STATEMENT OF CONSIDERATION
RELATING TO THE SIP REVISION FOR KENTUCKY'S REGIONAL HAZE SIP, WHICH DOCUMENTS REASONABLE PROGRESS GOALS FOR KENTUCKY'S CLASS I AREA MAMMOTH CAVE NATIONAL PARK AND INCLUDES BEST AVAILABLE RETROFIT TECHNOLOGY (BART) DETERMINATIONS
Amended After Comments

Kentucky Energy and Environment Cabinet

Department for Environmental Protection
Division for Air Quality

(1) The Kentucky Energy and Environment Cabinet (formerly the Environmental and Public Protection Cabinet) conducted a public hearing on April 7, 2008, at 10:00 a.m. (EDT) in the Conference Room of the Division for Air Quality, 803 Schenkel Lane, Frankfort, Kentucky. The hearing was held to receive comments on a proposed State Implementation Plan (SIP) revision that includes the pre-hearing draft of Kentucky's Regional Haze SIP, which documents reasonable progress goals for Kentucky's Class I area Mammoth Cave National Park and includes best available retrofit technology (BART) determinations.

Written and oral comments were received during the public comment period.

(2) The following individuals attended and/or provided written and/or oral comments:

Name and Title	**Organization**
Jason Wilkerson*	E.ON U.S.
Gary Revlett*	E.ON U.S.
George J. Schewe*, **, ***	Alpine Geophysics
Mike Zimmer*, ***	Trinity Consultants
Jimmy Keeton*	Kentucky Power
John R. Cline**	Troutman Sanders LLP on behalf of Southeast Visibility Industry Coalition (SEVIC)
Gordon G. Park**	Tennessee Valley Authority (TVA)
Richard A. Schutt**	U.S. EPA Region 4

*Attended hearing. **Written comments provided. ***Oral comments provided.

(3) The following individuals from the Kentucky Energy and Environment Cabinet attended the public hearing:

Martin Luther, Environmental Scientist II* & **	Division for Air Quality
Lona Brewer, Environmental Branch Manager**	Division for Air Quality
Ty Martin, Environmental Technologist I	Division for Air Quality

* Agency moderator.
**Drafted responses to comments received during the public comment period.

Response to Comments on the proposed revision to the State Implementation Plan (SIP) that includes the March 3, 2008, Pre-Hearing Draft of Kentucky's Regional Haze SIP, which documents reasonable progress goals for Kentucky's Class I area Mammoth Cave National Park and includes Best Available Retrofit Technology (BART) determinations.

1. **Comment:** Best Available Retrofit Technology (BART) Limits in the SIP:

   In the prehearing package, the proposed BART controls for five facilities are summarized in Table 7.5.3-1 in Section 7.5.3, p.62-64 of the SIP narrative, and in Table 9.1 of SIP Appendix L on pages 24-26. The BART limits and associated compliance schedules are required to be in the SIP per 40 CFR 51.308(e): "*The State must submit an implementation plan containing emission limitations representing BART and schedules for compliance with BART . . .*". Therefore, the SIP must include the specific emission limits (and supporting information for those limits) and compliance schedules for BART for the two facilities not currently subject to federal consent decrees (CDs). These limits must be in a form that can be enforced by both the Commonwealth and EPA.

   For the three facilities installing controls for BART to meet federally enforceable emission limits contained in CDs, the Commonwealth may rely on the federal CDs to establish emission limits that are federally enforceable. The BART limits established pursuant to federal CDs, and the conditions necessary to support those limits, do not need to be incorporated into the SIP, unless any changes are made to the limits. Emission limits from the CDs must be placed in each facility's title V permit prior to the expiration date of its CD.
   Richard A. Schutt, USEPA

   Response: The Cabinet concurs and the applicable BART emission limitations and compliance schedules have been more clearly identified in the SIP and BART emission limitations will be added to the source Title V permit as appropriate or on renewal. Also, in reviewing the applicable consent decrees in response to the USEPA's comments, it was discovered that the East Kentucky Power Cooperative (EKPC) consent decree summarized in the SIP on page 42 was improper and as a result the Cabinet has provided the proper EKPC consent decree summary for the EKPC 7/2/2007 consent decree.

2. **Comment:** BART Compliance Dates: a) 40 CFR 51.308(e)(1)(iv) requires each implementation plan to include: "*A requirement that each source subject to BART be required to install and operate BART as expeditiously as practicable, but in no event later than 5 years after approval of the implementation plan revision.*" Please clarify the timeframe for compliance with BART.

   b) Section 9.4 on page 27 of SIP Appendix L notes that in accordance with a federal CD, one of the BART controls may not be installed until December 2015, which is likely to fall outside the allowable time window for BART compliance provided in 40 CFR 51.308(e)(1)(iv). For example, if EPA uses the full 18 months allowed under the Clean

Air Act to take final action on a SIP received in May 2008, five years from November 2009 is November 2014. We encourage the Commonwealth to work with the facility to install the flue gas desulfurization (FGD) scrubber for Big Sandy Unit 2 as expeditiously as practicable.
Richard A. Schutt, USEPA

Response: The Cabinet acknowledges this comment and has clarified in the SIP the timeframe for source compliance with BART. In addition, the Cabinet will work with the source to install the flue gas desulfurization (FGD) scrubber for AEP Big Sandy Unit 2 as expeditiously as practicable. However, in the U.S. EPA's negotiations with AEP on the subject consent decree, if EPA had contacted Kentucky before agreeing to the timeframes, the necessity of these controls and timeframes could have been discussed with the possible outcome being controls installed earlier.

