indicates that regional motor vehicle emissions of VOC and NOx remain below the budgeted level in the proposed regional plan while accounting for the network anticipated to be operational as a result of roadway capacity projects listed in the 2002 TIP. As such the analysis indicates that the 2002 TIP and the 2020 LRTP are in conformity with the plan.

As of June 15, 2005, the revocation date for the one-hour ozone standard, 10 CSR 10-2.390 will no longer apply to the KCMA. This is due to KCMA's attainment designation under the eight-hour ozone standard. The applicability of 10 CSR 10-2.390 is being amended to reflect this change in applicability. The rule's applicability will be changed to a statement stating that "After EPA revokes the 1-hour ozone standard, if any Missouri portion of the Kansas City metropolitan area is redesignated as a nonattainment area for any transportation-related criteria pollutant, the provisions of this rule shall apply to the Missouri counties and the portions of Missouri counties located within the redesignated nonattainment area." This will allow the rule again be used if any portion of the KCMA is designated for any type of nonattainment area for a transportation-related criteria pollutant in the future.

3.0 REFERENCES

3.1 LIST OF REFERENCES

1. Kansas City Ozone Maintenance State Implementation Plan Revision: Emissions Inventories and Motor Vehicle Emissions Budgets for the Kansas City Metropolitan Area, Kansas Department of Health and Environment, Bureau of Air and Radiation, May, 1995.
2. Handbook for Criteria Pollutant Inventory Development: A Beginner's Guide for Point and Area Sources, U.S. Environmental Protection Agency, EPA-454/R-99-037, September 1999.
3. U.S. Department of Commerce, Bureau of the Census, <http://www.census.gov>.
4. 1997 Long-Range Population, Households And Employment Forecast, Mid-America Regional Council, updated December 1, 1998, http://www.metrodataline.org/mt_pop.htm.
5. I-Steps Point Source Data Base, Kansas Department of Health and Environment; Bureau of Air and Radiation, Topeka, KS, 1999.
6. Economic Growth Analysis System (EGAS) v4.0, U.S. Environmental Protection Agency, <http://www.epa.gov/ttn/chief/emch/projection/index.html>.
7. Large portions of this section on Air Quality Conformity Analysis/Determination and Mobile Budgets closely follow the definition, background, and use the data presented or have been directly copied from the MARC web [site http://www.marc.org/transportation/tip/TIP02-06.html](http://www.marc.org/transportation/tip/TIP02-06.html) and <http://www.marc.org/transportation/tip/AQConformity.pdf>
8. National Air Quality and Emissions Trends Report, 1999 Chapter 2, Criteria Pollutants – National Trends

3.2 LIST OF TABLES

- Table 1a: One-Hour Ozone Exceedances by Year in the KC Maintenance Area
Table 1b: Eight-Hour Ozone Exceedances by Year in the KC Maintenance Area
Table 2: Ozone Exceedances by Monitor in the KCMA
Table 3: Ozone Design Values for the KCMA
Table 4: 1999 and 2012 VOC, NO_x & CO Emissions for MO
Table 5: 1999 and 2012 VOC, NO_x & CO Emissions for KS
Table 6: 1999 and 2012 VOC, NO_x & CO Emissions for KCMA

3.3 LIST OF ACRONYMS

(APCP)	Air Pollution Control Program
(AFB)	Air Force Base
(BEA)	U.S. Department of Commerce Bureau of Economic Analysis
(BEIS)	Biogenic Emissions Inventory System
(BIOME)	Biogenic Model for Emissions
(PCBEIS-2.2)	Personal Computer version Biogenic Emissions Inventory System
(CAA)	Clean Air Act
(CAAA)	Clean Air Act Amendments of 1990
(CFR)	Code of Federal Regulations
(CO)	Carbon Monoxide
(DOT)	Department of Transportation
(EIQ)	Emission Inventory Questionnaire
(EIIP)	Emissions Inventory Improvement Program
(EPA)	U.S. Environmental Protection Agency
(I/M)	Inspection and Maintenance
(KCI)	Kansas City International Airports
(KCMA)	Kansas City Metropolitan Area
(KDHE)	Kansas Department of Health and Environment
(LAER)	Lowest Achievable Emission Rate
(LRTP)	Long Range Transportation Plan
(MACC)	Missouri Air Conservation Commission
(MACT)	Maximum Achievable Control Technology
(MARC)	Mid-America Regional Council
(NAAQS)	National Ambient Air Quality Standards
(NLEV)	National Low-Emission Vehicle
(NOx)	Nitrogen Oxides
(ORVR)	Onboard Refueling Vapor Recovery
(OSD)	Ozone Season Day
(PPM)	Parts Per Million
(RACT)	Reasonably Available Control Technology

List of Acronyms (cont.)

(RFG)	Reformulated Gasoline
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(RVP)	Reid Vapor Pressure
(SIP)	State Implementation Plan
(TCM)	Transportation Control Measures
(VOC)	Volatile Organic Compound
(VMT)	Vehicle Miles Traveled

3.4 LIST OF APPENDICES

Appendix A	Map of Kansas City Ozone Maintenance Area.
Appendix B	Area, Point, and Off-road mobile emissions for Kansas Plan counties.
Appendix C	Area, Point, and Off-road mobile emissions for Missouri Plan counties.
Appendix D	On-road emissions and MOBILE6 parameters.
Appendix E	Letters from Missouri and Kansas State Governors Responding to RFG program.
Appendix F	Draft Rulemakings Amending 10 CSR 10-6.010 Ambient Air Quality Standards and 10 CSR 10-6.040 References Methods to include the Eight-Hour Ozone Standard
Appendix G	June 30, 2005 Public Hearing Notice and Certification of Publication of the Notice.
Appendix H	June 30, 2005 Public Hearing Comments and Responses.
Appendix I	MACC Adoption Certification.
Appendix J	KS and MO Emissions from New Population and Employment Forecasts.
Appendix K	Final EPA Approval of 2005 Kansas City Maintenance Plan

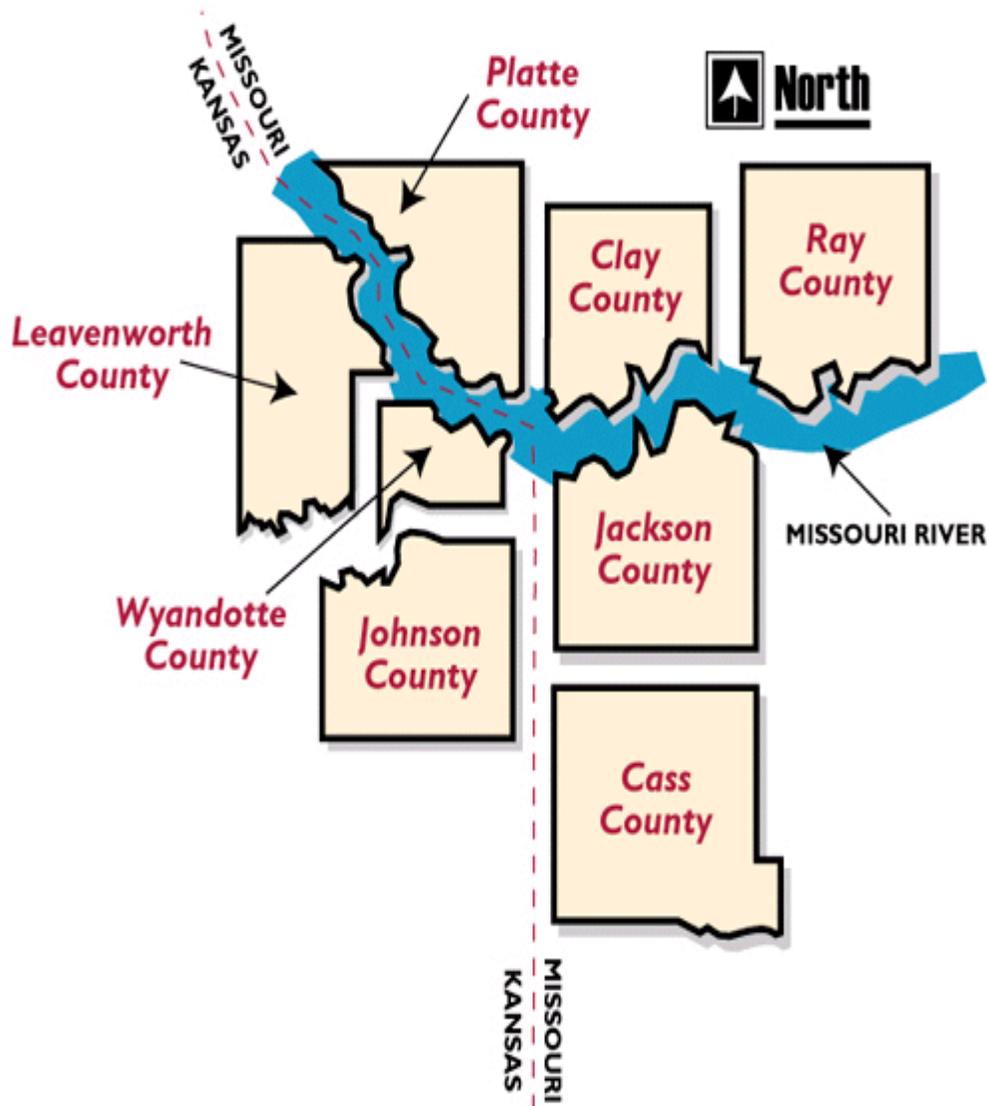
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3.4.1

APPENDIX A

Map of Kansas City Ozone Maintenance Area.

The maintenance area includes Jackson, Clay and Platte Counties in Missouri and the Kansas Counties of Johnson and Wyandotte. Ray and Cass Counties are not part of the non-attainment area, but are included for regional perspective. This map was developed by MARC is displayed with the permission of MARC.



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3.4.2

APPENDIX B

Area, Point and Off-road mobile emissions for Kansas Plan counties.

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1999 KANSAS CITY OZONE MAINTENANCE AREA INVENTORY 3/5/2002
AREA SOURCE EMISSIONS FOR JOHNSON AND WYANDOTTE COUNTY OF KANSAS

Category	1999 Annual Emissions			1999 Daily Emissions			2012 Daily Emissions		
	VOC	Nox	CO	VOC	Nox	CO	VOC	Nox	CO
	Tons	Tons	Tons	lbs/OSD	lbs/OSD	lbs/OSD	lbs/OSD	lbs/OSD	lbs/OSD
JOHNSON COUNTY									
Architectural									
Surface Coating	729.31			5,289.47			6,541.46		
Asphalt Paving	426.47			3,280.54			4,057.02		
Automobile Refinis	156.23			1,201.78			1,464.89		
Bakeries	31.13			170.58			210.48		
Commercial and C	1,333.80			7,308.49			9,038.37		
Dry Cleaning	13.43			103.30			127.75		
Fuel Oil Combusti	12.30	1,230.08	307.52	19.50	1,950.25	487.56	24.12	2,411.86	602.96
Gasoline									
Marketing	1,670.33			9,893.33			6,998.41		
Graphic Arts	969.45			7,457.28			8,377.77		
Incineration	20.89	31.65	99.62	114.44	173.40	545.84	141.53	214.44	675.04
Landfills	2,405.26		27.56	13,179.48		151.00	18,712.21		214.36
LPG Combustion	29.19	729.87	102.18	46.29	1,157.18	162.00	57.24	1,431.07	200.35
Natural Gas									
Combustion	115.88	2,521.78	1,498.50	497.75	11,849.13	7,171.95	550.74	13,003.52	7,879.38
Open Burning	685.50	137.10	1,942.25	3,756.16	751.23	10,642.44	4,645.22	929.04	13,161.45
Pesticides	410.50			3,473.44			4,295.59		
Small Industrial									
Surface Coating	981.77			7,552.10			8,180.11		
Solvent Cleaning	569.20			3,648.70			4,486.70		
Structural Fires	6.40	0.82	30.37	32.28	4.11	153.12	39.92	3.95	189.36
Traffic Markings	139.77			1,419.22			1,755.14		
Wildfires	37.38	6.23	218.03	410.74	68.46	2,395.98	410.74	68.46	2,395.98
Wood Combustion	927.84	59.31	4,889.17	1,471.06	94.04	7,751.59	1,819.25	116.30	9,586.35
COUNTY TOTAL	11,672.02	4,716.83	9,115.20	70,325.94	16,047.79	29,461.49	81,934.66	18,178.65	34,905.23
(tons/day)				35.16	8.02	14.73	40.97	9.09	17.45

2005 Kansas City Ozone Maintenance Plan

WYANDOTTE COUNTY

Architectural										
Surface Coating	250.80			1,818.99			1,747.97			
Asphalt Paving	233.19			1,793.77			1,723.74			
Automobile Refinls	41.66			320.47			390.64			
Bakeries	7.37			40.38			49.83			
Commercial and C	458.68			2,513.31			2,415.18			
Dry Cleaning	20.80			160.00			153.75			
Fuel Oil Combusti	4.23	423.01	105.75	6.71	670.67	167.67	6.44	644.48	161.12	
Gasoline										
Marketing	637.84			3,777.93			2,076.60			
Graphic Arts	145.81			1,121.60			1,260.04			
Incineration	9.75	14.78	47.24	53.44	80.97	258.85	51.36	77.81	248.75	
Landfills	500.12		5.73	2,740.39		31.40	2,448.65		28.06	
LPG Combustion	10.04	250.99	35.14	15.92	397.94	55.71	15.30	382.40	53.54	
Natural Gas										
Combustion	34.02	718.72	426.22	134.28	3,135.75	1,902.94	141.18	3,322.44	2,014.11	
Open Burning	251.51	50.30	712.62	1,378.15	275.63	3,904.77	1,324.35	264.87	3,752.32	
Pesticides	138.31			1,170.34			1,124.65			
Small Industrial										
Surface Coating	327.63			2,520.23			2,691.85			
Solvent Cleaning	400.72			2,568.73			3,267.05			
Structural Fires	2.20	0.28	10.45	11.10	1.41	52.66	10.67	1.36	50.60	
Traffic Markings	48.07			488.05			469.00			
Wildfires	9.97	1.66	58.15	109.55	18.26	639.06	109.55	18.26	639.06	
Wood Combustion	319.07	20.40	1,681.33	505.88	32.34	2,665.68	486.13	31.08	2,561.61	
COUNTY TOTAL	3,851.80	1,480.14	3,082.63	23,249.23	4,612.98	9,678.73	21,963.93	4,742.71	9,509.16	
(tons/day)				11.62	2.31	4.84	10.98	2.37	4.75	
AREA SOURCE T	15,523.82	6,196.97	12,197.83	93,575.17	20,660.76	39,140.22	103,898.59	22,921.36	44,414.40	
(tons/day)				46.79	10.33	19.57	51.95	11.46	22.21	

