



Oregon

Tina Kotek, Governor

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March 27, 2026

Benchmade Knife Company
300 Beaver Creek Rd.
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Sent electronically only

Joel Kershaw,

Benchmade Knife Company (Benchmade) is a manufacturer of knives located in Oregon City, OR. On July 30, 2025, DEQ's Cleaner Air Oregon (CAO) program reached out to Benchmade via email requesting additional information on Benchmade's chromium and hexavalent chromium air emissions after DEQ's review of Benchmade's 2021 Toxics Release Inventory (TRI) reporting showed chromium air emissions to be at levels of concern. Benchmade submitted emission estimates for chromium and hexavalent chromium on October 31, 2025. DEQ met with Benchmade on October 31, 2025, to discuss emissions at the facility and requested updates to the emissions estimates via email on November 3, 2025. Benchmade submitted revised emission estimates and supporting information on November 21, 2025.

DEQ has reviewed the emissions estimates to date and based on the potential health risk from the emissions at Benchmade, DEQ is requiring your facility to perform a Risk Assessment in accordance with the CAO program rules. [[Oregon Administrative Rules \(OAR\) 340-245-0050\(3\)](#)] This assessment will require you to provide emissions information (for example, production activities, emissions units, and control devices) that will be used, in conjunction with other data about where your facility is located, to estimate risks to the surrounding community as required under [OAR 340-245-0050\(3\)](#).

For the purposes of the CAO program, DEQ has determined that Benchmade is a new source as defined by [OAR 340-245-0020\(33\)](#) because Benchmade did not submit all necessary applications to DEQ under OAR, chapter 340, division 210 or 216 before November 16, 2018. Specifically:

- Benchmade has been in operation at their current location since 1996. However, prior to 2020, no communications between Benchmade and air quality personnel at DEQ have been documented.
- Stationary sources are required to notify the DEQ prior to construction, installation, or establishment of new sources of air contaminant emissions through either a Notice of Construction or air quality permit application. [[OAR 340-210-0205](#)¹ & [OAR 340-216-0020](#)]
- A source is considered a new source under the CAO program if they are not an existing source. [[OAR 340-245-0020\(20\) & \(33\)](#)] Because Benchmade had submitted neither a Notice of Construction or an air quality permit application to DEQ prior to November 16, 2018, nor had DEQ determined permitting applicability prior to this date, they are considered a new source under the CAO program.

To begin the Risk Assessment process, Benchmade must submit to DEQ the CAO New/Reconstructed Source Risk Assessment Application along with a completed CAO Emissions Inventory Form ([AQ520](#))

¹ This is the current OAR citation for the Notice of Construction requirements. The OARs have been revised since 1996, but the same requirement existed and was applicable to stationary sources in 1996.

Benchmade Knife Company

and payment of the New Source Consulting Fee for a Simple Air Contaminant Discharge Permit (ACDP) by **90 days** after the issuance date of this letter, or **June 25, 2026**. [[OAR 340-214-0110](#)] The CAO New Source Consulting Fee for a Simple ACDP is **\$1,989**. [[OAR 340-216-8030 Table 3](#)] Note that an additional 4 percent technology fee of **\$79.56** will be applied to this payment in Your DEQ Online.

In order for DEQ to be able to approve your submission, please provide all required supplementary materials required under [OAR 340-245-0040\(4\)](#). DEQ will consider submissions incomplete if submitted without the required supporting information. Based on the previous emissions information provided, DEQ has provided comments for consideration when preparing your CAO Emissions Inventory and included as an attachment to this letter (Attachment A). All submittals for the CAO Risk Assessment process must be completed through [Your DEQ Online \(YDO\)](#).

Information about the CAO Risk Assessment process and permitting, including the forms mentioned above, recommended procedures documents, and a flow chart showing the Risk Assessment process, can be found in the [Step-by-Step Guide for Facilities](#) available on the CAO web site, along with [Frequently Asked Questions](#).