3. **Comment:** Legal Authority: In the final SIP submittal, please include evidence as required per Appendix V of 40 CFR part 51 that the Commonwealth has the necessary legal authority under Kentucky law to adopt and implement the Regional Haze implementation plan, including the BART limits.
Richard A. Schutt, USEPA

Response: The Cabinet acknowledges this comment and has provided language in the preface on page ii of the SIP narrative to indicate that the Cabinet, per KRS 224.10-100(5), has the statutory legal authority to adopt and implement the Regional Haze State Implementation Plan (SIP), including the BART emission limits.

4. **Comment:** Dates of Adoption and Effectiveness: The text in Section 7.5.3 of the SIP narrative and Section 9.1 of SIP Appendix L indicates that the BART controls for all the sources are targeted to be adopted into title V permits in 2008, and that these BART limits will be taken to public notice. The final SIP submittal must provide evidence that the regional haze plan, including the BART limits, is adopted and effective in accordance with Appendix V of 40 CFR part 51. Additional clarification is needed to address when the BART limits and supporting conditions will be officially adopted by and effective in the Commonwealth for each of the facilities.
Richard A. Schutt, USEPA

Response: The Cabinet acknowledges this comment. As indicated in the Cabinet response to comment 3, the Cabinet, per KRS 224.10-100(5), has the statutory legal authority to adopt and implement Kentucky's Regional Haze SIP. In addition, the applicable BART emission limitations and compliance schedules have been more clearly identified in the SIP and BART emission limitations will be added to the source Title V permit as appropriate or on renewal.

5. **Comment:** General: We recommend that the SIP narrative provide a summary of the BART emission limits and the compliance schedules associated with them for all five facilities installing controls for BART. If the BART limits and supporting conditions are provided elsewhere in the document, this should be clearly identified.

Richard A. Schutt, USEPA

Response: The Cabinet concurs and the applicable BART emission limitations and compliance schedules have been more clearly identified in the SIP and BART emission limitations will be added to the source Title V permit as appropriate or on renewal.

6. **Comment:** Section 2.1 and 2.3: a) Section 2.3 of the SIP narrative references Appendix B.2 for more information on how the new IMPROVE equation is used to estimate natural background. However, none of the documents in Appendix B discuss where the data (i.e., PM2.5 species concentration data) used in the new IMPROVE equation was obtained and how it was used in the equation for the Kentucky Class I areas. Please clarify.
Richard A. Schutt, USEPA

   Response: The Cabinet acknowledges the comment and made wording changes consistent with the wording utilized in other states regional haze SIPs.

7. **Comment:** b) Please provide a citation in section 2.1 and/or section 2.3 for the location of the 20 percent best and worst days used in the technical analyses for the Kentucky Class I areas.
Richard A. Schutt, USEPA

   Response: The Cabinet acknowledges this comment. A citation providing the location of the 20 percent best and worst days used in the technical analyses for Kentucky's Class I area has been provided in Section 2.3.

8. **Comment:** Appendix L - E.ON US Mill Creek Station: Please further clarify the basis for limiting controls for BART (sorbent injection) to the larger two units versus all four units. The cost per ton and cost per deciview for the two larger units that are being controlled are very similar to that for the smaller two units that are not being controlled (see table on page 142 of appendix L.11). Further, the dollars per deciview ($/dv) cited is similar to that for controls under the Clean Air Interstate Rule (CAIR) rule.
Richard A. Schutt, USEPA

   Response: The Cabinet acknowledges this comment. As indicated in the E.ON U.S. Mill Creek BART determination submittal, the average cost for installing sorbent controls on all four Mill Creek units is about the same (an estimated 5.1 million $/dv). However, sorbent injection at all four units would mean an additional total capital investment of $8.8 million as compared to controls only on the larger Units 3 and 4. Therefore, E.ON U.S. concluded that BART should be the installation of sorbent injection controls on the larger Mill Creek Units 3 and 4 since they can achieve an estimated 70 percent of the total dv improvement achieved by controlling all four units. Given the extra cost for the lesser additional dv improvement, the Cabinet agreed that BART for Mill Creek is the installation of sorbent injection controls on the larger Units 3 and 4.

9. **Comment:** Section 1.5, p.5: This section states that procedures for continuing consultation with the Federal Land Managers (FLMs) are required per 40 CFR 51.308(i), however, no such procedures are outlined in this section. Rather, Section 1.5 describes the consultation procedures used to date to engage other states, FLMs, and others. Section 11 on page 87 in the fourth paragraph appears to provide continuing FLM consultation procedures as required by 40 CFR 51.308(i). We suggest that Kentucky clearly identify what is intended to constitute its continuing FLM consultation procedures.
Richard A. Schutt, USEPA

   Response: The Cabinet acknowledges the comment. However, the Cabinet did not make any changes since the wording utilized by the Cabinet was consistent with the wording utilized in other states regional haze SIPs.