1999 KANSAS CITY MAINTENANCE AREA INVENTORY
 Offroad Mobile Source Emission Summary for the Kansas Counties of Johnson and Wyandotte

3/5/200

Source Category	1999 Annual Emissions (tons/yr)			1999 Daily Emissions (lbs/OSD)			2012 Daily Emissions (lbs/OSD)		
	VOC	NOx	CO	VOC	NOx	CO	VOC	NOx	CO
Johnson									
Agricultural Equipment	26.2	218.1	129.1	269.0	2,241.3	1,315.9	147.8	1,522.1	1,426.5
Airport Equipment	2.0	9.2	19.1	11.1	50.7	103.3	5.4	41.7	122.1
Commercial Equipment	582.6	505.8	14,323.9	3,728.6	3,207.7	91,466.6	2,604.3	3,723.5	133,794.4
Construction and Mining Equipment	915.0	4,906.2	6,015.7	9,045.3	48,258.4	58,723.4	3,668.0	31,168.5	53,253.8
Industrial Equipment	90.1	600.2	2,199.5	547.6	3,722.2	13,722.5	259.7	4,037.0	13,969.2
Lawn and Garden Equipment (Com)	2,025.0	468.1	27,531.8	18,163.8	4,536.1	264,397.0	9,807.3	4,586.6	331,617.6
Lawn and Garden Equipment (Res)	448.0	27.5	6,601.0	2,918.8	180.2	44,576.9	1,492.7	198.3	54,700.2
Logging Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pleasure Craft	13.1	0.8	29.5	61.2	3.6	129.7	41.2	5.0	130.8
Railroad Equipment	1.6	6.7	15.6	11.1	46.7	108.1	5.5	35.6	111.9
Recreational Equipment	93.5	10.5	1,226.9	645.4	78.2	8,791.1	641.3	66.6	9,673.1
Aircraft	23.2	3.9	727.3	126.9	21.6	3,985.1	153.5	26.1	4,821.6
Commercial Marine Vessels	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Railroad Locomotives	76.4	1,961.9	193.2	418.4	10,750.2	1,058.4	519.2	8,780.7	1,517.9
COUNTY TOTALS	4,296.6		59,012.6	35,947.1	73,096.7	488,378.1	19,346.0	54,191.6	605,139.2
(tons/day)				18.0	36.5	244.2	9.7	27.1	302.6

Source Category	1999 Annual Emissions (tons/yr)			1999 Daily Emissions (lbs/OSD)			2012 Daily Emissions (lbs/OSD)		
	VOC	NOx	CO	VOC	NOx	CO	VOC	NOx	CO
Wyandotte									
Agricultural Equipment	5.2	43.0	25.4	53.0	441.6	259.3	29.1	299.9	281.
Airport Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Commercial Equipment	126.2	109.5	3,101.9	807.4	694.6	19,807.3	564.0	806.3	28,973.
Construction and Mining Equipment	77.9	417.9	512.4	770.4	4,110.1	5,001.4	312.4	2,654.6	4,535.
Industrial Equipment	48.0	328.6	1,271.9	294.8	2,056.8	7,959.7	128.2	2,256.1	8,002.
Lawn and Garden Equipment (Com)	220.1	50.9	2,992.0	1,974.0	493.0	28,733.6	1,065.8	498.5	36,038.
Lawn and Garden Equipment (Res)	211.5	13.0	3,117.3	1,378.4	85.1	21,051.2	704.9	93.6	25,831.
Logging Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Pleasure Craft	18.0	1.1	40.6	84.1	4.9	178.3	56.7	6.9	179.
Railroad Equipment	0.6	2.5	5.9	4.2	17.6	40.6	2.1	13.4	42.
Recreational Equipment	16.6	2	253.1	114.3	15.2	1,796.50	111.3	12.5	1,987.90
Aircraft	0.1	0.0	3.3	0.6	0.1	18.0	0.7	0.1	21.1
Commercial Marine Vessels	0.6	14.5	1.6	3.0	79.4	8.8	3.4	89.7	9.
Railroad Locomotives	232.8	4,917.4	504.1	1,275.5	26,944.7	2,762.3	1,203.7	20,060.9	3,521.6
COUNTY TOTALS	957.5	5,900.4	11,829.4	6,759.7	34,943.0	87,616.9	4,182.2	26,792.6	109,426.
(tons/day)				3.40	17.50	43.80	2.10	13.40	54.70
TOTALS	5,254.10	5,900.40	70,842.10	42,706.80	108,039.70	575,995.00	23,528.20	80,984.20	714,565.90
(tons/day)				21.4	54	288	11.8	40.5	357.3

1999 KANSAS CITY MAINTENANCE AREA INVENTORY
 JOHNSON AND WYANDOTTE COUNTY POINT SOURCE EMISSIONS SUMMARY BY 2-DIGIT SIC

12/5/2001

SIC2	DESC1	1999 Annual (tons/yr)			1999 Daily (lbs/OSD)			2012 Daily (lbs/OSD)		
		VOC	NOx	CO	VOC	NOx	CO	VOC	NOx	CO
27	Printing, Publishing And Allied Industries	296.0	0.6	0.1	2,441.6	5.3	1.1	2,744.6	6.0	1.2
28	Chemicals And Allied Products	54.8	0.2	0.2	421.3	1.7	1.4	480.0	1.9	1.6
29	Petroleum Refining And Related Industries	6.5	24.3	14.7	50.3	180.5	119.5	58.3	206.9	137.4
30	Rubber And Miscellaneous Plastics Products	98.4	1.8	0.4	757.1	14.0	3.2	864.5	17.8	4.1
32	Stone, Clay, Glass And Concrete Products	0.0	1,344.3	133.5	0.2	6,795.3	675.1	0.3	7,181.4	713.6
34	Fabricated Metal Products, Except Machinery & Tran	15.1	0.1	0.0	116.2	1.0	0.2	132.4	1.1	0.2
35	Industrial And Commercial Machinery & Computer Equ	8.9	0.1	1.1	68.1	0.7	8.3	79.1	0.8	10.6
39	Miscellaneous Manufacturing Industries	68.8			529.4			603.2		
48	Communications	0.0	0.3	0.1	0.0	0.2	0.1	0.0	0.2	0.1
49	Electric, Gas And Sanitary Services	28.9	163.1	62.7	155.5	1,025.3	404.1	180.6	1,252.7	483.9
51	Wholesale Trade-Nondurable Goods	52.9			290.8			337.5		
59	Miscellaneous Retail	0.0	0.8	0.2	0.2	4.5	0.9	0.3	5.2	1.0
76	Miscellaneous Repair Services	4.1			31.5			35.8		
COUNTY TOTALS		634.6	1,535.7	213.0	4,862.3	8,028.5	1,213.8	5,516.6	8,674.1	1,353.8
tons					2.4	4.0	0.6	2.8	4.3	0.7

WYANDOTTE COUNTY												
14	Mining And Quarrying Of Nonmetallic Minerals	0.1	3.2	0.7	1.1	26.1	5.5	1.3	29.7	6.3		
20	Food And Kindred Products	168.7	32.8	13.0	962.1	222.2	82.5	1,166.5	256.5	96.9		
26	Paper And Allied Products	24.3		0.2	187.2		0.0	210.3		0.0		
27	Printing, Publishing And Allied Industries	34.8	0.9	77.3	271.9	0.0	494.0	306.9	0.0	549.2		
28	Chemicals And Allied Products	169.6	115.7	5.9	1,119.0	732.6	67.9	1,274.0	811.1	78.5		
29	Petroleum Refining And Related Industries	3.7	10.7		42.9	126.2		49.7	144.8			
30	Rubber And Miscellaneous Plastics Products	0.2	3.7	0.9	1.1	23.8	6.0	1.4	27.1	6.8		
32	Stone, Clay, Glass And Concrete Products	213.5	435.1	342.8	1,260.5	2,483.6	1,886.0	1,342.6	2,688.6	2,020.0		
34	Fabricated Metal Products, Except Machinery & Tran	107.5	42.8	328.0	832.0	236.2	1,802.5	944.9	263.9	2,002.5		
35	Industrial And Commercial Machinery & Computer Equ	50.7	0.5	0.1	440.3	3.8	0.9	501.6	4.3	1.1		
36	Electronic & Other Electrical Equipment & Componen	25.4			182.2			207.6				
37	Transportation Equipment	1,476.7	49.6	10.4	11,177.7	357.0	75.3	14,168.7	410.9	87.5		
49	Electric, Gas And Sanitary Services	105.9	6,808.9	465.3	694.3	51,363.6	3,308.5	859.9	64,381.7	4,138.5		
51	Wholesale Trade-Nondurable Goods	462.7	17.2	42.4	2,574.5	93.2	229.7	2,987.1	108.2	266.6		
80	Health Services	0.6	27.1	6.8	2.0	94.7	24.1	2.5	115.9	29.5		
COUNTY TOTALS		2,844.5	7,548.1	1,293.9	19,748.6	55,763.0	7,983.0	24,024.8	69,242.7	9,283.3		
tons		9.9	27.9	4.0	12.0	34.6	4.6					
TOTALS												
		3,479.0	9,083.8	1,506.9	24,610.9	63,791.5	9,196.8	29,541.4	77,916.8	10,637.1		
tons		12.3	31.9	4.6	14.8	39.0	5.3					

3.4.3

APPENDIX C

Area, Point, and Off-road emission sources for Missouri Plan counties.

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Area source emissions for Missouri SIP counties

