Invitation to Comment

Art Glass Permanent Rulemaking 2016

This document contains several documents:
- -Invitation to Comment
- -Notice of Rulemaking Hearing
- -Draft Rules
- -Attachment A - Fiscal Impact Calculations

DEQ invites public input on proposed permanent rule amendments to chapter 340 of the Oregon Administrative Rules.

DEQ proposal

DEQ proposes the following changes to OAR 340, division number 244 that will control metals emissions from colored art glass manufacturing (CAGM) facilities in the Portland area.

Air toxics emissions from certain types of industrial businesses like colored art glass manufacturers are not fully regulated under federal requirements. Based on sampling DEQ has concluded that uncontrolled furnaces used in such colored art glass manufacturing are more likely than not to emit potentially unsafe levels of certain metals, including arsenic, cadmium, hexavalent chromium and nickel. The permanent rules that DEQ proposes for EQC adoption are intended to protect the public health and the environment by ensuring the air emissions from colored art glass facilities do not cause unsafe levels of metals in the air nearby.

EQC adopted temporary rules on April 21, 2016 and this proposed rulemaking will make those rule changes permanent. If no action is taken those rules will expire 180 days after adoption, on October 18, 2016. DEQ is also seeking comment on possible rule modifications that would make the proposed permanent rules apply to more sources than do the temporary rules, as noted in the "Request for other options" section of the Notice of Proposed Rulemaking.

More information

Information about this rulemaking is on this rulemaking's web page: Art Glass Permanent Rules 2016

Public Hearings

DEQ will hold the following public hearings on this rulemaking:

6 pm, July 19, 2016
DEQ Headquarters, 10th Floor Conference Room EQC-A, 811 SW 6th Avenue, Portland, OR 97204
Meeting Call-In Number: 888-363-4734
Participant Code: 1910322
Webinar Link: https://www.connectmeeting.att.com

What will happen next?

DEQ will include a written response to comments in a staff report DEQ will submit to the Environmental Quality Commission. DEQ may modify the rule proposal based on the comments.

Present proposal to the EQC
Proposed rules only become effective if the Environmental Quality Commission adopts them. DEQ plans to present the proposed rules to the commission for a decision at a special meeting to be scheduled in October 2016.

How to comment on this rulemaking proposal

DEQ is asking for public comment on the proposed rules. Anyone can submit comments and questions about this rulemaking.

Comment deadline
DEQ will only consider comments on the proposed rules that DEQ receives by 5 p.m., on Friday, July 29th 2016.

Submit comment online
Art Glass Permanent Rules 2016 Comment Page

Note for public university students:
ORS 192.501(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you complete the online form to submit a comment.

By mail
Oregon DEQ
Attn: Joe Westersund
811 SW Sixth Avenue
Portland, OR 97204-1390

At hearing
Tuesday, July 19, 2016

Sign up for rulemaking notices
Get email updates about future DEQ rulemaking by signing up through GovDelivery

or on the rulemaking web site.

Accessibility information
You may review copies of all documents referenced in this announcement at:

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR, 97204

To schedule a review of all websites and documents referenced in this announcement, call Joe Westersund in Portland, at 503-229-6240 (800-452-4011, ext. 5622 toll-free in Oregon).

Please notify DEQ of any special physical or language accommodations or if you need information in large print, Braille or another format. To make these arrangements, contact DEQ, Portland, at 503-229-5696 or call toll-free in Oregon at 1-800-452-4011, ext. 5696; fax to 503-229-6762; or email to deqinfo@deq.state.or.us. Hearing impaired persons may call 711.

Oregon Department of Environmental Quality
June 15, 2016
Notice of Proposed Rulemaking

Art Glass Permanent Rulemaking 2016

Overview

Short summary

DEQ proposes that the Oregon Environmental Quality Commission (EQC) approve the proposed rules, making the temporary art glass rules adopted by the EQC in April 2016 permanent, but potentially with some modifications.

Brief history

Elevated and possibly unsafe levels of metals have been found in the air around two glass manufacturing facilities in Portland. In May 2015, DEQ received the initial results of a study the U.S. Forest Service conducted looking at moss samples as an indicator or screening tool for contaminants in the air. The study's results showed that the moss samples in the areas near two colored art glass manufacturers contained high levels of the heavy metals cadmium and arsenic in Southeast Portland and cadmium in North Portland.

This pilot study prompted DEQ to set up air monitoring systems near a glass company in Southeast Portland. The study collected 24-hour air samples every few days over a 30-day period in October 2015. The results of DEQ's air monitoring confirmed that the glass company was the likely source of metals air emissions. DEQ completed its quality assurance and quality control review of those samples in late January 2016. DEQ then shared its analysis of the findings with the Oregon Health Authority (OHA) and the Multnomah County Health Department.

The DEQ also identified a second area of concern near a glass company in North Portland. The glass companies were operating in compliance with the current law. One company was operating within its permit and the other company is not required to have a permit.

The U.S. Congress amended the Clean Air Act in 1990 to allow EPA to oversee the control of 188 hazardous air pollutants (HAPs) in order to protect human health. The EPA works with local and state governments to implement technologies that control the emission of these chemicals.

Benchmarks are Oregon's protective "clean air" goals that DEQ developed to address toxic air pollutants. There are no direct regulatory requirements associated with benchmarks. In 2005, with EPA funding, DEQ measured concentrations of air toxics, including metals, at six locations in the Portland area, finding levels of many pollutants above clean air benchmarks. DEQ established air toxics benchmarks in 2006 that set guidelines for 52 pollutants.

DEQ's work in 2006 and since then has identified levels of some toxic air pollutants that are still above Oregon's air toxics benchmarks. This is a significant problem because toxic air pollutants are connected with serious health effects like cancer, respiratory problems and organ damage. DEQ's air

toxics benchmarks are designed to be very protective air concentrations that people could breathe for a lifetime without increasing their cancer risk beyond a chance of one in a million.

Air toxics emissions from certain types of industrial businesses like colored art glass manufacturers are not fully regulated under federal requirements. Based on sampling DEQ has concluded that uncontrolled furnaces used in such colored art glass manufacturing are more likely than not to emit potentially unsafe levels of certain metals, including arsenic, cadmium, hexavalent chromium and nickel. The permanent rules that DEQ proposes for EQC adoption are intended to protect public health and the environment by ensuring the air emissions from colored art glass facilities do not cause unsafe levels of metals in the air nearby.

EQC adopted temporary rules on April 21, 2016 and this proposed rulemaking will make those rule changes permanent. If no action is taken those rules will expire 180 days after adoption, on October 18, 2016.

Regulated parties

The proposed rules apply to colored art glass manufacturers (CAGM) in the Portland Air Quality Maintenance Area (AQMA). DEQ is considering rule modifications that would make the proposed permanent rules apply to more sources than do the temporary rules, as noted below in the section titled "Request for other options".

