



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

Air Resources Division

P.O. Box 25287

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N3615 (2350)

February 22, 2012

Pamela Blakley, Chief
Control Strategies Section
Air Programs Branch (AR-18J)
U.S. Environmental Protection Agency Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

EPA Docket ID: EPA-R05-OAR-2011-0329

Dear Ms. Blakley:

The National Park Service (NPS) has reviewed the Environmental Protection Agency's (EPA's) proposed "Approval and Promulgation of Air Quality Implementation Plans; Ohio; Regional Haze."

Our enclosed comments review the determination of Best Available Retrofit Technology (BART) for P. H. Glatfelter boilers #7 and #8 and recommend that in addition to the daily maximum SO₂ emissions rate, EPA and Ohio also set a 30-day rolling average SO₂ limit equivalent to a continuous 90% emissions reduction.

We appreciate the opportunity to work closely with the Ohio Environmental Protection Agency and EPA Region 5 to make progress toward achieving natural visibility conditions at our National Parks and Wilderness Areas. For further information regarding our comments, please contact Don Shepherd at (303) 969-2075.

Sincerely,

Susan Johnson
Acting Chief, Policy, Planning and Permit Review Branch

Enclosure

cc:
Bob Hodanbosi, Director
Division of Air Pollution Control
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, Ohio 43216-1049

National Park Service Comments on EPA's Proposed Partial Approval of the Ohio Regional
Haze State Implementation Plan
February 22, 2012

Long Term Strategy

EPA proposes to approve Ohio's conclusion that implementation of existing control programs adequately addresses Ohio's impact on Class I areas in other states and provides Ohio's fair share of emissions reductions to meet reasonable progress goals for the impacted Class I areas. EPA's approval assumes that the Cross State Air Pollution Rule will be upheld by the District Court this April, 2012, and that its proposed "Regional Haze: Revisions to Provisions Governing Alternatives to Source-Specific Best Available Retrofit Technology (BART) Determinations"¹ will be finalized before final action is required on Ohio's plan.

BART Determination

P. H. Glatfelter--Chillicothe Facility (Glatfelter)

The Glatfelter paper mill produces Kraft pulp and bleached paper products at its mill in Chillicothe in south central Ohio. The BART-eligible sources at Glatfelter are the pulverized-coal-fired power boilers #7 (B002) and #8 (B003); capacities are 422 and 505 mmBtu/hr respectively.² Boiler #7 is tangentially fired, producing 300,000 lb steam/hr, and #8 is a wet-bottom, wall-fired unit producing 400,000 lb steam/hr. NO_x emissions are controlled by Low-NO_x Burners (LNB) with Close-Coupled Overfire Air on boiler #7 and by LNB on boiler #8.

Ohio Environmental Protection Agency (OEPA) determined that BART for SO₂ is a semi-dry Flue Gas Desulfurization with a removal efficiency of 90% and an estimated reduction of 20,515 TPY of SO₂ emissions below current levels. Glatfelter proposed a BART alternative to accomplish the equivalent of 90% removal. Glatfelter's proposed emissions limit is a maximum limit of 24,930 pounds per day. This is a 90% reduction from the maximum 24-hour SO₂ emissions rate (from 2003, 2004, and 2005) that was used in the BART modeling; however, this represents only 77% reduction from the actual annual 2002 emissions of 19,913 ton per year reported by OEPA³.

In addition to the 24,930 pounds per day emissions limit, we recommend that EPA and OEPA require Glatfelter achieve at least a 90% SO₂ reduction on a 30-day rolling average that reflects the performance capability of the control equipment.

Below we provide supporting data for our recommendation from the Ohio State Implementation Plan.

¹ EPA-HQ-OAR-2011-0729

² Appendix F-I, Details of Modeling

³ Appendix F-I, Details of Modeling

OEPA CALPUFF modeling results: The following days of exceedance (most-impacted areas only shown) of 0.5 dv ⁴				
Class I area	2002	2003	2004	Totals
Dolly Sods	23	23	31	77
Mammoth Cave	12	14	22	48
Shenandoah	20	37	38	95
Great Smoky	5	8	10	23
Totals	60	82	101	243

According to OEPA⁵:

In view of the fact that 100% control of SO₂ brings the number of above-threshold days in the most-impacted area from 38 days down to zero, whereas 100% NO_x control only brings it down to 35 days, it was judged that the benefit of NO_x control would be a full order of magnitude less than for SO₂, and on that basis the current controls on NO_x were judged to be acceptable. Likewise, the benefit of control of primary particulate is negligible compared to SO₂.

