# United States Department of the Interior

FISH AND WILDLIFE SERVICE
National Wildlife Refuge System
Branch of Air Quality
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IN REPLY REFER TO:
FWS/ANWS-AR-AQ

April 14, 2008

ADEM Hearing Officer
Outreach Branch
Permits and Services Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

Dear ADEM Hearing Officer:

On March 9, 2008, the State of Alabama submitted for public comment proposed revisions to the Alabama State Implementation Plan, describing its proposal to improve air quality regional haze impacts at mandatory Class I areas across your region. We appreciate the opportunity to work closely with the State through the initial evaluation, development, and, now, subsequent review of this plan. Cooperative efforts such as these ensure that, together, we will continue to make progress toward the Clean Air Act's goal of natural visibility conditions at all of our most pristine National Parks and Wilderness Areas for future generations.

This letter acknowledges that the U.S. Department of the Interior, U.S. Fish and Wildlife Service (FWS) in coordination with the National Park Service (NPS) have received and conducted a substantive review of your proposed Regional Haze Rule implementation plan in fulfillment of your requirements under the federal regulations 40 CFR 51.308(i)(2). Please note, however, that only the U.S. Environmental Protection Agency (EPA) can make a final determination regarding the document's completeness and, therefore, ability to receive federal approval from EPA.

As outlined in a letter to each State dated August 1, 2006, our review focused on eight basic content areas. The content areas reflect priorities for the Federal Land Manager agencies, and we have attached comments associated with these priorities. We look forward to your response, as per section 40 CFR 51.308(i)(3). For further information, please contact Tim Allen (FWS) (303) 914-3802.

TAKE PRIDE IN AMERICA

Again, we appreciate the opportunity to work closely with the State of Alabama and compliment you on your hard work and dedication to significant improvement in our nation's air quality values and visibility.

Sincerely,

Sandra V. Silva, Chief
FWS Branch of Air Quality

Enclosures (1)

cc:

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**Fish and Wildlife Service Comments Regarding**
**Alabama Proposed Regional Haze State Implementation Plan**
**April 11, 2008**

On March 9, 2008, the State of Alabama submitted a proposed Regional Haze State implementation plan (SIP), pursuant to the requirements codified in federal rule at 40 CFR 51.308(i)(2), to the U.S. Department of the Interior, Fish and Wildlife Service (FWS) and National Park Service (NPS). The air program staff of the FWS in coordination with the NPS has conducted a substantive review of the Alabama draft plan, and has provided the comments listed below. We applaud the Alabama Department of Environmental Management (ADEM) for developing a SIP that is responsive to the key policy areas that we identified as important in our August 1, 2006, letter. We particularly appreciate the descriptive narrative explaining the rationale for conclusions made to address Regional Haze. We offer the following comments in the spirit of cooperation to improve on the items already contained in the proposed draft SIP. We look forward to the State's response as per section 40 CFR 51.308(i)(3). For further information regarding these comments, please contact Tim Allen at (303) 914-3802.

Best Available Retrofit Technology (BART):

BART-Eligible Issues

Sanders Lead and Escambia (Natural Gas Processing Plant, Flomation) do not appear on the "BART Eligible Unit List" (Attachment H.3) of the Regional Haze SIP (RH SIP), but the FWS received hardcopies of their exemption modeling. Both were below the 0.5 dv impact cutoff. It seems that they should appear on the BART Eligible Unit List.

The Alabama Modeling Summary (Attachment H8) of the RH SIP lacks the modeling results for the following facilities that appear on the BART Eligible Unit List:

- Escambia Operating Company – Big Escambia Creek (We can't tell if this is the same facility or a different one than the Escambia Natural Gas Processing Plant at Flomation)
- Alabama Power Co., Plant Barry
- Chemical Lime Corp., Montevallo Plant
- Chemical Lime Corp., Alabaster Plant
- Alabama Power Co., Plant EC Gaston
- Alabama Power Co., Plant Greene Co
- Alabama Power Co., Plant Gorgas
- American Cast Iron Pipe Company
- TVA, Widows Creek
- TVA, Colbert
- Alabama Power Co., Plant Miller
- Sanders Lead Company, Inc.
- Hunt Refining Company
- BP Amoco Chemical Company, Decatur Works

There appears to be a contradiction regarding Oak Grove Resources - JCDH in that the Alabama Modeling Summary (Attachment H8 – Table 4-6) shows this facility to have a 0.021 dv impact when Table 7.8.4-1 of the RH SIP shows an impact of 0.535 dv. This difference should be explained or rectified.