CAGMs will incur expenses to obtain air permits; submit reports to DEQ; and depending on the compliance path chosen, to install, operate and maintain emission control devices, and/or perform stack testing and dispersion modeling.

Request for other options

During the public comment period, DEQ requests public comment on whether to consider other options for achieving the rules' substantive goals while reducing the rules' negative economic impact on business.

In addition to comments on other aspects of the proposed rules, DEQ is specifically requesting public input on these questions:

- Should the rule be modified to apply to sources that make less than 10 tons per year of colored art glass? If so, what threshold would be appropriate? If proposing a new threshold, what is the scientific/risk based rationale for the change?
- Should the rule be modified to apply statewide, rather than only in the Portland AQMA?
- 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.

Statement of need

What need would the proposed rule address?

DEQ is addressing the need to control metals emissions from CAGM facilities. As DEQ recently determined through air monitoring and facility inspections, uncontrolled glass furnaces processing colored glass to which metal Hazardous Air Pollutants[1] (HAP) are added emit these metals at levels that can pose an immediate threat to the health of people nearby. Recent monitoring close to a colored art glass facility with uncontrolled furnace emissions has shown metals concentrations at levels that can significantly increase risks of cancer and other health problems.

These rules are necessary to address a regulatory gap. A federal regulation called NESHAP 6S[2] is applicable to some furnaces at the largest CAGMs, but smaller facilities and furnaces also use and emit metal HAP in quantities likely to pose an unacceptable risk to people nearby. No other state and federal standards currently apply that would limit potentially unsafe levels of metal emissions from these types of colored art glass facilities.

How would the proposed rule address the need?

The proposed rules would fill the regulatory gap by setting operational standards for art glass businesses that emit air toxics and potentially cause serious health effects.

The proposed rules create two tiers of CAGM based on production and furnace type. The larger Tier 2 CAGMs would be required to install emission control devices on all furnaces using metal HAP and to perform source testing and dispersion modeling to measure and limit emissions of hexavalent chromium. The smaller Tier 1 CAGMs can install emission control devices on all furnaces using metal HAP, use source testing and modeling to demonstrate that emissions are below source impact levels without controls, or stop using metal HAP in one or more furnaces.

These rules would decrease the risk from airborne metal exposure to people nearby, including children and other sensitive or vulnerable individuals.

How will DEQ know the rule addressed the need?

The rule requires source testing to demonstrate the effectiveness of emissions control devices and to measure emissions in several other cases (hexavalent chromium emissions from Tier 2 facilities and metal HAP emissions from Tier 1 facilities opting to operate uncontrolled furnaces). Source testing will quantify metal HAP emissions and emissions reductions.

DEQ is also performing ambient air monitoring near several CAGMs, which can verify whether metal HAP concentrations in the air people breathe have been reduced to safe levels.

[1] The metal HAP governed by the proposed rule include arsenic, cadmium, chromium, lead, manganese and nickel.
[2] National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources, 40 CFR Part 63 Subpart SSSSSS.

Rules affected, authorities, supporting documents

Lead division

Operations

Program or activity

Program Operations

Chapter 340 action

Repeal	OAR 340-244-0010(T), 340-244-9000(T), 340-244-9010(T), 340-244-9020(T), 340-244-9030(T), 340-244-9040(T), 340-244-9050(T), 340-244-9060(T), 340-244-9070(T), 340-244-9080(T), 340-244-9090(T)
Adopt	OAR 340-244-9000, 340-244-9010, 340-244-9020, 340-244-9030, 340-244-9040, 340-244-9050, 340-244-9060, 340-244-9070, 340-244-9080, 340-244-9090
Amend	OAR 340-244-0010

Statutory authority

ORS 468.020, 468A.025, 468A.040, 468A.055, 468A.070 and 468A.310

Statute implemented

ORS 468A.025, 468A.040, 468A.055, 468A.070 & 468A.310

Documents relied on for rulemaking

Document title	Document location
EQC Staff Report for Colored Art Glass Manufacturer Emissions Temporary Rulemaking	http://www.oregon.gov/deq/RulesandRegulations/Documents/ToxicsStaff0416.pdf

Fee Analysis

This rulemaking does not involve the adoption of any new fees.

Statement of fiscal and economic impact

Fiscal and Economic Impact

The proposed change to make the CAGM rules permanent would have fiscal and economic impacts on businesses, DEQ, and the public. It is not anticipated to have fiscal and economic impacts on federal government, other state agencies, or local governments.

Statement of Cost of Compliance

State and federal agencies

Direct Impacts

The proposed rules would require Tier 1 CAGMs to apply for and maintain Air Contaminant Discharge Permits (ACDPs), which these businesses would not otherwise be required to have. The permit application fees (currently $7,200 per facility) and annual fees (currently $4,608 per facility) would be additional revenue to DEQ. However, those fee amounts would be offset by DEQ's additional costs for permit writing, compliance monitoring and inspections.

Tier 2 CAGMs that must comply with the substantive requirements of NESHAP 6S will be required to have Title V operating permits whether or not the proposed rules are adopted. In this case, adoption of the proposed rules would not impact DEQ revenue or costs for these facilities. If a Tier 2 CAGM is not required by NESHAP 6S to have a Title V permit, the proposed rules would require them to get an ACDP similar to Tier 1 CAGMs. Bullseye Glass currently has an ACDP.

The US Environmental Protection Agency has been in contact with CAGMs and DEQ but they would not be directly involved in implementing the proposed rules. DEQ does not anticipate impacts to federal agencies or other state agencies besides DEQ.

Indirect Impacts

DEQ does not anticipate indirect impacts to DEQ or other state and federal agencies.

Local governments

DEQ does not anticipate direct or indirect impacts to local governments.

Public

Direct Impacts

DEQ does not anticipate direct impacts to members of the public, because they are not subject to the rule.

Indirect Impacts

The proposed rules are intended to measure and reduce emissions of metal HAPs from the CAGMs subject to the rule. Decreased emissions of metal HAPs and other particulate matter may have

significant health benefits for the public, particularly those who live, work or otherwise spend significant time near a CAGM.

Cadmium, arsenic, and lead, three of the metal HAPs regulated by the rule, have been found to exceed human health-based benchmark concentrations near CAGMs. Exposure to metal HAPs through inhalation or other means is connected with serious health effects like cancer, respiratory problems and organ damage.

The compliance route chosen by many CAGMs will likely be installation of one or more particulate matter control devices such as baghouses. In addition to reducing metal HAP emissions, installation of these devices would reduce emissions of other particulate matter, including fine particulate matter (less than 2.5 microns in diameter). Fine particulate matter causes serious health problems ranging from increased respiratory and pulmonary symptoms, hospital admissions and emergency room visits to premature death for people with heart and lung disease.

