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# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 25, 2008

James L. Kavanaugh
Director, Air Pollution Control Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

Dear Mr. Kavanaugh:

The purpose of this letter is to share with Missouri the information that the Texas Commission on Environmental Quality (TCEQ) has developed for Texas on emissions that modeling and analysis indicate affect the Class I areas in your state. The TCEQ also requests confirmation from you that Texas' projected emissions reductions will be adequate to meet Texas' apportioned part of the reductions necessary for your state to meet its reasonable progress goal for its Class I area.

As you know, under the Regional Haze Rule, 40 Code of Federal Regulations §51.308, a state must consult with neighboring states on emission strategies and reasonable progress goals for emissions that may be reasonably anticipated to contribute to visibility impairment in Class I areas in those states. This letter is intended to be the culmination of our consultation process for this initial Regional Haze state implementation plan (SIP) submittal.

The information in this letter regarding emissions and probable impacts was developed as part of the Central Regional Air Planning Association (CENRAP) planning process. The TCEQ has been involved in the CENRAP since its inception in 1999. The CENRAP's evaluation of regional haze sources in the central states and beyond has been invaluable in the member states' combined effort to determine the impacts of regional haze on Class I areas in the region and to assess the effectiveness of future control efforts. As contemplated in the Regional Haze Rule, regional planning organizations like the CENRAP are the vehicle through which states agree on regional haze impacts and emissions reduction apportionment obligations.

As described in our proposed Regional Haze SIP revision, the TCEQ provided the CENRAP emissions inventory information for all source categories in Texas. The CENRAP conducted Particulate Matter Source Apportionment Technology (PSAT) modeling to determine the contribution from each source area to visibility impairment at Class I areas in the region. These results are enclosed for Hercules-Glades and Mingo Wilderness Areas. The TCEQ participated fully in the analysis of this data, base period visibility impairment, natural visibility condition estimates, and 2018 projections based on current and anticipated future state and federal controls. The PSAT modeling indicates that the probable impact of Texas sources will be reduced by 2018 in the Hercules-Glades and Mingo Wilderness Area due to the expected emissions reductions from current and planned controls.

As required under the Regional Haze Rule, a review of Texas sources and the impact of emissions on regional haze will be conducted for all of the five-year progress reports and 10-year SIP revisions in order to determine the efficacy of current controls.

The TCEQ is requesting Missouri's concurrence on this assessment and a verification that your state is not depending on any additional reductions from Texas sources in order to meet your reasonable progress goal(s). So that we may prepare and submit our Regional Haze SIP revision to the United States Environmental Protection Agency by this summer, we would appreciate a response within 30 days. If you have any questions or comments on this letter or wish to set up a time to consult further, please contact Margaret Earnest at mearnest@tceq.state.tx.us or 512-239-4581.

Sincerely,

Susana M. Hildebrand, P.E.
Air Quality Division Director

SMH/ME/ts

Enclosures

cc: Greg Nudd, TCEQ
Margaret Earnest, TCEQ
Dr. Calvin Ku, MDNR

**Measured 2002 and Projected 2018 Visibility Impacts on the Hercules-Glades and Mingo Wilderness Areas in Missouri Including the Impact of Texas' Emissions**

The following tables show the 2002 measured visibility impacts and the 2018 projected visibility impacts from all source areas on the two Class I areas in Missouri and the impacts apportioned to be from Texas. The associated figures show the apportioned impacts from all source areas that the modeling separated, including three areas of Texas.

CENRAP produced these results using particulate matter source apportionment technology (PSAT) modeling and relative response factors according to EPA regional haze modeling guidance. The data are from the August 27, 2007, version of the PSAT tool that Environ produced for CENRAP. The database file is available from the CENRAP web site at http://cenrap.org/projects.asp under the listing "27 Aug 2007 Updated CENRAP PSAT Visualization Tool - 36 MB zip."

