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Re: Review of NAAQS Air Dispersion Modeling Protocol for Owens-Brockway; Request for Revisions

Dear Mr. Riemschneider and Mr. Buenger:

Thank you for the "NAAQS Air Dispersion Modeling Protocol," submitted September 20, 2021, prepared for Owens-Brockway Glass Container Inc. (Owens-Brockway) by Bridgewater Group (NAAQS Protocol). This Protocol supplements the "Air Dispersion Modeling Protocol," submitted January 2021 that was prepared by ERM, which addressed modeling for the Cleaner Air Oregon (CAO) program. The comments in this letter are only for the NAAQS Protocol. DEQ appreciates the time and effort that Owens-Brockway has recently invested in the evaluating emissions at its Portland facility.

General Comments

The major elements of the NAAQS Protocol, including the selection of models, modeling methods and parameters, meteorological data, background, PVMRM NO_x to NO_2 conversion methodology using an ISR = 0.1, and other data and information used in the modeling, are acceptable and follow the DEQ Modeling Procedures Document. The comments below address elements in the Protocol for which DEQ requires clarification or additional information before the NAAQS Protocol can be deemed complete and approved.

Specific Comments

DEQ has the following comments that must be addressed before final approval of the Protocol:

1) **Building and Stack Height**: There is uncertainty about building heights, particularly the height of the large vent on the top of building B1, and the height of Stack D. These concerns are shared with the CAO review of the CAO modeling Protocol. We request that an accurate determination of these heights be made by survey or other reliable on-site measurement. Given the close proximity of the stack and vent, and their similar height, small changes in height could have a significant effect on downwash concentrations.

2) **Production and Emission Rates; Emission Factors:** The maximum production rates, emission rates, and emissions factors (EFs) for Furnace D are critical for determining the resulting modeled concentrations and the source's ability to comply with 1-hour NAAQS. The values proposed in the NAAQS Protocol should be representative of the upper end of the facility's potential hourly emissions to adequately assess the facility's potential to comply with short-term NAAQS. These values will be incorporated into the permit as limits and Owens-Brockway will be required to demonstrate compliance with those limits through additional monitoring and testing. For example, the NAAQS Protocol currently uses an hourly production rate of 7.95 tons of glass per hour and an annual production level of 60,000 tons per year. Revisions to the NAAQS Protocol and subsequent modeling may also be necessary after future source testing or monitoring at the facility. Ultimately, Owens-Brockway should select for modeling the highest emission rate that it is capable of demonstrating compliance with. DEQ makes the following requests:

(a) Please revise the NAAQS Protocol to use the emission factor of 4.02 lbs NO_x per ton of glass, or higher, for Stack D. The NAAQS Protocol currently proposes a NO_x emission rate of 29.68 lbs/hr for Stack D, as shown in Table A-1, based on an hourly production rate of 7.95 tons glass/hr (190.8 tons/day) and an EF of 3.73 lb of NO_x per ton of glass, which represents an average of the three most recent source tests (each consisting of three runs). In contrast, while operating at a production rate of 7.95 tons glass/hr, run no. 1 of the June 2020 source test demonstrated an EF of 4.02 lbs of NO_x per ton of glass for Stack D. Using the highest EF is preferred over using an average of prior source tests, particularly when compared to the facility's COMS and production data and where the source tests were conducted for other purposes, including to demonstrate compliance with annual limits.

(b) For SO_2, DEQ currently understands that the emissions vary depending upon the glass type and color. Please identify which glass type and color has the highest potential SO_2 emissions and indicate if the source tests conducted in 2019 and 2020 are representative of that glass formula, or alternatively how Owens-Brockway intends to restrict its production to a smaller set of glass formulas until additional source testing can be performed. For antique green glass (G56), please revise the NAAQS Protocol to use the emission factor of 3.4 lbs SO_2 per ton of glass, or higher, for Stack D. Run no. 1 in the May 2019 source test using the formaldehyde system flow rate demonstrated an emission factor of 3.4 lbs SO_2 per ton of glass for Stack D. Using the highest EF is preferred over using an average of prior source tests, particularly when compared to the facility's COMS and production data and where the source tests were conducted using two different glass colors and for other purposes, including to demonstrate compliance with annual limits.

3) **Typographical Correction:** Note that the reference to a 18-19 August 2021 source test appears to be in error, as this test occurred on 18-19 August *2020*. Please clarify whether the NAAQS Protocol intended to reference the August 2020 test.

4) **Mapping:** In addition to the modeling files, please provide maps showing isopleths of concentration that graphically show the extent and magnitude of the modeled concentrations plus background.

Thank you for your attention to this request for additional information. Please submit the additional requested information by **December 5, 2021**. If you fail to submit the requested information to DEQ by the date specified above, you may be subject to enforcement, including civil penalties.

If you have any questions on this letter please contact Matt Davis at (503) 229-5687 or email matthew.davis@deq.state.or.us.

Sincerely,

Matt Davis
DEQ Northwest Region, Air Quality

Cc: George Yun, DEQ Northwest Region
Kenzie Billings, DEQ Cleaner Air Oregon
Philip Allen, DEQ Air Technical Services