10. **Comment:** Section 3.1, page 15: Figure 3.1-1 presents the Uniform Rate of Progress Glide Path for the 20 percent worst days at the Mammoth Cave Class I area. These figures reference a "Method 1 Prediction" for the reasonable progress assessment. However, Figure 3.1-1 does not present the modeled reasonable progress goals. It is suggested that the "Method 1 Prediction" entry in the legend be deleted. To avoid confusion, we suggest deletion of "Reasonable" in the title of Figure 3.1-1 on page 15.
Richard A. Schutt, USEPA

    Response: The Cabinet acknowledges the comment and has made the suggested changes.

11. **Comment:** Section 7.2.4, Figures 7.2.4-1 and 7.2.4-2, pages 46-47: Figures 7.2.4-1 and 7.2.4-2 present the Uniform Rate of Progress Glide Path for the 20 percent worst days and 20 percent best days at the Mammoth Cave Class I area, respectively. In the legend, these figures reference a "Method 1 Prediction" for the reasonable progress assessment. However, the text does not describe what is meant by Method 1. We suggest a clarification of Method 1 in the text.
Richard A. Schutt, USEPA

    Response: The Cabinet acknowledges the comment. However, the Cabinet did not make any changes since the wording utilized by the Cabinet was consistent with the wording utilized in other states regional haze SIPs.

12. **Comment:** Section 10, p. 86: The text appears ambiguous regarding the Commonwealth's approach to addressing MANE-VU's request with respect to a 28 percent reduction in non-EGU sulfur dioxide (SO2) emissions for the first planning period. We suggest that the Commonwealth's approach be clarified.
Richard A. Schutt, USEPA

    Response: The Cabinet acknowledges the comment and has made some wording changes to provide clarification. The Cabinet has related in the SIP narrative that it believes that the significant Kentucky existing and expected EGU emission controls more than adequately addresses MANE-VU's EGU and Non-EGU emission control requests.

13. **Comment:** Appendix L Summary: The summary document to Appendix L is very useful and informative. Kentucky is commended for the good work done to organize the appendices. Much, if not all, of the discussion in the introductory summary document to Appendix L on how the BART requirement was met, (i.e., exemption volatile organic compound emissions, contribution threshold, sources exempted, etc.), could be moved to the SIP narrative starting in section 7.5.1. It is a very well documented discussion of the BART modeling.
Richard A. Schutt, USEPA

Response: The Cabinet acknowledges the comment, but no changes were made since Appendix L is referenced numerous times in the SIP narrative.

14. **Comment:** Overall, SEVIC concurs with the Kentucky Division for Air Quality's (KYDAQ's) most significant conclusion for its initial regional haze SIP. That is, given the projected magnitude of visibility improvements in Mammoth Cave National Park by 2018 due to other, non-regional haze Clean Air Act programs, any control measures beyond any State BART requirements will not achieve further reasonable progress during the current planning period. That result is fully consistent with EPA's expectations for some Class I areas during this initial planning period.
See 64 Fed. Reg. 35721-22 (July 1, 1999).

However, SEVIC does not agree with portions of the methodology that KYDAQ used to arrive at that important conclusion. Because Kentucky will be repeating the regional haze planning process numerous times over the next 40 years, SEVIC is concerned with the potential precedent of the State's current planning approach. While the planning deficiencies identified herein had no material impact on the State's overall conclusions for this planning period, the same might not be true for future planning periods if substantial visibility improvements are not achieved by other (non-regional-haze) CAA programs in the future. Therefore, SEVIC offers the enclosed detailed comments with the hope that KYDAQ (1) will take a fresh look at the fundamental requirements of sections 169A and 169B of the Act, (2) will examine some of the conflicting EPA guidance on regional haze with a critical eye and (3) will re-structure its future reasonable progress analyses to better align the State's methodology with the plain language and purpose of those statutory provisions.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

15. **Comment:** SEVIC is disappointed that KYDAQ has chosen to structure the content and analyses within its regional haze SIP in accordance with what we can only label as, for lack of a better description, the "Carolina Model." While SEVIC appreciates the VISTAS States' need to cooperate with each other and to maintain some level of consistency in their respective analytical and regulatory approaches, we believe that KYDAQ has missed an opportunity to raise the quality of its regional haze SIP above the level of earlier submittals of several States. When the contents of certain State-specific analyses

in one SIP are practically word-for-word the same as the contents of those analyses in other States' SIPs, SEVIC believes that the importance of individual State-by-State analysis and decision-making on matters of visibility protection, which the statute so clearly anticipated, has been sacrificed in the name of consistent, mechanical and sometimes illogical SIP uniformity.

If KYDAQ could make but a single change to its future regional haze planning, SEVIC requests that the State adopt a method for determining reasonable progress which comports with the fundamental approach in the statute rather than with conflicting and misleading "guidance." "Reasonable progress" means reasonable visibility improvement in a Class I area … period. The statute says absolutely nothing about "reasonable control measures." And any reasonable progress determination that considers the named statutory factors but not the related visibility improvement constitutes a fundamentally, if not fatally, flawed approach to regional haze planning.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

16. Comment: SEVIC's comments on Kentucky's draft regional haze SIP focus on its Chapter 7, i.e., the long-term strategy, and its companion Appendix H. In particular, SEVIC has numerous concerns with the structure of the State's reasonable progress analyses. We believe that approach requires substantive revision prior to any reasonable progress determinations for future SIP planning periods.