Health problems have negative economic impacts to the people experiencing them, and may also affect their family members, employers, and the health care system. The proposed rules would create positive economic benefits and improvements in public health and welfare by reducing these emissions. DEQ currently does not have an estimate of avoided health impacts, but the Oregon Health Authority (OHA) is working on Public Health Assessments to estimate the health impacts of emissions from Bullseye and Uroboros. OHA plans to release those reports in late fall of 2016.

The US Environmental Protection Agency (EPA) estimated the costs and benefits of the 1990 Clean Air Act Amendments[3], which among other things expanded regulation of air toxics and led to regulations such as NESHAP 6S. EPA's estimate was that the health benefits of that set of regulations were 30 times the costs of compliance, with a range between 3 and 90. According to EPA, "This net improvement in economic welfare is projected to occur because cleaner air leads to better health and productivity for American workers as well as savings on medical expenses for air pollution-related health problems. The beneficial economic effects of these two improvements alone are projected to more than offset the expenditures for pollution control."[4] While EPA has calculated these benefits for the 1990 Clean Air Act Amendments, it is unknown whether figures would be similar for these proposed rules.

The source testing, modeling, and reporting components of the rule provide the public information about the amount and composition of emissions. This information appears to have value to members of the public, though DEQ is unable to quantify that value in monetary terms.

To the extent that metals emissions depress property values near CAGM facilities, the proposed rule may also have a positive economic impact by reversing that effect. DEQ does not have available data to quantify this.

Members of the public that are customers of CAGMs may pay higher prices, if CAGMs raise their prices to recoup their compliance costs. DEQ lacks information to estimate the impact of price increases but expects this impact on the public to be small relative to the health benefits.

[3] "Benefits and Costs of the Clean Air Act, 1990 to 2020", https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act

[4] https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-second-prospective-study

Large businesses - businesses with more than 50 employees

Direct Impacts

Currently there are five CAGM that would be subject to the proposed rules. One of those, Bullseye Glass Company, has more than 50 employees and is therefore considered a large business for the purposes of rulemaking fiscal impact analysis.

Compliance cost may vary depending on facility-specific circumstances. In particular, Bullseye is making changes to comply with NESHAP 6S at the same time as this proposed rule. Even if this proposed rule is not adopted, Bullseye would need to install one or more baghouses to meet NESHAP 6S requirements. Because the number of baghouses that would be installed for NESHAP 6S alone is uncertain, the number of additional baghouses needed for compliance with the proposed rule is also uncertain. (Bullseye is planning for installation of a total of 4 baghouses.) DEQ has incorporated that uncertainty into this fiscal impact analysis by estimating that Bullseye would install between zero and two additional baghouses to comply with the proposed rule, over and above what they would install for NESHAP 6S compliance alone.

If no additional baghouse costs were attributable to the proposed rule, compliance with the proposed rule would cost Bullseye about $70,000 to $100,000 in initial costs for permitting, source testing, and modeling, with no ongoing costs.

If all costs for two additional baghouses were attributable to the proposed rule, compliance with the proposed rule would cost Bullseye about $578,000 to $930,000 for permitting, baghouse installation, source testing, and modeling, and ongoing costs of $54,000 to $174,000 per year to operate and monitor the baghouses.

It is possible that Bullseye may be able to offset the cost of compliance through increased prices. Bullseye is reportedly increasing prices by 12.5% in August 2016 to help pay for baghouse installation[5]. However, the potential for increasing revenue may be limited if prices are set in a market that includes competitors located outside the jurisdiction of the proposed rules.

Further details on these cost estimates can be found in Attachment A.

Indirect Impacts

To the extent CAGMs raise their prices in response to the proposed rules, the increased prices represent an indirect fiscal impact on their customers, some of whom may be large businesses. DEQ does not have sufficient information to estimate this effect.

Small businesses – businesses with 50 or fewer employees

Direct Impacts

Four of the five businesses subject to the proposed rules have 50 or fewer employees and are therefore considered small businesses for the purposes of rulemaking fiscal analysis.

Of these, one (Uroboros Glass Studios, Inc.) is in Tier 2 of the proposed rules. The other three (Glass Alchemy, Northstar Glassworks, and Trautman Art Glass) are in Tier 1.

[5] Portland Mercury, “Bullseye Glass is Raising Prices To Pay for Air Filters”, June 8, 2016.

Like Bullseye, Uroboros is making changes to comply with NESHAP 6S at the same time as the proposed rule. Uroboros stated that in 2015 all of their furnaces were below the throughput thresholds for NESHAP 6S applicability. But, they intend to comply with NESHAP 6S because future throughput may be higher. Uroboros plans to install one baghouse at their facility. Because that baghouse is partially attributable to this proposed rule, DEQ calculated Uroboros' costs with between zero and one additional baghouse to comply with the proposed rule.

If no additional baghouse costs were attributable to the proposed rule, compliance with the proposed rule would cost Uroboros about $66,000 to $89,000 in initial costs for permitting, source testing, and modeling, with no ongoing costs.

If all costs for the baghouse were attributable to the proposed rule, compliance with the proposed rule would cost Uroboros $421,000 to $699,000 for permitting, baghouse installation, source testing, and modeling, and ongoing costs of $27,000 to $87,000 per year to operate and monitor the baghouse.

Facility-specific data for the Tier 1 CAGMs was not available, so their costs were estimated as a class. The proposed rule gives Tier 1 CAGMs multiple compliance options.

One option is to install an emissions control device such as a baghouse. DEQ estimates that the cost of compliance through this method is approximately $261,000 to $422,000 per facility in one-time costs and between $32,000 and $92,000 per facility in ongoing annual costs. The Tier 1 facilities are not subject to NESHAP 6S and would likely install only one baghouse per facility. All three Tier 1 CAGMs indicated that they planned to pursue this compliance option.

Alternately, Tier 1 CAGMs can operate without an emissions control device if they show through source testing and dispersion modeling that the impact of their emissions on the nearest sensitive receptor is within acceptable source impact levels. DEQ estimates that the cost of compliance via this pathway would be approximately $32,000 to $127,000 in one-time costs and $5,000 in ongoing annual costs for permitting. However, this estimate does not include the cost of reductions or changes in the type or amount of products produced, which could potentially be required in order to maintain emission impacts below limits. The proposed rules also prohibit hexavalent chromium from being used in furnaces that are using this compliance pathway. DEQ does not have sufficient information to estimate whether reduction or changes in production would be necessary.

Tier 1 CAGMs also have the option to stop using some or all of the metal hazardous air pollutants[6] regulated by this rule completely. While this option is available, this would limit the range of glass colors that can be produced, and the lost revenue would likely make this an expensive compliance option.