DEQ is available for consultation prior to reviewing and approving submittals for the CAO process, including the Emissions Inventory, Modeling Protocol, Risk Assessment Work Plan (if you plan to complete a Level 3 or Level 4 Risk Assessment) and the Risk Assessment itself. Once the Risk Assessment is complete and approved, DEQ will use the Risk Action Levels identified in [OAR 340-245-8010 Table 1](#) to determine whether additional action is required under the CAO program rules.

Your contact for CAO Risk Assessment work is:

Amy DeVita-McBride – CAO Project Engineer
Amy.DEVITA-MCBRIDE@deq.oregon.gov
 (971) 300-3653

Please contact DEQ to clarify any questions you may have regarding the Emissions Inventory and Risk Assessment process. We look forward to working with you.

Sincerely,



J.R. Giska
 Cleaner Air Oregon Program Manager
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 971-337-4102

Enc. Attachment A: Comments Related to Benchmade's Emissions Estimates

Cc: Megan Edmundson, Benchmade Knife Company
 Leslie Riley, MFA
 Amy DeVita-McBride, DEQ
 Julia DeGagné, DEQ
 Ali Mirzakhali, DEQ
 File

March 27, 2026

Attachment A: Comments Related to Benchmade's Emissions Estimates

DEQ has completed an initial review of Benchmade's emission estimates and has prepared the following comments (including requests for additional information, corrections, and updates) for Benchmade to consider while preparing your CAO Emissions Inventory (Inventory).

General Comments

1. Benchmade will need to assess all non-exempt activities at the facility for their potential to emit TACs in the Inventory. Previous emissions inventories prepared by Benchmade have included only emissions of metal toxic air contaminants (TACs) from the following toxics emissions units (TEUs): laser cutting; micro joint sanding; and blade sharpening and buffing.
2. As a new source in the CAO program, Benchmade is only required to present emissions for the Potential to Emit (PTE) basis. There is no requirement to include throughputs or usage rates for the actual basis for new sources. [OAR 340-245-0040(4)(a)(B)(i)]
3. DEQ will not accept 99.9 percent control efficiency of particulate matter (PM) for activities controlled by a baghouse without additional justification. DEQ has addressed specific instances and required updates to the Inventory or supporting calculations in the proceeding section.

Specific Comments

1. **Blade Production Rate:** Confirm how Benchmade determined the hourly blade production rate and whether this rate represents the physical capacity of the equipment.
2. **Alloy Composition:** Benchmade should ensure that the selected alloy composition for the PTE basis is appropriately conservative based on historical and desired future production rates.
 - a. Annual PTE: In the previous emissions estimates, Benchmade has used the weighted average across multiple years when developing the PTE alloy composition. However, for several TACs the composition used for the PTE basis was lower than the composition used for the 2021 emission estimates.
 - b. Maximum Daily PTE: DEQ requires modeling of the worst-case maximum daily emissions for acute risk. When preparing the maximum daily PTE alloy compositions ensure they are representative of Benchmade's worst-case potential daily emissions.
3. **Laser Cutting TEU:**
 - a. Review the laser cutting emission calculations for hexavalent chromium (CASRN 18540-29-9) and ensure that the emission factor from the South Coast Air Quality Management District's document is used appropriately. The basis of this emission factor is "pound chromium in metal removed," not "pound chromium emitted."²
 - b. Per General Comment 3, DEQ will not accept a PM control efficiency of 99.9 percent for processes controlled by a baghouse without additional supporting documentation to support such high level of control for the small PM expected from a fume generating

² South Coast Air Quality Management District. March 2025. "Guideline for Calculating and Reporting Emissions from Laser or Plasma Cutting of Metal Materials Operations." (<https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/guidelines-for-calculating-and-reporting-emissions-from-laser-or-plasma-cutting-of-metal-materials-operations---fixed.pdf?sfvrsn=6>)

process such as laser cutting. DEQ will accept a 99 percent control efficiency for PM emissions from this TEU based on the documentation provided to date.