In addition, we also take exception with how KYDAQ has defined BART for those sources that are subject to the independent emission-reduction requirements of a consent decree or similar administrative or judicial order. Those particular control measures are not required by the regional haze rule but rather are due to other CAA programs. Thus, it is incorrect to attribute such reductions to BART. Any BART requirements for such sources should start with an emissions baseline that accounts for the emission reductions attributable to all other CAA programs, including those currently required by a consent decree.

SEVIC's comments also reflect a number of concerns with VISTAS' (and Kentucky's) methods (1) for identifying the relative visibility-impairment contributions of different pollutants in Class I areas and (2) for defining an Area of Influence, purportedly by 2018 SO2 emissions, which for some reason is heavily influenced by SO2 emissions during 2000-2004.

Finally, SEVIC notes that KYDAQ's Chapter 7 identifies a number of "technical improvements" which the State hopes can be made "to support regulatory decisions for regional haze." SEVIC requests that KYDAQ also commit to an independent State assessment or audit of the structure and methodologies of its regional haze analyses. Because that process is iterative over the next four decades, the State needs some form of periodic review of its process and procedures in order that its planning may be continually enhanced and targeted toward the underlying statutory provisions at all times.

John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment. Please see responses for specific Section 7 comments as follows.

17. **Comment:** Section 7.0, Page 39, 1st ¶, The regional haze rule does not require States to establish reasonable progress goals for visibility improvement at each affected Class I area. 40 C.F.R. § 51.308(d)(1) clearly prescribes that "[f]or each mandatory Class I area located within the State, the State must establish [reasonable progress] goals . . ."
Reasonable progress during the initial planning period must be achieved through measures contained in the State's long-term strategy and measures required as BART. See CAA section 169(A)(b)(2).
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

18. **Comment:** § 7.1, 1st ¶, The first sentence purportedly establishes a "key conclusion" which has little to no real significance to the list of questions which follow.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

19. **Comment:** § 7.1, item a, The "glidepath" represents a uniform rate of visibility improvement. Therefore, the appropriate comparison should be between the visibility improvement resulting from existing federal and State air regulatory requirements and that visibility improvement achieved by the glidepath over the planning period.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

20. **Comment:** § 7.1, item b, The emission controls per se representing BART are immaterial. Rather, the question should focus on the additional visibility improvement in Kentucky's Class I area resulting from those BART controls.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

21. **Comment:** § 7.1, item c, Again, it is not the additional emission reductions that are at issue. The question should focus on whether additional visibility improvement, beyond that achieved by existing air regulatory requirements and by BART, is needed to achieve reasonable progress in Kentucky's Class I area.

John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

22. Comment: § 7.1, item d, From Kentucky's standpoint of establishing a reasonable progress goal for its Class I area, the greatest impact on visibility in other, specific Class I areas is not pertinent to the State's inquiry.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

23. Comment: § 7.1, item f, Again, from Kentucky's perspective, the inquiry is not for "a given Class I area" but rather for Kentucky's single Class I area.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

24. Comment: § 7.1, item g, Reasonable progress is a measure of visibility improvement. Therefore, "additional emission controls" cannot represent reasonable progress. Instead, the question is whether visibility improvement achieved by additional emission controls will constitute reasonable progress.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

25. Comment: § 7.1, item h, SEVIC recommends re-stating the question as follows: After accounting for the visibility improvement achieved in Kentucky's Class I area due to emission reductions required by other CAA programs and by BART, is additional visibility improvement still needed to achieve that which the glidepath would achieve over the planning period?
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

26. Comment: Page 41, 1st ¶, last sent. The requirement for use of ultra-low sulfur diesel in on-road engines is already required.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

27. **Comment:** Page 41, 4th ¶ The non-road diesel rule required no more than 500 ppm of sulfur beginning in 2007, dropping to 15 ppm for most non-road engines in 2010 and for ships and locomotives in 2012.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

28. **Comment:** Page 43, 4th ¶ In several places within this document, reference is made to "updated growth and control data consistent with the data used in the USEPA's CAIR analyses." SEVIC requests that a specific Federal Register citation be included for that "data used in the USEPA's CAIR analyses" in order that the referenced data may be located and examined.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and included a citation for the USEPA's CAIR analyses.

29. **Comment:** Page 46, 2nd ¶ The subject figures do constitute one type of "reasonable progress assessment for Mammoth Cave National Park." The comparison is only between visibility improvement achieved by implementation of existing federal and state regulations and visibility improvement achieved at the uniform rate of progress for Mammoth Cave National Park. Thus, the figures' title of "Reasonable Progress Assessment" should be qualified by adding "for Other CAA Programs."

Also, the red lines do not show the uniform rate of progress to natural conditions in 2064 for the 20 percent best days.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

30. **Comment:** Page 53, 2nd ¶, last sent. By "not … accounting for international emissions in setting the 2018 reasonable progress goals for [Mammoth Cave]," KYDAQ has injected a bias in its overall analysis. Because visibility impairment attributable to international emissions is contained in the value of the baseline impairment in Mammoth Cave, the uniform rate of progress for that Class I area as determined by KYDAQ will be slightly greater (steeper glidepath) than what would otherwise be necessary to reach natural conditions by 2064. Therefore, in its interim progress review during the first planning period, KYDAQ must account for this bias when evaluating whether the actual rate of visibility improvement in Mammoth Cave is acceptable.
Sources should not be penalized (by subsequently requiring further emission reductions) for that embedded portion of visibility impairment due to international emissions that cannot be reduced during the planning period.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment. The Cabinet does not think it wise to state at this time if international emissions should be accounted for in future Regional Haze SIPs. The Cabinet plans to assess if international emissions should be accounted for in setting the reasonable progress goals for future assessment periods at the time those goals are established.