Trautman Art Glass, one of the Tier 1 CAGMs, said that the proposed rules may prompt them to move their facility to a new location. That decision would depend on whether the current property owner agrees to allow installation of a baghouse, as well as other factors internal to their business. The company estimated that moving their factory and complying with the rules at the new location would cost approximately $2 million, plus lost revenue of $1 million during the moving process. DEQ does not have data to verify the necessity to move or the facility's cost estimates for doing so.

[6] The metal HAPs regulated by the proposed rule include arsenic, cadmium, chromium, lead, manganese and nickel.

As for large business CAGMs, it is possible that small business CAGMs may be able to offset the cost of compliance through increased prices. However, this potential may be limited if their prices are set in a market that includes competitors located outside the jurisdiction of the proposed rules.

Further details on these cost estimates can be found in Attachment A.

Indirect Impacts

To the extent CAGMs raise their prices in response to the proposed rules, it would represent an indirect fiscal impact on their customers, some of whom may be small businesses. DEQ does not have sufficient information to estimate this effect.

Summary of impact on small business (ORS 183.336)

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Four of the CAGMs subject to the proposed rule are small businesses.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

Tier 1 CAGMs would be required to obtain an Air Contaminant Discharge Permit (ACDP) that they wouldn't otherwise be required to have. Tier 2 CAGMs would be required to obtain an ACDP, if an ACDP or Title V is not already required by other regulations.

CAGMs complying using an emissions control device are required to do an initial source test, and ongoing monitoring and reporting to show proper operation of the emissions control device.

CAGMs complying using source testing and modeling would be required to perform source testing and modeling, and may also need to do recordkeeping and reporting to show that production levels remain below limits established through that process.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

CAGMs complying using an emissions control device would be required to install the control device, which may require replacement parts and supplies.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ allowed for a two week public comment period on the temporary rule, which is not required by law. DEQ received comments on the temporary rule from three of the four small businesses affected by the rule. DEQ proposed changes in the rules for Tier 1 CAGMs as a result of these comments.

Documents relied on for fiscal and economic impact

Document title	Document location
Benefits and Costs of the Clean Air Act 1990-2020, the Second Prospective Study	https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-second-prospective-study
Bullseye Glass is Raising Prices To Pay for Air Filters	Portland Mercury, June 8, 2016 http://www.portlandmercury.com/blogtown/2016/06/08/18194644/bullseye-glass-is-raising-prices-to-pay-for-air-filters

Advisory committee

DEQ appointed a fiscal advisory committee.

As ORS 183.33 requires, DEQ asked for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact,
- The extent of the impact, and
- Whether the proposed rules would have a significant impact on small businesses and complies with ORS 183.540.

The committee met on May 27, 2016 and June 10, 2016 to review the draft fiscal and economic impact statement. Committee members were asked individually to respond to the questions listed above.

Committee members agreed that the rules would have a fiscal impact. Several members commented that there is also a fiscal impact on the US EPA. Other committee members stated that in addition to negative fiscal impacts of the rule, there are positive impacts because of avoided health impacts.

Committee members felt the range of costs reflected in the DEQ fiscal impact estimates were reasonable. Some commented that there is high uncertainty about the numbers, and some requested that the health benefits of the rule be quantified. One commented that costs could be significantly higher than the cost range given if a CAGM had to move their facility to install controls.

Committee members agreed that the rule would have a significant adverse impact on small businesses. Several members commented that small businesses located near the facilities or whose employees are located near the facilities would be negatively impacted if the rule were not implemented, because of the health impacts of uncontrolled emissions.

The committee determined the proposed rules would have a significant adverse impact on small businesses. As ORS 183.333 and 183.540 require, the committee considered how DEQ could reduce the rules' fiscal impact on small business by:

- Establishing differing compliance or reporting requirements or time tables for small business;
- Clarifying, consolidating or simplifying the compliance and reporting requirements under the rule for small business;
- Utilizing objective criteria for standards;
- Exempting small businesses from any or all requirements of the rule; or

- Otherwise establishing less intrusive or less costly alternatives applicable to small business.

Committee members were asked whether they could suggest ways to reduce the negative economic impact of the rule while still meeting its public health and safety purpose. Several committee members commented that DEQ could reduce uncertainty for small businesses by clarifying source test requirements and whether they can operate during the period between submitting a permit application and DEQ issuing the permit. Some committee members mentioned that the rule already attempts to reduce impacts on small businesses by having different requirements for different tiers.

Committee members also stated that the current limits of the rule (only affecting CAGM in the Portland AQMA that produce 10 or more tons per year) increase the negative economic impact on the small businesses subject to the rule, because the rule is spurring competition from smaller unregulated operations, some run out of residential garages. The committee suggested that applying the rule statewide and lowering the applicability threshold from 10 tons per year to one, 100 or 1,000 pounds per year would better protect public health and reduce incentives to circumvent the rule.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel. DEQ determined that the proposed rules could affect the development cost if a house is constructed using colored art glass as a material, and if CAGM increase their prices in response to the proposed rule. However, the possible housing cost impact of these proposed changes appears to be infinitesimal because colored art glass represents an exceedingly small proportion of the development cost of a home.

Federal relationship

Relationship to federal requirements

ORS 183.332, 468A.327 and OAR 340-011-0029 require DEQ to attempt to adopt rules that correspond with existing equivalent federal laws and rules unless there are reasons not to do so.

The proposed rules add requirements additional to those in federal requirements. Air toxics emissions from certain types of industrial businesses like colored art glass manufacturers are not fully regulated under federal requirements. Based on sampling DEQ has concluded that uncontrolled furnaces used in such colored art glass manufacturing are more likely than not to emit potentially unsafe levels of certain metals, including arsenic, cadmium, hexavalent chromium and nickel. The permanent rules that DEQ proposes for EQC adoption are intended to protect the public health and the environment by ensuring the air emissions from colored art glass facilities do not cause unsafe levels of metals in the air nearby.

What alternatives did DEQ consider if any?

The only alternative that would not require rules in addition to federal requirements would be to not adopt these rules. DEQ considered but did not pursue this alternative because air monitoring measured metals at levels that can pose an immediate threat to the health of people nearby.

DEQ considered regulating all CAGMs the same but did not pursue this alternative because of the comments received from the public on the difference between Tier 1 and Tier 2 CAGMs.

Land use

Land-use considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with state wide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
  - Resources, objectives or areas identified in the statewide planning goals, or
  - Present or future land uses identified in acknowledged comprehensive plans

To determine whether the proposed rules involve programs or actions that affect land use, DEQ reviewed its Statewide Agency Coordination plan, which describes the DEQ programs that have been determined to significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

Goal	Title
5	Open Spaces, Scenic and Historic Areas, and Natural Resources
6	Air, Water and Land Resources Quality
9	Ocean Resources
11	Public Facilities and Services
16	Estuarial Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

Determination

DEQ determined that these proposed rules do not affect land use under OAR 340-018-0030 or DEQ's State Agency Coordination Program.