4. Micro Joint Sanding TEU:

- a. This TEU should be represented by two Toxics Emissions Sub-Units (TESUs) in the Inventory: one to account for the controlled portion of emissions and one for the uncontrolled portion.
- b. Provide additional documentation on ventilation design to support the 95 percent capture efficiency by the collection system.
- c. Controlled TESU: Per General Comment 3, DEQ will not accept a PM control efficiency of 99.9 percent for processes controlled by a baghouse without additional supporting documentation to support such high level of control. DEQ will accept a 99 percent control efficiency for PM emissions from this TEU based on the documentation provided to date.
- d. Uncontrolled TESU: For the “uncontrolled” portion of the emissions from this TEU, DEQ requires additional information to support the assumption of 50 percent control of emissions from “fall out within the building envelope.” Additional justification should include a discussion of the building’s ventilation and a discussion of the expected particulate size distribution for the micro joint sanding activities.
- e. Particulate Emission Factor:
 - i. Supplemental information provided by Benchmade notes an average of 0.627 grams (1.38×10^{-3} pounds) of metal is removed from each blade during micro joint sanding activities. The particulate emission factor used in the emissions inventory is 1.0×10^{-3} pounds per blade. Review the particulate emission factor and revise as appropriate to reflect the correct number of significant figures based on the analysis used to develop.
 - ii. The supplemental information provided indicates that there is variability in the amount of metal removed for different blade types. When preparing the maximum daily emission estimates ensure they are representative of Benchmade’s worst-case daily emissions.

5. Blade Sharpening and Buffing TEU:

- a. This TEU should be represented by two toxics emissions subunits (TESUs) in the Inventory: one for the controlled portion of emissions and one for the uncontrolled portion.
- b. Provide additional documentation on ventilation design to support the 95 percent capture efficiency by the collection system.
- c. Controlled TESU:
 - i. Update removal efficiency of the Torit baghouse filters to reflect the MERV 15 equivalency rating stated by the manufacturer. DEQ will accept a removal efficiency of 90 percent based on the EPA’s minimum stated control efficiency for MERV 15 filters for particulate greater than 1 micrometer.³ If Benchmade would like to use a higher control efficiency, please provide additional justification including supporting documentation from the filter manufacturer and a discussion of the expected particulate size distribution for the blade sharpening and buffing activities.

³ EPA. Updated January 14, 2026. “What is a MERV rating?” *Indoor Air Quality*. (<https://www.epa.gov/indoor-air-quality-iaq/what-merv-rating>)

- ii. For the “controlled” portion of emissions from this TEU, DEQ will not accept the additional 50 percent control of particulate emissions from “fall out within the building envelope.” It is assumed that the majority of the particulate not removed by the fabric filters is of a size less than 2.5 microns. Particulate of this size remains suspended for longer periods (days to weeks) and therefore do not “fall out” readily in the building.
- d. Uncontrolled TESU: For the “uncontrolled” portion of the emissions from this TEU, DEQ requires additional information to support the assumption of 50 percent control of emissions from “fall out within the building envelope.” Additional justification should include a discussion of the building’s ventilation and a discussion of the expected particulate size distribution for the blade sharpening and buffing activities.
- e. Particulate Emission Factor:
 - i. Supplemental information provided by Benchmade shows an average of 0.000413 (4.13×10^{-4}) pounds of metal is removed from each blade during sharpening and buffing activities. The particulate emission factor used in the emissions inventory is 4.0×10^{-4} pounds per blade. Review the particulate emission factor and revise as appropriate reflect the correct number of significant figures based on the analysis used to develop.
 - ii. The supplemental information provided shows that there is variability in the amount of metal removed for different blade types. When preparing the maximum daily emission estimates ensure they are representative of Benchmade’s worst-case daily emissions.