31. Comment: § 7.4, Relative Contributions - SEVIC understands that this particular analysis was intended to "identify the key pollutants contributing to visibility impairment" in Mammoth Cave National Park. However, SEVIC believes that the reported results are misleading and may not be representative of the relative contributions of various pollutants that actually remain after emission reductions due to all existing and planned control measures.

This SIP evaluation was based initially on the "2018 projections inventory." Intuitively, that approach seems appropriate for defining the mix of visibility-impairing pollutants that remain after accounting for emissions reductions due to other CAA programs over the planning period. However, the analysis also consisted of modeling runs with the "2009 projection inventory," and, in fact, KYDAQ has relied on those latter modeling results to estimate the relative contributions of visibility impairing pollutants in Mammoth Cave NP.

SEVIC believes KYDAQ has erred in relying on modeling results based upon 2009 emissions as the basis for determining those relative contributions. For example, CAIR will clearly achieve substantial reductions in SO2 and NOx emissions during the period from 2010 to 2018. Consequently, that will likely result in the relative contributions from other pollutants increasing significantly, i.e., the fraction of each of those other pollutants will increase as those for SO2 and NOx decrease substantially.

While SEVIC understands KYDAQ's conclusion that point source emissions of SO2 will be major contributors to visibility impairment in the subject Class I area after accounting for all other CAA programs, the relative contributions of all other pollutants are inherently biased low in this study due to the inappropriate reliance on projected 2009 emissions instead of those from 2018.

This also raises the fundamental question as to why VISTAS and KYDAQ found it necessary to exclude the results of its analysis using projected 2018 emissions. SEVIC believes that those results and their implications deserve some discussion within the draft SIP.

Aside from KYDAQ's questionable reliance on results using an inappropriate emissions inventory, SEVIC also questions whether the population of the reported results was large enough to be representative of the pollutant mix that should be expected. If we understand KYDAQ's explanations, two episodes totaling 70 days in 2009 were modeled, and responses of the 20 percent worst days were averaged. Nevertheless, SEVIC cannot find in this draft SIP what the result of that averaging was for the 20 percent worst days.

Instead, for Mammoth Cave NP, KYDAQ has presented the results based only upon "responses on six of the 20 percent worst visibility days." In SEVIC's view, responses on the 20 percent worst days would consist of results from 14 days. We, therefore, request KYDAQ to explain why it has selectively chosen responses from only 6 days to purportedly be representative of the results for this analysis.

Because of the limited amount of information used to support the reported results, SEVIC questions some of the conclusions which KYDAQ makes based on those misleading results. For example, KYDAQ states that "[r]educing carbon from fires was not found to be effective because there was little fire activity at these sites on the days modeled in the sensitivity analyses." Perhaps the days modeled were simply not representative of the frequency of fires which impact Mammoth Cave NP. Indeed, if the results ultimately reported were based solely on responses during 6 days, then it is understandable that no significant fire contributions may have occurred for that very limited data set.

Finally, if the determination of the relative contributions of visibility impairing pollutants had been based on the 2018 emissions inventory, and if the modeled responses from all of the 20 percent worst-visibility days had been used, KYDAQ is requested to discuss (1) the likely results from that latter approach and (2) the magnitude of the differences between those results and the draft SIP's reported values of the relative contributions. In short, SEVIC believes that this latter approach could suggest greater potential benefits from future reductions of those other pollutants' emissions.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet does not agree. The intent of using the sensitivity modeling results was not to determine what the relative contribution from different States/regions had on visibility, but rather to better understand how reductions in various source sectors would impact visibility. The Cabinet used data from existing modeling as a qualitative guide to identify the key pollutants contributing to visibility impairment at Kentucky's Class I area.

32. Comment: Page 56, 3rd ¶ It is incorrect to state that section 169A directs States to assess certain … *older* emission sources for the possible applicability of BART. When Congress adopted section 169A, all the sources potentially subject to BART were no more than 15 years old. The ages of the affected sources at this time are due to the 30-year delay in implementing the statutory BART requirements.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made wording changes deemed appropriate.

33. Comment: Page 58, 3rd ¶ The statutory provision for BART plainly requires the State to determine whether a source "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any such [Class I] area." Thus, if KYDAQ determines that some sources do not cause or contribute to

visibility impairment in a Class I area, then SEVIC believes that KYDAQ has no discretion in exempting those sources from BART. In other words, contrary to KYDAQ's assertion, a BART exemption for such a source is not something that may be considered. Instead, exemption from BART must be granted to the source.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

34. Comment: Page 61, 2nd ¶ For purposes of clarity and continuity, this paragraph beginning with the words "The USEPA has determined …" should precede the paragraph on the previous page.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

35. Comment: Page 61, last ¶ This one sentence appears to be completely redundant.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

36. Comment: § 7.5.3, Determination of BART for Subject-to-BART Sources - KYDAQ has explained that any BART determination for an EGU needs only be made for particulate matter because CAIR has been considered to be equal to or better than BART for SO2 and NOx. Furthermore, KYDAQ states that it has used PM10 as an indicator for particulate matter to identify BART-eligible units.