**BART Determination Issues**

Attachment H8 of the RH SIP contains State-developed summaries of the two BART determinations of Solutia, Inc., and International Paper – Courtland Mill. In addition, we have reviewed the BART determinations submitted by the companies and our comments are below.

A potential issue relates to the significant 4.4 deciview impact of Solutia, Inc. on Sipsey Wilderness Area. Such significant impact portends a closer look at possible controls that might be considered by Solutia, Inc., in its BART determination.

**International Paper – Courtland Mill**

The BART determination performed by International Paper (IP) for the Courtland Mill was generally comprehensive and well-done. However, it is not clear whether the base-case showing a 1.013 deciview impact at Sipsey assumed that the #1 Combination Boiler was operating in "swing capacity" as is actually the case or whether full-time use was assumed. This should be clarified.

A BART control strategy involves installation of low NOx burners (LNB) on the #2 Combination Boiler. The table on page 5-8 assumes a 30% control performance level and develops a control cost of $585 per ton and a visibility improvement cost of $3,130,000/deciview. The State should strongly consider adopting this BART strategy. Visibility improvement at Sipsey is estimated at .083 deciview. However, Attachment D, which serves as the conclusion section, states that only 10% NOx control is expected from this strategy, resulting in a .019 deciview improvement. This discrepancy should be explained or rectified. A LNB installation could be expected to result in 30% control, rather than 10%, so the former numbers seem to be more realistic.

**Solutia, Inc.**

This facility has a significant visibility impact on the Sipsey Wilderness Area (Sipsey) with the baseline emissions scenario being 4.438 deciviews ($98^{th}$ percentile 24-hour impact). This impact prompted the reviewers to seriously consider and recommend any reasonable BART alternative for implementation. The FWS concurs with the BART recommendations made by the ADEM, reversing the Solutia, Inc. proposal that BART should include no additional control equipment. The FWS proposes that BART should include additional control equipment on both coking boilers.

The introduction to the BART Engineering Analysis dated December 2006 stated, "A number of model sensitivity analyses conducted to investigate the impact of large $SO_2$

and $NO_x$ emission reduction (i.e., up to 95% control) indicated relatively little effect on visibility impairment. These results suggest that the atmospheric transport times and chemical conversion rates of gaseous precursors into visibility-impairing particulate matter are too low for there to be major Class I area visibility improvements." First, the statement of "little effect on visibility impairment" is not accepted, given, for example, that a wet scrubber on Coke Boiler #1 (even at 90% removal efficiency) results in a 0.41 deciview improvement at Sipsey. This could be doubled for a wet scrubber on Coke Boiler #2. FWS considers this as a significant improvement at reasonable cost and the State should consider this in their BART determination. Under the BART guidelines[1] any improvement in visibility at Class I areas that can be achieved at reasonable cost per ton and cost per deciview of visibility improvement should be initiated. Second, it is suggested that Sipsey is too near the Solutia facility (48 km) for significant chemical conversion of the gaseous precursors to result in visibility impairment. Attachment H8 of the RH SIP, in the Table within the Nitrogen Oxides section showed $NO_x$ removed for each $NO_x$ BART alternative on the five units ranging from 52 tons to 655 tons. In each case it was asserted that reductions of this magnitude had a "zero" $98^{th}$ percentile deciview improvement at Sipsey. This conclusion should be reviewed. Though Sipsey is the nearest Class 1 area to the Solutia facility and was the only area modeled, significant impacts may be found at other Class I areas.

Solutia, Inc., concluded that Boilers #5 and #6 should be limited to no more than 1800 hours of operation in a year, primarily being operated only when other units were not in operation; but did not consider this limit to be a limit as a result of BART. The FWS considers this to definitely be a BART limit. Solutia's analysis showed that wet scrubbers on Boilers #5 and #6 would cost about $1,000 per ton of SO2 and $8.9 million per deciview under full operation. FWS considers that these costs are reasonable under the under the BART guidelines, and the State should consider BART for these units to be wet scrubbers. An operational limit is acceptable to avoid installation of BART control equipment, but such a limit, by itself, becomes BART and requires that permanent, enforceable limits be placed in Solutia, Inc.'s operating permit. The FWS agrees with ADEM that a requirement of low sulfur fuel (less than 1.2 lb/MMBtu) for Boilers #5 and #6 is reasonable and the visibility improvement justifies the cost of $470/ton and $423/ton of $SO_2$, respectively.