Stakeholder and public involvement

Advisory committee

Background

DEQ convened the Art Glass Permanent Rulemaking 2016 Fiscal Advisory Committee. The committee included representatives from colored art glass manufacturers, environmental groups and neighborhood air quality groups and met two times. The committee's web page is located at: Art Glass Permanent Rules 2016 Advisory Committee

The committee members were:

Name	Representing
Abe Fleishman	Northstar Glassworks
Al Hooton	Glass Alchemy, Ltd
Amanda Jarman	Eastside Portland Air Coalition
Chris Winter	CRAG Law Center
Eric Durrin	Bullseye Glass Company
Jacob Sherman	South Portland Air Quality
Mark Riskedahl	NW Environmental Defense Center
Paul Trautman	Trautman Art Glass

All five CAGMs subject to the rule were invited to participate on the committee. Uroboros Glass Studios, Inc. declined to participate.

Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, a free e-mail subscription service, to the following lists:
  - On May 17 DEQ sent a one-time notice to: Subscribers of Air Quality 2016 Permanent Rulemaking, Air Toxics State-wide, Cleaner Air Oregon Regulatory Overhaul, DEQ Public Notices, News Releases, Portland Air Toxics Solutions, Rulemaking and Toxics Reduction Strategy subscribers to describe how to sign up for advisory committee meeting notices, and
  - People who signed up for the advisory committee bulletin.
- Added advisory committee announcements to DEQ's calendar of public meetings at DEQ Calendar.

Committee discussions

The committee's discussions are described under the Statement of Fiscal and Economic Impact section above.

EQC prior involvement

The EQC met on March 15, 2016 to consider the temporary CAGM rules. After a public comment period and revisions to the rule, the EQC approved the rule at a second meeting on April 21, 2016.

Public notice and hearings

Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing on June 15, 2016 by:

- Filing notice with the Oregon Secretary of State for publication in the Oregon Bulletin on June 15, 2016,
- Notifying the EPA by email,
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking; located at: Art Glass Permanent Rules 2016,
- Emailing 9906 interested parties on the following DEQ lists through GovDelivery:
  - Subscribers of Air Quality 2016 Permanent Rulemaking
  - Air Toxics State-wide, Cleaner Air Oregon Regulatory Overhaul
  - DEQ Public Notices
  - News Releases
  - Rulemaking
  - Toxics Reduction Strategy
- Emailing the following key legislators required under ORS 183.335:
  - Senator Chris Edwards, Chair, Senate Environment and Natural Resources Committee
  - Representative Jessica Vega-Pederson, Chair, House Energy and Environment Committee
  - Senator Lee Beyer
- Emailing advisory committee members,
- Postings on Twitter and Facebook
- Posting on the DEQ event calendar: DEQ Calendar

Public hearings

DEQ plans to hold one public hearing. The table below provides the details.

DEQ will consider all written comments received at the hearings listed below before completing the draft rules. DEQ will summarize all comments and respond to comments in the Environmental Quality Commission staff report.

Hearing 1	
Date	**Tuesday, July 19th 2016**
Time	**6 pm**
Address Line 1	**811 SW 6th Avenue**
Address Line 2	**10th Floor, Conference Room EQC-A**
City	**Portland**
Presiding Officer	**DEQ staff**
Staff Presenter	**DEQ staff**

Call-in Phone Number	888-363-4734
Call-in Access Code	1910322
Webinar information	https://www.connectmeeting.att.com Meeting number: 888-363-4734 Code: 1910322

How to comment on the proposed rules:

Submit comment online
Art Glass Permanent Rules 2016 Comment Page

Note for public university students:
ORS 192.501(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you complete the online form to submit a comment.

By mail
Oregon DEQ
Attn: Joe Westersund
811 SW Sixth Avenue
Portland, OR 97204-1390

At the hearing

Close of public comment period

The comment period will close at 5 p.m. on July 29, 2016

Accessibility Information

You may review copies of all documents referenced in this announcement at:
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR, 97204

To schedule a review of all websites and documents referenced in this announcement, call Joe Westersund, DEQ HQ, 503-229-6240 (800-452-4011, ext. 5622 toll-free in Oregon).

Please notify DEQ of any special physical or language accommodations or if you need information in large print, Braille or another format. To make these arrangements, contact DEQ, Portland, at 503-229-5696 or call toll-free in Oregon at 1-800-452-4011, ext. 5696; fax to 503-229-6762; or email to deqinfo@deq.state.or.us. Hearing impaired persons may call 711.

Key to Identifying Changed Text:
Inserted text is Blue Underlined
Deleted text is ~~Red Strikethrough~~
Text deleted from one location - and moved to another location

Note: DEQ is proposing to make the current, temporary colored art glass manufacturing facility rules (included below) permanent. Therefore, there is no deleted, inserted, or removed text.

DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 244

OREGON FEDERAL AND STATE HAZARDOUS AIR POLLUTANT PROGRAM

General Provisions for Stationary Sources

340-244-0010

Policy and Purpose

The Environmental Quality Commission finds that certain air contaminants for which there are no ambient air quality standards may cause or contribute to an identifiable and significant increase in mortality or to an increase in serious irreversible or incapacitating reversible illness or to irreversible ecological damage, and are therefore considered to be hazardous air pollutants. It shall be the policy of the Commission that no person may cause, allow, or permit emissions into the ambient air of any hazardous substance in such quantity, concentration, or duration determined by the Commission to be injurious to public health or the environment. The purpose of this Division is to establish emissions limitations on sources of these air contaminants. In order to reduce the release of these hazardous air pollutants and protect public health and the environment, it is the intent of the Commission to adopt by rule within this Division the source category specific requirements that are promulgated by the EPA, and state standards to reduce the release of these hazardous air pollutants. Furthermore, it is hereby declared the policy of the Commission that the standards contained in this Division are considered minimum standards, and as technology advances, protection of public health and the environment warrants, more stringent standards may be adopted and applied.

Stat. Auth.: ORS 468.020 & 468A.310
Stats. Implemented: ORS 468A.025
Hist.: DEQ 13-1993, f. & cert. ef. 9-24-93; DEQ 14-1999, f. & cert. ef. 10-14-99, Renumbered from 340-032-0100; DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

Colored Art Glass Manufacturing Facility Rules

340-244-9000

Applicability

Notwithstanding OAR 340 Division 246, OAR 340-244-9000 through 9090 apply to facilities located within the Portland Air Quality Maintenance Area that:

(1)(a) Manufacture colored glass from raw materials, or a combination of raw materials and cullet, for use in art, architecture, interior design and other similar decorative applications, or

(b) Manufacture colored glass products from raw materials, or a combination of raw materials and cullet, for use by colored glass manufacturers for use in art, architecture, interior design and other similar decorative applications; and

(2) Manufacture 10 tons per year or more of colored glass using raw materials that contain any of the following metal HAPs: arsenic, cadmium, chromium, lead, manganese and nickel.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9010

Definitions

The definitions in OAR 340-200-0020 and this rule apply to OAR 340-244-9000 through 9090. If the same term is defined in this rule and 340-200-0020, the definition in this rule applies to this division.

