

July 8, 2022

Julia DeGagné
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Attn: Julia DeGagné

Re: Response to DEQ letter dated June 8, 2022

Dear Julia:

Hollingsworth & Vose Fiber Company (H&V) received a letter dated June 8, 2022 (the letter), from the Oregon Department of Environmental Quality (DEQ) relating to the Cleaner Air Oregon (CAO) Emissions Inventory submitted by H&V on April 11, 2022. H&V and Maul Foster & Alongi, Inc. (MFA), have prepared the following responses, due July 8, 2022. This response document is organized in the same manner as the information was requested in the letter. DEQ comments are shown in bold followed by the response. MFA has prepared a revision to the CAO emissions inventory, which is included as Attachment A to this letter.

Also, in Attachment D are provided the Safety Data Sheets (SDSs) for the raw materials with the exception of those SDSs already submitted for Zinc and Barium. H&V is requesting that the SDSs being provided with this letter be protected as confidential and exempt from public disclosure pursuant to Oregon Administrative Rules (OAR) 340-214-0130 and Oregon Revised Statutes (ORS) 192.501(2). The pages of the materials eligible for this exemption from disclosure have been clearly marked with the words: **Confidential Business Information--Do Not Release to Public**. Consistent with the requirements in OAR 340-214-0130(3), these data (a) cannot be patented; (b) are known only to a limited number of individuals within H&V and the company makes efforts to maintain the secrecy of the information; (c) are information that derives significant economic value from not being disclosed to other persons; (d) provide H&V the chance to obtain and maintain a business advantage over its competitors which lack the information; and (e) do not constitute "emissions data" as that term is defined by state law. In short, the source and brand of the raw materials are at the core of H&V's highly competitive business and the disclosure of these data would have a profound negative impact upon H&V's ability to do business. Therefore, these data are precisely the type of trade secret information that ORS 192.501(2) and OAR 340-214-0130 are intended to protect. If the DEQ is unable or unwilling to exempt these data from public disclosure, we request that all copies of the data be

returned to H&V immediately and we will work with you to provide the information you need by another means.

- 1. Update the chromium VI (CAS # 18540-29-9) emission factors for glass plant processes (TEUs RF, RC, FB, and GM) to use total chromium emissions data from the May, June, and August 2018 source tests, and assume one hundred percent of total chromium is chromium VI.**

The emission factors for total chromium from the glass plant processes are based on emissions data from the April/May, June, and August 2018 source tests. The emissions inventory has been revised to assume 100 percent of total chromium emissions from the glass plant processes is hexavalent chromium. This is a conservative assumption, and we reserve the right to revisit this assumption at a later date.

- 2. Glass fiber emissions could be classified as one or more Oregon Toxic Air Contaminants (TACs). Please provide emissions estimates for the following TACs, or provide a demonstration that the glass fibers produced and potentially emitted by H&V do not meet the criteria to be classified as TACs:**
 - a. Glasswool fibers (DEQ ID 352). According to the Agency for Toxic Substances and Disease Registry's Toxicological Profile for Synthetic Vitreous Fibers, special purpose fibers (including those produced by flame attenuation) are included in the "glass wool" category of Synthetic Vitreous Fibers; and**
 - b. Mineral Fibers (fine mineral fibers which are man-made, and are airborne particles of a respirable size greater than 5 microns in length, less than or equal to 3.5 microns in diameter, with a length to diameter ratio of 3:1 (DEQ ID 350)).**

If the fibers from H&V do not fall into the categories described in 2a. or 2b., please describe the fibers produced/potentially emitted (for example, list dimensions).

We recognize that the use of terminology in the Agency for Toxic Substances and Disease Registry (ATSDR) document is confusing and internally inconsistent. As the document explains, there are multiple product classifications within the overarching category of Synthetic Vitreous Fiber (SVF). One product type under SVF is Glass Insulation Wool, which is what is used to make insulation. Another product type is Special Purpose Fibers (SPF). H&V makes exclusively SPF. At certain places in the ATSDR document they suggest that SPF is a type of Glass Wool. However, at others they distinguish between the two based on chemical properties. For example, in Table 4-1 of the ATSDR document, SPF is shown to have different constituent blends from Glass Wool. These differences

give SPF the unique properties needed for the types of applications to which it is put. H&V considers its fiber to be SPF rather than Glass Wool.