29	165	PLATTE	NA	2102004000	0.53	52.64	13.16	0.56	56.38	14.10	Industrial Fuel Oil Combustion
29	047	CLAY	NA	2102004000	0.53	52.64	13.16	0.56	56.38	14.10	Industrial Fuel Oil Combustion
29	095	JACKSON	NA	2102004000	11.91	1191.10	297.77	11.63	1162.53	290.63	Industrial Fuel Oil Combustion
29	165	PLATTE	NA	2102007000	8.76	332.94	56.07	8.64	328.22	55.28	Industrial LPG Combustion
29	047	CLAY	NA	2102007000	8.76	332.94	56.07	8.64	328.22	55.28	Industrial LPG Combustion
29	095	JACKSON	NA	2102007000	2.44	103.22	18.65	2.42	101.78	18.37	Industrial LPG Combustion
29	165	PLATTE	NA	2102006000	5.48	139.41	83.65	5.67	149.33	89.60	Industrial Natural Gas Combustion
29	047	CLAY	NA	2102006000	5.48	139.41	83.65	5.67	149.33	89.60	Industrial Natural Gas Combustion
29	095	JACKSON	NA	2102006000	123.93	3154.70	1802.82	120.96	3079.03	1847.43	Industrial Natural Gas Combustion
29	165	PLATTE	NA	2102005000	123.93	3154.70	1802.82	120.96	3079.03	1847.43	Industrial Natural Gas Combustion
29	047	CLAY	NA	2102005000	123.93	3154.70	1802.82	120.96	3079.03	1847.43	Industrial Natural Gas Combustion
29	095	JACKSON	NA	2102005000	4232.09	0	0	4172.12	0.00	0.00	Industrial Surface Coating
29	165	PLATTE	NA	2102005000	4232.09	0	0	4172.12	0.00	0.00	Industrial Surface Coating
29	047	CLAY	NA	2102005000	4232.09	0	0	4172.12	0.00	0.00	Industrial Surface Coating
29	095	JACKSON	NA	2102005000	151.31	0	0	149.84	0.00	0.00	Industrial Surface Coating
29	165	PLATTE	NA	2610020000	6.86	1.37	19.43	6.65	1.73	24.50	Institutional/Commercial Open Burning
29	047	CLAY	NA	2610020000	6.86	1.37	19.43	6.65	1.73	24.50	Institutional/Commercial Open Burning
29	095	JACKSON	NA	2610020000	7.73	1.59	19.21	7.51	1.61	24.73	Institutional/Commercial Open Burning
29	165	PLATTE	NA	2610020000	7.90	1.58	22.37	8.22	1.64	23.29	Institutional/Commercial Open Burning
29	047	CLAY	NA	2610020000	7.90	1.58	22.37	8.22	1.64	23.29	Institutional/Commercial Open Burning
29	095	JACKSON	NA	2620030000	96.25	0	0	113.93	0.00	0.00	Municipal Landfills
29	165	PLATTE	NA	2620030000	96.25	0	0	113.93	0.00	0.00	Municipal Landfills
29	047	CLAY	NA	2620030000	96.25	0	0	113.93	0.00	0.00	Municipal Landfills
29	095	JACKSON	NA	2610020000	14.10	21.37	71.22	17.77	26.92	89.74	On-site Incineration
29	165	PLATTE	NA	2610020000	14.10	21.37	71.22	17.77	26.92	89.74	On-site Incineration
29	047	CLAY	NA	2610020000	14.10	21.37	71.22	17.77	26.92	89.74	On-site Incineration
29	095	JACKSON	NA	2610020000	131.82	199.73	665.78	137.25	207.95	693.17	On-site Incineration
29	165	PLATTE	NA	2610020000	131.82	199.73	665.78	137.25	207.95	693.17	On-site Incineration
29	047	CLAY	NA	2610020000	131.82	199.73	665.78	137.25	207.95	693.17	On-site Incineration
29	095	JACKSON	NA	2461800000	1503.65	0	0	1782.21	0.00	0.00	Pesticide Application
29	165	PLATTE	NA	2461800000	1503.65	0	0	1782.21	0.00	0.00	Pesticide Application
29	047	CLAY	NA	2461800000	1503.65	0	0	1782.21	0.00	0.00	Pesticide Application
29	095	JACKSON	NA	2104002000	0.00	0.00	0.00	0.00	0.00	0.00	Residential Coal Combustion
29	165	PLATTE	NA	2104002000	0.00	0.00	0.00	0.00	0.00	0.00	Residential Coal Combustion
29	047	CLAY	NA	2104002000	0.00	0.00	0.00	0.00	0.00	0.00	Residential Coal Combustion
29	095	JACKSON	NA	2104002000	2.46	2.24	67.70	2.66	2.42	73.06	Residential Coal Combustion
29	165	PLATTE	NA	2104002000	2.46	2.24	67.70	2.66	2.42	73.06	Residential Coal Combustion
29	047	CLAY	NA	2104002000	2.46	2.24	67.70	2.66	2.42	73.06	Residential Coal Combustion
29	095	JACKSON	NA	2104004000	0.05	1.39	0.39	0.07	1.72	0.48	Residential Fuel Oil Combustion
29	165	PLATTE	NA	2104004000	0.05	1.39	0.39	0.07	1.72	0.48	Residential Fuel Oil Combustion
29	047	CLAY	NA	2104004000	0.05	1.39	0.39	0.07	1.72	0.48	Residential Fuel Oil Combustion
29	095	JACKSON	NA	2104007000	0.99	27.59	3.74	1.29	36.20	4.91	Residential LPG Combustion
29	165	PLATTE	NA	2104007000	0.99	27.59	3.74	1.29	36.20	4.91	Residential LPG Combustion
29	047	CLAY	NA	2104007000	0.99	27.59	3.74	1.29	36.20	4.91	Residential LPG Combustion
29	095	JACKSON	NA	2104007000	2.75	76.90	10.44	2.96	82.99	11.26	Residential LPG Combustion
29	165	PLATTE	NA	2104007000	2.75	76.90	10.44	2.96	82.99	11.26	Residential LPG Combustion
29	047	CLAY	NA	2104007000	2.75	76.90	10.44	2.96	82.99	11.26	Residential LPG Combustion
29	095	JACKSON	NA	2104006000	22.82	389.95	165.93	28.10	480.31	204.39	Residential Natural Gas Combustion
29	165	PLATTE	NA	2104006000	22.82	389.95	165.93	28.10	480.31	204.39	Residential Natural Gas Combustion
29	047	CLAY	NA	2104006000	22.82	389.95	165.93	28.10	480.31	204.39	Residential Natural Gas Combustion
29	095	JACKSON	NA	2610030000	128.69	25.74	364.61	162.13	32.43	459.38	Residential Open Burning
29	165	PLATTE	NA	2610030000	128.69	25.74	364.61	162.13	32.43	459.38	Residential Open Burning
29	047	CLAY	NA	2610030000	128.69	25.74	364.61	162.13	32.43	459.38	Residential Open Burning
29	095	JACKSON	NA	2610030000	148.04	29.61	419.43	154.12	30.82	436.69	Residential Open Burning
29	165	PLATTE	NA	2610030000	148.04	29.61	419.43	154.12	30.82	436.69	Residential Open Burning
29	047	CLAY	NA	2610030000	148.04	29.61	419.43	154.12	30.82	436.69	Residential Open Burning
29	095	JACKSON	NA	2104008000	43.46	0.49	47.94	53.53	0.61	59.05	Residential Wood
29	165	PLATTE	NA	2104008000	43.46	0.49	47.94	53.53	0.61	59.05	Residential Wood
29	047	CLAY	NA	2104008000	43.46	0.49	47.94	53.53	0.61	59.05	Residential Wood
29	095	JACKSON	NA	2104008000	457.59	0	0	470.00	0.00	0.00	Solvent Cleaning
29	165	PLATTE	NA	2104008000	457.59	0	0	470.00	0.00	0.00	Solvent Cleaning
29	047	CLAY	NA	2104008000	457.59	0	0	470.00	0.00	0.00	Solvent Cleaning
29	095	JACKSON	NA	2415000000	8.89	0	0	8823.95	0.00	0.00	Solvent Cleaning
29	165	PLATTE	NA	2415000000	8.89	0	0	8823.95	0.00	0.00	Solvent Cleaning
29	047	CLAY	NA	2415000000	8.89	0	0	8823.95	0.00	0.00	Solvent Cleaning
29	095	JACKSON	NA	2810030000	11.27	1.43	61.46	13.34	1.70	72.75	Structure Fires
29	165	PLATTE	NA	2810030000	11.27	1.43	61.46	13.34	1.70	72.75	Structure Fires
29	047	CLAY	NA	2810030000	11.27	1.43	61.46	13.34	1.70	72.75	Structure Fires
29	095	JACKSON	NA	2401008000	19.30	0	0	24.32	0.00	0.00	Traffic Markings
29	165	PLATTE	NA	2401008000	19.30	0	0	24.32	0.00	0.00	Traffic Markings
29	047	CLAY	NA	2401008000	19.30	0	0	24.32	0.00	0.00	Traffic Markings
29	095	JACKSON	NA	2401008000	180.41	0	0	187.83	0.00	0.00	Traffic Markings
29	165	PLATTE	NA	2401008000	180.41	0	0	187.83	0.00	0.00	Traffic Markings
29	047	CLAY	NA	2401008000	180.41	0	0	187.83	0.00	0.00	Traffic Markings
				TOTAL (lbs./OSD)	86,288.06	25,971.49	10,637.78	82,002.52	25,910.66	10,999.78	
				TOTAL (tons/OSD)	43.14	12.99	5.32	41.00	12.96	5.50	

1999 Kansas City Regional Emissions Inventory: Nonroad Emissions

Category/ County	1999 VOC lbs/day	2012 VOC lbs/day	1999 NOx lbs/day	2012 NOx lbs/day	1999 CO lbs/day	2012 CO lbs/day
Agricultural Equipment						
Clay	200.0	116.0	1,640.0	1,148.0	960.0	1,052.0
Jackson	240.0	136.0	2,040.0	1,416.0	1,200.0	1,300.0
Platte	340.0	192.0	2,900.0	2,008.0	1,700.0	1,852.0
Totals	780.0	444.0	6,580.0	4,572.0	3,860.0	4,204.0
Aircraft						
Clay	101.5	131.2	15.3	19.8	2,828.5	3,654.2
Jackson	106.7	138.1	16.1	20.8	2,971.4	3,846.6
Platte	1,454.6	1,933.0	4,023.3	5,347.4	8,282.8	11,002.4
Totals	1,662.8	2,202.3	4,054.7	5,387.9	14,082.8	18,503.3
Airport Equipment						
Clay	0.0	0.0	20.0	20.0	40.0	44.0
Jackson	0.0	0.0	20.0	20.0	40.0	40.0
Platte	100.0	40.0	480.0	392.0	820.0	984.0
Totals	100.0	40.0	520.0	432.0	900.0	
Commercial Marine Vessels						
Clay	6.7	6.7	176.6	176.6	19.5	19.5
Jackson	9.3	9.3	244.3	244.3	26.9	26.9
Platte	18.3	18.3	477.7	477.7	52.7	52.7
Totals	34.3	34.3	898.6	898.6	99.0	99.0
Construction Equipment						
Clay	1,280.0	548.0	6,820.0	4,664.0	8,280.0	7,520.0
Jackson	5,820.0	2,512.0	31,060.0	21,268.0	37,700.0	34,212.0
Platte	980.0	428.0	5,240.0	3,584.0	6,380.0	5,780.0
Totals	8,080.0	3,488.0	43,120.0	29,516.0	52,360.0	47,512.0
Industrial Equipment						
Clay	320.0	148.0	2,240.0	2,484.0	8,660.0	8,796.0
Jackson	1,020.0	484.0	7,020.0	7,784.0	26,460.0	26,988.0
Platte	60.0	36.0	420.0	448.0	1,360.0	1,420.0
Totals	1,400.0	668.0	9,680.0	10,716.0	36,480.0	37,204.0

1999 Kansas City Regional Emissions Inventory: Nonroad Emissions

Commercial Lawn & Garden Equipment						
Clay	2,340.0	1,292.0	580.0	580.0	33,360.0	41,788.0
Jackson	13,580.0	7,496.0	3,320.0	3,400.0	193,820.0	242,728.0
Platte	800.0	432.0	200.0	200.0	11,320.0	14,192.0
Totals	16,720.0	9,220.0	4,100.0	4,180.0	238,500.0	298,708.0
Residential Lawn & Garden Equipment						
Clay	1,060.0	596.0	60.0	80.0	15,980.0	19,548.0
Jackson	4,620.0	2,552.0	280.0	324.0	69,300.0	84,724.0
Platte	400.0	220.0	20.0	20.0	5,840.0	7,140.0
Totals	6,080.0	3,368.0	360.0	424.0	91,120.0	111,412.0
Commercial Equipment						
Clay	920.0	644.0	800.0	932.0	22,340.0	32,652.0
Jackson	3,420.0	2,440.0	2,980.0	3,512.0	84,040.0	122,748.0
Platte	280.0	188.0	240.0	284.0	6,720.0	9,828.0
Totals	4,620.0	3,272.0	4,020.0	4,728.0	113,100.0	165,228.0
Pleasure Craft						
Clay	240.0	176.0	20.0	20.0	520.0	524.0
Jackson	220.0	156.0	20.0	20.0	460.0	468.0
Platte	120.0	96.0	0.0	20.0	280.0	284.0
Totals	580.0	428.0	40.0	60.0	1,260.0	1,276.0
Railroad Locomotives						
Clay	0.0	0.0	0.0	0.0	0.0	0.0
Jackson	0.0	0.0	0.0	0.0	0.0	0.0
Platte	0.0	0.0	0.0	0.0	0.0	0.0
Totals	0.0	0.0	0.0	0.0	0.0	0.0
Recreational Equipment						
Clay	140.0	124.0	20.0	20.0	3,140.0	3,512.0
Jackson	560.0	548.0	80.0	60.0	9,260.0	10,236.0
Platte	280.0	284.0	20.0	20.0	2,960.0	3,208.0
Totals	980.0	956.0	120.0	100.0	15,360.0	16,956.0

1999 Kansas City Regional Emissions Inventory: Nonroad Emissions

Railroad Equipment						
Clay	0.0	0.0	20.0	20.0	40.0	44.0
Jackson	20.0	0.0	80.0	60.0	180.0	184.0
Platte	0.0	0.0	0.0	0.0	20.0	20.0
Totals	20.0	0.0	100.0	80.0	240.0	248.0
Total Nonroad Emissions (lbs./OSD)						
	41,057.1	24,120.6	73,593.3	61,094.6	567,361.8	701,350.3
Total Nonroad Emissions (tons/OSD)						
	20.5	12.1	36.8	30.5	283.7	350.7

2005 Kansas City Ozone Maintenance Plan

MISSOURI POINT SOURCE EMISSIONS (1999-2012)
METROPOLITAN KANSAS CITY

SIC	SIC Description	1999 VOC Annual Emissions (lbs/day)	1999 NOx Annual Emissions (lbs/day)	1999 CO Annual Emissions (lb/year)	1999 VOC Daily Emissions (lbs/OSD)	1999 NOx Daily Emissions (lb/OSD)	1999 CO Daily Emissions (lb/OSD)	2012 Growth Factor	2012 VOC Daily Emissions (lb/OSD)	2012 NOx Daily Emissions (lb/OSD)	2012 CO Daily Emissions (lb/OSD)
CLAY COUNTY											
00		12.9			99.4			1.43542802	142.7		
20	Food product manufacturing	317.0	86.3	74.1	1,750.0	513.8	440.1	1.340834196	2,346.5	688.9	690.1
26	Paper product manufacturing	16.3	20.2	16.9	102.8	109.0	91.5	1.333395961	137.1	145.4	121.9
27	Printing & publishing	93.9	4.2	1.2	635.3	16.3	2.4	1.066885585	890.5	17.7	2.8
28	Chemical manufacturing	116.3	6.2	1.5	853.2	43.6	10.8	1.288791723	1,087.9	56.1	13.9
29	Petroleum refining	3.4	7.1	1.3	25.5	72.4	13.3	1	25.5	72.4	13.3
30	Rubber & plastic manufacturing	14.2	0.3	0.2	98.3	2.1	1.3	1.200286804	118.9	2.6	1.5
	Stone, clay, glass, and concrete products manufacturing										
32		4.8	1.7	0.4	37.7	25.9	6.2	1.704112767	64.2	44.1	10.5
	Fabricated metal products, except machinery and transportation equipment										
34		0.2			0.8			1.723076923	1.4		
	Electronic equipment & components, except computer equipment manufacturing										
35		2.2	1.0	0.2	13.1	6.1	1.0	1.293747776	16.9	7.9	1.3
	Transportation equipment manufacturing										
37		1,811.6	121.0	99.4	12,758.5	823.2	674.9	1.832050134	23,374.3	1,508.2	1,236.5
	Miscellaneous manufacturing										
39		6.4	1.2	0.3	54.5	10.3	2.3	1.999914288	108.9	20.7	4.6

2005 Kansas City Ozone Maintenance Plan

49	Electric, gas, & sanitary services	047	0.5	394.3	6.8	4.2	3,076.5	54.6	1,367,036,787	5.7	4,205.7	74.7
50	Wholesale trade - durable goods	047	11.5	3.6	0.8	54.3	19.6	4.2	1,474,463,973	90.1	29.2	6.2
51	Wholesale trade - nondurable goods	047	0.0	0.1		0.0	0.8		1,474,463,973	0.0	0.9	
72	Personal services	047	1.7			8.8			1,238,509,202	10.9		
75	Automotive repair, services and parking	047	34.4	0.3	0.2	245.3	1.8	1.5	1,513,755,098	371.3	2.7	2.3
80	Health services	047	0.0	1.8	0.4	0.2	7.6	1.9	1,334,045,204	0.2	10.1	2.5
CLAY COUNTY TOTALS			2,447.7	639.2	203.7	18,741.9	4,729.1	1,305.8		28,593.1	6,812.6	2,081.8
JACKSON COUNTY												
07	Agricultural services	095		0.0			0.4		1,227,818,575		0.5	
14	Mining and quarrying of nonmetallic minerals, except fuels	095	0.8	18.0	12.5	6.4	145.5	112.7	1,216,704,289	7.8	177.1	137.1
17	Construction - special trade contractors	095	0.5	0.1	0.3	7.4	1.8	4.6	1,195,020,335	8.8	2.1	5.6
20	Food product manufacturing	095	401.4	97.1	278.8	1,804.8	489.2	1,519.4	1,340,834,195	2,420.0	655.9	2,037.3
24	Lumber & wood products, except furniture, manufacturing	095	30.5	0.6	0.8	188.5	3.9	6.3	1,920,867,113	362.1	7.5	12.2
25	Furniture & fixture manufacturing	095	3.8			28.2			1,974,052,932	57.7		
26	Paper product manufacturing	095	120.2	4.4	2.7	765.1	31.1	18.6	1,333,393,961	1,020.1	41.5	24.8
27	Printing & publishing	095	388.8	9.0	4.0	2,770.6	61.5	29.0	1,098,895,585	3,011.3	66.9	31.6