**Table 1: Texas' apportioned contribution to the measured 2002 and projected 2018 total visibility extinction at Hercules Glades Wilderness Area**

| Particulate Matter Constituent | 2002 Impacts at Hercules-Glades (inverse megameters) | | 2018 Impacts at Hercules-Glades (inverse megameters) | |
|---|---|---|---|---|
| | Texas Total | Total, All Source Areas | Texas Total | Total, All Source Areas |
| Sulfate | 3.48 | 87.94 | 2.51 | 50.63 |
| Nitrate | 2.56 | 17.91 | 1.51 | 12.35 |
| Primary Organic Aerosol | 0.33 | 14.55 | 0.28 | 12.95 |
| Elemental Carbon | 0.12 | 5.22 | 0.06 | 3.51 |
| Fine Soil | 0.03 | 0.92 | 0.03 | 1.00 |
| Coarse Mass | 0.06 | 2.78 | 0.06 | 2.48 |
| Secondary Organic Aerosol, Anthropogenic | not available[1] | 4.50 | not available[1] | 3.76 |
| Secondary Organic Aerosol, Biogenic | not available[1] | 6.22 | not available[1] | 5.83 |
| Total | 6.59 | 140.05 | 4.45 | 92.49 |

[1] The CENRAP PSAT modeling did not apportion either the anthropogenic or the biogenic secondary organic aerosol (SOA). The reasons are (1) that sulfate and nitrate are generally the main causes of visibility impairment resulting from human activity and (2) that tracking the multiple volatile organic compound constituents and reaction products necessary to apportion SOA would have extended the modeling run times far beyond the time that was available for the modeling.

**Figure 1: Measured 2002 extinction on the worst 20 percent of days at Hercules Glades Wilderness Area apportioned using PSAT modeling**