Glatfelter reviewed a number of possible retrofit technologies and three technologies passed the initial review and were subjected to a more detailed analysis:

- Wet FGD
- Semi-Dry FGD
- Overfire Air and Sorbent Injection System (OASIS)

OEPA⁶: The three processes are capable of 90, 90, and 60 percent SO₂ removal, respectively. The three technologies have similar costs (\$2,540 - \$2,744) on a basis of dollars per ton of pollutant removed.⁷ Taking this analysis into consideration in conjunction with the CALPUFF modeling results, Ohio determined that a process capable of 90 percent SO₂ removal was appropriate. Upon further discussions with Glatfelter it was decided that Glatfelter would implement an alternative program to BART as allowed under 40 CFR 51.308(e)(2). An alternative BART measure must achieve greater reasonable progress than would be achieved through the installation and operation of BART. If the alternative measure results in greater emission reductions, then the alternative measure is deemed to achieve greater reasonable progress. As part of a broader business strategy to improve energy efficiency, Glatfelter will be implementing an alternative approach that will achieve greater emission reductions than the 90 percent SO₂ removal projected under traditional BART. This approach includes installing control technology sufficient to achieve greater than BART SO₂ removal on boiler numbers B002 and B003 or permanently shutting down the boiler(s). Ohio EPA will implement the requirement as a modification to Glatfelter's permit-to-install (PTI). Prior to implementing the alternative BART, the Company will be issued a modified PTI, and prior to startup of any new equipment, within

⁴ Appendix F-I, Details of Modeling

⁵ Analysis of Visibility Impacts of BART-Eligible Sources on the Regional Scale, Technical Support Document, Ohio Environmental Protection Agency, Division of Air Pollution Control, February 2011

⁶ Analysis of Visibility Impacts of BART-Eligible Sources on the Regional Scale, Technical Support Document, Ohio Environmental Protection Agency, Division of Air Pollution Control, February 2011

⁷ The cost estimates do not follow EPA guidelines because they are based upon a ten-year amortization period at a rate of 15%, as opposed to the EPA-recommended 15 years at 7%. As a result, the Glatfelter estimates are almost double the appropriate values. It is also likely that the wet FGD technology could achieve 95% SO₂ removal.

the 5-year time frame specified under 40 CFR 51.308 (e)(1)(iv), permit restrictions will be in force assuring continuous effective operation of a control process capable of greater than 90 percent sulfur dioxide removal.

SIP section 8.4: Projected Emissions Reductions Resulting from Installation of BART Controls

The application of alternative BART to the subject-to-BART source, Glatfelter, will provide an estimated reduction of 20,515 TPY of SO₂ emissions below current levels. Controlling both boilers at 90 percent would have resulted in limiting SO₂ emissions to 24,931 pounds per day. Under this alternative the boilers will be limited to emitting 24,930 pounds per day. There is also the co-benefit of additional reductions of NO_x and PM_{2.5} if Glatfelter chooses to permanently shut down a boiler.

SIP section: 8.5 Enforceability of BART Requirements

This requirement has been incorporated into a federally enforceable permit with a compliance date of December 31, 2014. Under the alternative, control may include an add-on control device, use of an alternative fuel, use of low sulfur fuel, or a combination of these measures. In addition, Glatfelter may choose to shut down the boiler(s). By no later than December 31, 2013, Glatfelter shall submit to Ohio EPA an application for modification of the federally enforceable permit that includes a compliance plan outlining, at a minimum, the specific, selected control technologies and methods of compliance; and these requirements, along with any appropriate monitoring, recordkeeping, and reporting requirements, shall be incorporated into the federally enforceable permit by no later than December 31, 2014. A continuous emission monitoring system (CEMS) will also be installed prior to December 31, 2014 to measure and record the daily SO₂ emissions. The requirements will be incorporated into the facility's Title V operating permit according to Title V revision procedures.