2005 Kansas City Ozone Maintenance Plan

49	Electric, gas, & sanitary services	095	286.2	21,986.4	673.2	1,919.5	156,792.6	7,665.3	1,367,036.767	2,624.1	217,075.3	10,478.7
50	Wholesale trade - durable goods	095	6.8	0.1	0.0	37.5	0.3	0.1	1,474,463,973	55.3	0.4	0.1
51	Wholesale trade - nondurable goods	095	38.1	1.8	0.5	209.4	5.3	1.3	1,474,463,973	308.8	7.9	1.9
70	Hotels & other lodging places	095	0.6	12.8	3.4	6.9	154.4	41.2	1,242,287,333	8.5	191.9	51.2
72	Personal services	095	91.9	0.3	0.2	650.2	2.1	1.3	1,238,608,202	805.3	2.6	1.5
73	Business services	095	8.6	18.5	3.7	67.2	145.4	29.0	1,217,944,879	81.8	177.1	35.4
75	Automotive repair, services and parking	095	11.6	1.3	0.2	89.4	9.0	1.3	1,513,755,098	135.3	13.7	2.0
80	Health services	095	8.4	83.5	28.5	53.6	523.5	191.7	1,334,045,204	71.5	698.3	255.7
82	Educational services	095	0.3	12.7	3.1	1.4	55.1	13.3	1,277,193,835	1.8	70.4	17.0
84	Museums, art galleries, and botanical & zoological gardens	095	0.0	0.0	0.0	0.1	0.1	0.2	1,383,963,684	0.1	0.1	0.3
86	Membership organizations	095	1.3	0.4		8.1	2.4		1,286,277,585	10.2	3.1	
87	Engineering, accounting and other professional services	095	1.9	16.7	3.0	14.1	122.1	22.0	1,380,471,059	19.4	168.5	30.4
JACKSON COUNTY TOTALS			1,954.7	23,986.2	2,008.5	12,847.9	170,631.8	13,776.1	45.7	17,321.9	236,056.5	19,997.9
PLATTE COUNTY												
27	Printing & publishing	165	63.2	0.0	0.0	443.2	0.1	0.0	1,086,895,565	481.7	0.1	0.0
29	Petroleum refining	185	0.5	6.3	1.7	4.8	59.1	15.8	1	4.9	59.1	15.8
30	Rubber & plastic manufacturing	165	99.0	1.2	1.0	845.4	7.8	6.5	1,209,295,804	780.5	9.5	7.9

2005 Kansas City Ozone Maintenance Plan

32	Stone, clay, glass, and concrete products manufacturing	165	0.5	25.8	6.4	3.2	158.6	39.6	1,704,112,787	5.5	270.2	87.5
37	Transportation equipment manufacturing	165	32.2	5.3	3.8	175.4	28.7	20.8	1,832,050,134	321.3	52.5	38.2
45	Air transportation	165	29.1	57.5	24.0	156.1	308.4	131.0	1,463,944,001	228.6	451.5	191.7
49	Electric, gas, & sanitary services	165	81.4	6,440.7	681.3	482.8	38,512.4	4,128.3	1,367,038,767	660.2	52,647.9	5,643.6
51	Wholesale trade - nondurable goods	165	79.8	4.5	9.1	438.2	24.9	49.7	1,474,463,973	646.1	36.7	73.3
72	Personal services	165	4.6	0.0	0.0	29.6	0.1	0.1	1,238,500,202	36.6	0.2	0.1
73	Business services	165	0.1	3.4	0.8	0.5	14.4	3.5	1,217,944,879	0.6	17.5	4.3
75	Automotive repair, services and parking	165	16.5	1.2	1.0	120.4	8.7	7.5	1,513,755,098	162.3	13.2	11.3
PLATTE COUNTY TOTALS			407.0	6,545.7	729.2	2,499.9	39,123.3	4,402.9		3,348.2	53,658.5	6,083.7
TOTALS (LBS/OSD)			4,808.4	31,171.2	2,941.4	31,889.7	214,484.2	19,484.9		49,263.2	296,427.5	28,033.5
TOTALS (TONS/OSD)			2.4	15.6	1.5	15.9	107.2	9.7		24.6	146.2	14.0

3.4.4 APPENDIX D

On-road emissions and MOBILE6 parameters.

MOBILE6 inputs: default vehicle age distribution; 7.2 RVP gasoline in 1999; 7.0 RVP gasoline in 2012; refueling emissions not included (refueling emissions are included in area source inventory)

Year	1999	2012	2020
Non-local DVMT	37,575,888	47,925,799	53,653,284
Local DVMT	8,397,659	10,710,712	11,990,721
Total DVMT	45,973,547	58,636,511	65,644,005

VOC (tons/osd)	92.3	41.2	30.6
NOx (tons/osd)	152.9	67.2	36.5
CO (tons/osd)	1092.4	579.0	526.2

conversion factor: 1.10×10^{-6} tons/gram

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3.4.5

APPENDIX E

Letters from Missouri and Kansas State Governors
Responding to RFG program.

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OFFICE OF THE GOVERNOR
STATE OF MISSOURI
JEFFERSON CITY
65101

MEL CARNAHAN
GOVERNOR

STATE CAPITOL
ROOM 316
(573) 751-3222

July 28, 1999

Ms. Carol Browner, Administrator
U.S. Environmental Protection Agency
401 M. Street, S.W.
Washington, D.C. 20460

Dear Ms. Browner:

Pursuant to Section 211(k)(6) of the Clean Air Act, I request the U.S. Environmental Protection Agency extend the requirement for reformulated gasoline to the Missouri portion of the Kansas City Ozone Maintenance Area beginning June 1, 2000.

Thank you for your attention to this matter. I look forward to the successful implementation of this program as well as continued attainment of the federal clean air standards for the Kansas City area.

If you have any further questions or concerns, please contact Mr. Stephen Mahfood, Director, Department of Natural Resources (573) 751-4732. Thank you.

Very truly yours,


Mel Carnahan

MC/gh

c: Dennis Grams, EPA, Region VII

STATE OF KANSAS

BILL GRAVES, Governor
State Capitol, 2nd Floor
Topeka, Kansas 66612-1590



(785) 296-
1-800-748-
EAX (785) 296-

OFFICE OF THE GOVERNOR

July 28, 1999

The Honorable Carol Browner, Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Administrator Browner:

By this letter, Kansas is applying to opt-in to the federal reformulated gasoline (RFG) program in Johnson County, Kansas and Wyandotte County, Kansas. As authorized by section 211(k)(6) of the federal Clean Air Act, Kansas is making application to the Administrator to apply the prohibition set forth in section 211(k)(5) of the federal Clean Air Act in Johnson County, Kansas, and Wyandotte County, Kansas. As authorized by 40 CFR 80.70(k), I am petitioning to include Johnson County, Kansas, and Wyandotte County, Kansas as covered areas for purposes of subparts D, E and F of 40 CFR Part 80. Also, I request that EPA utilize all the time allowed by law before RFG is required to be introduced in Johnson County, Kansas and Wyandotte County, Kansas.

I am exercising my prerogative as Governor to opt-in to the federal RFG program so the long-range transportation plan for Kansas City will demonstrate conformity with the state implementation plan mobile source volatile organic compound (VOC) emissions budget. This conformity demonstration will allow transportation projects in these counties to continue under the implementation procedures crafted in response to *Environmental Defense Fund v. Browner*. It is my understanding that this will also satisfy the contingency plan VOC reduction requirements of the Kansas City maintenance plan as authorized at 64 FR 28757-28761, May 27, 1999.

I also request that you remain open to considering alternatives to RFG for the Kansas City metropolitan area prior to the January 1, 2004 "opt-out" time frame for RFG. Much has changed since this lock-in date was established by EPA in October 1997 which causes great concern about the long-term ramifications of opting into the federal RFG program. Valid public health concerns about the RFG oxygenate methyl tertiary butyl ether (MTBE) are being raised at a time when studies suggest the RFG oxygenate requirement may not provide the intended VOC emission reduction benefits. Yet Kansas is being forced to opt-in to a program which may increase the potential exposure of Kansas citizens to this possible carcinogen.

I am also concerned that Kansas City may not realize all the air quality benefits that have been suggested as a result of an RFG opt-in. Specifically, Kansas City may not receive the VOC reductions that have been touted by various stakeholders throughout the process to date. In fact, we understand the VOC reductions could be significantly less. A cursory review of the growth and increased traffic demands of the Kansas City area readily confirm that RFG may only be a stop-gap remedy to achieve theoretical transportation conformity.

Jul-28-99 02:02pm From:FED TRANSIT ADMIN

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The Honorable Carol Browner,
July 28, 1999
Page 2

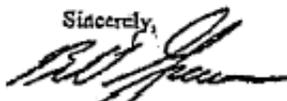
Our concerns regarding the groundwater contamination potential of increased levels of MTBE were validated by the report of your MTBE advisory panel. Eighty-eight percent of petroleum clean-up sites in Kansas are contaminated with MTBE. In addition, Kansas' experience corroborates that MTBE molecules travel unusually fast through soil and into groundwater. In Rush Center, Kansas, MTBE had migrated under monitoring wells to public wells despite the fact that the contaminant plume was well defined. Permanent, long-term treatment at the public water plant was required.

The decision to opt-in should be viewed as a short term, stop-gap measure made in response to an artificial crisis generated by transportation conformity requirements. Since the demonstration that additional refining capacity for RFG is not needed, a long-term solution should not be held captive until January 1, 2004, a date that cannot now be justified in regard to its original purpose. Therefore, I reiterate my request to continue to review alternatives to RFG in order to develop and implement the most effective manner for improving Kansas City air quality. Also, I pledge to work with you in your efforts to reduce the use of MTBE in gasoline as quickly as possible. I am confident that a performance based state blend, which could include ethanol, will continue to improve Kansas City air quality and meet your goal.

In addition, with the introduction of RFG into the Kansas City area, both state and federal regulations regarding fuel standards will be in place in Kansas City. Since EPA will be responsible for enforcement of the requirements for RFG brought into the Kansas City area, it is essential EPA does not authorize the introduction of gasoline into the Kansas City maintenance area which violates state regulations and the SIP.

I believe many questions remain on this issue. I hope to work with EPA and our partners in the Kansas City area to find an effective, long-term solution.

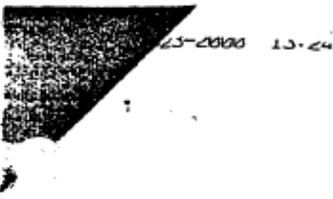
Sincerely,



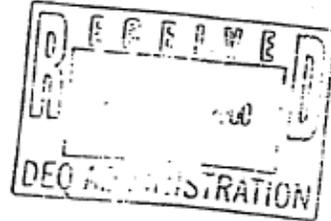
BILL GRAVES
Governor

BG/jca

- cc: Clyde D. Gracber, Secretary, KDHE
- Dennis Grams, Regional Administrator, Region VII
- B. Dean Carlson, Secretary, KDOT
- David Geiger, Division Administrator, FHWA



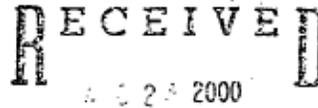
OFFICE OF THE GOVERNOR
STATE OF MISSOURI
JEFFERSON CITY
65101



MEL CARNAHAN
GOVERNOR

STATE CAPITOL
ROOM 216
(314) 751-3222

August 22, 2000



Mr. Dennis Grams
Region VII Administrator
US Environmental Protection Agency
901 North Fifth Street
Kansas City, KS 66101

AIR POLLUTION CONTROL
PROGRAM

Dear Mr. Grams:

This letter is in response to your letter dated April 11, 2000, which requested that the State of Missouri select a control strategy to satisfy the Kansas City Ozone Maintenance Plan contingency measures now that reformulated gasoline has been eliminated as a viable control measure.

Missouri is committed to resolving the air quality problems in Kansas City. The State of Missouri commits to implementing a 7.0 Reid Vapor Pressure (RVP) gasoline program in Clay, Platte, and Jackson counties with an implementation date of June 1, 2001. The implementation of 7.0 RVP gasoline will require the Missouri Department of Natural Resources to revise both the Kansas City Ozone Maintenance Plan and the Kansas City RVP rule. The department is currently working on the schedule for both of these revisions.

In addition, the current Kansas City Ozone Maintenance Plan requires emission reductions beyond those achieved by the implementation of 7.0 RVP gasoline. Therefore, the State of Missouri will revise the current petroleum liquid storage, loading and transfer regulation to include additional reporting and inspection requirements as well as the installation and testing of pressure vacuum relief valves. The State of Missouri also intends to implement a cold solvent cleaning regulation similar to that recently developed for the St. Louis ozone nonattainment area.

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Mr. Dennis Grams
August 22, 2000
Page Two

To assure our air quality problems in Kansas City are resolved, I am directing the Missouri Department of Natural Resources to revise the Kansas City Ozone Maintenance Plan and require implementation of additional control strategies upon further violation of the one hour primary national ambient air quality standard for ozone. These contingencies shall include implementation of stage II vapor recovery and industrial emissions offsets for all major new sources or source modifications.

If you have any further questions or concerns, please contact Mr. Stephen Mahfood, Director, Department of Natural Resources at (573) 751-4732.

Very truly yours,



Mel Carnahan

MC:kds

cc: Governor Bill Graves, Kansas
David Warm, Mid-America Regional Council

FROM: EPA APTD_REGION_VII...

FAX NO.: 5517844...