(1) “Colored Art Glass Manufacturer” or “CAGM” means a facility that meets the applicability requirements in OAR 340-244-9000 and refers to the owner or operator of such a facility when the context requires.

(2) “Chromium III” means chromium in the +3 oxidation state, also known as trivalent chromium.

(3) “Chromium VI” means chromium in the +6 oxidation state, also known as hexavalent chromium.

(4) “Chromium”, without a following roman numeral, means total chromium.

(5) “Controlled” means the glass-making furnace emissions are treated by an emission control device approved by DEQ.

(6) “Cullet” means recycled glass that is mixed with raw materials and charged to a glass-making furnace to produce glass. Cullet does not include glass materials that contain metal HAPs in amounts that materially affect the color of the finished product and that are used as

coloring agents; such materials are considered raw materials. Cullet is not considered to be a raw material.

(7) “Emission control device” means control device as defined in OAR 340 Division 200.

(8) “Glass-making furnace” means a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass.

(9) “Metal HAP” means arsenic, cadmium, chromium, lead, manganese or nickel in any form, such as the pure metal, in compounds or mixed with other materials.

(10) “Raw material” means:

(a) Substances that are intentionally added to a glass manufacturing batch and melted in glass-making furnace to produce glass, including but not limited to:

(A) Minerals, such as silica sand, limestone, and dolomite;

(B) Inorganic chemical compounds, such as soda ash (sodium carbonate), salt cake (sodium sulfate), and potash (potassium carbonate);

(C) Metal oxides and other metal-based compounds, such as lead oxide, chromium oxide, and sodium antimonate; and

(D) Metal ores, such as chromite and pyrolusite.

(b) Metals that are naturally-occurring trace constituents or contaminants of other substances are not considered to be raw materials.

(c) Raw material includes glass materials that contain metal HAPs in amounts that materially affect the color of the finished product and that are used as coloring agents.

(d) Cullet and material that is recovered from a glass-making furnace control device for recycling into the glass formulation are not considered to be raw materials.

(11) “Tier 1 CAGM” means a CAGM that produces 10 tons per year or more of colored art glass, but not more than 100 tons per year, and produces colored art glass in glass-making furnaces that are only electrically heated.

(12) “Tier 2 CAGM” means:

(a) A CAGM that produces 10 tons per year or more of colored art glass in fuel-heated or combination fuel- and electrically-heated glass-making furnaces; or

(b) Produces 100 tons per year or more of colored art glass in any type of glass-making furnace.

(13) “Uncontrolled” means the glass-making furnace emissions are not treated by an emission control device approved by DEQ.

(14) “Week” means Sunday through Saturday.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9020

Permit Required

Not later than September 1, 2016, all CAGMs not otherwise subject to a permitting requirement must apply for a permit under OAR 340-216-8010 Table 1, Part B, category #84.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9030

Requirements That Apply To Tier 2 CAGMs

Effective September 1, 2016, Tier 2 CAGMs may not use raw materials containing any metal HAPs except in glass-making furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9040

Operating Restrictions That Apply To Tier 2 CAGMs

(1) Tier 2 CAGMs may not use raw materials containing arsenic, cadmium or chromium VI except in glass-making furnaces that are controlled by an emission control device approved by DEQ.

(2) A Tier 2 CAGM may use raw materials containing chromium III in a glass-making furnace (controlled or uncontrolled) if DEQ has established annual and daily maximum allowable chromium III usage rates for the glass-making furnace or group of glass-making furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter of chromium VI and a daily acceptable source impact level of 36 nanograms per cubic meter of chromium VI.

(3) After DEQ establishes the maximum allowable chromium III usage rates for a CAGM's glass-making furnace or glass-making furnaces, the CAGM must comply with the rates DEQ establishes. For the purpose of establishing maximum allowable chromium III usage rates, the following are required:

(a) A source test must be performed as specified below:

(A) Test using DEQ- approved protocols and methods for total chromium, chromium VI, and particulate matter using DEQ Method 5 or a DEQ-approved equivalent method and submit a source test plan detailing the approach to DEQ for approval;

(B) Test for chromium, chromium VI and particulate matter at the outlet of an uncontrolled glass-making furnace; or test for chromium, chromium VI and particulate matter at the inlet of an emission control device and for particulate matter at the outlet of the emission control device;

(C) Test while making a glass that DEQ agrees is made under the most oxidizing combustion conditions and that contains a high percentage of chromium III as compared to other formulas used by the CAGM; and

(D) Keep records of the amount of chromium III used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan.

(b) The Tier 2 CAGM must perform dispersion modeling, using models and protocols approved by DEQ, to determine the annual average and daily maximum ambient concentrations that result from the Tier 2 CAGM's air emissions as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the maximum chromium VI emission rate;

(C) Establish a maximum chromium III usage so that the source impact will not exceed either of the following:

(i) An annual acceptable source impact level for chromium VI concentration of 0.08 nanograms per cubic meter at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities; and

(ii) A daily acceptable source impact level for chromium VI concentration of 36 nanograms per cubic meter at any off-site modeled receptor.

(c) Each Tier 2 CAGM must keep daily records of all glass formulations produced and, until such time as the Tier 2 CAGM has installed all emission control devices required under OAR 340-244-9030, provide to DEQ a weekly report of the daily amount of each metal HAP used.

(4) Tier 2 CAGMs may apply source testing protocols equivalent to those in section (3)(a) to the use of chromium VI in a glass-making furnace to establish maximum usage rates for chromium VI in controlled glass-making furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter and a daily acceptable source impact level of 36 nanograms per cubic meter.

(5) Tier 2 CAGMs are not restricted on the raw materials that may be used in glass-making furnaces that are controlled by an emission control device approved by DEQ, except that the use of raw materials containing chromium III and chromium VI will be subject to maximum usage rates determined by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9050

Requirements That Apply To Tier 1 CAGMs

(1) No later than October 1, 2016, each Tier 1 CAGM must comply with subsection (a), (b) or (c) for each glass-making furnace or group of glass-making furnaces:

(a) Install an emission control device to control a glass-making furnace or group of glass-making furnaces that uses raw material containing metal HAPs, and that meets the emission control device requirements in OAR 340-244-9070;

(b) Demonstrate that the glass-making furnace or group of glass-making furnaces meets the exemption in section (2); or

(c) Request a permit condition that prohibits the use of metal HAPs in the glass-making furnace or group of glass-making furnaces, and comply with that condition.