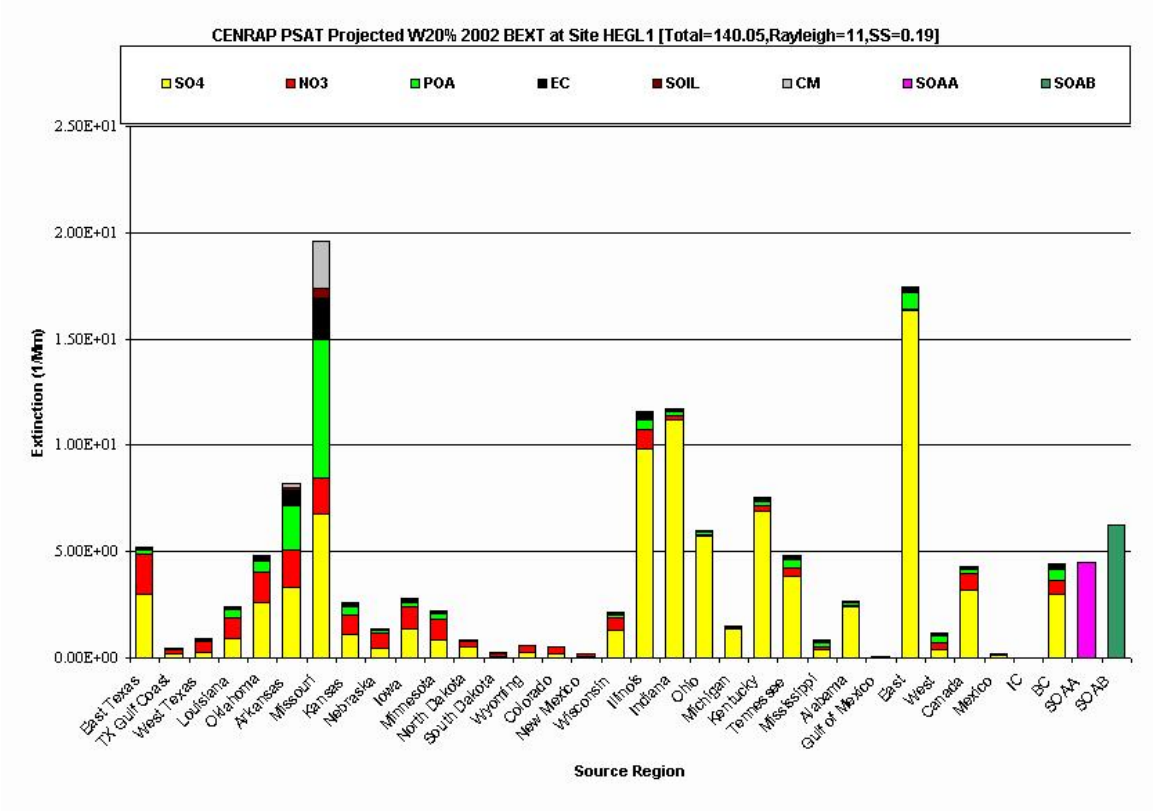



**Figure 2: Projected 2018 extinction on the worst 20 percent of days at Hercules Glades Wilderness Area apportioned using PSAT modeling**

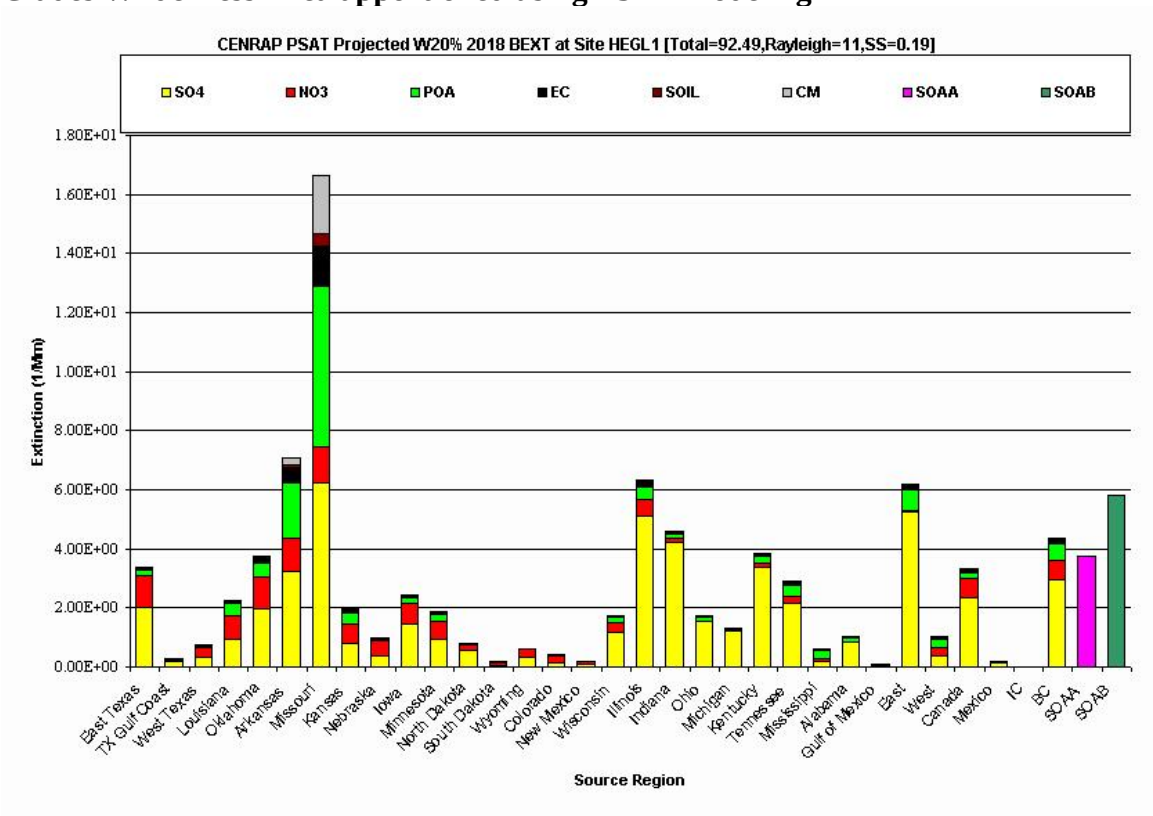


**Table 2: Texas' apportioned contribution to the measured 2002 and projected 2018 total visibility extinction at Mingo Wilderness Area**