07-07-00 03:15P P.01

STATE OF KANSAS

BILL GRAVES, Governor
State Capitol, 2nd Floor
Topeka, Kansas 66612-1590



(785) 296-3232
1-800-748-4408
FAX: (785) 296-7973

OFFICE OF THE GOVERNOR

July 7, 2000

Mr. Dennis Grams
Region VII Administrator
U.S. Environmental Protection Agency
901 N. 5th Street
Kansas City, KS 66101

Dear Mr. Grams:

This letter is in response to your letter dated April 11, 2000 in which you request the state of Kansas to select a control strategy to satisfy the Kansas City maintenance plan contingency measures now that the courts have determined that reformulated gasoline is no longer an option.

The State of Kansas will commit to implement a 7.0 Reid Vapor Pressure (RVP) fuel program in Johnson and Wyandotte counties with a target date of the summer of 2001. This will amount to creditable VOC reductions of 2.33 tons per day if implemented throughout the five county Kansas City maintenance area. The State of Kansas will also commit to implementation of a phased program to reduce vapor pressure of cold cleaning solvents to less than or equal to 1.0 mmHg. It is estimated this will amount to creditable VOC reductions in excess of 3 tons per day if implemented throughout the five county Kansas City maintenance area. These two control measures will provide more than a 5.33 ton per day reduction in VOCs as compared to the 4.71 tons per day from a Stage II program. Implementation schedules will be submitted under separate cover.

It is my policy to assure, to the extent possible, that state programs complement any related federal initiatives in order to provide the maximum benefit at the least cost. For this reason, it would appear to me to be counterproductive and against good public policy to propose implementation of Stage II vapor recovery in light of the introduction of on-board fuel vapor recovery (OBVR) in newer motor vehicles. Using the California estimation of the fleet penetration of OBVR motor vehicles, by the year 2003 the combination of VOC reductions attributable to 7.0 RVP gasoline plus those attributable to the motor vehicle fleet with OBVR will result in a VOC reductions equal to 70% of the reductions attributable to Stage II. By the year 2003, VOC reductions attributable to 7.0 RVP gasoline plus OBVR will already exceed the VOC reductions which would be realized by implementing Stage II. In addition, 7.0 RVP

APTD REGION VII FAX NO.: 5517844

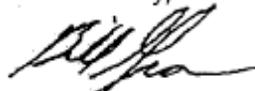
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Mr. Dennis Grams
July 7, 2000
Page 2

gasoline will be introduced into the Kansas City area in a much more expeditious manner providing measurable VOC reductions next year. Finally, accounting for the VOC reductions attributable to reducing the vapor pressure of cold cleaning solvents will only add to the benefits realized by implementing a VOC reduction program that builds on the federal initiative rather than implementing a program that becomes less effective as vehicles with OBVR penetrate the fleet.

If you have any questions or desire additional information, please contact Jan Sides, Director of the Bureau of Air and Radiation, at 785/296-1551.

Sincerely,



BILL GRAVES
Governor

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3.4.6 APPENDIX F

Draft Rulemakings Amending
10 CSR 10-6.010 Ambient Air Quality Standards
and
10 CSR 10-6.040 References Methods
to include the Eight-Hour Ozone Standard

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Title 10 - DEPARTMENT OF

NATURAL RESOURCES

Division 10 - Air Conservation Commission

**Chapter 6 – Air Quality Standards, Definitions, Sampling and Reference Methods
and Air Pollution Control Regulations for the Entire State of Missouri**

PROPOSED AMENDMENT

10 CSR 10-6.010 Ambient Air Quality Standards. The commission proposes to amend the Ambient Air Quality Standards Table to now contain the new 8-Hour Ozone and Particulate Matter 2.5 standards. The table is also being reformatted at this time by switching the Methods and Concentration columns for rule clarity. If the commission adopts this rule action, it will be submitted to the U.S. Environmental Protection Agency to replace the current rule in the Missouri State Implementation Plan. The evidence supporting the need for this proposed rulemaking is available for viewing at the Missouri Department of Natural Resources’ Air Pollution Control Program at the address and phone number listed in the Notice of Public Hearing at the end of this rule. More information concerning this rulemaking can be found at the Missouri Department of Natural Resources’ Environmental Regulatory Agenda website, www.dnr.mo.gov/regs/regagenda.htm.

PURPOSE: This rule provides long-range goals for ambient air quality throughout Missouri in order to protect the public health and welfare. This proposed rule amendment adopts the new 8-Hour Ozone(O₃) and Particulate Matter 2.5 (PM_{2.5}) Micron National Ambient Air Quality Standards mandated under the Clean Air Act Amendment of 1997 into the ambient air quality standards table. The Methods and Concentration columns in this table have also been switched for rule clarity. The evidence supporting the need for this proposed rulemaking, per section 536.016 RSMo, is the National Ambient Air Quality Standards mandated under the Clean Air Act Amendment of 1997 and is available for viewing at the Missouri Department of Natural Resources’ Air Pollution Control Program at the address and phone number listed in the Notice of Public Hearing at the end of this rule.

PURPOSE: This rule provides long-range for ambient air quality throughout Missouri in order to protect the public health and welfare.

Pollutant	Method	Concentration	Remarks
1. Particulate matter 10-micron (PM ₁₀)	As specified in 10 CSR 10-6.040(4)(J)	50 micrograms per cubic meter annual arithmetic mean	
		150 micrograms per cubic meter	As determined 10 CSR 10-

		24 hour average concentration	6.040(4)(K)
2. Sulfur dioxide	As specified in 10 CSR 10-6.040(4)(A)	0.03 ppm (80 micrograms per cubic meter)	Annual arithmetic mean
		0.14 ppm (365 micrograms per cubic meter)	24 hour average not to be exceeded more than once per year
		0.5 ppm (1300 micrograms per cubic meter)	3 hour average not to be exceeded more than once per year
3. Carbon monoxide	As specified in 10 CSR 10-6.040(4)(C)	9 ppm (10,000 micrograms per cubic meter)	8 hour average not to be exceeded more than once per year
		35 ppm (40,000 micrograms per cubic meter)	1 hour average not to be exceeded more than once per year
4. Photochemical oxidants (ozone)	As specified in 10 CSR 10-6.040(4)(D)	0.12 ppm (235 micrograms per cubic meter)	1 hour average not to be exceeded more than one day per year (see 10 CSR 10-6.040(4)(H))
5. Nitrogen dioxide	As specified in 10 CSR 10-6.040(4)(F)	0.05 ppm (100 micrograms per cubic meter)	Annual arithmetic mean not to be exceeded
6. Hydrogen sulfide	As specified in 10 CSR 10-6.040(5)	0.05 ppm (70 micrograms per cubic meter)	1/2 hour average not to be exceeded over 2 times per year

DRAFT

		0.03 ppm (42 micrograms per cubic meter)	1/2 hour average not to be exceeded over 2 times in any 5 consecutive days
7. Sulfuric acid	As specified in 10 CSR 10-6.040(6)	10 micrograms per cubic meter	24 hour average not to be exceeded more than once in any 90 consecutive days
		30 micrograms per cubic meter	1 hour average not to be exceeded more than once in any 2 consecutive days
8. Lead	As specified in 10 CSR 10-6.040(4)(G)	1.5 micrograms per cubic meter	Calendar quarter arithmetic mean not to be exceeded]

Pollutant	Concentration	Method	Remarks
1. Particulate matter 10 micron (PM₁₀)	50 micrograms per cubic meter	As specified in 10 CSR 10-6.040(4)(J)	3-year average of annual arithmetic mean
	150 micrograms per cubic meter		24-hour average concentration. Not more than one expected exceedance, 3 year average (see 10 CSR 10-6.040(4)(K))
Particulate matter 2.5 micron (PM_{2.5})	15 micrograms per cubic meter	As specified in 10 CSR 10-6.040(4)(L)	3-year average of annual arithmetic mean
	65 micrograms per cubic meter		24-hour average concentration 98th percentile of monitored daily concentration (see 10

			CSR 10-6.040(4)(M))
2. Sulfur dioxide	0.03 ppm (80 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(4)(A)	Annual arithmetic mean
	0.14 ppm (365 micrograms per cubic meter)		24-hour average not to be exceeded more than once per year
	0.5 ppm (1300 micrograms per cubic meter)		3-hour average not to be exceeded more than once per year
3. Carbon monoxide	9 ppm (10,000 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(4)(C)	8-hour average not to be exceeded more than once per year
	35 ppm (40,000 micrograms per cubic meter)		1-hour average not to be exceeded more than once per year
4. Photo-chemical oxidants (1-hour ozone)	0.12 ppm (235 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(4)(D)	1-hour average. Not more than one expected exceedance, 3 year average (see 10 CSR 10-6.040(4)(H))
Photo-chemical oxidants (8-hour ozone)	0.08 ppm (156.64 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(4)(D)	8-hour standard not to exceed 3-year average of the 4th highest daily maximum (see 10 CSR 10-6.040(4)(I))
5. Nitrogen dioxide	0.05 ppm (100 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(4)(F)	Annual arithmetic mean not to be exceeded
6. Hydrogen sulfide	0.05 ppm (70 micrograms per cubic meter)	As specified in 10 CSR 10-6.040(5)	1/2-hour average not to be exceeded over 2 times per year
	0.03 ppm (42 micrograms per cubic meter)		1/2-hour average not to be exceeded over 2 times in any 5

			consecutive days
7. Sulfuric acid	10 micrograms per cubic meter	As specified in 10 CSR 10-6.040(6)	24-hour average not to be exceeded more than once in any 90 consecutive days
	30 micrograms per cubic meter		1-hour average not to be exceeded more than once in any 2 consecutive days
8. Lead	1.5 micrograms per cubic meter	As specified in 10 CSR 10-6.040(4)(G)	Calendar quarter arithmetic mean not to be exceeded

AUTHORITY: section 643.050, RSMo [1992]2000. Original rule filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed Dec. 10, 1979, effective April 11, 1980. Amended: Filed Jan. 5, 1988, effective April 28, 1988. Amended: Filed July 1, 2005.

PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars (\$500) in the aggregate.

PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars (\$500) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: A public hearing on this proposed amendment will begin at 9:00 a.m., September 29, 2005. The public hearing will be held at the Double Tree Hotel, Salon A, 1301 Wyandotte, Kansas City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person. Written request to be heard should be submitted at least seven (7) days prior to the hearing to Director, Missouri Department of Natural Resources' Air Pollution Control Program, 205 Jefferson Street, PO Box 176, Jefferson City, MO 65102-0176, (573) 751-4817. Interested persons, whether or not heard, may submit a written statement of their views until 5:00 p.m., October 6, 2005. Written comments shall be sent to Chief, Planning Section, Missouri Department of Natural Resources' Air Pollution Control Program, 205 Jefferson Street, PO Box 176, Jefferson City, MO 65102-0176.

**Title 10 - DEPARTMENT OF
NATURAL RESOURCES**

Division 10 - Air Conservation Commission

**Chapter 6 – Air Quality Standards, Definitions, Sampling and Reference Methods
and Air Pollution Control Regulations for the Entire State of Missouri**

PROPOSED AMENDMENT

10 CSR 10-6.040 Reference Methods. The commission proposes to amend sections (2), (4), (5) and (9). If the commission adopts this rule action, it will be submitted to the U.S. Environmental Protection Agency to replace the current rule in the Missouri State Implementation Plan. The evidence supporting the need for this proposed rulemaking is available for viewing at the Missouri Department of Natural Resources' Air Pollution Control Program at the address and phone number listed in the Notice of Public Hearing at the end of this rule. More information concerning this rulemaking can be found at the Missouri Department of Natural Resources' Environmental Regulatory Agenda website, www.dnr.mo.gov/regs/regagenda.htm.

PURPOSE: This rule provides reference methods for determining data and information necessary for the enforcement of air pollution control regulations throughout Missouri. This rule amendment updates adopted approved Federal reference methods and adopts new approved Federal reference methods for the new and revised 8-Hour Ozone and Particulate Matter 2.5 Micron Ambient Air Quality Standards mandated under the Clean Air Act Amendment of 1997. This rule amendment also removes an obsolete Federal reference method and updates several Federal reference methods titles. These reference methods are for determining data and information necessary for the enforcement of air pollution control regulations throughout Missouri. The evidence supporting the need for this proposed rulemaking, per section 536.016 RSMo, is available for viewing at the Missouri Department of Natural Resources' Air Pollution Control Program at the address and phone number listed in the Notice of Public Hearing at the end of this rule.

PURPOSE: This rule provides reference methods for determining data and information necessary for the enforcement of air pollution control regulations throughout Missouri.

- (1) The percent sulfur in solid fuels shall be determined as specified by American Society of Testing and Materials (ASTM) Method D(3177-75) *Total Sulfur in the Analysis Sample of Coal and Coke*.
- (2) The heat content [or] higher heating value (HHV) of solid fuels shall be determined by use of the Adiabatic Bomb Calorimeter as specified by ASTM Method D(2015-66) *Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter*.
- (3) The heat content or HHV of liquid hydrocarbons shall be determined as specified by ASTM Method D(240-64) *Heat of Combustion of Liquid Hydrocarbon by Bomb Calorimeter*.