Solutia, Inc., accepted ADEM's recommendation of BART for Boiler #7 as Rotating Opposed Fire Air (ROFA)/Rotamix for $NO_x$ (and mercury) control and the Mobotec Furnace Sorbent Injection (FSI) system for $SO_2$ (and mercury) control. These alternatives were primarily chosen to meet the Boiler Maximum Acheivable Control Technology (MACT) requirements for the facility. On strictly BART criteria it might be argued that a combination of Selective Catalyst Reduction (SCR) for $NO_x$ control and a wet scrubbing alternative for $SO_2$ control might be more cost-effective with greater visibility improvement at Sipsey. The ROFA/FSI systems were likely not finalized (e.g., by a signed Consent Decree under MACT) prior to EPA's publication of the BART guidelines (July 6, 2005). Therefore, MACT and BART control alternatives should be considered on equal footing without a supposition that MACT is the first consideration. Solutia, Inc., should examine other technologies that may remove mercury and meet

MACT standards in concert with bonifide $SO_2$ and $NO_x$ controls that may best meet the BART criteria (possibly the SCR/wet scrubbing alternative).

The FWS agrees with the ADEM that for Boiler #7 the $SO_2$ limit should be 0.41 lb/MMBtu and the $NO_x$ limit should be 0.28 lb/MMBtu. The Solutia, Inc., argument that those limits should be 0.47 lb/MMBtu and 0.36 lb/MMBtu, respectively, allowing for "comparable technology" to reach those limits rather than being bound to FSI and ROFA, allows too much latitude. The use of comparable technology to reach prescribed, enforceable limits is acceptable, but to relax the limits and then allow comparable technology seems too permissive.

No BART controls were selected for Coke Boilers #1 and #2. Again, FWS considers using a wet scrubber with a cost per ton of $600 for $SO_2$ control within an acceptable BART cost range and the State should consider this option. On a visibility basis this amounts to a cost of $8 million per deciview of visibility improvement. This too, is reasonable. Even the next higher cost alternative of ROFA/FSI at $1,090 per ton might be construed as reasonable. The BART evaluation for Coke Boilers #1 and #2 should include a wet scrubber on each unit. This would result in visibility improvement at Sipsey of a very significant 0.82 deciviews. One set of tables in the BART determination seemed to use 90% control efficiency for the wet scrubber, while another set of tables assumed 95% control efficiency. The 95% control efficiency is attainable by industry practice and should be used.

Attachment H8 of the RH SIP in the section entitled, "Cost of Compliance" it is stated, "For both the coking units, Solutia has indicated that the addition of any controls would negate the viability of the coking units. The requirement of the additional controls would result in a net loss and thus require the units to be shutdown." The BART Guidelines[2] address this situation. A mere statement that the units would be required to shut down is not sufficient. The specific economic effects, parameters and reasoning, among other topics should be discussed to justify such an unusual conclusion.

Solutia, Inc., has proposed to ADEM that the following language be added to the RH SIP: "Other technology(s), on a site-wide or unit-by-unit basis, may be used to satisfy BART provided the reduction of SO2 and NOx emissions is commensurate with the unit-by-unit specified BART controls and calculated emission rates found in Attachment A, Table 2". It would seem to be acceptable to meet an emission level equivalent to a particular BART technology standard. The question becomes why Solutia, Inc., cannot evaluate those other alternatives now. Full implementation of BART is required within five years after approval of the Alabama RH SIP, so time is relatively short. If there is some innovative approach that Solutia, Inc., is considering, it would be good to open it up to discussion sooner rather than later.

[1] See 40 CFR Part 51, Appendix Y. The U.S. Environmental Protection Agency finalized it's BART Guidelines on June 15, 2005, and published the preamble and final rule text in the Federal Register on July 6, 2005. The rulemaking action added Appendix Y to Part 51, titled "Guidelines for BART Determinations Under the Regional Haze Rule."

[2] ibid. See Section IV.E.3.