In relation to the “Mineral Fibers” classification, this is clearly not relevant to H&V. The Mineral Fibers grouping is defined as “fine mineral fibers which are man-made, and are airborne particles of a respirable size greater than 5 microns in length, less than or equal to 3.5 microns in diameter, with a length to diameter ratio of 3:1.” This definition looks to the size of the airborne particles emitted from a facility. In order to be within this definition, a particle would need to be greater than 5 microns in length. H&V’s particulate controls, the ceramic filtration devices (CFUs), are highly efficient. No particles greater than 5 microns in length would make it through the ceramic material that serves as the filtration media in a CFU.

H&V emits extremely little particulate from its processes. In June 2018, H&V performed emission factor verification tests for particulate (among other constituents). Because the CFUs are so effective, H&V conducted extended length runs. Nonetheless, the level of particulate matter measured in the CFU exhaust was below the In Stack Detection Limit. The minute amounts of filterable particulate (a small portion of the overall particulate) that do pass through the CFUs are believed to be predominantly, if not exclusively, bulking agent. As a result, H&V’s SPF emissions are negligible.

- 3. The potential for fugitive emissions from manufacturing and collection areas must also be considered and such emissions included in the Inventory. Please provide substantiation for the reported capture efficiency of 100 percent, including control device or design specifications, as applicable, for the following TEUs, or update their reported capture efficiencies:**
 - a. Raw material handling (RMH_BA and RMH_ZN); and**
 - b. Glass plant processes (RF, RC, FB, and GM).**

Glass Plant 1 has 11 CFUs and Glass Plant 2 has 7 CFUs that each operate in a range between 8,000 and 23,000 dry standard cubic feet per minute. The make-up air for the process, feeding the CFUs, is predominantly from the inside of the glass plants. Based on observations it appears that the CFUs provide sufficient negative pressure that 100 percent of process emissions from Glass Plant 1 and 2 are captured and controlled. H&V plans to conduct a study on the potential for fugitive emissions leaving the raw material handling area. We believe there is adequate negative pressure to prevent that from occurring but will specifically evaluate that area and provide the findings to you.

- 4. Provide the May 2015 source test that was used to develop the benzene (CAS # 71-43-2), hexane (CAS # 110-54-3), and toluene (CAS # 108-88-3) emission factors for glass plant processes (TEUs RF, RC, and FB).**

The May 2015 source tests were conducted when the facility used scrubbers for control of the glass plant processes. The facility now uses CFUs as control for the glass plant processes. Due to these changes, the May 2015 source tests do not reflect our upgraded controls. H&V is in the process of collecting current data from our existing controls, and so will work with the DEQ to prepare a testing plan to develop current glass plant emission factors for benzene (CAS # 71-43-2), hexane (CAS # 110-54-3), and toluene (CAS # 108-88-3).

- 5. Provide a detailed narrative supporting the representativeness of emission factors used in the development of organic compound TAC emissions estimates for glass plant process TEUs RF, RC, and FB, and GM. The discussion should address the potential impacts of:**
 - a. Changes in control equipment related to emission factors derived from the 2015 source test; and**
 - b. The use of non-typical combustion conditions in glass plant processes, for emission factors derived from AP-42.**

The May 2015 source tests were conducted when the facility used scrubbers for control of the glass plant processes. The facility now uses CFUs as control for the glass plant processes. Due to these changes, the May 2015 source tests do not reflect our upgraded controls. H&V is in the process of collecting current data for organic TACs from our existing controls, and so will work with the DEQ to prepare a testing plan to develop current glass plant emission factors.

- 6. Update the Table 14 footnotes to clarify that emissions from combustion of natural gas in the forehearth burners have been included as “non-production” natural gas emissions, and that these are standard burners that can be considered to operate under typical combustion conditions.**

After additional review of the CAO emissions inventory submitted to the DEQ on April 11, 2022, it was determined that the natural gas usage from the forehearth burners was included in the glass plant production natural gas usage. The natural gas usage for the forehearth burners has been estimated and included as “non-production” natural gas usage in the revised emissions inventory.

- 7. Update the formaldehyde (CAS #50-00-0) emission factor for the Flameblown process TEU FB to 0.465 pounds per ton for consistency with the April and June 2018 source test results.**

The emissions inventory has been updated to address the formaldehyde emission factor for the Flameblown process. The formaldehyde emissions factor was derived from the April/May and June 2018 source test results.

- 8. For the emergency generator TEUs, EGEN1 and EGEN2:**
 - a. Update assumed load factor to 100 percent; and**

As requested, the revised emissions inventory incorporates a load factor of 100 percent for both emergency generators.