Permit section: Operations, Property and/or Equipment Description⁸:

b) Applicable Emission Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emission limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

g. ...sulfur dioxide emissions from emissions units B002 and B003, combined, shall not exceed 24,930 pounds per calendar day.

NPS: While we commend OEPA for its efforts to reduce SO₂ emissions, based upon our review of BART Appendix G, we have concerns that the approach described may not be as effective as intended, or required.

According to OEPA Appendix F-1, Glatfelter's 2002 SO₂ emissions were 19,913 tons (see table below).

⁸ OEPA final Permit-to-Install issued 3/7/11

EIS 2002 emission rates (TPY)				Proposed		
Boiler	B002	B003	Combined	Combined		
hrs/yr	8,650	8,744	17,394	(lb/day)	(TPY)	Reduction
S02	7,862	12,051	19,913	24,930	4,550	77%
NOx	871	1,715	2,586			
PM	22	26	49			
PM10	12	18	30			
PM2.5	0	0	0			

The proposed emission limit is equivalent to 4,550 tons/year, which represents only a 77% reduction from 2002 emission rates.⁹ BART is typically an emission limit based upon either a percent reduction requirement or a mass emission per unit of input (or output); this ensures that the control technology chosen will be operated at its fullest capacity at all times. (For example, EPA’s BART Guidelines specify either 0.15 lb SO₂/mmBtu or 90% control be achieved on a 30-day rolling average.) In that context, “Ohio determined that a process capable of 90 percent SO₂ removal was appropriate.” However, by imposing only a daily limit on mass emissions, Glatfelter could operate its power boilers at reduced capacity (or shut down one boiler), and still meet the emission limit with no additional control of SO₂; this does not meet the intent of the BART regulations.

We have compiled emission limits proposed for other coal-fired paper mill power boilers that are also subject to BART:

State	Company	Facility	Source	Control Technology	SO ₂ % Reduction	SO ₂ Limits
MD	New Page/Westvaco	Luke Paper	Power Boiler No. 25	BART: Spray Dryer Absorber or a Circulating Dry Scrubber	90% annual	
VA	MeadWestvaco	Covington	Power Boiler #9	BART: upgrade existing wet caustic scrubbers which control SO ₂ emissions from all 4 power house boilers	additional 20% SO ₂ reduction	1831 lb/hr (annual avg.) demonstrated daily; 8020 tons/yr (12-month rolling total)
VA	MeadWestvaco	Covington	Power Boiler #9	Reasonable Progress determination that additional upgrades could be made to the existing scrubber system by 2015 by adding virgin caustic to the scrubber liquid	additional 15% SO ₂ reduction	1556 lb/hr (annual avg.) demonstrated daily; 6817 tons/yr (12-month rolling total)
VA	Georgia Pacific	Big Island	#4 Power Boiler	BART: caustic scrubber	design control efficiency of 90 percent	Annual SO ₂ emissions will be limited to 219 tpy
WI	Georgia Pacific	Green Bay	Power Boilers B-26 and B-27	The final BART determination for SO ₂ reflects fuel switching of petroleum coke from BART boilers B26 and B27, followed by circulating bed dry scrubbing technology at 93% control.	Overall SO ₂ control efficiency, based on combination of fuel switching and dry scrubber control at 93%, is 95.8% for B26 and 93.8% for B27.	268 tons/30-day rolling average; 2,340 tpy

Except for the Mead/Westvaco mill in VA (which involves a cap including several non-BART boilers), the other coal-fired power boilers will install scrubbers designed to achieve at least 90%

⁹ We would like to see more-recent SO₂ emissions data for Glatfelter to see how the proposed limit compares to current operation.

SO₂ reduction. (Although only the Wisconsin BART determination includes a 30-day rolling average, we are recommending a similar format for the other paper mills.) In addition to the 24,930 lb daily limit, EPA should require that Glatfelter achieve at least a 90% SO₂ reduction on a 30-day rolling average.