



Northstar Glassworks, Inc.  
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July 29, 2016

Oregon Department of Environmental Quality  
Attn: Joe Westersund  
811 SW Sixth Avenue  
Portland, OR 97204-1390

RE: Art Glass Permanent Rules 2016  
Public Comment on DEQ's Rulemaking Proposal  
As it Pertains to Northstar Glassworks, Inc.

Dear Mr. Westersund:

Northstar Glassworks, Inc. (Northstar) presents this letter of comments to Oregon Department of Environmental Quality's (DEQ's) proposed Art Glass Permanent Rulemaking 2016.

### **Background**

DEQ's Questions are provided in *italicized text*, and Northstar's responses are provided in regular text below:

1. *Should the rule be modified to apply to sources that make less than 10 tons per year of colored art glass?*
  - Yes, the rule should be modified to apply to all sources of hazardous air pollutants (HAPs), ideally, regardless of the amount produced. However, if a threshold is needed, we suggest that the rule apply to manufacturers of greater than 500 pounds of colored art glass per year. This would prevent smaller, unregulated, colored art glass manufacturers from starting up in lieu of the larger, tiered regulated manufacturers. This modification would be consistent with the goal of reducing the amount of HAPs being discharged to the atmosphere.
  - Northstar Glassworks has worked with activists, DEQ and the EPA to better understand what goes on in our manufacturing process. The reason for Northstar recommending a lower threshold for tons produced per year is that it leave a large loophole for smaller manufactures to pollute. The main reason of these rules is to lower air toxics in the air in Portland and hopefully reduce the health concerns to the public. Also by NOT lowering the threshold of glass produced it could give any manufacture the chance to

just have smaller facilities for producing just enough to skirt the rules all together. It is DEQ's executive responsibility to protect the health and environment we live in. Please do not leave loopholes that could affect companies and the health of the public.

2. *Should the rule be modified to apply statewide, rather than only in the Portland AQMA?*

- Yes, the rule should be modified to apply to colored art glass manufacturers throughout the State. Such an action will prevent tiered colored art glass manufacturers from relocating to unregulated areas of the State, to avoid the cost of complying with the rules. This action would be consistent with the goal of reducing the amount of HAPs being discharged to the atmosphere.

3. *The temporary rule requires control devices be shown to capture at least 99.0% of incoming particulate matter. DEQ has received indications that, for some facilities, capturing enough particulate matter to show compliance with the 99.0% requirement may require an unmanageably long source test. DEQ seeks comment on whether replacing the 99.0% capture efficiency standard with an emissions standard at the control device outlet would be appropriate for Tier 1 or all facilities and if so, what emissions standard should be chosen. DEQ is considering a control device outlet particulate matter emission standard between 0.001 and 0.01 gr/dscf (grains per dry standard cubic foot of air) based on a range of emissions standards in federal air toxics rules.*

- Our estimates indicate that insufficient PM would be collected over a 24-hr test period to achieve DEQ's Method Quantitation Limit (MQL) of 7 milligrams (mg). Working backward, we would need over 700 mg at the inlet (or 2.3 lbs/hr, assuming a 24 hr sample duration) to show 99.0% removal, as shown below:

- $1 - 0.99 \times \text{PM} = 0.01 \times \text{PM} = 7 \text{ mg}; \text{PM} = 7 \text{ mg} / 0.01 = 700 \text{ mg}$ , assuming:

- Typical sampling rate of 16L/min (1 m<sup>3</sup>/hr)

- Sample volume = 1 m<sup>3</sup>/hr 24-hour test duration = 1 m<sup>3</sup>/hr x 24 hr = 24 m<sup>3</sup>

- Total mass to accumulate over 24-hour sample duration (700 mg)

- An inlet concentration of 30 mg/m<sup>3</sup> (700 mg collected at a rate of 1 m<sup>3</sup>/hr)
  - Which is equivalent to 0.013 gr/dscf, assuming 0.015 grains/mg)
- A stack flow of 20,000 cfm (566 m<sup>3</sup>/min)
- Calculated necessary minimum emission rate
  - 266 gr/min, or
  - 15932 gr/hr, or
  - 2.3 lbs/hr, assuming 7000 grains/lb
- Northstar Glassworks is estimated to produce no more than 10 lbs PM per month, 0.33 lb/day, or 0.014 lb/hr [6,300 mg/hr]), the majority of which is from glass crushing operations. Thus, the inlet PM is approximately 0.6% of the mass needed to meet a 99% efficiency standard using DEQ's Method 5 MQL of 7 mg.
- Although the method quantification limit in inlet PM in EPA's method is better (3 mg), the inlet PM is only approximately 1.4% of the mass needed to meet a 99% efficiency standard.
- Given the low inlet mass at Northstar, it is impossible to conduct a PM efficiency test that is long enough duration to meet the MQL for DEQ's Method 5 or EPA's Method 5; however, the estimated costs to conduct these tests ranged between approximately \$40,000 to over \$80,000, and are nearly one week in duration. Running a longer duration test, e.g., over a month long period, would introduce greater potential for error, increase costs significantly (\$300k to \$400k), but still not guarantee a successful test. None of the laboratories will guarantee results. All of these options are cost-prohibitive for a Tier I manufacturer of colored art glass.

Therefore, Northstar strongly supports replacing the 99.0% capture efficiency standard. The following replacement emissions standards, listed in descending order of preference, are proposed:

- A standard tied to the efficiency of the baghouse fitted with a particular set of filters, i.e. 99.0%. No efficiency testing is proposed. Rather, we will rely on factory efficiency test data and the fact that baghouses are a time-proven technology.

- A device outlet particulate standard of 0.01 gr/dscf. This could be achieved using either DEQ Method 5 or EPA Method 5, and it is normally done with three (3) one-hour test runs that can be completed in one day with a crew of two technicians.
- A device outlet particulate standard of 0.001 gr/dscf. This could be achieved using either DEQ Method 5 or EPA Method 5, and it is normally done with three (3) two-hour test runs that can be completed in one day with a crew of two technicians.
- Northstar also recommends that DEQ add Cadmium to the list of materials that cannot be used in unfiltered hoods/furnaces for tier 1 manufactures. Cadmium is very toxic and we believe that Cadmium volatilizes at more than 75 percent. By DEQ adding cadmium to the list of raw materials this would help protect the public and also NOT leave a loophole that could cause potential health concerns in the future.
- We also would like to have DEQ lower the costs involved with the discharge permits to tier 1 manufactures. The costs for tier 1 manufactures are almost more the tier 2 manufactures to comply with the regulations when we are much smaller. Tier 1 manufactures have never been noted as polluters and have not been inspected in that manner either. After dealing with the costs to comply with the new regulations Northstar believes that costs for the permit should be NO more than 2-4,000 per year.

Kind regards,

Paul M. Trone, R.G.  
Principal Geologist, EVREN Northwest

Abraham Fleishman  
President, Northstar Glassworks, Inc.