- (4) The methods for determining the concentrations of the following air contaminants in the ambient air shall be as specified in 40 CFR part 50, Appendices A–[K]N or equivalent methods as specified in 40 CFR part 53:
- (A) The concentration of sulfur dioxide shall be determined as specified in 40 CFR part 50, Appendix A—*Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method)* or an equivalent method as approved by 40 CFR part 53;
 - (B) The concentration of total suspended particulate shall be determined as specified in 40 CFR part 50, Appendix B—*Reference Method for the Determination of Suspended Particulates in the Atmosphere (High Volume Method)*;
 - (C) The concentration of carbon monoxide in the ambient air shall be determined as specified in 40 CFR part 50, Appendix C—*Measurement Principle and Calibration Procedure for the Continuous Measurement of Carbon Monoxide in the Atmosphere (Non-Dispersive Infrared Spectrometry)* or equivalent methods as approved by 40 CFR part 53;
 - (D) The concentration of photochemical oxidants (ozone) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix D—*Measurement Principle and Calibration Procedure for the Measurement of Ozone in the Atmosphere* or equivalent methods as approved by 40 CFR part 53;
 - (E) ~~[The concentration of hydrocarbons in the ambient air shall be determined as specified by 40 CFR part 50, Appendix E—*Reference Method for the Determination of Hydrocarbons Corrected for Methane* or equivalent method as approved in 40 CFR part 53;]~~ **Reserved**
 - (F) The concentration of nitrogen dioxide in the ambient air shall be determined as specified in 40 CFR part 50, Appendix F—*Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase Chemiluminescence)* or equivalent methods as approved by 40 CFR part 53;
 - (G) The concentration of lead in the ambient air shall be determined as specified in 40 CFR part 50, Appendix G—*Reference Method for the Determination of Lead in Suspended Particulate Matter Collected From Ambient Air* or equivalent methods as approved by 40 CFR part 53;
 - (H) Compliance with the **one (1) hour** ozone standard shall be determined as specified in 40 CFR part 50, Appendix H—*Interpretation of the National Ambient Air Quality Standards for Ozone*;
 - (I) ~~Reserved~~ **Compliance with the eight (8) hour ozone standards shall be determined as specified in 40 CFR part 50, Appendix I—*Interpretation of the 8-Hour Primary and Secondary National Ambient Air Quality Standards for Ozone*;**
 - (J) The concentration of particulate matter 10 micron (PM₁₀) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix J—*Reference Method for the Determination of Particulate Matter as PM₁₀ in the Atmosphere*, or an equivalent method as approved in 40 CFR part 53; ~~and~~
 - (K) Compliance with **particulate matter 10** (PM₁₀) standards shall be determined as specified in 40 CFR part 50, Appendix K—*Interpretation of the National Ambient Air Quality Standards for Particulate Matter*[-];
 - (L) **The concentration of particulate matter 2.5 micron (PM_{2.5}) in the ambient air shall be determined as specified in 40 CFR part 50, Appendix L—*Reference***

Method for the Determination of Fine Particulate Matter as PM_{2.5} in the Atmosphere, or an equivalent method as approved in 40 CFR part 53; and
(M) Compliance with particulate matter 2.5 (PM_{2.5}) standards shall be determined as specified in 40 CFR part 50, Appendix N—*Interpretation of the National Ambient Air Quality Standards for Particulate Matter.*

5. The concentration of hydrogen sulfide (H₂S) in the ambient air shall be determined by scrubbing all sulfur dioxide (SO₂) present in the sample and then converting each molecule of H₂S to SO₂ with a thermal converter so that the resulting SO₂ is detected by an analyzer as specified in 40 CFR part 50, Appendix A—*Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method)* or an equivalent method approved by 40 CFR part 53, in which case the calibration gas used must be National Institute of Standards and Technology traceable H₂S gas.

(6) The concentration of sulfuric acid mist in the ambient air shall be determined as specified in the *Compendium Method IO-4-2, Determination of Reactive Acidic and Basic Gases and Strong Acidity of Fine-Particles (<2.5µm)*, Center for Environmental Research Information, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268, EPA/625/R-96/010a.

(A) The concentration of total sulfur shall be determined as specified in section (4) of this rule by sampling for sulfur dioxide without removing other sulfur compound interferences.

(B) The concentration of sulfur dioxide shall be determined as specified by section (4) of this rule.

(C) The concentration of hydrogen sulfide shall be determined as specified by section (5) of this rule.

(7) The percent sulfur in liquid hydrocarbons shall be determined as specified by ASTM D(2622-98), *Sulfur in Petroleum Products by X-Ray Fluorescence Spectrometry*.

(8) The amount of solvent present in earth filters and distillation wastes shall be determined as specified by ASTM Method D(322-67), *Standard Test Method for Gasoline Diluent in Used Gasoline Engine Oils by Distillation*.

(9) The latest effective date of any 40 CFR part 50, Appendices A–[K]N and equivalent methods as specified in 40 CFR part 53 shall be as designated in 10 CSR 10-6.070 New Source Performance Regulations for 40 CFR part 60.

AUTHORITY: section 643.050, RSMo Supp. [1999]2000. Original rule filed Aug. 16, 1977, effective Feb. 11, 1978. Amended: Filed Sept. 14, 1978, effective April 12, 1979. Amended: Filed Dec. 10, 1979, effective April 11, 1980. Amended: Filed March 13, 1980, effective Sept. 12, 1980. Amended: Filed Feb. 14, 1984, effective July 12, 1984. Amended: Filed Jan. 5, 1988, effective April 28, 1988. Amended: Filed Oct. 13, 2000, effective July 30, 2001. Amended: Filed July 1, 2005.

PUBLIC COST: This proposed amendment will not cost state agencies or political subdivisions more than five hundred dollars (\$500) in the aggregate.

PRIVATE COST: This proposed amendment will not cost private entities more than five hundred dollars (\$500) in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: A public hearing on this proposed amendment will begin at 9:00 a.m., September 29, 2005. The public hearing will be held at the Double Tree Hotel, Salon A, 1301 Wyandotte, Kansas City, Missouri. Opportunity to be heard at the hearing shall be afforded any interested person. Written request to be heard should be submitted at least seven (7) days prior to the hearing to Director, Missouri Department of Natural Resources' Air Pollution Control Program, 205 Jefferson Street, PO Box 176, Jefferson City, MO 65102-0176, (573) 751-4817. Interested persons, whether or not heard, may submit a written statement of their views until 5:00 p.m., October 6, 2005. Written comments shall be sent to Chief, Planning Section, Missouri Department of Natural Resources' Air Pollution Control Program, 205 Jefferson Street, PO Box 176, Jefferson City, MO 65102-0176.

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3.4.7 APPENDIX G

June 30, 2005 Public Hearing Notice
and Certification of Publication of the Notice

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AFFIDAVIT OF PUBLICATION

THE KANSAS CITY STAR COMPANY, publishers of THE KANSAS CITY STAR, a newspaper published in the City of Kansas City, County of Jackson, State of Missouri, confirms that the notice and/or advertisement of

MO DEPT OF NATURAL RESOURCES

PO BOX 176
JEFFERSON CITY MO 65102
23717156

7518430

a true copy of which is hereto attached, was duly published in the above said newspaper

FOR THE PERIOD OF: 1 Day (s)

COMMENCING: May 29,2005

ENDING: May 29,2005

STAR EDITION (S): 5/29/

STAR PAPER (S): 254

VOLUME: #125

Subscribed and sworn to before me, this Sunday, 29 May, 2005 .

I certify that I was duly qualified as a Notary Public for the State of Missouri, commissioned in Jackson County, Missouri. My commission expires August 18, 2006.

Laura S. Keeling

Laura S. Keeling, Notary

CB

**MISSOURI AIR CONSERVATION COMMISSION
WILL HOLD PUBLIC HEARINGS**

JEFFERSON CITY, MO -- The Missouri Air Conservation Commission will hold a public hearing on Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Road Laws, Missouri State Implementation Plan 002 Run Herculaneum, Application to Consent Judgement, and Missouri State Implementation Plan Update to Kansas City Maintenance Plan for Control of Ozone on Thursday, June 30, 2005. The Public Hearing will begin at 10:00 a.m. at the Governor Office Building, Room 402, 202 Missouri Street, Jefferson City, Missouri. The Commission will hear testimony related to the following rule actions:

• 30 CSR 10-3.388 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Road Laws

This proposed amendment will amend the state Kansas City transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

• 30 CSR 10-5.480 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Road Laws

This proposed amendment will amend the state St. Louis transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

• Missouri State Implementation Plan-Do Run Herculaneum, Modification to Consent Judgement

On December 7, 2000, the Missouri Air Conservation Commission adopted a revision to the 1990 state implementation plan for the control of lead emissions at the Doe Run Herculaneum smelter. The plan included a Consent Judgement that set emission control construction deadlines, process throughout emission, outlined a set of contingency measures, and established emission penalties with potential production cuts. The Judgement was filed in Iron County Court and signed on January 3, 2001, and the plan was submitted to EPA on January 9, 2001, and formally approved on April 16, 2001.

The emission control strategy involved enclosure of the melt processes at the plant, and the installation of building ventilation systems. The ventilation ducts are filtered by state-of-the-art, high efficiency submicron filtration systems prior to release to the atmosphere. Capital costs were approximately \$12,000,000. All of the emission control projects were completed by the deadline established in the Consent Judgement July 31, 2002.

The Consent Judgement required the hoodhouses to meet a 0.025 grain per dry standard cubic foot performance standard, and it included language requiring the use of Teflon membrane bag house. Doe Run would like to replace these Teflon membrane bags with soundboard plated bags that have an approximately twice the filter area. The Department of Natural Resources Air Pollution Control Program has been assured that the replacement bags will perform properly, and Doe Run will be required to conduct testing to demonstrate proper performance. The Consent Judgement must be modified to accommodate this change. The Consent Judgement has provisions for modifications that satisfy require the parties to agree on the modification.

• Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone

This proposed update to the 2002 Kansas City Maintenance Plan for Control of Ozone incorporates Quality Standards and associated control triggers, information regarding historical background and monitoring data/locations has also been updated. This revision will be in place until a new 8-hour ozone maintenance plan can be developed to meet the U.S. Environmental Protection Agency June 15, 2007 deadline.

The above documents will be available for review at the following locations: Missouri Department of Natural Resources, Air Pollution Control Program, 225 Jefferson St., Jefferson City, MO 65102; Kansas City Regional Office, 500 NE Coffey Road, Lee's Summit, MO 64582-2202; Northwest Regional Office, 1709 Woodcock Drive, Macon, MO 64602-2112; Southeast Regional Office, 2125 N. Westwood Boulevard, Pender Park, MO 64070; St. Louis Regional Office, 1945 S. Lindberg, Suite 130, St. Louis, MO 63114-2082; Southwest Regional Office, 2040 W. Woodland, Springfield, MO 65703-4202.

Persons with disabilities requiring special services or accommodations to attend the meeting can make arrangements by calling the Department directly at (513) 751-7843. The documents can be reviewed at (513) 751-7843, or by writing two weeks in advance of the meeting to: Missouri Department of Natural Resources, Air Conservation Commission Secretary, P.O. Box 176, Jefferson City, MO 65102. Hearing impaired persons may contact the program through Relay Missouri, (800) 735-2895.

The commission holds public hearings under the provisions of chapter 84, RSMo. Citizens wishing to speak at the public hearing should notify the secretary to the Missouri Air Conservation Commission, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or telephone (513) 751-7843. The department requests persons intending to give verbal presentations also provide a written copy of their testimony to the commission secretary at the time of the public hearing. The department also will accept written comments for the record under 3 p.m. on July 7, 2005. Please send two copies of written comments to: chief, operations section, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Rule proposals considered at this hearing may be adopted by the Missouri Air Conservation Commission as provided for under authority of 84.010, RSMo. For more information or a complete meeting agenda, including rules being presented for adoption, contact the Missouri Department of Natural Resources Air Pollution Control Program at (513) 751-4297.

RECEIVED
 MISSOURI AIR CONSERVATION COMMISSION
 JEFFERSON CITY, MO

AFFIDAVIT OF PUBLICATION

STATE OF MISSOURI) ss.
 County of Boone)

I, LUKE FLETCHER, being duly sworn according to law, state that I am one of the publishers of the Columbia Daily Tribune, a daily newspaper of general circulation in the County of Boone, State of Missouri, where located; which newspaper has been admitted to the Post Office as periodical class matter in the City of Columbia, Missouri, the city of publication; which newspaper has been published regularly and consecutively for a period of three years and has a list of bona fide subscribers, voluntarily engaged as such, who have paid or agreed to pay a stated price for a subscription for a definite period of time, and that such newspaper has complied with the provisions of Section 493.050, Revised Statutes of Missouri 2000, and Section 59.310, Revised Statutes of Missouri 2000. The affixed notice appeared in said newspaper on the following consecutive issues:

- 1st Insertion, May 29, 2005
- 2nd Insertion, _____
- 3rd Insertion, _____
- 4th Insertion, _____
- 5th Insertion, _____
- 6th Insertion, _____
- 7th Insertion, _____
- 8th Insertion, _____
- 9th Insertion, _____
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- 21st Insertion, _____
- 22nd Insertion, _____

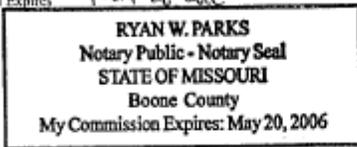
PRINTERS FEE 106.45

By [Signature]

Subscribed and sworn to before me this 31 day of May, 2005

[Signature]
 Notary Public

My Commission Expires May 20 2006



CR

MISSOURI AIR CONSERVATION COMMISSION WILL HOLD PUBLIC HEARING

JEFFERSON CITY, MO -- The Missouri Air Conservation Commission will hold a public hearing on Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws, Missouri State Implementation Plan-Doe Run Herculaneum, Modification to Consent Judgement, and Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone on Thursday, June 30, 2005. The Public Hearing will begin at 9 a.m. at the Governor Office Building, Room 450, 200 Madison Street, Jefferson City, Missouri. The commission will hear testimony related to the following rule actions:

* 10 CSR 10-2.390 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

This proposed amendment will amend the state Kansas City transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

* 10 CSR 10-5.480 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

This proposed amendment will amend the state St. Louis transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

* Missouri State Implementation Plan-Doe Run Herculaneum, Modification to Consent Judgement

On December 7, 2000, the Missouri Air Conservation Commission adopted a revision to the state implementation plan for the control of lead emissions at the Doe Run Herculaneum smelter. The plan included a Consent Judgement that set emission control construction deadline...

measures, and established stipulated penalties with potential production cuts. The Judgement

was filed in Iron County Court and signed on January 5, 2001, and the plan was submitted to EPA on January 9, 2001, and formally approved on April 16, 2002.

The emission control strategy involved enclosure of the main processes at the plant, and the installation of building ventilation systems. The ventilation gases are filtered by state-of-the-art, high-efficiency baghouse filtration systems prior to release to the atmosphere. Capital costs were approximately \$12,000,000. All of the emission control projects were completed by the deadline established in the Consent Judgement (July 31, 2002).

