GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Air Protection Branch
4244 International Parkway
Suite 120
Atlanta, Georgia 30354
404-363-7000

July 10, 2020

Jill Holmes
Brunswick Cellulose
1400 West Ninth Street
P.O. Box 1438
Brunswick, GA 31520

Subject: Regional Haze 4-Factor Analysis
Brunswick Cellulose, Glynn County, Georgia

Dear Ms. Holmes:

On July 1, 1999, the United States Environmental Protection Agency (EPA) published the final Regional Haze Regulations in the Federal Register[1]. Section 51.308 of the Regional Haze Regulations requires each state to "address regional haze in each mandatory Class I Federal area located within the State and in each mandatory Class I Federal area located outside the State which may be affected by emissions from within the State." Georgia submitted its initial regional haze plan on February 11, 2010. The plan was supplemented on November 19, 2010 and updated on July 26, 2017 to change reliance from the Clean Air Interstate Rule (CAIR) to the Cross-State Air Pollution Rule (CSAPR) for certain regional haze requirements. U.S. EPA fully approved the Georgia regional haze plan on May 4, 2018 (83 FR 19637). Paragraph 40 CFR 51.308(f) of the Regional Haze Regulation requires that states submit a regional haze implementation plan revision by July 31, 2021. As part of the plan revision, the State of Georgia must establish a reasonable progress goal (expressed in deciviews) that provides for reasonable progress towards achieving natural visibility conditions in the Cohutta Wilderness Area, Okefenokee Wilderness Area, and Wolf Island Wilderness. The goal "must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period."

The State of Georgia must also submit a long-term strategy that addresses regional haze visibility impairment for each mandatory Class I Federal area within the State and for each mandatory Class I Federal area located outside the State that may be affected by emissions from the State. The long-term strategy must include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals established by States having mandatory Class I Federal areas.

[1] The Regional Haze regulations were amended on July 6, 2005, October 13, 2006, June 7, 2012, and January 10, 2017.

In establishing reasonable progress goals, the State must consider the four factors specified in section 169A of the federal Clean Air Act and in paragraph 51.308(f)(2)(i) of the Regional Haze Regulations: (1) the cost of compliance, (2) the time necessary for compliance, (3) the energy and non-air quality environmental impacts of compliance, and (4) the remaining useful life of any potentially affected sources.

On August 20, 2019, U.S. EPA issued "Guidance on Regional Haze State Implementation Plans for the Second Implementation Period." Among other things, this document provides guidance to states on the selection of sources for analysis, characterization of factors for emission control measures, and decisions on what control measures are necessary to make reasonable progress.

The Georgia Environmental Protection Division (EPD) has worked with Visibility Improvement State and Tribal Association of the Southeast (VISTAS), of which Georgia is a member, to identify facilities that significantly impact visibility impairment for Class I Federal areas within and outside of Georgia consistent with the Regional Haze statutory and regulatory requirements and EPA guidance. VISTAS initially utilized an Area of Influence (AoI) analysis to help identify the areas and sources most likely contributing to poor visibility in Class I Federal areas. This AoI analysis involved running a backward trajectory model to determine the origin of the air parcels affecting visibility. This information was then spatially combined with emissions data to determine the pollutants, sectors, and individual sources that were most likely contributing to the visibility impairment at each Class I Federal area. Georgia first used this information to determine that the pollutant and sector with the largest impact on visibility impairment was sulfur dioxide from point sources. Georgia then used the results of the AoI analysis to identify sources to "tag" for PM (Particulate Matter) Source Apportionment Technology (PSAT) modeling. PSAT modeling uses "reactive tracers" to apportion particulate matter among different sources, source categories, and regions. PSAT was implemented with the CAMx (Comprehensive Air Quality Model with extensions) photochemical model to determine visibility impairment due to individual facilities. Georgia identified sources shown to have an impact on one or more Class I Federal areas that is greater than or equal to one percent (≥1.00%) of the total sulfate and nitrate visibility impairment from EGU and non-EGU point sources on the most impaired days for that Class I Federal area. These sources are being considered for additional analysis.

Based on analyses conducted by Georgia EPD and VISTAS, sulfur dioxide emissions from Brunswick Cellulose have been shown to contribute to more than one percent to the visibility impairment at one mandatory Class I Federal area (Table 1). In order to meet the requirements of Section 51.308(d)(1)(i)(A) of the Regional Haze Rule, we must consider each of the four factors listed above for your facilities. Actual 2028 sulfur dioxide emissions have been projected to be 294.20 tons per year for Brunswick Cellulose based on historical operations and emissions and any changes that are expected to occur. Please review this information to determine if these estimates reasonably project actual 2028 emissions. Should you have a significantly different estimate for projected 2028 sulfur dioxide emissions, please provide that estimate along with the justification and methodology for the revised estimate.

