



Oregon

Kate Brown, Governor

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July 13, 2020

Dennis Buenger
Owens-Brockway Glass Container
9710 NE Glass Plant Rd.
Portland, OR 97220

Mr. Buenger,

DEQ received the Cleaner Air Oregon Modeling Protocol and Risk Assessment Work Plan on May 8, 2020 and Air Toxics Emissions Inventory Form AQ405CAO on May 15, 2020 for the Owens-Brockway Glass Container Inc. facility (Owens) in Portland, OR has completed our review of these submittals. According to Oregon Administrative Rule (OAR) 340-245-0030(2), DEQ requests that you submit a revised Emissions Inventory, Modeling Protocol, and Risk Assessment Work Plan by **August 12, 2020** that include the revisions requested in this letter. DEQ's comments are organized in four sections below: (I) Facility and Process Flow Diagrams, (II) Emissions Inventory, (III) Modeling Protocol, and (IV) Risk Assessment Work Plan.

I. Facility and Process Flow Diagrams

1. Process Flow Diagram: In DEQ's response to Owens' last submittal, DEQ requested facility and process flow diagrams. DEQ received a process flow diagram with your updated submittals. Please clearly identify emission points for TEUs on your process flow diagram.
2. Facility Diagram: Please use an aerial photo as the basis for your facility diagram. Identify (1) TEUs designated in your Emissions Inventory and (2) their corresponding emission points.

II. Emissions Inventory

3. Revise the Emissions Inventory to:
 - a. Remove chromium trioxide emissions estimates from Furnaces A and D.
 - b. Include only hexavalent chromium emissions from the facility's May 2019 source test report. Report these emissions as *chromium VI*, *chromate*, and *dichromate particulate* emissions in the revised Emissions Inventory.
4. Emissions estimates for gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), and shielded metal arc welding (SMAW) were included in the revised emissions inventory. GTAW emissions estimates in the *Supplemental Information* spreadsheet do not match the values in the Safety Data Sheet (SDS) provided. Please revise the Emissions Inventory to reflect the TAC percentages in the GTAW Radnor SDS provided to DEQ. Please include emission factor units for all welding activities in your Emissions Inventory.
5. Clearly designate nickel emissions from spray welding activities as *nickel and compounds* (CAS No. 7440-02-0) in the emissions inventory.
6. Please provide industrial hygiene testing data referenced during our June 23, 2020 meeting to verify silica emissions estimates.

7. Revise the Emissions Inventory to include TAC emissions associated with grinding activities controlled by EU10.
8. Per DEQ request, Owens provided additional context for all references cited in the emissions inventory in a spreadsheet titled *Source Table 2020 June 2020.xlsx*. Please provide the **original** production data and plant records referenced in the spreadsheet, including Furnace A and D production data and welding and raw material handling plant records.

III. Modeling Protocol

9. The Furnace D exit velocity presented in Table 3-7 is reported as 51 m/s. DEQ believes this is the exit velocity reported in ft/s but was not converted to m/s. Please convert the exit velocity to m/s.
10. Revise *chromium trioxide* and *Chromium VI, chromate, and dichromate particulate* emissions as requested in comment 3, above, in Appendix E.
11. Revise both annual and daily *nickel and compounds* emission rates reported in Appendix E to be reported as *nickel compounds, insoluble* (CAS No. 7440-02-0). Footnote (f) in OAR 340-245-8040 Table 4 provides examples of compounds in each category.
12. Revise receptor spacing as DEQ previously requested. Modeling receptors should be spaced no less than:
 - a. 25 m along fence line and out to 200 m from fence line (Note: if the fenceline is adjacent to road or rail, the 25 m spacing can begin on the opposite side of the road/rail)
 - b. 50 m spacing 200 to 1,000 m
 - c. 100 m spacing 1,000 to 2,000 m
 - d. 200 m spacing 2,000 to 5,000 m
 - e. 500 m spacing 5 000 to 10,000 m
13. Include the following daycares and classify them as child exposure locations:
 - a. Joyful Heart Day School: 4627 NE 89th Avenue, Portland OR 97220
 - b. Airport Learning Tree: 12029 NE Ainsworth Circle, Portland, Or 97220
 - c. Discovery Gardens Childcare: 8212 NE Sandy Boulevard, Portland, OR 97220

IV. Risk Assessment Work Plan

14. In Table 2-2, nickel compounds need to be identified as *nickel compounds, insoluble* (CAS No. 7440-02-0). Footnote (f) in OAR 340-245-8040 Table 4 provides examples of compounds in each category.
15. In Table 2-2, include the classification of chemicals as either HI3 or HI5 based on the April 2020 revision to the CAO rules. Refer to the attached draft fact sheet summarizing the revisions to CAO rules. Revised OAR 340-245-8040 Table 4 provides this information. Because there will be a mix of HI3 and HI5 chemicals, please provide a discussion for calculating Risk Determination Ratios as outlined in OAR 340-245-0200(5).
16. Revise *chromium trioxide* and *Chromium VI, chromate, and dichromate particulate* emissions as requested in comment 3, above, in Appendix C.
17. Revise both annual and daily *nickel and compounds* emission rates reported in Appendix C to be reported as *nickel compounds, insoluble* (CAS No. 7440-02-0).
18. The RBCs provided in Table 2-2 show three significant digits. The RBCs in OAR 340-245-8040 Table 4 show only two significant digits. Because risk should be calculating using RBCs in rule, please show the RBCs in Table 2-2 to two significant digits only.