(2) A Tier 1 CAGM is exempt from the requirement to install emission controls under subsection (1)(a) on a glass-making furnace or group of glass-making furnaces if that CAGM meets the requirements of subsection (a) for each of the individual metal HAPs listed in paragraphs (a)(A) through (a)(F) below. This exemption is not allowed for a glass-making furnace or group of glass-making furnaces that use raw materials containing chromium VI.

(a) The CAGM shows through source testing and dispersion modeling if necessary, following the requirements of subsections (b) and (c), that the metal HAP concentrations modeled at the nearest sensitive receptor do not exceed the applicable concentration listed in paragraphs (A) through (F). For chromium VI resulting from the use of chromium III, the CAGM may source test for and model chromium VI, or may source test for and model total chromium in lieu of chromium VI to demonstrate that the ambient concentration is below the concentration listed in paragraph (C). If the modeled total chromium ambient concentration exceeds the concentration listed in paragraph (C), then the CAGM may conduct an additional source test to measure

chromium VI and model to show that the ambient concentration of chromium VI does not exceed the concentration listed in paragraph (C).

(A) Arsenic, 0.2 nanograms per cubic meter;

(B) Cadmium, 0.6 nanograms per cubic meter;

(C) Chromium VI, 0.08 nanograms per cubic meter;

(D) Lead, 15 nanograms per cubic meter;

(E) Manganese, 90 nanograms per cubic meter;

(F) Nickel, 4 nanograms per cubic meter.

(b) Source testing for the purpose of demonstrating the exemption in this section must be performed as follows:

(A) Test using DEQ -approved protocols and methods for each metal HAP listed in paragraphs (a)(A) through (a)(F) that the Tier 1 CAGM intends to use.

(B) Test for particulate matter using DEQ Method 5 or equivalent; metals using EPA Method 29, CARB Method M-436 or an equivalent method approved by DEQ; and if the Tier 1 CAGM chooses, chromium VI using a method approved by DEQ.

(C) Submit a source test plan to DEQ for approval at least 30 days before the test date.

(D) For each metal HAP to be tested for, test while making a glass formulation that DEQ agrees has the highest potential emissions of that metal HAP. More than one source test may be required if a single glass formulation cannot meet this requirement for all metal HAPs to be tested for.

(E) Keep records of the amount of each metal HAP regulated under this rule used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan.

(c) Dispersion modeling for the purpose of demonstrating the exemption in this section is not required for any HAP metal that the source testing under subsection (b) shows is not greater than the applicable concentration listed in paragraphs (a)(A) through (a)(F); otherwise, dispersion modeling must be performed as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the EPA-approved model AERSCREEN or other EPA -approved model;

(C) Use the maximum emission rate for each metal to be modeled as determined by the source testing required by subsection (b); and

(D) Model the ambient concentration at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9060

Operating Restrictions That Apply To Tier 1 CAGMs

(1) Tier 1 CAGMs may not use raw materials that contain chromium VI in any uncontrolled glass-making furnace.

(2) Tier 1 CAGMs are not restricted on the raw materials that may be used in glass-making furnaces that are controlled by an emission control device approved by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9070

Emission Control Device Requirements

(1) Each emission control device used to comply with this rule must meet 99.0 percent or more removal efficiency for particulate matter as measured by EPA Method 5 or an equivalent method approved by DEQ.

(2) Emission control device requirements:

(a) A CAGM must obtain DEQ approval of the design of all emission control devices before installation, as provided in this rule.

(b) A CAGM must submit a Notice of Intent to Construct as required by OAR 340-210-0205 through 340-210-0250 no later than 15 days before the date installation begins. If DEQ does not deny or approve the Notice of Intent to Construct within 10 days after receiving the Notice, the Notice will be deemed to be approved.

(c) Emission control devices may control emissions from more than one glass-making furnace.

(d) Each emission control device must be equipped with the following monitoring equipment:

(A) An inlet temperature monitoring device;

(B) A differential pressure monitoring device if the emission control device is a baghouse; and

(C) Any other monitoring device or devices specified in DEQ's approval of the Notice of Intent to Construct.

(e) Each emission control device must be equipped with inlet ducting that provides the following:

(A) Sufficient cooling of exhaust gases to no more than the maximum design inlet temperature under worst-case conditions; and

(B) Provision for inlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(f) Each emission control device must be equipped with outlet ducting that provides for outlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(g) After commencing operation of any emission control device, the CAGM must monitor the emission control device as required by OAR 340-244-9080.

(h) A CAGM must perform the following source testing on at least one emission control device. Source testing done under OAR 340-244-9040(2) may be used in whole or in part to comply with this requirement.

(A) Within 60 days of commencing operation of the emission control devices, test control device inlet and outlet for particulate matter using DEQ Method 5 or equivalent method;

(B) The emission control device to be tested must be approved by DEQ;

(C) A source test plan must be submitted at least 30 days before conducting the source test; and

(D) The source test plan must be approved by DEQ before conducting the source test.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16; DEQ 6-2016(Temp), f. & cert. ef. 5-6-16 thru 10-17-16

340-244-9080

Emission Control Device Monitoring

(1) Each Tier 1 CAGM must perform the following monitoring on each emission control device it uses to comply with this rule:

(a) At least once each week, observe and record the inlet temperature and differential pressure (if applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(2) Each Tier 2 CAGM must perform the following monitoring on each emission control device used to comply with this rule:

(a) At least once each day, observe and record the inlet temperature and differential pressure (if applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, and if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(3) CAGMs must observe and record any parameters specified in a DEQ approval of the Notice of Intent to Construct applicable to a control device.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

340-244-9090

Other Metal HAPs

(1) If DEQ determines that ambient concentrations of a metal HAP in the area of a CAGM pose an unacceptable risk to human health and that emissions from an uncontrolled glass-making furnace at the CAGM are a contributing factor, then DEQ must set a limit on the CAGM's use of the metal HAP of concern in uncontrolled glass-making furnaces, by agreement or in a permit, to reduce such risk. DEQ must consult with the Oregon Health Authority when applying this rule.