Georgia EPD is requesting that you conduct a four-factor analysis on emission sources at your facility. Specifically, the analysis should include all significant sources of SO_2 emissions at Brunswick Cellulose.

Table 1. Brunswick Cellulose (13127-3721011)
Modeled SO_2 = 294.20 tpy, Modeled NOx = 1,554.51 tpy

Impacted VISTAS Class I Areas	Sulfate PSAT (Mm^{-1})	Nitrate PSAT (Mm^{-1})	Total EGU & non-EGU Sulfate + Nitrate (Mm^{-1})	Sulfate PSAT % Impact	Nitrate PSAT % Impact
Wolf Island Wilderness (GA)	0.228	0.017	12.957	1.76%	0.13%

EPA's August 20, 2019, memorandum provides guidance on how the four statutory factors can be characterized. In order to identify control measures with the highest level of control effectiveness that are both technically feasible and cost effective using the minimal amount of effort, Georgia EPD also requests that the analyses be conducted using a "top-down" approach as follows:

Step 1: Identify all control technologies;
Step 2: Eliminate technically infeasible options;
Step 3: Rank remaining control technologies by control effectiveness;
Step 4: Application of the four statutory factors (cost of compliance, time necessary for compliance, energy and non-air quality environmental impacts, remaining useful life of existing source) to control technologies identified in Step 3 and document the results; and
Step 5: Select control technology

Implementation of the methodology specified in EPA's August 20, 2019, guidance using a top-down approach is summarized in the attachment.

You should submit the requested four-factor analyses by no later than November 30, 2020. Should you have a different estimate for projected 2028 sulfur dioxide emission than that presented in this letter, please submit that information by not later than August 10, 2020. Should you have any questions concerning this request, please contact Dr. James Boylan at (404) 363-7014 or via email at James.Boylan@dnr.ga.gov.

Sincerely,

Karen Hays

Karen Hays, P.E
Chief
Air Protection Branch

Attachment

Summary of 4-Factor Analysis Methodology Specified in EPA's Guidance (August 20, 2019) Using a Top-Down Approach

Determining Which Emission Control Measures to Consider

First, identify all technically feasible sulfur dioxide control measures for each source selected for four-factor analysis. Then, rank them in order of highest to lowest control effectiveness. The projected 2028 actual sulfur dioxide emissions from the source should be used as the baseline emission level for estimating control effectiveness of each control measure.

Characterizing the Cost of Compliance (Statutory Factor 1)

Estimate the cost of compliance starting with the control measure with the highest level of control effectiveness. The cost of compliance should be in terms of cost/ton of sulfur dioxide reduced. The cost used as the numerator in the cost/ton metric should be the annualized cost of implementing the control measure and should be determined using methods consistent with U.S. EPA's Air Pollution Cost Control Manual[2]. Should you use a method that deviates from the Cost Control Manual, you should include that methodology, including all calculations and assumptions, and you should justify why the method used is more appropriate than methods specified in the Cost Control Manual. The emission reduction used as the denominator for the cost/ton metric should be the annual tons of reduction from implementation of the control measure. If your analysis indicates that the control measure should be included as part of Georgia's long-term strategy for the second implementation period, further analysis is not necessary. If your analysis indicates that the control measure is not cost effective, you should estimate the cost of compliance for the control measure with the next highest level of control effectiveness. This process should be repeated until you have identified a control measure that should be included in Georgia's long-term strategy or until all of the control measures have been analyzed.

Characterizing the Time Necessary for Compliance (Statutory Factor 2)

Provide an estimate of the time needed to comply with the control measure(s) identified using statutory factor 1. Specify the source-specific factors used to estimate the time to install the control measure and provide a justification as to why the estimated time is reasonable.

Characterizing Energy and Non-Air Environmental Impacts (Statutory Factor 3)

The cost of the direct energy consumption of the control measure should be specified and included in the cost of compliance analysis. If there are any non-air environmental impacts associated with a control measure, such as impacts on nearby water bodies, those impacts should be specified.

Characterizing Remaining Useful Life of the Source (Statutory Factor 4)

The length of the remaining useful life of a source is the number of years prior to the shutdown date during which the new emission control would be operating. If the remaining useful life of the source is less than the useful life of the control system being analyzed, then you should use the remaining useful life of the source in determining the annualized cost in the cost of compliance analysis. Otherwise, you should use the useful life of the control measure in the cost of compliance analysis. If the remaining useful life of a source is relied upon in in a four-factor analysis of a control measure instead of the useful life of the control system, and that control system becomes part of the state's long-term strategy, the shutdown date for the source will need to be included in the Regional Haze SIP and be made federally enforceable.

[2] https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution#cost manual