SEVIC objects to KYDAQ's BART determinations for certain affected sources because those determinations go far beyond consideration of BART for particulate matter. In particular, two of the five BART-affected sources are already required under consent decrees to install highly efficient control systems for condensible particulate emissions and other visibility impairing pollutants. Those controls will be required regardless of whether BART applies to the affected units. SEVIC therefore questions the propriety of identifying those controls as BART. Instead, SEVIC believes that a realistic assessment of BART for those units with new emission control systems that already are required should be based on a baseline level of emissions that those new controls are designed to achieve.

Not only are those new control systems already required in the absence of any BART determinations, KYDAQ has not limited its BART analysis only to particulate matter, in general, and to PM10, in particular. Rather, KYDAQ has now defined BART for those affected units on the basis of reductions of "condensible particulate emissions and other visibility impairing pollutants". KYDAQ's BART "determinations" for PM emissions from those units already affected by consent decrees are inappropriate and should be re-evaluated based on PM emissions which will remain after controls already required by the consent decrees are implemented.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet does not agree. Subject Kentucky BART sources were already completing BART determination modeling before the final consent decrees were issued. The issuance of a consent decree control does not preclude controls from being considered as a control for BART. In addition, since condensable particulates are part of PM, the Cabinet finds that it was appropriate to require their control for BART.

37. § 7.6.3, SO2 Areas of Influence - The purpose of VISTAS' and KYDAQ's analysis was to "define the geographic area with highest probability of influencing the receptor [Class I area] on the 20 percent worst days in 2000-2004 that were dominated by sulfate." However, for identifying sources of emission reductions that can possibly achieve additional reasonable progress in Mammoth Cave NP, SEVIC believes the analysis should have been based on back trajectories on the projected 20 percent worst days in 2018 that are dominated by sulfate. That is, SEVIC believes the analysis would be more informative if it had defined the sources with the most visibility impact in Mammoth Cave after accounting for the many emissions reductions required by other CAA programs through 2018. In short, much of KYDAQ's area of influence for Mammoth Cave has been determined by emissions that will not exist in the future and therefore should never be considered as candidates for achieving additional reasonable progress. That area of influence should have been determined only by emissions which will remain after the many reductions already required by existing and planned controls.

Furthermore, KYDAQ states that deliberately weighting the back trajectories by sulfate extinction results in "plac[ing] less importance on days influenced by organic carbon from fires." It appears to SEVIC that that inherent bias is further reason why KYDAQ later questionably concludes that the visibility-impairment contribution of fires in Mammoth Cave NP is not material.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and has made wording changes it deemed appropriate. The area of influence plots were developed to understand the area that most likely impacted the Class I areas during the baseline period of 2000 – 2004. This provided the State with a starting point to identify those sources located within the region that may have impacted the 20% worst days. The KYDAQ could then evaluate those sources, their estimated future emissions and any potential control technologies that may be considered reasonable measures. Although the sulfate weighted residence times were calculated from 2002 emissions, the only emission sources that decreased significantly between 2002 and 2018 were the electric generating units (EGUs) that are expected to be controlled by 2018. Since the KYDAQ determined that the Clean Air Interstate Rule (CAIR) were deemed reasonable control measures for the EGUs, only the non-EGU sources were left to evaluate. If a non-EGU source happened to be located within the same grid cell as an EGU, it potentially could have been weighted higher than if it had not. However, since the KYDAQ evaluated each source on its own merits, the outcome would not have been different.

38. Comment: § 7.6.4, Emissions Sources within SO2 Areas of Influence - For similar reasons, SEVIC also questions the appropriateness of KYDAQ's plots which show "2018 SO2 emissions weighted by residence time." As SEVIC understands the resultant plots, the sulfate-extinction weighted residence times were determined from the 20% worst days of visibility due to sulfate during 2000-2004. This raises the question of the usefulness of those results for 2018 projections if those results have been heavily influenced by SO2 emissions during 2000-2004, many of which will not be present in 2018.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made changes deemed appropriate.

39. Comment: Page 72, 2nd ¶ KYDAQ states that "[t]he emission sensitivities . . . indicated very small benefits of controlling NOx, NH3, and primary PM emissions at Kentucky's Class I area, but if these emissions were of concern, different source categories would need to be addressed." As SEVIC has previously explained, these pollutants were found to be of lesser importance with respect to visibility in Mammoth Cave NP partially because their relative contributions were biased low by VISTAS/KYDAQ's inappropriate use of 2009 emissions in the relative-contribution analysis.

SEVIC believes that such a bias must be avoided in future analyses of the relative contributions of different pollutants. As the SO2 emissions inventory continues to decrease over the next decade, the relative contributions due to other pollutants almost certainly will increase. Consequently, in future regional haze planning periods, SEVIC asserts that other pollutants will be "of concern" and thus "different source categories would need to be addressed."
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made changes deemed appropriate.

40. Comment: Page 73, 1st ¶ "KYDAQ considered what additional control measures for electric utilities and industrial boilers are reasonable." This statement likely refers to the State's subsequent reasonable progress analyses for those source categories. Although we understand that KYDAQ's terminology in the above sentence likely arises from some questionable draft EPA guidance that was never fully corrected or clarified, SEVIC believes that KYDAQ's future regional haze planning must adopt an approach that is wholly consistent with the fundamental principles in the Clean Air Act.