| Particulate Matter Constituent | 2002 Impacts at Mingo (inverse megameters) | | 2018 Impacts at Mingo (inverse megameters) | |
|---|---|---|---|---|
| | Texas Total | Total, All Source Areas | Texas Total | Total, All Source Areas |
| Sulfate | 0.69 | 102.52 | 0.53 | 54.45 |
| Nitrate | 1.18 | 27.24 | 0.64 | 19.14 |
| Primary Organic Aerosol | 0.07 | 10.21 | 0.06 | 9.09 |
| Elemental Carbon | 0.03 | 5.49 | 0.02 | 3.53 |
| Fine Soil | 0.01 | 1.26 | 0.01 | 1.44 |
| Coarse Mass | 0.02 | 5.95 | 0.02 | 5.31 |
| Secondary Organic Aerosol, Anthropogenic | not available[1] | 3.66 | not available[1] | 3.04 |
| Secondary Organic Aerosol, Biogenic | not available[1] | 3.50 | not available[1] | 3.25 |
| Total | 2.01 | 159.83 | 1.28 | 99.24 |

**Figure 3: Measured 2002 extinction on the worst 20 percent of days at Mingo Wilderness Area apportioned using PSAT modeling**

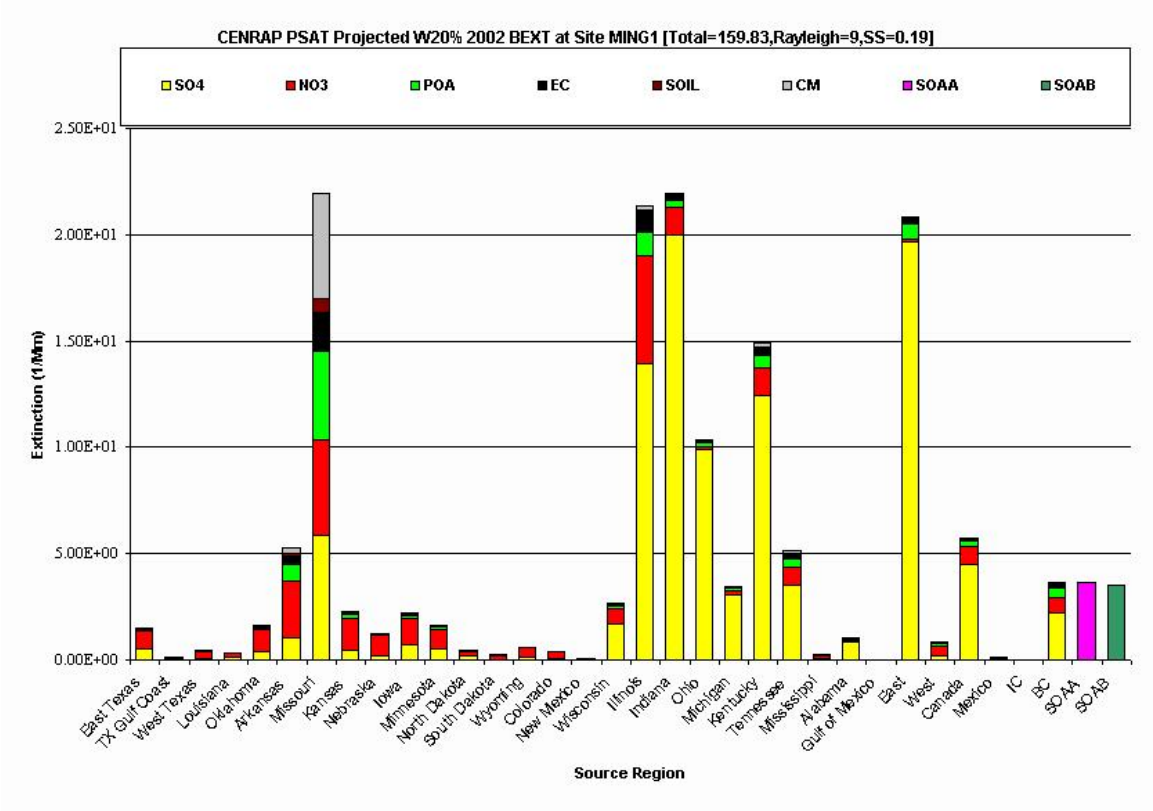