- b. Provide manufacturer's documentation of reported fuel usage rates at 100 percent load.**

Engine specifications were provided to MFA by regional Caterpillar representatives at Peterson Power via email correspondence. Email exchanges which include fuel usage estimates for both engines have been included in Attachment B. Emergency Generator 1 (EGEN1) has a Caterpillar 3406A DITA engine and Emergency Generator 2 (EGEN2) has a Caterpillar D343 engine.

- 9. Update the table headings in Tables 7 through 11 (for example, "Maximum VOC concentration", "VOC emissions rate", "VOC emissions estimate" and "VOC weight fraction") to clarify that the concentrations and estimates presented are based on the sum of the concentrations of selected sampled TACs, if this data is not based on a measurement of Total VOCs. Alternatively, provide the Total VOC data used.**

As stated in Ms. DeGagné's letter dated July 1, 2022, the DEQ's question regarding the TCE remediation system has been withdrawn.

- 10. Provide the following documentation to support the emissions calculations:**
 - a. Calculations in native database format showing emission factor derivation from: source tests for glass plant process TEUs RF, RC, FB, and GM; and from analytical data for the TCE Remediation System TEUs (i.e., REMSYS, LEAKS_SVE, LEAKS_SS, LEAKS_CV1, and LEAKS_CV2);**

H&V has provided the source test reports for the glass plant process Toxic Emission Units (TEUs) in Attachment C. The attachment includes three reports for CFU testing conducted in April/May, June, and September 2018.

As stated in Ms. DeGagné's letter dated July 1, 2022, the DEQ's question regarding the TCE remediation system has been withdrawn.

b. Documentation of the stack flow rates used in the emissions calculations for the TCE remediation system TEU REMSYS;

As stated in Ms. DeGagné's letter dated July 1, 2022, the DEQ's question regarding the TCE remediation system has been withdrawn.

c. Manufacturer's specification sheets or data used to select parameters for cooling tower emissions calculations for TEUs CT1_2, CT3, and CT4, including drift loss, dosage range, and water circulation rate; and

Drift loss percentage of circulating water was provided by Applied Systems Northwest, the regional Baltimore Aircoil Company representative, during March 2019 phone communications. Cooling tower chemical dosage rates were provided by H&V's chemical provider. The average of the dosage range was assumed for emission purposes. Water circulation rates were estimated by H&V based on the current pump capacities for each unit.

d. Safety Data Sheets and/or analytical data for all raw materials used – for example, sand and minerals used in the glass processes.

SDSs for all raw materials (excluding those already provided to the DEQ in April 2022) have been included in Attachment D. As noted at the outset of this letter, H&V is requesting that the SDSs being provided be protected as confidential and exempt from public disclosure pursuant to OAR 340-214-0130 and ORS 192.501(2). The pages of the materials eligible for this exemption from disclosure have been clearly marked with the words: **Confidential Business Information--Do Not Release to Public.**

11. Activity levels used to model risk under Cleaner Air Oregon could become new permitted limits. Please confirm that the production value used in requested Potential to Emit calculations for rotary coarse and ultra rotary coarse fiber production (17,424 pounds, combined) reflects the facility's desired capacity.

We appreciate your identifying for us that activity levels could potentially become permitted limits and so it is important to conduct the CAO modeling at levels reflective of

our intended maximum operations. H&V employed its maximum intended rotary/ultra-rotary coarse fiber values to develop its inventory. As we work our way through the risk assessment process we will assess the best means of demonstrating long term compliance with the CAO requirements. Also, we would like to bring to your attention that an error was made in the units above, this should be tons versus pounds.

In addition to the updates to the emissions inventory noted above, we have incorporated an additional TEU. Our shipping and receiving department uses a minor amount of spray paint to mark incoming raw materials. Emissions from spray paints have been included in the CAO emissions inventory in Attachment A, and the DEQ form AQ520, which will be submitted with this response. Spray paint SDSs have been included in Attachment E.

Please do not hesitate to contact me at (541) 738-5382 if you have any comments or require additional information.

Sincerely,



Anita Ragan
Environmental Health & Safety Manager

Attachments: A. Revised CAO Emissions Inventory
 B. Emergency Generator Data
 C. 2018 Source Test Reports
 D. Raw Material Safety Data Sheets
 E. Spray Paint Safety Data Sheets

cc: Cindy Frost, H&V
 Mike Eisele, DEQ

ATTACHEMENT A

Revised CAO Emissions Inventory

ATTACHEMENT B

Emergency Generator Data

ATTACHEMENT C

2018 Source Test Reports

ATTACHEMENT D

Raw Materials Safety Data Sheets

ATTACHEMENT E

Spray Paint Safety Data Sheets