(2) Exceeding the limits established under the authority of this rule is a violation of this rule.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040
Stats. Implemented: ORS 468A.025, & 468A.040
Hist.: DEQ 4-2016(Temp), f. & cert. ef. 4-21-16 thru 10-17-16

Attachment A
Fiscal Impact Calculations

DEQ Art Glass Permanent Rule
Fiscal Impact Estimate for proposed rule- Bullseye Glass Company

Bullseye - Tier 2			
Requirements summary	Install control device on all furnaces using metal HAPs If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits		
	Cost Estimate		
	low	**high**	
Permitting costs			
NESHAP 6S applies?	Y		
Needs Title V permit because of 6S	Y		
Cost of Title V application (including DEQ fees + consultant to prepare)	$25,000	$100,000	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Annual DEQ Title V permit costs	$10,310	$11,510	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Incremental extra cost of Title V application due to art glass rule	$0	$5,000	Assume preparing the permit application would cost 0% to 5% more because of the incremental addition of the proposed rules.
Incremental extra cost of Title V annual permit fees due to art glass rule	$0	$0	The proposed rules would not increase the annual permit fees if the facility would have a Title V anyway.
Number of Control Devices			
# of additional baghouses installed, over and above what would have been installed due to NESHAP 6S alone	0	2	This is uncertain because changes to comply with NESHAP 6S are happening at the same time as efforts to comply with this rule.
Cost Per Control Device			
Install baghouse	$250,000	$400,000	
One-time source test to demonstrate 99% PM control efficiency	$4,000	$15,000	Assume length of run depends on detection limits, does not have to be entire production run to show capture efficiency.
Annual operation	$15,000	$70,000	Electricity, bag replacement etc
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	
Total one-time costs per baghouse	$254,000	$415,000	
Total annual costs per baghouse	$27,000	$87,000	
Source Testing Costs			
One-time source test to measure Cr6 emissions when making products containing Cr3 or Cr6	$60,000	$65,000	Assume 16 hr test runs. May be able to run concurrently with 99% control efficiency test, reducing cost.
Modeling Costs			
One-time modeling to find max production rate that results in acceptable source impact level			
AERSCREEN model only	$10,000	-	
AERSCREEN followed by AERMOD model	-	$30,000	

Bullseye - Tier 2		
Requirements summary	Install control device on all furnaces using metal HAPs If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits	
	Cost Estimate	
	low	**high**

Total Costs

If 0 additional baghouses installed

One-time costs	$70,000	$100,000
Annual costs	$0	$0

If 2 additional baghouses installed

One-time costs	$578,000	$930,000
Annual costs	$54,000	$174,000

DEQ Art Glass Permanent Rule
Fiscal Impact Estimate for proposed rule- Uroboros Glass Studios, Inc.

Uroboros - Tier 2			
Requirements summary	Install control device on all furnaces using metal HAPs If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits		
	Cost Estimate		
	low	**high**	
Permitting costs			
NESHAP 6S applies?	Y		
Needs Title V permit because of 6S	Y		
Cost of Title V application (including DEQ fees + consultant to prepare)	$15,000	$55,000	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Annual DEQ Title V permit costs	$8,500	$8,500	If a facility needs a Title V due to NESHAP 6S, that is independent of this art glass rule, so this cost isn't included in the totals.
Incremental extra cost of Title V application due to art glass rule	$0	$3,000	Assume preparing the permit application would cost 0% to 5% more because of the incremental addition of the proposed rules. (Rounded to the nearest thousand.)
Incremental extra cost of Title V annual permit fees due to art glass rule	$0	$0	The proposed rules would not increase the annual permit fees if the facility would have a Title V anyway.
Number of Control Devices			
# of additional baghouses installed, over and above what would have been installed due to NESHAP 6S alone	0	1	This is uncertain because changes to comply with NESHAP 6S are happening at the same time as efforts to comply with this rule.
Cost Per Control Device			
Install baghouse	$355,000	$610,000	
One-time source test to demonstrate 99% PM control efficiency	Included in source testing cost below		Assume length of run depends on detection limits, does not have to be entire production run to show capture efficiency.
Annual operation	$15,000	$70,000	Electricity, bag replacement etc
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	
Total one-time costs per baghouse	$355,000	$610,000	
Total annual costs per baghouse	$27,000	$87,000	
Source Testing Costs			
One-time source test to measure Cr6 emissions when making products containing Cr3 or Cr6	$56,000	$56,000	
Modeling Costs			
One-time modeling to find max production rate that results in acceptable source impact level			
AERSCREEN model only	$10,000	-	
AERSCREEN followed by AERMOD model	-	$30,000	

Uroboros - Tier 2		
Requirements summary	Install control device on all furnaces using metal HAPs If using chrome: source test & modeling to develop daily & annual max usage Then follow the max usage limits	
	Cost Estimate	
	low	**high**

Total Costs

If 0 additional baghouses installed

One-time costs	$66,000	$89,000
Annual costs	$0	$0

If 1 additional baghouse installed

One-time costs	$421,000	$699,000
Annual costs	$27,000	$87,000

DEQ Art Glass Permanent Rule
Fiscal Impact Estimate for proposed rule- Tier 1 CAGM

Tier 1 (Northstar, Trautman and Glass Alchemy)						
Requirements summary	Do 1 of these at all furnaces: Install control device, OR source test & modeling to show impact below limits, OR request permit condition to not use metal HAPs					
	Cost Estimate					
	If installing control device		**If doing source test and modeling only**		**If taking permit condition to stop using metal HAPs**	
	low	high	low	high	low	high
Permitting costs						
NESHAP 6S applies?	N		N		N	
Rule would require facility to get new permit	Yes, ACDP		Yes, ACDP		Yes, ACDP	
Application Fee	$7,200	$7,200	$7,200	$7,200	$7,200	$7,200
Consultant to prepare application	-	-	-	-	-	-
Annual Permit Fee (applies at time of application and each year after)	$4,608	$4,608	$4,608	$4,608	$4,608	$4,608
Control Device Costs						
Install baghouse	$250,000	$400,000	-	-	-	-
Annual operation (electricity, bag replacement, etc)	$15,000	$70,000	-	-	-	-
Reporting Costs						
Annual cost to monitor and report on baghouse to DEQ	$12,000	$17,000	-	-	-	-
Source Testing Costs						
One-time source test to measure metal emissions including total Cr. (Total Cr can be used as a proxy for Cr6)	-	-	$15,000	$25,000	-	-
One-time source test to measure Cr6 emissions when making products containing Cr3 (optional)	If Tier 1 and using control device, don't have to test for Cr6		$0	$65,000	-	-
One-time source test to demonstrate 99% PM control efficiency	$4,000	$15,000	-	-	-	-
Modeling Costs						
One-time modeling to find max production rate that results in acceptable source impact level						
AERSCREEN model only	-	-	$10,000	-	-	-
AERSCREEN followed by AERMOD model	-	-	-	$30,000	-	-
Cost of reduced production						
Stopping production of materials containing Cr6 (required to take source test + modeling exemption)	-	-	unknown	unknown	About 1/2 of products contain metal HAPs. There may not be workable substitute formulations. Facilities may choose to phase out one or a few metal HAPs but are likely to choose source test & modeling or installation of a control device.	
Reduced production if source testing shows it's needed to meet receptor conc limits	-	-	unknown	unknown		
Total Costs						
One-time costs	$261,200	$422,200	$32,200	$127,200	$7,200	$7,200
Annual costs	$4,608	$4,608	$31,608	$86,608	50% of facility profit (?)	
One-time costs (rounded)	$261,000	$422,000	$32,000	$127,000	$7,000	$7,000
Annual costs (rounded)	$32,000	$92,000	$5,000	$5,000	50% of facility profit (?)	