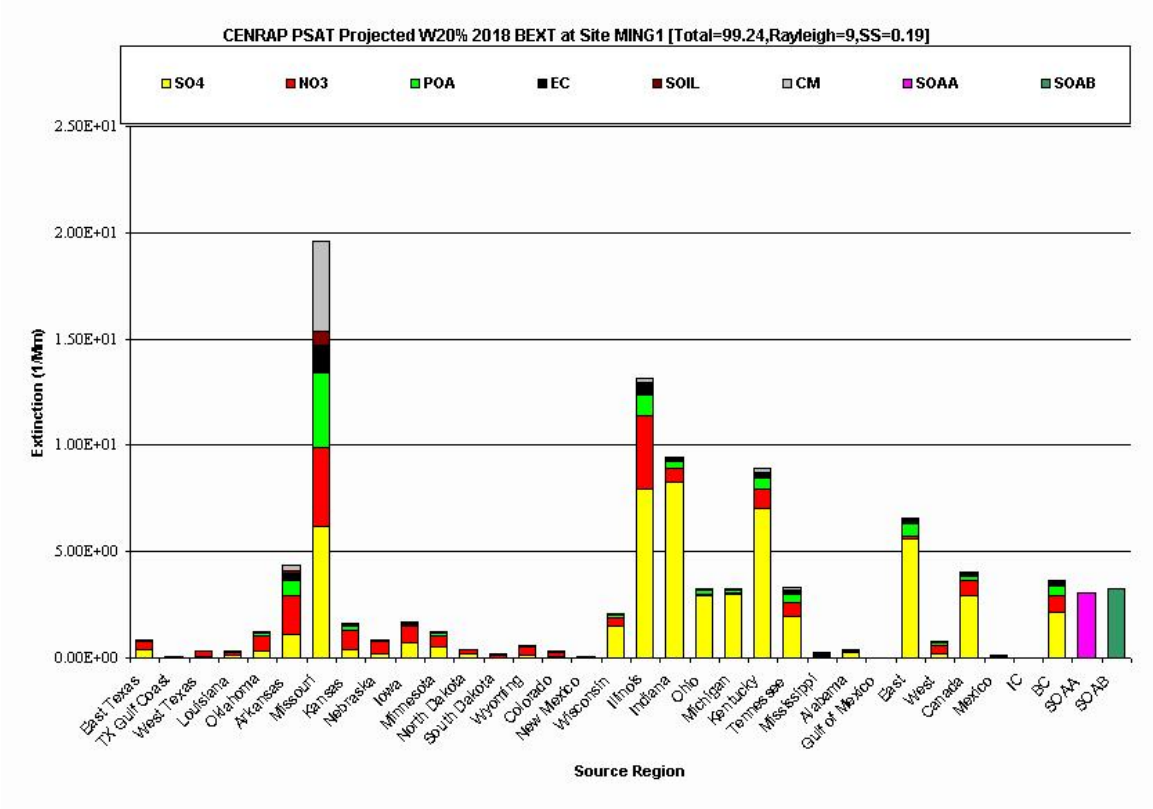


**Figure 4: Projected 2018 extinction on the worst 20 percent of days at Mingo Wilderness Area apportioned using PSAT modeling**



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APR 21 2008

Ms. Susana M. Hildebrand, P.E., Director
Air Quality Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Dear Ms. Hildebrand

This is in response to your recent letter regarding regional haze effects by emission sources in Texas on Class I areas within Missouri. In that letter you requested that we provide confirmation that Texas Commission on Environmental Quality (TCEQ) projected emission reductions will be adequate to meet Texas' apportioned part in reaching Missouri Class I areas regional haze reasonable progress goals.