To that end, and as will be discussed subsequently in more detail, KYDAQ must understand that the so-called "four-factor analysis" does not determine <u>reasonable control measures</u>. The plain language of section 169A(g)(1) of the Act requires certain statutory factors to be considered when "<u>determining reasonable progress</u>." The word "progress" in the context of the Act's provisions for visibility protection is nothing more than a synonym for "visibility improvement." Consequently, one mandate for KYDAQ in this

regional haze SIP is to consider certain statutory factors when evaluating whether additional control measures for electrtic utilities and industrial boilers will achieve reasonable progress (visibility improvement) in Mammoth Cave National Park. The Act says nothing about determining whether control measures are "reasonable."
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

41. Comment: § 7.7, Evaluating the Four Statutory Factors for Specific SO2 Emissions Sources in Each Area of Influence

Page 74, 6th ¶ This approach reflects a fundamental flaw in the structure of KYDAQ's (and other States') reasonable progress analysis. Aside from what those States believe the regional haze rule requires, the underlying, unavoidable fact is that section 169A of the Clean Air Act requires four factors to be considered when "determining reasonable progress." Thus, those four factors must be considered when determining whether visibility improvement is reasonable. In other words, it is highly misleading to label a reasonable progress analysis as a "four-factor analysis" inasmuch as that analysis must involve five discrete statutory factors. SEVIC believes that any reasonable progress analysis for a candidate control measure that does not account for its associated visibility improvement is deficient as a matter of law.

KYDAQ's reasonable progress is not, however, fatally flawed in this instance because, for one reason, the State has actually considered visibility improvement as part of its reasonable progress analysis. Although KYDAQ indicates that it has used "cost of compliance" as a screening tool for its reasonable progress analysis (p.78, 4th ¶), the State fails to mention, at least explicitly, that it has also used "visibility improvement" or "progress" as a screening tool as well.

By determining "which emission units would be evaluated based on impact", i.e., "those emission units with a contribution of one percent or more to the visibility impairment at [Mammoth Cave National Park]," KYDAQ has screened out all other emission units for which additional control measures have less potential to achieve visibility improvement in that Class I area. Thus, KYDAQ's evaluation of additional control measures for certain sources has been confined only to those sources where such control measures have the greatest likelihood of achieving reasonable progress.

Moreover, as part of its reasonable progress analysis, KYDAQ did ultimately consider visibility improvement achieved by some candidate control measures. However, SEVIC does not believe that visibility improvement was assessed at the appropriate point in the process. As KYDAQ states, "If any control measure for an emission unit was found reasonable after assessing the four factors, modeling would be performed to determine if the controls would result in a visibility improvement."

SEVIC already has established that the statute says absolutely nothing about finding a control measure to be reasonable. Rather the objective of any reasonable progress

analysis is to determine whether visibility improvement achieved by a candidate control measure is reasonable. Consequently, KYDAQ's "four-factor analysis," by itself, for a particular emission unit was nothing more than a further screening analysis that limited considerations of visibility improvement to a limited number of control measures.

SEVIC strongly believes that visibility improvement must not be considered only after some non-descript determination of a "reasonable control measures." Rather, the extent of visibility improvement from a candidate control measure should be considerered at the same time as evaluations of the cost of compliance and the other statutory factors.

The other reason that KYDAQ's reasonable progress analysis in this instance is not fatally flawed is because of the substantial amounts of reasonable progress that either has already been or will be achieved by other CAA programs during this initial planning period. That is, the amount of visibility improvement obtained by 2018 at Mammoth Cave NP due to other CAA programs is predicted to be greater progress than what would be obtained with the Class I area's uniform rate of progress. As a result, when using the statutory factors, it would be exceedingly difficult to justify visibility improvement achieved from any "regional haze" controls (except perhaps by BART) during this first planning period as "reasonable" In short, SEVIC believes that the ultimate conclusion of KYDAQ's reasonable progress analysis is correct, even though the State's methodology for getting there was not fully in accordance with the statute.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

42. Comment: § 7.8, Which Control Measures Represent Reasonable Progress for Individual Sources? One can tell from the particular way this question is phrased that the analysis which follows will likely not be consistent with the statutory command for "determining reasonable progress." First, control measures do not "represent" reasonable progress" but instead they may "achieve" reasonable progress. Second, control measures do not achieve reasonable progress "for" individual sources but rather for "Class I areas," in general, and for Mammoth Cave National Park, in particular in this instance. While SEVIC nevertheless understands the underlying intent of KYDAQ's analysis, we believe that strict adherence to the appropriate terminology will result in a more acceptable structure of a reasonable progress analysis.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made changes deemed appropriate.

43. Comment: Page 76, Step 3 The phrase "CAIR is sufficient for reasonable progress" is another example of the use of inappropriate terminology. SEVIC believes the intent here seeks to determine whether the visibility improvement achieved from CAIR-required emission reduction will constitute reasonable progress. However, KYDAQ's subsequent focus on emission reductions makes that interpretation suspect.

SEVIC does commend KYDAQ's consideration of control costs which go beyond the mere mechanical calculation of $/ton "cost-effectiveness" for control measures. By acknowledging the CAIR's evaluation of various economic impacts to electric utilities, KYDAQ's assessment of the "costs of compliance" statutory factor constitutes a more thorough and reasoned evaluation of that factor which SEVIC believes is consistent with congressional expectations for section 169A.