The Consent Judgement required the baghouses to meet a 0.022 grain per dry standard cubic foot performance standard, and it included language requiring the use of "Teflon membrane bags. Doe Run would like to replace these "Teflon membrane bags" with spun-bond pleated bags that have approximately twice the filter area. The Department of Natural Resources' Air Pollution Control Program has been assured that the replacement bags will perform properly, and Doe Run will be required to conduct testing to demonstrate proper performance. The Consent Judgement must be modified to accommodate this change. The Consent Judgement has provisions for modification that simply require the parties to agree on the modification.

***Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone**

This proposed update to the 2002 Kansas City Maintenance Plan for Control of Ozone incorporates references to the 8-hour National Ambient Air Quality Standards and associated control triggers. Information regarding historical background and monitoring data/locations has also been updated. This revision will be in place until a new 8-hour ozone maintenance plan can be developed to meet the U.S. Environmental Protection Agency June 15, 2007 deadline.

The above documents will be available for review at the following locations: Missouri Department of Natural Resources, Air Pollution Control Program, 225 Jefferson St., Jefferson City, (573) 751-4317; Kansas City Regional Office, 500 NE Colbern Road, Lee's Summit, (816) 622-7000; Northeast Regional Office, 1709 Prospect Drive, Macon, (660) 385-2129; Southeast Regional Office, 2155 N. Westwood Boulevard, Poplar Bluff, (573) 840-9750; St. Louis Regional Office, 7545 S. Lindberg, Suite 210, St. Louis, (314) 416-2960; Southwest Regional Office, 2040 W. Woodland, Springfield, (417) 891-4300.

Persons with disabilities requiring

to attend the meeting can make arrangements by calling the department directly at (573) 751-7840, the department's toll free number at (800) 334-6946, or by writing two weeks in advance of the meeting to: Missouri Department of Natural Resources, Air Conservation Commission Secretary, P.O. Box 176, Jefferson City, MO 65102. Hearing impaired persons may contact the program through Relay Missouri, (800) 735-2966.

The commission holds public hearings under the provisions of chapter 643, RSMo. Citizens wishing to speak at the public hearing should notify the secretary to the Missouri Air Conservation Commission, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or telephone (573) 751-7840. The department requests persons intending to give verbal presentations also provide a written copy of their testimony to the commission secretary at the time of the public hearing. The department also will accept written comments for the record until 5 p.m. on July 7, 2005; please send two copies of written comments to Chief, Operations Section, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176.

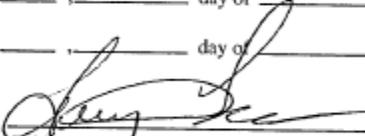
Rule proposals considered at this hearing may be adopted by the Missouri Air Conservation Commission as provided for under authority of 643.050, RSMo. For more information or a complete meeting agenda, including rules being presented for adoption, contact the Missouri Department of Natural Resources' Air Pollution Control Program at (573) 751-4817.
INSERTION DATE: May 29, 2005.

RECEIVED
JUN 19 4:10:51
MISSOURI
COUNTY OF ADAIR

AFFIDAVIT OF PUBLICATION
STATE OF MISSOURI
COUNTY OF ADAIR

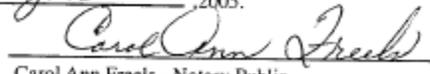
I, Larry W. Freels, being duly sworn, according to law, state that I am the Publisher of Kirksville Daily Express, a daily newspaper of general circulation in the County of Adair, State of Missouri, where located; which newspaper has been admitted to the Post Office as periodical class matter in the City of Kirksville, Missouri, the city of publication; which newspaper has been published regularly and consecutively for a period of three years and has a list of bona fide subscribers, voluntarily engaged as such who have paid or agreed to pay a state price for a subscription for a definite period of time, and that such newspaper has complied with the provisions of Section 493.050, Revised Statutes of Missouri 2000, and Section 59.310, Revised Statutes of Missouri 2000. The affixed notice appeared in said newspaper in the following consecutive issues.

First Insertion Vol. 104 No. 122 , 24th day of May , 2005
Second Insertion Vol. _____ No. _____ , _____ day of _____ , 2005
Third Insertion Vol. _____ No. _____ , _____ day of _____ , 2005
Fourth Insertion Vol. _____ No. _____ , _____ day of _____ , 2005



Publisher Larry W. Freels

Subscribed and sworn to before me on this 8th day of June , 2005.



Carol Ann Freels - Notary Public
My Commission Expires February 21, 2007.

See reference of legal on page 2.

Publication Fee \$ 333.25

Received payment _____

18

MISSOURI AIR CONSERVATION COMMISSION
WILL HOLD PUBLIC HEARING

JEFFERSON CITY, MO -- The Missouri Air Conservation Commission will hold a public hearing on Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws, Missouri State Implementation Plan-Doe Run Herculaneum, Modification to Consent Judgement, and Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone on Thursday, June 30, 2005. The Public Hearing will begin at 9 a.m. at the Governor Office Building, Room 450, 200 Madison Street, Jefferson City, Missouri. The commission will hear testimony related to the following rule actions.

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This proposed amendment will amend the state Kansas City transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

- 10 CSR 10-5.480 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

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- Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone

This proposed update to the Kansas City Maintenance Plan for Control of Ozone incorporates references to the 8-hour National Ambient Air Quality Standards and associated control triggers. Information regarding historical background and monitoring data/locations has also been updated. This revision will be in place until a new 8-hour ozone maintenance plan can be developed to meet the U.S. Environmental Protection Agency June 15, 2007 deadline.

The above documents will be available for review at the following locations: Missouri Department of Natural Resources, Air Pollution Control Program, 205 Jefferson St., Jefferson City, (573) 751-4817; Kansas City Regional Office, 500 NE Colbern Road, Lee's Summit, (816) 622-7000; Northeast Regional Office, 1709 Prospect Drive, Macon, (860) 385-2129; Southeast Regional Office, 2155 N. Westwood Boulevard, Poplar Bluff (573) 840-9750; St. Louis Regional Office, 7545 S. Lindberg, Suite 210 St. Louis, (314) 416-2960; Southwest Regional Office, 2040 W Woodland, Springfield, (417) 891-4300.

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Rule proposals considered at this hearing may be adopted by the Missouri Air Conservation Commission as provided for under authority c 643.050, RSMo. For more information or a complete meeting agenda including rules being presented for adoption, contact the Missouri Department of Natural Resources' Air Pollution Control Program at (573) 751-4817.

May 21, 2005

(D)

AFFIDAVIT OF PUBLICATION

St. Joseph News-Press, 825 Edmond St., St. Joseph, MO 64501

Account: 12275
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Ad Description: JUNE PUBLIC HEARINGS

Mo Dept of Natural
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Jefferson City, MO 65102-0176

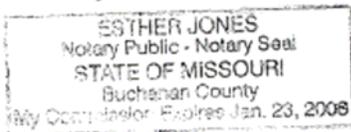
County of Buchanan
State of Missouri

I, Deborah Lemen, being duly sworn according to law, state that I am the Classified Advertising Manager of the St. Joseph News-Press, a daily newspaper of general circulation in the county of Buchanan, where located; which has been admitted to the Post Office as second class matter in the city of St. Joseph, the city of publication; consecutively for a period of three years and has a list of bona fide subscribers voluntarily engaged to pay a stated price for a subscription for a definite period of time, and that such newspaper has complied with the provisions of Section 493.050 Revised Statutes of Missouri, 1949. The affixed Notice appeared in said newspaper on the following date:

Run Dates: 5/29/2005
Space: 3x10
Total: \$789.60

(Signed) Deborah Lemen

Subscribed and sworn before me this 15th day of June 20 05
Esther Jones Notary Public



(Published in the St. Joseph News-Press Sunday, 05/29/05)

MISSOURI AIR CONSERVATION COMMISSION
WILL HOLD PUBLIC HEARING

JEFFERSON CITY, MO - The Missouri Air Conservation Commission will hold a public hearing on Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws, Missouri State Implementation Plan-Doe Run Herculaneum, Modification to Consent Judgement, and Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone on Thursday, June 30, 2005. The Public Hearing will begin at 9 a.m. at the Governor Office Building, Room 450, 200 Madison Street, Jefferson City, Missouri. The commission will hear testimony related to the following rule actions.

- 10 CSR 10-2-390 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

This proposed amendment will amend the state Kansas City transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

- 10 CSR 10-5-480 (amendment) Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws

This proposed amendment will amend the state St. Louis transportation conformity rule to bring it into compliance with the recently amended federal transportation conformity rule.

- Missouri State Implementation Plan-Doe Run Herculaneum, Modification to Consent Judgement

On December 7, 2000, the Missouri Air Conservation Commission adopted a revision to the state implementation plan for the control of lead emissions at the Doe Run Herculaneum amalter. The plan included a Consent Judgement that set emission control construction deadlines, process throughput limitations, outlined a set of contingency measures, and established stipulated penalties with potential production cuts. The Judgement was filed in Iron County Court and signed on January 5, 2001, and the plan was submitted to EPA on January 9, 2001, and formally approved on April 16, 2002.

The emission control strategy involved enclosure of the main processes at the plant, and the installation of building ventilation systems. The ventilation gases are filtered by state-of-the-art, high-efficiency baghouse filtration systems prior to release to the atmosphere. Capital costs were approximately \$12,000,000. All of the emission control projects were completed by the deadline established in the Consent Judgement (July 31, 2002).

The Consent Judgement required the baghouses to meet a 0.022 grain per dry standard cubic foot performance standard, and it included language requiring the use of "Teflon membrane bags. Doe Run would like to replace these "Teflon membrane bags" with spun-bond plated bags that have approximately twice the filter area. The Department of Natural Resources' Air Pollution Control Program has been assured that the replacement bags will perform properly, and Doe Run will be required to conduct testing to demonstrate proper performance. The Consent Judgement must be modified to accommodate this change. The Consent Judgement has provisions for modification that simply require the parties to agree on the modification.

- Missouri State Implementation Plan-Update to Kansas City Maintenance Plan for Control of Ozone

This proposed update to the 2002 Kansas City Maintenance Plan for Control of Ozone incorporates references to the 8-hour National Ambient Air Quality Standards and associated control triggers. Information regarding historical background and monitoring data/locations has also been updated. This revision will be in place until a new 8-hour ozone maintenance plan can be developed to meet the U.S. Environmental Protection Agency June 15, 2007 deadline.

The above documents will be available for review at the following locations: Missouri Department of Natural Resources, Air Pollution Control Program, 205 Jefferson St., Jefferson City, (573) 751-4817; Kansas City Regional Office, 500 NE Colbern Road, Lee's Summit, (816) 622-7050; Northeast Regional Office, 1709 Prospect Drive, Macon, (660) 385-2129; Southeast Regional Office, 2155 N. Westwood Boulevard, Poplar Bluff, (573) 840-9750; St. Louis Regional Office, 7545 S. Lindberg, Suite 210, St. Louis, (314) 416-2960; Southwest Regional Office, 2040 W. Woodland, Springfield, (417) 891-4300.

Persons with disabilities requiring special services or accommodations to attend the meeting can make arrangements by calling the department directly at (573) 751-7540, the department's toll free number at (800) 334-6946, or by writing two weeks in advance of the meeting to: Missouri Department of Natural Resources, Air Conservation Commission Secretary, P.O. Box 176, Jefferson City, MO 65102. Hearing impaired persons may contact the program through Relay Missouri, (800) 735-2966.

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2005 Kansas City Ozone Maintenance Plan

To speak at the public hearing should notify the secretary to the Missouri Air Conservation Commission, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or telephone (573) 751-7840. The department requests persons intending to give verbal presentations also provide a written copy of their testimony to the commission secretary at the time of the public hearing. The department also will accept written comments for the record until 5 p.m. on July 7, 2005; please send two copies of written comments to Chief, Operations Section, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Rule proposals considered at this hearing may be adopted by the Missouri Air Conservation Commission as provided for under authority of 643.050, RSMo. For more information or a complete meeting agenda, including rules being presented for adoption, contact the Missouri Department of Natural Resources' Air Pollution Control Program at (573) 751-4617.

AFFIDAVIT OF PUBLICATION

STATE OF MISSOURI)
COUNTY OF BUTLER) SS.

I, **Don Schrieber**, being duly sworn according to law, state that I am **PUBLISHER** of the **DAILY AMERICAN REPUBLIC**, a daily newspaper of general circulation in the Countie of Butler, Ripley, Carter, Wayne, Stoddard, New Madrid and Pemiscot; which newspaper has been admitted to the Post Office as second class matter in City of Poplar Bluff, Missouri, the city of publication; which newspaper has been published regularly and consecutively for a period of three years and has a list of bona fide subscribers voluntarily engaged as such who have paid or agreed to pay stated price for a subscription for a definite period of time and that such newspaper has complied with the provisions of Section 493.050, Revised Statutes of Missouri 1969. The affixed notice appeared in said newspaper in the following consecutive issues.

1st Insertion	Vol. <u>137</u>No. <u>117</u> <u>27</u> day of <u>May</u> , 20 <u>05</u>
2nd Insertion	Vol.No.day of20
3rd Insertion	Vol.No.day of20
4th Insertion	Vol.No.day of20
5th Insertion	Vol.No.day of20
6th Insertion	Vol.No.day of20
7th Insertion	Vol.No.day of20
8th Insertion	Vol.No.day of20
9th Insertion	Vol.No.day of20
10th Insertion	Vol.No.day of20

Don Schrieber
Don Schrieber, PUBLISHER

Subscribed and sworn to before me this 3 day of June
20 05.

Christina L. Pierce, Notary Public
Butler County, State of Missouri
My Commission Expires 6/26/2006

Christina L. Pierce
Christina L. Pierce, NOTARY PUBLIC

My commission expires 6/26/2006
Publication Fee \$ 257.73

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The commission holds public hearings under the provisions of chapter 643, RSMo. Citizens wishing to speak at the public hearing should notify the secretary to the Missouri Air Conservation Commission, Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, Missouri 65102-0176, or telephone (573) 751-7840. The department requests persons intending to give verbal presentations also provide a written copy of their testimony to the commission secretary at the time of the public hearing. The department also will accept written comments for the record until 5 p.m. on July 7, 2005; please send two copies of written comments to Chief, Operations Section, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176.

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5/27, 2005

3.4.8

APPENDIX H

June 30, 2005 Public Hearing Comments and Responses.