On July 23, 2007 Missouri, jointly with Arkansas, sent a letter to our consultation partners indicating that we had completed the consultation process and that we intended to develop a plan for reasonable progress based on proposed controls. That plan submission has been completed. We have reviewed the TCEQ analysis attachments and they provide results generally consistent with Central States Regional Air Planning Association and Missouri modeling and data analysis used in developing the plan. At this time we can confirm that the Texas emissions reductions included in our plan development appear to be adequate. It is our intent to conduct a five-year review by 2013, and if this review discloses that controls have not been as effective as intended, we may need to revisit control issues with contributing states.

I believe this response fulfills your request. Should you need any further information please contact Terry Rowles with the departments' Air Pollution Control Program at P.O. Box 176, Jefferson City, MO 65102 or by phone at (573) 751-4817. Thank you.

Sincerely

AIR POLLUTION CONTROL PROGRAM

James L. Kavanaugh
Director

JLK:trt

Enclosure

c: Mr. Mike Bates, Arkansas Department of Environmental Quality
Mr. Wayne Graf, Air Pollution Control Program

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July 23, 2007

To: Participants in the Central Class I Areas Consultation Process

Re: Central Class I Areas Consultation Conclusion

On Feb. 26, 2007, an invitation letter was sent to 12 states and tribes from the states of Missouri and Arkansas. The invitation included a consultation plan, which detailed the procedures and timelines for identifying possible contributors to regional haze in Arkansas and Missouri Class I Areas (Caney Creek, Upper Buffalo, Hercules Glade and Mingo). This process was initiated because the federal Regional Haze Rule requires states to consult with other states and tribes that may be causing or contributing to visibility impairments in federal Class I areas.

These consultations have been accomplished through a series of conference calls. The calls were held on April 3, May 11 and June 7, 2007. Participants included states and tribes, Environmental Protection Agency personnel, regional office staff, Federal Land Managers, and other Regional Planning Organizations. A summary of these conference calls can be found on the CENRAP Web site.

A Uniform Rate of Progress was developed for each of the Class I Areas in Arkansas and Missouri. Regional modeling and other findings indicate that these Class I Areas will meet the established Rate of Progress goals by 2018 based on the existing and proposed controls through both state and federal requirements. Therefore, it is the intent of Arkansas and Missouri to proceed with the development and submittal of a Regional Haze Plan.

Both Missouri and Arkansas believe that the consultations conducted to date have satisfied the consultation process requirements described in the rule. These consultations were completed so that the each state's plan can be submitted for separate review with the Federal Land Managers and Environmental Protection Agency. If necessary, future consultations will be conducted to address any issues that are identified in the review of those draft plans or if changes occur in the contributions associated with regional haze transport.

Arkansas and Missouri are committed to continue on-going assessments of progress in meeting visibility improvement goals. However, the ability to conduct

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any substantive future planning activities of this nature are made difficult by the lack of federal funding for these efforts. The next review is scheduled for completion in 2013, as dictated by Long Term Strategy Planning on a five-year cycle.

Furthermore, to document that these initial consultations have been made, we are asking that recipients of this letter respond to provide a record that these consultations have taken place to the satisfaction of your state or tribe. Since federal recipients of this letter have a separate administrative process for review, we are not asking for your reply at this time.

Thank you for your participation and contributions in this consultation process. Your time and efforts are appreciated. If you require additional information regarding this matter, please contact Mr. Calvin Ku, Missouri Department of Natural Resources at (573) 751-8406 or, Mr. Mark McCorkle, Arkansas Department of Environmental Quality at (501) 682-0736.

Sincerely,

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Mike Bates

Mike Bates, Chief
Air Division
Arkansas Department of Environmental Quality

MISSOURI DEPARTMENT OF NATURAL RESOURCES

James L. Kavanaugh, Director
Air Pollution Control Program
Missouri Department of Natural Resources