Confidential or trade secret information submitted to DEQ

DEQ is requesting that you submit additional information to complete your Toxic Air Contaminant Emissions Inventory. If you think that any of that information is confidential, trade secret or otherwise

exempt from disclosure, in whole or in part, you must comply with the requirements in OAR 340-214-0130 to identify this information. This includes clearly marking each page of the writing with a request for exemption from disclosure and stating the specific statutory provision under which you claim exemption. Emissions data is not exempt from disclosure.

Submittal Deadlines

Please submit your revised Emissions Inventory, Modeling Protocol, Risk Assessment Work Plan, facility diagram, and process flow diagram by **August 12, 2020**. Please communicate any questions or clarifications regarding the above comments proactively in order to provide timely submittals. DEQ remains available during this timeframe to discuss the submittal with you and answer any questions you may have. Failure to provide additional information or corrections required by DEQ by this date may result in a violation of OAR 340-245-0030(1) and OAR 340-245-0040(1).

Please contact me directly at 503.229.5247, billings.kenzie@deq.state.or.us, and we look forward to your continued assistance with this process.

Sincerely,

Kenzie Billings
DEQ CAO Project Manager

Attachment: DRAFT Existing Facility Hazard Index Calculations and Noncancer Risk Action Levels

Cc: Keith Johnson, DEQ
Thomas Rhodes, DEQ
Steve Dietrich, DEQ
George Yun, DEQ



DRAFT Existing Facility Hazard Index Calculations and Noncancer Risk Action Levels

Hazard Index (HI) calculations are required when evaluating both chronic and acute noncancer risk at exposure locations for the purposes of a CAO risk assessment. **For existing facilities**, the CAO rules separate Toxic Air Contaminants (TACs) with noncancer Risk Based Concentrations (RBCs) into two distinct groups based on their Toxics Best Available Control Technology (TBACT) Risk Action Levels (RALs). [see OAR 340-245-8040 Table 4].

TACs with noncancer RBCs are grouped as either having TBACT RALs of either HI = 3 (HI3) or HI = 5 (HI5). HI calculations involving TAC emissions, with either strictly HI3 or HI5 TACs, will be calculated as shown in Equation 1 below. If a facility emits a mixture of both HI3 and HI5 chemicals, a Risk Determination Ratio (RDR) will need to be calculated^[1] as shown in Equation 2 below. [see OAR 340-245-0200(5)]. **For new facilities**, all TACs are compared to an HI = 1.

Equation 1:

$$\text{Hazard Index (HI3 or HI5)}_{T,E} = \sum_{x=1}^n \frac{\text{TAC}_x \text{ Modeled Concentration}}{\text{RBC}_x}$$

Equation 2:

$$\text{Risk Determination Ratio (RDR)}_{T,E} = \frac{\text{HI3}_{T,E}}{3} + \frac{\text{HI5}_{T,E}}{5}$$

Where:

- T = Type of risk (acute or chronic noncancer risk)
- E = Exposure Location (residential, non-residential child, worker, or acute)
- x = specific TAC emitted at facility

When evaluating the final noncancer risk for your facility at the required exposure locations, HI3 and HI5 risk estimates should be rounded off to the nearest whole number, but RDR estimates should be rounded off to one decimal place. [OAR 340-245-0200(4)(a)(A)] Please see Table 1 below to determine how the final noncancer risk compares with the correlated RALs.

Please refer to Appendix A of the Health Risk Assessment Guidance Recommended Procedures for example risk assessment calculations involving RDRs for existing facilities, including analyses based on target organ systems.

Table 1: Use the following values to determine compliance for the final maximum noncancer risk from your facility using the RALs for the corresponding case for the TAC emissions from you facility. [OAR 340-245-8010 Table 1] Be sure to round RDRs to one decimal place.

Noncancer Risk	Existing Facility Risk Action Levels (RALs)		
	TBACT	Risk Reduction	Immediate Curtailment
HI3	3	6	12
HI5	5	10	20
RDR	1.0	2.0	4.0

[1] – If the noncancer risk for a facility is HI < 3.0, then the calculation of the RDR is not required as it only applies at the TBACT RAL.