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**COMMENTS AND RESPONSES ON
PROPOSED REVISIONS TO THE
MISSOURI STATE IMPLEMENTATION PLAN –
UPDATE TO KANSAS CITY MAINTENACE PLAN FOR CONTROL OF OZONE
AND
RECOMMENDATION FOR ADOPTION**

On June 30, 2005, the Missouri Air Conservation Commission held a public hearing concerning incorporating references to the new eight hour ozone standard to the 2002 Kansas City Maintenance Plan for the Control of Ozone. The following is a summary of comments received and the Missouri Department of Natural Resources' corresponding responses. Any changes to the proposed state implementation plan are identified in the responses to the comments.

The Missouri Department of Natural Resources' Air Pollution Control Program recommends the commission adopt the plan action as amended. If the commission adopts this plan action, it will be the department's intention to submit this plan action to the U.S. Environmental Protection Agency to replace the current plan that is in the Missouri State Implementation Plan.

SUMMARY OF COMMENTS: The department's Air Pollution Control Program received a total of four (4) comments from the Mid-America Regional Council (MARC) and the U.S. Environmental Protection Agency (EPA) on the proposed State Implementation Plan (SIP) revisions.

COMMENT: MARC commented that they are in support of this SIP revision in order to address any possible violations of the new eight-hour ozone standard.

RESPONSE: The department's Air Pollution Control Program appreciates the support for this SIP revision. No changes were made as a result of this comment.

COMMENT: EPA commented that the abbreviation KCMA is used inconsistently in the document to refer to both the Kansas City Metropolitan Area and the Kansas City Maintenance Area. In order to assure that confusion does not arise, the EPA recommends that the abbreviation be used to refer to only one of the two possibilities.

RESPONSE AND EXPLANATION OF CHANGE: Using the same abbreviation for two different phrases is confusing and inconsistent, therefore references throughout the document have been changed to reflect the abbreviation's usage in representing only the phrase Kansas City Maintenance Area.

COMMENT: EPA commented that the Kansas City Maintenance Plan mentions both transportation conformity and mobile source emissions budgets. In light of the fact that transportation conformity is no longer required in the Kansas City area, EPA suggests adding

additional explanation for continuing to include the mobile source emissions budget in the document.

RESPONSE AND EXPLANATION OF CHANGE: The department's Air Pollution Control Program has added clarification as to the continued inclusion of the mobile source emissions budget in the document, stating that the mobile vehicle emissions budget has been kept in the the Kansas City Maintenance Plan for emissions inventory and historical reference purposes.

COMMENT: EPA commented that the Kansas City Maintenance Plan does not offer a specific time period for the implementation of contingency measures.

RESPONSE AND EXPLANATION OF CHANGE: The department's Air Pollution Control Program has modified the discussion of contingency measure adoption and implementation to include a specific time period for completion of these actions.

3.4.9 **APPENDIX I**

MACC Adoption Certification

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Pursuant to 643.055 RSMo, the Missouri Air Conservation Commission has determined that this action is needed to have a U.S. Environmental Protection Agency approved State Implementation Plan.

Update to Kansas City Maintenance Plan for Control of Ozone is hereby **ADOPTED** by the Missouri Air Conservation Commission this 21st day of July 2005.

Michael R. Foreman, Chairman

Dennis [Signature], Member

Mark C. Fry, Member

[Signature], Member

Jack C. Baker, Member

_____, Member

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3.4.10

APPENDIX J

KS and MO Emissions from New Population and Employment Forecasts.

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**Kansas City Regional Emissions Inventory
August 26, 2002**

Note: Area and on-road mobile source estimates for 2012 are based on new draft population and employment forecasts approved by the MARC Technical Forecast Committee on July 11, 2002. Forecasts have not been adopted by the MARC Board.

	VOC emissions						NOx emissions						CO emissions					
	1999			2012			1999			2012			1999			2012		
	KS	MO	REG	KS	MO	REG	KS	MO	REG	KS	MO	REG	KS	MO	REG	KS	MO	REG
Area	46.8	43.1	89.9	57.9	54.3	112.1	10.3	13.0	23.3	12.2	13.8	26.0	19.6	5.3	24.9	23.2	5.5	28.7
Point	12.3	15.9	28.3	14.8	24.6	39.4	31.9	107.2	139.1	39.0	148.2	187.2	4.6	9.7	14.3	5.3	14.0	19.3
On-road mobile	92.3		92.3	45.5		45.5	152.9		152.9	74.2		74.2	1092.4		1092.4	639.4		639.4
Off-road mobile	21.4	21.6	43.0	11.8	12.9	24.7	54.0	54.9	108.9	40.5	45.5	86.0	288.0	286.4	574.4	357.3	354.5	711.8
TOTAL	253.6			221.7			424.2			373.5			1708.0			1399.3		

**Kansas City Regional Emissions Inventory
August 26, 2002**

Note: Area and on-road mobile source estimates for 2012 are based on new draft population and employment forecasts approved by the MARC Technical Forecast Committee on July 11, 2002. Forecasts have not been adopted by the MARC Board.

TABLE I - VOC Emissions

	1999		2012		% change 1999-2012
	tons/OSD	% of total	tons/OSD	% of total	
Area	89.9	35.5%	112.1	50.6%	24.7%
Point	28.3	11.1%	39.4	17.8%	39.5%
On-road mobile	92.3	36.4%	45.5	20.5%	-50.8%
Off-road mobile	43.0	17.0%	24.7	11.1%	-42.7%
TOTAL	253.6		221.7		-12.6%

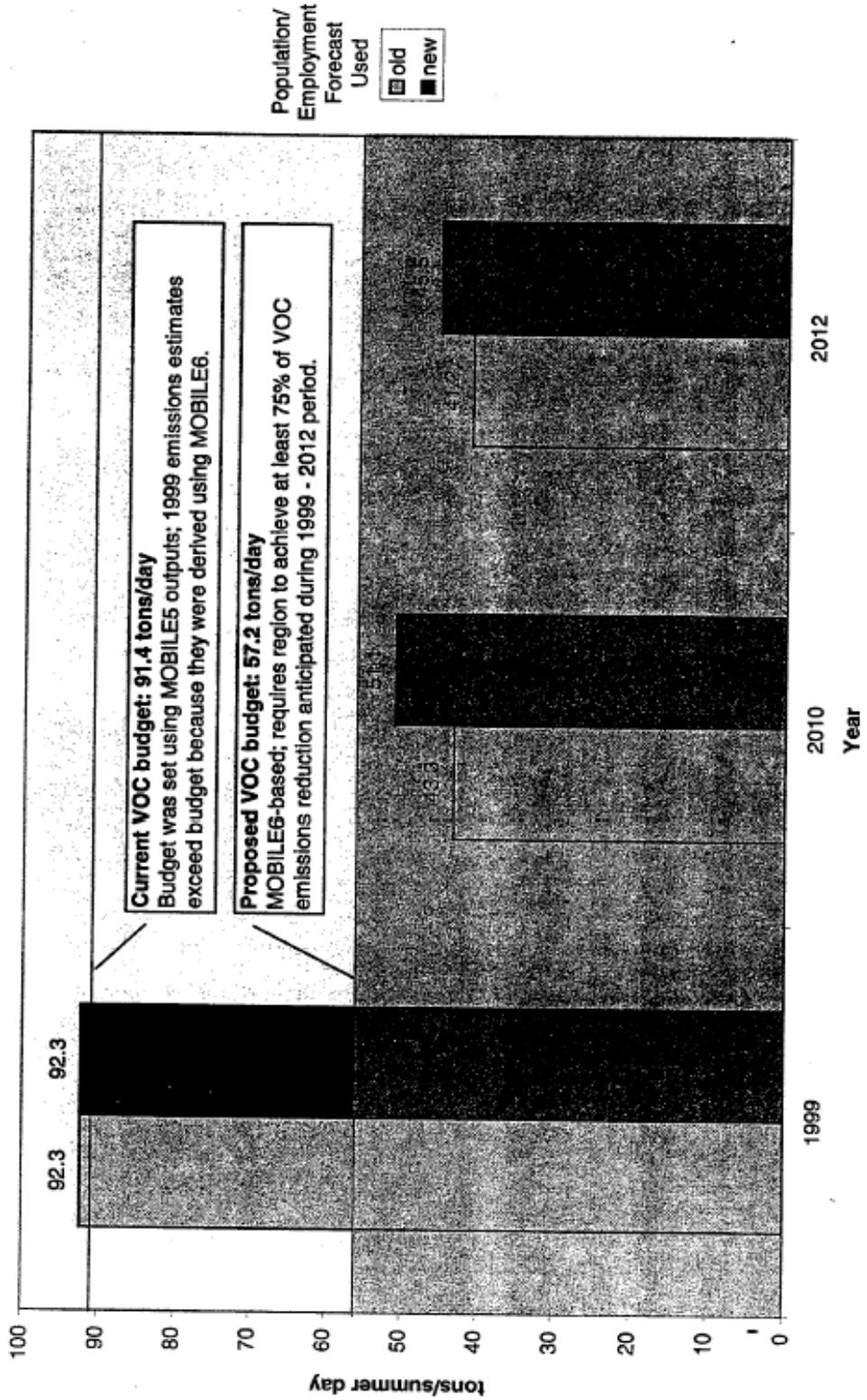
TABLE II - NOx Emissions

	1999		2012		% change 1999-2012
	tons/OSD	% of total	tons/OSD	% of total	
Area	23.3	5.5%	26.0	7.0%	11.7%
Point	139.1	32.8%	187.2	50.1%	34.5%
On-road mobile	152.9	36.0%	74.2	19.9%	-51.4%
Off-road mobile	108.9	25.7%	86.0	23.0%	-21.0%
TOTAL	424.2		373.5		-12.0%

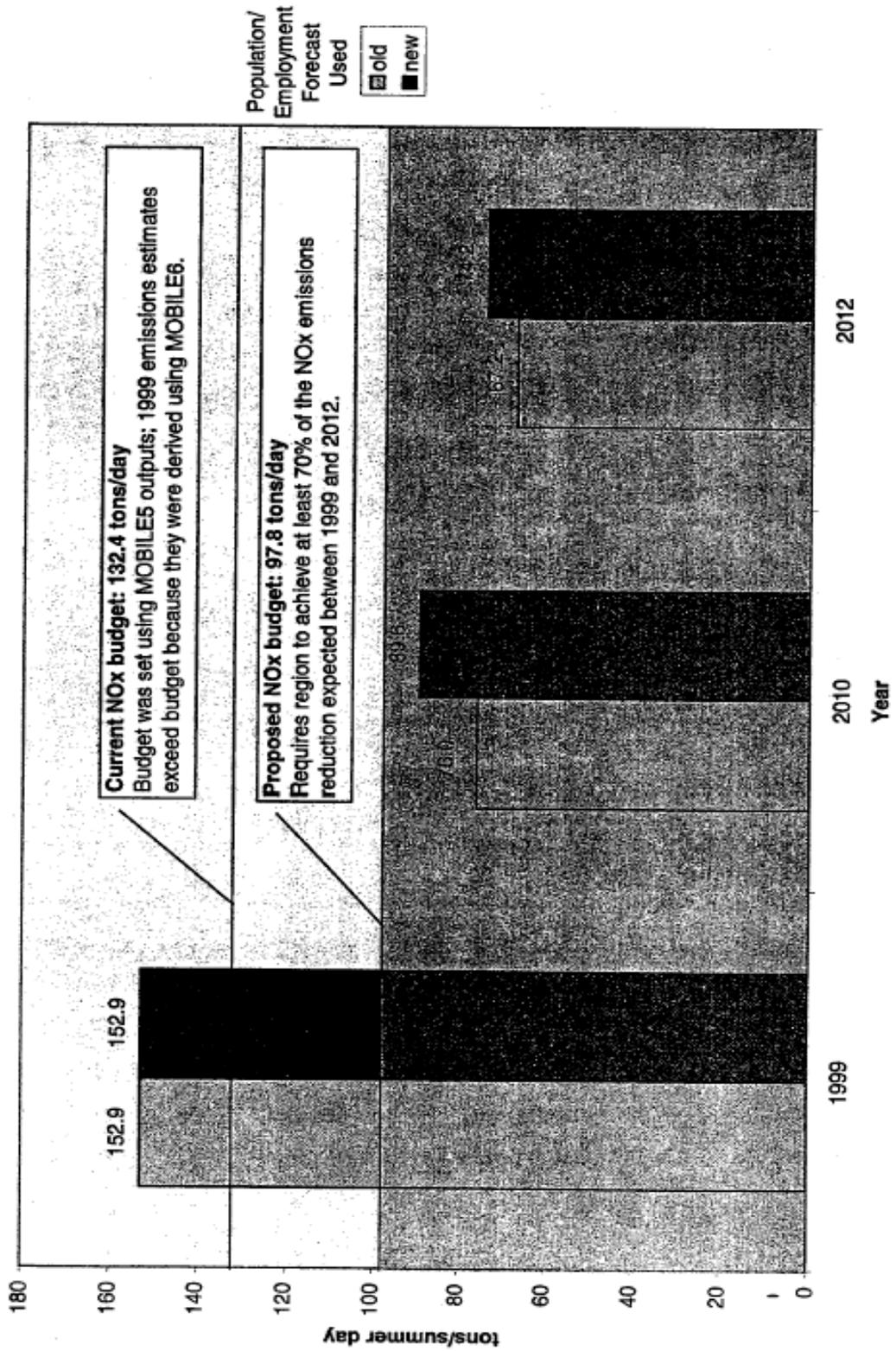
TABLE III - CO Emissions

	1999		2012		% change 1999-2012
	tons/OSD	% of total	tons/OSD	% of total	
Area	24.9	1.5%	28.7	2.1%	15.5%
Point	14.3	0.8%	19.3	1.4%	34.8%
On-road mobile	1092.4	64.0%	639.4	45.7%	-41.5%
Off-road mobile	574.4	33.7%	711.8	50.9%	23.9%
TOTAL	1706.0		1399.3		-18.0%

Kansas City Regional Mobile Source VOC Emissions 1999-2012



Kansas City Regional Mobile Source NOx Emissions 1999-2012



3.4.11 APPENDIX K

Final EPA Approval of
2005 Kansas City Maintenance Plan for Control of Ozone Revision

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