However, SEVIC believes that CAIR is more appropriately accounted for by defining the reasonable progress to be achieved by CAIR and all other CAA programs. Once the magnitude of that aggregate visibility improvement is defined (greater than that obtainable with the uniform rate of progress), then the reasonable progress analysis for a particular EGU becomes a question of whether further visibility improvement achieved by any "beyond-CAIR" control measure, in the context of the statutory factors, would be found to be reasonable during the first planning period.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

44. Comment: Page 77, last ¶ In planning for its 2012 periodic report, KYDAQ indicates that it will focus on a comparison of planned emission reductions to those actually being achieved. Inasmuch as the ultimate goal of the regional haze program is to reduce visibility impairment in Class I areas, SEVIC believes that KYDAQ's 2012 "re-evaluation" should instead focus on the amount and rate of visibility improvement achieved by that time in Mammoth Cave National Park versus what the State's initial regional haze SIP had projected.

The last sentence states that "the KYDAQ has concluded that at this time these existing regulatory programs constitute reasonable control measures for Kentucky EGUs during this first assessment period." Once again, this shorthand statement does not directly address either the statutory or regulatory obligation of the State. Rather, SEVIC believes that KYDAQ's conclusion should be stated as follows: "Based on the magnitude of reasonable progress projected for Mammoth Cave National Park by 2018 due to other CAA programs, Kentucky DAQ concludes that additional control measures on any Kentucky EGU would not achieve further reasonable progress at Mammoth Cave during this initial planning period."
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

45. Comment: Page 80, 4th ¶ This paragraph needs to be updated to reflect developments which have occurred since it was first written. In particular, VISTAS' "best-and final" modeling run has now been completed, and the results have been provided to the States. The December 17, 2007 submittal deadline for the regional haze SIPs is no longer a relevant factor in how KYDAQ addresses the "final modeling run."

Given the magnitude of reasonable progress expected for Mammoth Cave during the first planning period, KYDAQ likely has no need to revise its reasonable progress goals for that Class I area. However, the final SIP for this planning period should, at a minimum, acknowledge the most recent status of VISTAS' regional modeling and comment on whether the latest results are at least as favorable for Mammoth Cave as the earlier modeling results on which KYDAQ has relied.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment and made changes deemed appropriate.

46. Comment: Page 87, 4th ¶ SEVIC concurs with KYDAQ's belief that its new source review regulations are adequate for addressing visibility impacts in Class I areas due to new major stationary sources and major modifications. Indeed, the legislative history of title I of the 1977 Amendments to the Clean Air Act confirms that Congress intended for the major NSR statutory provisions to address visibility impacts from new and modified major stationary sources and for the separate visibility protection provisions of the Act to address such impacts from existing sources.
John R. Cline, Troutman Sanders LLP

Response: The Cabinet acknowledges the comment.

47. Comment: Please clarify what is meant by "steady state operations" for the 24-hour emissions used in BART exemption modeling.
George J. Schewe, Alpine Geophysics

Response: The Cabinet acknowledges the comment. The term may reflect operations that are stable and not transient or varying. However, the Cabinet recommends that the commenter directly communicate this question to the USEPA for a response since this question concerns the USEPA's BART rule and guidelines.

48. Comment: Would like clarification and concurrence that a facility that is cited as an exempt facility, that through the SIP process, that they will gain their federally enforceable condition to have that exemption, or whether a facility that has been cited as an exempt facility will have to undergo further additional work after this process.
Mike Zimmer, Trinity Consultants

Response: The Cabinet's Regional Haze SIP identifies those sources that were exempted from BART based on the source's BART exemption modeling. For clarification, those exempted sources through the SIP process are exempt from BART and will not have to undergo further analysis in the future for BART, but possibly for reasonable progress.

49. Comment: Section 7.5.3 of the Draft Implementation Plan states that hydrated lime injection was determined to be BART for Paradise Fossil Plant (PAF). However, TVA did not determine that this control should be the basis for BART. Rather, hydrated lime injection will be installed at PAF to mitigate stack opacity due to SO3 emissions well

before BART controls are required. As an added benefit, the opacity-mitigation systems will concurrently achieve the reduction in visibility impacts listed in the Draft Implementation Plan. Because these systems will be included in the PAF Title V permit and will, therefore, be federally enforceable, no further analysis or control should be required under BART regulations.
Gordon G. Park, TVA

Response: The Cabinet concurs with the comment. Since TVA had previously indicated to the KYDAQ its plans to install hydrated lime injection controls on TVA Paradise Units 1-3 to mitigate opacity due to SO3 emissions and that additional controls are not cost-effective at this time, the Cabinet (KYDAQ) has determined BART to be no control for TVA Paradise Units 1-3. However, as related by TVA, the hydrated lime injection controls for TVA Paradise Units 1-3 will be in place well before the BART controls are required; will achieve the reduction in visibility impacts listed in the Draft Implementation Plan (Kentucky Regional Haze SIP); and will be included in TVA Paradise's Title V permit as appropriate or upon renewal. Specifically, regarding the installation of hydrated lime injection controls for TVA Paradise Units 1-3, TVA has communicated to KYDAQ its proposed plan that provides for permitting activities to proceed in July 2008; for construction to begin in mid-2009 on Unit 3 with construction for Unit 1 and 2 to follow; and for controls to be operating on all three TVA Paradise units possibly by the fall of 2010.